Q
1
S3
V.81
1978
SUB. INDEX
MES-Z
N/C
SCI

U. I. C. C.
JAN 1 5 1979
LIBRARY.

PAMPHLET BOX

Physics Abstracts

Science Abstracts Series A
January-June 1978

Subject Index (Mes – Z)

inspec
The Institution of Electrical Engineers

CONTENTS

Title page i
Subject index S767

SIX-MONTHLY INDEXES TO SCIENCE ABSTRACTS

Cumulative indexes to Science Abstracts are published twice a year covering the period January-June and July-December. They comprise author and subject indexes and some specialised or 'small' indexes. For Physics Abstracts and Electrical & Electronics Abstracts the Author Index and Subject Index are published as separate volumes. In this case the Small Indexes are included in the Author Index volume.

Subject Index

The Subject index provides an alphabetical subject key to the articles included in the abstracts journal. Some general guidance on its use is given below:

1. Look in the index for the name of the specific subject in which you are interested. In most cases this name will be a heading in the index and you will find relevant articles listed under it. The majority of the subject headings fall into the following catagories: property, phenomena, substance or named objects, instrument, device, theory, method, process, application, event.

2. Occasionally you will be directed from the subject heading chosen to a different heading under which the relevant or additional articles are listed.

3. If you do not find the subject heading you first chose, try a more general heading.

4. Each entry under the heading relates to an article appearing in the abstracts journal and gives the serial number of that article in the journal preceded by the last digit of the current year, e.g. 7-12345; i.e. Abstract number 12345 in the abstracts journal for 1977.

The language of the article, if it is not in English, is also indicated. e.g. digital frequency meter jamming, distribution function determ. (Russian) 7-41575.

Each entry starts with a Keyword or Keyphrase considered to be most relevant to the heading. On sorting these Keywords, the qualifying prefixes are usuallly ignored. (e.g. α-brass, 5-sulphosalicylic, 31 Cygni, n-Ge are sorted under brass, sulphosalicylic, Cygni, Ge respectively).

There are three main Keyword lists; alphabetical A-Z, elementary particles, and chemical symbols (organic substances are written and not given as chemical formula). More than one Keyword list may be present under each subject heading.

For document on, say, 'photoemission of germanium' at least two access points 'photoemission' and 'Germanium' are provided. Under the heading 'photoemission' the Keyword will be 'Ge' and under 'germanium' the Keyword will be 'photoemission'.

In a case like this, it is advisable and quicker to use the heading 'photoemission' and go straight to the chemical symbol list for 'Ge'.

Intermetallic compounds are indexed under the appropriate alloy headings. The chemical formula is used as Keyword. However, it is important to realise in searching the chemical symbol list that, at present, alloys and intermetallic compounds are sorted separately. For example FeCo is sorted at the end of the Fe- list e.g. Fe-Al, ... Fe-Co, ... Fe-Si, ... Fe-Si-B,... FeCo, ... FeSi and so on in this order.

Physics Abstracts

Science Abstracts Series A

January-June 1978

Subject Index (Mes – Z)

inspec
The Institution of Electrical Engineers

Physics Abstracts is published twice monthly by the Institution of Electrical Engineers. Twice-yearly subject and author indexes covering the period January-June and July-December are included in the subscription. Printed by G. A. Pindar & Son Ltd., Scarborough, N. Yorkshire, England. Second class postage paid at Piscataway, NJ 08854 USA.

© 1978: THE INSTITUTION OF ELECTRICAL ENGINEERS

meson detection and measurement continued
K^- tracks, 1.5 GeV/C, fast stable particles from light emulsion nuclei, emission probabilities 8−17245
(π^+,π^-) reactions on light nuclei, micron spectrometer for meas. with energy resolution of 1 MeV for 400 MeV/c momentum 8−13368
π^-, sensitivity of personnel monitoring film 8−28079
π^0 high resolution spectrometer for nucl. struct. anal. 8−37500
$\pi^+p\to n\pi^+\pi^+\pi^+\pi^-$, reaction, extraction from background 8−880

meson-deuteron interactions
see also meson-deuteron scattering
K^0d interaction, 10 to 50 GeV/c, transmission regeneration *(Russian)* 8−41590
πd, scatt. length, binding corrections 8−17046
$\pi d\to A_1d$, double scatt. at high energy, unstable particle scatt. amplitude 8−45929
$\pi^+d\to pp$, review, medium energy pion-nucleus absorption and scattering, pion condensation 8−8858

meson-deuteron scattering
see also meson-deuteron interactions
$K^\pm+d$, high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
Kd study, $K^\pm n$ elastic scattering, 10 GeV/c, real part of forward amplitude, dispersion relation 8−45950
K^-d, 1.2 to 2.2 GeV, cross sections for K^-n and K^-p scatt. 8−29353
$\pi+d$, high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
πd, relativistic effects in deuteron alignment 8−25068

meson effects
biological effects of π^-, depend. on intrinsic props. of reaction systems, RBE 8−3562
lymphocyte chromosome aberrations, pion$^-$ peak expansion to range of depths useful in radiotherapy 8−20243
mammalian cells irrad. with π^- and Co γ-rays, cell cycle progression 8−40269
pig, usefulness for assessing π^- damage in locally treated pelvis and abdomen 8−3554
Vicia faba bean root growth, effects of π^- and neutrons 8−28003
π^--meson channelling in crystals 8−6115

meson field theory
see also nuclear forces
alternating layer spin structure, one-dimensional, localised, in nuclear system, and π^0 condensation 8−4902
axial currents in nuclei, one-pion exchange diagram 8−46008
bound states in baryon-antibaryon systems, NN, NN, dispersion method *(Russian)* 8−16933
charmed particle-antiparticle system, bound states near charm threshold 8−45857
cold matter at super-nuclear densities including pion condensates 8−17128
collective mode of nucleon system with π^0 condensate 8−41660
f-meson-other field strong gravitational coupling, effect on nuclear force in nucleon-nucleon interactions 8−514
generating functionals in current formulation of quantum meson field 8−16947
high density nuclear Mach shock waves, central heavy ion collisions, compressed nuclear matter, meson condensation 8−46089
hydrodynamic model, nonlinear pion+pion chiral Lagrangian, e^++e^- and p+p collisions 8−32966
isovector scalar meson interaction, static source, variational method, coherent states 8−16921
long range NN interaction, axial polarisability, two pion exchange 8−29397
magnetic moments of light nuclei, configuration mixing and meson exchange 8−17100
micrononcausal Euclidean wave functions for hadrons, virtual mesons in deuterons 8−41408
microscopic dynamics of nuclei, meson exchange currents 8−12980
nonlinear chiral fields *(Russian)* 8−28968
nuclear, Compton scattering, diffractive behaviour, meson exchange effects 8−33165
nuclear field theory, renormalisation of single particle states 8−24926
nuclear matter, symm. and asymm., simple effective interaction for props. 8−25141
nucleon self-energy in finite nuclei; renormalisation, nucleon-meson interaction, ^{16}O calcs. 8−17110
Pauli principle effect in nuclear matter, exchange of interacting two pions 8−12983
quark effective-bare mass distinction 8−12866
scalar meson fields in conformally flat space 8−8278
SU(2) nonlinear σ model, kink solns., form factor interpretation 8−24964
superconducting props. of π condensates 8−32993
Thomas-Fermi model of finite nuclei 8−8747
three body systems in nuclear physics, review 8−517
three nucleon clusters in nuclear matter, intermediate Δ-states, exchange diagrams calc. 8−17112
NN scatt., small angle, appl. of eikonal vector meson exchange theory 8−17052
$\bar{p}N\to\bar{N}(N\pi)_{I=1/2}$, 5.7 GeV.c ρ exchange contrib., cross channel isospin amplitude anal. 8−45938
π bound states in finite nuclei, π-nuclear optical pot. 8−46013
π condensation in nuclear matter, Hartree-Fock and generator coord. methods 8−17129
π field, nonlinear chiral models, many dimensional solitons 8−4792
π field relaxation in nuclear materials *(Russian)* 8−8764
π prod. and absorpt. in nucl. reactions, vertex function anal. 8−12989
π-nucleon coupled field, progenitor sum rules, ρ-mesonic effects 8−17111
π^0 condensation in finite system, extended Thomas-Fermi model 8−41645
π+nucleus absorption and scattering, pion condensation 8−8858
π+nucleus scatt. field theoretic treatment 8−29505
^{12}C, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{40}Ca, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{48}Ca, pion-exchange contribs. to charge densities, HF calcs. 8−46001
$^3H(e,e)$, many-body exchange effects, charge form factors calc. 8−33169
He(e,e), A=3,4, many-body exchange effects, charge form factors calc. 8−33169
^{16}O, pion-exchange contribs. to charge densities, HF calcs. 8−46001

meson field theory continued
^{17}O, mag. form factor, core polarisation and exchange current effects 8−46003
^{208}Pb, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{90}Zr, pion-exchange contribs. to charge densities, HF calcs. 8−46001

meson hadronic decay
see also kaon hadronic decay
$\eta\to\pi^+\pi^-\gamma$, one-loop approx. in quantum chiral theory 8−25041
charmed meson decay, simple symm. breaking 8−21418
charmed meson decays and right handed currents 8−8662
charmed meson hadronic decay, D^0, D^+, F^+ branching ratios 8−45913
charmed-meson decay, massive quark model 8−33067
extended PCAC+Veneziano type model, Goldberger Treiman relations, $\eta\to\gamma\gamma$or $\pi^+\pi^-\gamma$ 8−21354
pseudoscalar mesons, in spectrum-generating SU(3), beta-decay 8−4858
QCD, inclusive hadronic annihilation of heavy quark-antiquark bound states, Y, ψ decays 8−45866
radiative decay of vector mesons into pseudoscalar mesons, relativistic harmonic oscillator model *(Russian)* 8−453
radiativn decays 8−21419
resonances, binary decays, centrifugal effects *(Russian)* 8−17012
single quark transition model, parity violating charmed hadron decays, current-current interaction 8−12907
SU(3) rules for nonleptonic weak decay of charmed and strange mesons 8−45916
vector mesons, two-body photonic decays, 16-plet mixings in SU(4) quark symm. 8−33062
$B(1235)\to\varphi(1020)\pi$, Okubo Zweig Iizuka rule violation 8−21425
$\chi_{1,2}\to\gamma J/\psi$, radiative decays of 2^{++}, 1^{++} mesons 8−21420
$\chi_j\to\psi\gamma$, radiative decay widths of charmonium states, superconvergent sum rules 8−21422
$D^0\to K^-\pi^+\pi^-$, obs. in 3.77 GeV e^+e^- annihilation 8−37206
$D^+\to K^0\pi^+$, $D^0\to K^-\pi^+$, two body decays of charmed mesons, quark recombination scheme 8−37207
D*, pion and photon couplings, SU(4) violations, decay rates calc. 8−45914
$e^+e^-\to x\pi$, even G parity hadronic cross section, ρ′(1600) 2π branching ratio 8−12921
$\eta\to\pi^0\gamma\gamma$, $\pi^+\pi^-\pi^0\gamma$, $\pi^+\pi^-\gamma\gamma$, scalar meson dominance model 8−4860
$\eta\to\pi^+\pi^-\gamma$, quantum chiral theory, decay width determ. *(Russian)* 8−41544
η_c, coherent prod. and baryon-antibaryon pair decay 8−21421
η_c meson hadronic decay 8−8664
η′(958), spin-parity test from collinear prod. and decay 8−41543
$\eta'\to\eta\pi\pi$, finite dispersion relation calc. of decay rate 8−41542
J/ψ hadronic decay, energy crisis interpretation, anomalous neutral component 8−41540
$\omega\to\eta\gamma$, radiative decay width determ. 8−467
$\bar{p}p\to F_1\omega$, F_1 spin-parity anal., boson spin tests from sequential decays 8−29345
φ meson, two-body hadronic decay, quark model 8−25040
$\varphi\to\pi^+\pi^-$, search in $e^+e^-\to\pi^+\pi^-$ reaction *(Russian)* 8−45915
$\varphi\to\rho\pi$, dynamical calc., energy depend. of Zweig-rule violating couplings 8−33063
π production, direct and by meson resonance decay in π^+p interactions 8−29365
ψ, $\psi'\to\pi^+\pi^-$, K^+K^-, decay suppression, dimensionality based selection rule 8−33061
$\psi(3772)\to DD$, $D^{0,7}$ masses, branching fractions 8−17009
$\psi(3.1)\to f\omega$, $\psi(3.1)\to B\pi$, branching ratios meas. 8−17011
$\psi(4.1)\to\psi(3.1)+\pi+\pi$, coloron model, quark composite struct. 8−29332
ψ(4.414), width anal. in quark model 8−17010
ψ and ψ′ decays violating Zweig Iizuka rule, asymptotic freedom phenomenology 8−451
$\psi\to\eta_c\gamma$, η_c hadronic decay, charmonium model 8−41502
$\psi\to\eta_c\gamma$, quark-string model anal. 8−33065
$\psi\to f^0\gamma$, $\psi\to\rho\pi$, branching ratios meas. 8−25043
ψ meson, two-body hadronic decay, quark model 8−25040
ψ radiative decay, radial excitations and q^2 depend. in VDM 8−452
ψ/J and ψ′ production in hadronic collisions, quark-antiquark annihilation, cascade process 8−25013
$\psi'(3.7)\to\psi\pi^0$, isospin violating decays 8−37205
$\psi'\to\chi_j\gamma$, radiative decay widths of charmonium states, superconvergent sum rules 8−21422
$\psi'\to\gamma\chi_{1,2}$, radiative decays of 2^{++}, 1^{++} mesons 8−21420
$\psi''(4.028)\to DD$, or DD^*+DD^* or D^*DD^*, strong decay theory, radial excitation of charmonium 8−12909
$\rho\to\eta\gamma$ radiative decay width determ. 8−467

meson interactions *see lepton-hadron interactions; meson-baryon interactions; meson-deuteron interactions; meson-meson interactions; meson-nucleus reactions; photon-hadron interactions*

meson leptonic decay
see also kaon leptonic decay
resonance decay, quark confinement potential 8−41536
vector mesons, gluon condensate *(Russian)* 8−33060
D meson decay, semileptonic and leptonic modes, electron momentum spectrum 8−8657
$\varphi\to e^+e^-$, decay widths from QCD *(Russian)* 8−45812
$\pi^0\to e^+e^-$, branching ratio meas. 8−41538
$\pi^0\to e^+e^-$, form factor slope meas. 8−41537
$\pi^+\to\mu^+\nu_\mu$, at rest, μ^+ momentum meas. 8−45911
ψ leptonic decays, spectral-function sum rules 8−4857
ψ meson, phenomenology and quark confinement 8−29308
$\rho\to e^+e^-$, decay widths from QCD *(Russian)* 8−45812

meson magnetic moment
SU(10) symmetry, charmed vector bosons mag. moments 8−17018

meson mass
baryonium mass spectrum in planar bootstrap model 8−25020
charmed mesons and charmoniums, masses and mixing, OZI rule breaking 8−12889
charmed particles, duality constraints on spectroscopy 8−21398
chiral SU(4)⊗SU(4), broken model, F, L_s, F_s mesons 8−12836
chiral SU(4)⊗SU(4) symmetry breaking parameter, meson mass 8−12838
gluonium concept, mass calc. *(Russian)* 8−45879
mass formulae in broken $SU(8)_w$ symmetry 8−37191
potential model of meson mass 8−45874

meson mass continued
pseudoscalar mesons, sum rule, symm. breaking of chiral SU(4)×SU(4), decay const., masses 8−33000
QCD, multicolour, series expansion for meson masses 8−21315
quark-string model, meson mass spectra 8−33065
resonances, empirical relation for masses 8−29323
SU(3) 27-plet mesons masses, existence of low-mass long lived exotics in quark model 8−33032
SU(4) algebraic realisation, meson mass formula *(Russian)* 8−45895
SU(4) meson mass formula from generalisation of SU(3) Schwinger mass formulae 8−37190
vector meson mass predictions, SU(3) formalism of S quark model 8−37177
Weinberg sum rules, derivation of meson spectrum, duality unification with chiral symm. 8−29272
D^{*+}-d^{*0} mass difference using form factors and vector meson interactions 8−21427
K, mass shift 8−45920
φ meson mass determ. in $e^+e^-\to\pi^+\pi^-\pi^0$ and $e^+e^-\to K_s{}^0K_l{}^0$ *(Russian)* 8−45935
π, K and baryon linear mass relations 8−41520
π, mass shift 8−45920
π inertial mass, quaternion field theory of matter 8−24702
$\psi(3772)\to DD$, $D^{0,7}$ masses, branching fractions 8−17009
Y mesons, level struct., masses, new quarkonium state 8−33031

meson-meson interactions
see also meson-meson scattering; pion-pion interactions
inelastic collisions, Glauber multiple-quark scatt. model, quark-quark scatt. amplitudes 8−21459
QCD, two dimens., hadron scatt., leading order calcs., meson-meson scatt. 8−4831
Zweig-superconvergence relations in meson collisions 8−21397
πK scattering, chiral dynamics and asymptotical restrictions, sum rules *(Russian)* 8−17047

meson-meson scattering
see also meson-meson interactions; pion-pion scattering
asymptotic energy scale factors for pseudoscalar meson scatt. and charmed meson couplings 8−8620
chiral invariance for asymptotic momenta, elastic scatt. of hadrons, helicity amplitudes 8−4800
Kπ scatt. at complex energies 8−21458
Regge theory, crossing symmetric representation of dynamical eqns. 8−4841
resonating group calcs., low energy limit 8−424
vector meson scatt., two to three body, high energy, in Yang-Mills theory 8−17051
KK→KK, dispersion model, matrix N/D method *(Russian)* 8−45954
πK low energy scatt., dispersion relation anal. 8−33088
πK low energy scatt., solvable realistic model 8−33089

meson-nucleus reactions
for inelastic meson-nucleus scattering, see "meson-nucleus scattering"
see also kaon-nucleus reactions; meson-baryon interactions; meson capture; pion-nucleus reactions
multiplicity of particles produced in hadron-nucleus high-energy interactions 8−4933
pion cumulative production in hadron-nucleus collisions *(Russian)* 8−607
$Be+\pi^-$, 43 GeV/c, J/ψ prod. A depend. 8−25089
$Cu+\pi^-$, 43 GeV/c, J/ψ prod. A depend. 8−25089
$^2H(t\mu,n\mu^-)^4He$, fusion reaction, 2 GeV energy release 8−17250
$W+\pi^-$, 43 GeV/c, J/ψ prod. A depend. 8−25089

meson-nucleus scattering
see also kaon-nucleus scattering; meson-baryon scattering; pion-nucleus scattering
No entries

meson photoproduction
current algebra with unitarity corrections, vector-meson exchange 8−41557
heavy quark bound states, peripheral and VMD models 8−33074
impulse approx. for partial reaction amplitudes *(Russian)* 8−41698
VDM, generalised, electroprod. and photoprod. of vector mesons 8−41519
Vekton-1 double arm spectrom. for ρ^- meson photoproduction 8−33362
$\delta d\to\pi^+nn$, final state interaction effects *(Russian)* 8−41558
η_c, coherent prod. and baryon-antibaryon pair decay 8−21421
(γ,π^-p), detector system and ccts. 8−877
$\gamma n\to\pi^-p$, 850 MeV, target asymmetry meas. 8−21438
$\gamma n\to\pi^-p$, proton polarisation in $^2H(\gamma,np)$ *(Russian)* 8−41700
γp, π^0 prod. in resonance region, asymm. *(Russian)* 8−17031
$\gamma p\to p+$vector meson, total cross section *(Russian)* 8−8674
$\gamma p\to\pi^0p$, differential cross sections at large angles, 2-6 GeV 8−37214
$\gamma p\to\pi^+n$, 850 MeV, target asymmetry meas. 8−21438
ω, inelastic photoprod., 7.5-10.5 GeV, with Δ(1236) and higher masses 8−45930
π photoproduction in first resonance region, one particle exchange model 8−4864
π^0 coherent photoprod. on ^4He, screening corrections and rescatt. *(Russian)* 8−41697
ψ photoproduction, two-gluon exchange model 8−21437
$\rho^\pm$ inelastic photoprod., 7.5-10.5 GeV, with Δ(1236) and higher masses 8−45930
^{27}Al, π^+ high energy photoproduction and electroproduction 8−21543
$^2H(\gamma,\pi^+)$, 1-4 MeV, cross-section meas. 8−21544
$^4He(\gamma,\pi^0)$, impulse approx. for differential cross sections in resonance region *(Russian)* 8−41698
$^4He(\gamma,\pi^0)$, reaction cross section meas. equipment 8−29694
$^{51}V\ \pi^p$ high energy photoproduction and electroproduction 8−21543

meson production
see also kaon production; meson photoproduction; pion production
. 8−41581
charmed meson prod. at SPEAR 8−4865
charmed meson prod. in e^+e^- annihilation, quark model 8−8680
charmed meson prod. in quark exchange model 8−8600
diffractive meson prod. 8−21416
extended PCAC hypothesis, soft-meson chiral symm. breaking, pseudoscalar meson photoprod. 8−21353
hadron-nucleus collisions, relation between low mass dimuon and meson prods., quark-antiquark interactions 8−41477

meson production continued
hard scattering models comparison for large transverse momentum meson prod. 8−41498
Higgs meson prod., muon-number violation 8−41422
inclusive vector and tensor meson prod. in beam fragmentation region, Mueller-Regge formalism 8−17057
jets from quark fragmentation, flavour, power counting rules at x→1 8−37185
Pomeron-f identity scheme, vector meson prod. 8−12887
QCD, high transverse momentum meson prod. hadron-hadron collisions 8−45861
quark cascade model, appl. to meson spectra in e^+e^- annihilation 8−41482
quark model of heavy mesonic resonance prod. *(Russian)* 8−45881
quark model predictions of η and η′ prod. in multiparticle reactions 8−423
TRIUMF meson factory, basic and applied research 8−21792
VDM, radial excitations and q^2 depend., appl. to ψ radiative decay 8−452
vector meson emission, quark scatt., non-Abelian gauge theory *(Russian)* 8−45883
A_1 meson in quark model and chiral symm. 8−12834
C+p, 24 GeV, J/ψ prod. cross section 8−46055
D and D* prod. from e^+e^- annihilation, form factors and free quark model 8−37222
D mesons, prod. rates in e^+e^- annihilation calc. 8−8668
$D^0(1865)$ prod. anal. *(Chinese)* 8−487
$D^0(1865)$ prod. from neutron interactions at 300 GeV/c 8−37244
$D^0(1.865)$ production in proton-nucleus collisions at 400 GeV/c 8−13099
e(μ)N, deep inelast. scatt. from polarised targets 8−25053
e^-e^+ annihilation, >2 GeV, production of charmed particles and charged τ lepton, review 8−17006
e^+e^- annihilation, charmed axial vector meson prod., nonrelativistic quark model 8−25055
$e^+e^-\to\pi^+\pi^-$, 4π, dispersion anal., ρ°(1250), ρ″(1600) prod. 8−8677
η′(958), spin-parity test from collinear prod. and decay 8−41543
F-meson semileptonic decay modes, explanation of inclusive electron spectra 8−37202
$f^0(1270)$ production in $\pi^-p\to\pi^+\pi^-n$, cross sections, decay density matrix elements 8−33095
H+p, 24 GeV, J/ψ prod. cross section 8−46055
J/ψ hadronic prod. *(Chinese)* 8−8696
$K^-p\to\varphi\Lambda$, ωΛ, ρΛ, $\varphi\Sigma^0$, or $\rho\Sigma^0$, 4.2 GeV/c, cross sections, density matrix elements, hyperon polarisation 8−41580
νp interactions, charmed meson prod., Regge pole model, cross sections 8−33052
$\nu p\to\nu+$vector meson + X, neutral currents, generalised VDM, Regge pole anal. 8−41532
$p+Be\to\varphi+X$, 400 GeV/c, φ decay modes, OZI rule 8−599
$\bar{p}p\to F_1\omega$, F_1 spin-parity anal., boson spin tests from sequential decays 8−29345
$\bar{p}p\to$neutral meson$+\pi^+\pi^-$, or neutral meson$+\bar{p}p$, 7.2 GeV/c, quark model anal. 8−41561
$\bar{p}p\to\pi^+\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
$pp\to\psi\gamma$, inclusive prod. anal. 8−25091
π^0/η prod. ratio at high transverse momenta 8−41602
$\pi^-+C(Al)(Cu)(Pb)(H)$, 3.7 Gev/c, incoherent prod. of ρ^0 mesons *(Russian)* 8−33084
π^-N, 40 GeV/c, leading and conserved mesons *(Russian)* 8−45987
$\pi^-n\to p\pi^-\pi^-\pi^0$ or $\rho^-\pi^-p$, 5, 9 GeV/c, model independ. anal. of final states 8−25071
$\pi^-p\to\chi n$, 40 GeV/c, prod. of χ(2.85) particles *(Russian)* 8−45963
$\pi^-p\to\eta^0n$, 3.3 GeV/c, differential cross section, helicity-flip amplitude *(Russian)* 8−45945
π^-p inclusive interactions, ρ^0, ω, f-mesons prod. cross section *(Russian)* 8−33098
$\pi^-p\to\omega n$, Reggeon cuts and reaction description *(Russian)* 8−45947
$\pi^-p\to p\pi^-\pi^0$, 9 and 12 GeV/c, backward e^- prod. 8−8704
$\pi^-p\to p\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
$\pi^-p\to\varphi\varphi n$, 22.6 GeV/c, cross section meas. 8−37242
$\pi^-p\to\psi n$, 8.2-9.8 GeV/c, upper limit on prod. cross-section determ. 8−41578
$\pi^-p\to\rho^0n$, Reggeon cuts and reaction description *(Russian)* 8−45947
$\pi^-p\to Xn$, 40 GeV/c, $X(2.85)\to2\gamma$ obs. 8−25047
π^+p, inclusive yields, transverse spectra, of nonstrange mesons, quark model 8−4886
$\pi^+p\to K^+\Sigma^+$, exchange degeneracy in hypercharge exchange reacts. 8−41581
$\pi^+p\to$meson resonances, 15 GeV/c, SLAC bubble-chamber expt. 8−41595
$\pi^+p\to\pi^+p\pi^0$, p diffractive dissociation, ρ^+ prod., one-pion-exchange model 8−21451
$\pi^\pm p$, inclusive meson prod. with large transverse momentum, effective gluon model 8−8717
ψ/J and ψ′ production in hadronic collisions, quark-antiquark annihilation, cascade process 8−25013
$\psi''(4.028)\to DD$, or DD^*+DD^* or D^*DD^*, strong decay theory, radial excitation of charmonium 8−12909
υ(9.5), prod. in e^+e^- annihilation, photoprod., decay modes, quark model 8−12877
W+p, 24 GeV, J/ψ prod. cross section 8−46055
$Be(\pi^-, \Psi)$, 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983
$^{12}C+\pi^-$, 40 GeV/c, leading and conserved mesons *(Russian)* 8−45987
$Cu(\pi^-, \Psi)$, 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983
$W(\pi^-, \Psi)$, 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983

meson resonances
see also D mesons; eta meson resonances; omega mesons; phi mesons; psi mesons; rho mesons
axion, appearance in $k\to\pi^++$axion 8−33064
axion, implied by U(1) symm. 8−33037
baryonium, mass and selection rule, string model 8−29319
baryonium interaction, dual amplitudes 8−25022
baryonium mass spectrum in planar bootstrap model 8−25020
binary decays, centrifugal effects *(Russian)* 8−17012

meson resonances continued
charmed mag. moments determ., SU(8) symm. 8−4794
charmed mesons and charmoniums, masses and mixing, OZI rule breaking 8−12889
charmonium, ψ and χ states, hyperfine struct. 8−12878
Deck model, rescattering effects for diffr. dissociation of hadrons 8−4844
dihadron mass continuum and narrow resonance prod. in p-Be, 400 GeV interaction 8−33178
dimuon enhancement at 9.5 GeV, vector meson family with hidden 'beauty' *(Russian)* 8−33030
dual unitarisation scheme for baryon and baryonium states with string junctions 8−25021
eight quark model, modified left-handed currents, ν reactions and e^+e^- annihilations 8−16982
EM decays and props. of stratons *(Chinese)* 8−29336
exotic mesons and $p\text{-}\bar{p}(e^+\text{-}e^-)$ annihilation 8−21393
f-mesons, spin 2 coupled with other field, effect on nuclear force in nucleon-nucleon interactions 8−514
gluonic resonances in hadronic spectrum, scalar mesons, pomerons 8−21394
heavy quarks, widths of neutral vector mesons 8−8602
heavy vector mesons, decay into Higgs particles 8−12908
high energy vector meson scatt., two to three body, in Yang-Mills theory 8−17051
inclusive vector and tensor meson prod. in beam fragmentation region, Mueller-Regge formalism 8−17057
left-handed quarks, phenomenology 8−21383
leptonic decay, quark confinement potential 8−41536
masses, empirical relation 8−29323
meson spectroscopy, a review using quark models 8−25010
multiplicative processes, ρ^0 meson formation cross section, pion prod., multiperipheral cluster model *(Russian)* 8−17067
narrow reson., low energy 8−29341
paracharmonium states, corrections to two-gluon annihilation rates 8−33039
particle correlations in multiperipheral resonance prod. model, broken SU_3 theory 8−45891
Pomeron-f identity scheme, vector meson prod. 8−12887
pseudoscalar transitions between high-spin reson. 8−8666
quark model of heavy mesonic resonance prod. *(Russian)* 8−45881
quarkonium level spacings 8−8604
radiative decay of vector mesons into pseudoscalar mesons, relativistic harmonic oscillator model *(Russian)* 8−453
radiative decays 8−21419
straton model theory, extension to SU_5 *(Chinese)* 8−24996
SU(10) symmetry, charmed vector bosons mag. moments 8−17018
SU(4) symmetry, meson-quark interactions, mag. moments *(Russian)* 8−45804
two-body photonic decays, 16-plet mixings in SU(4) quark symm. 8−33062
VDM, radial excitations and q^2 depend., appl. to ψ radiative decay 8−452
vector meson leptonic decay and gluon condensate *(Russian)* 8−33060
vector meson mass predictions, SU(3) formalism of S quark model 8−37177
Zweig-superconvergence relations in meson collisions 8−21397
A_1, A_2, A_3, prod., $\pi^\pm p$ reactions, polarisation anal. 8−41577
A_1 meson in quark model and chiral symm. 8−12834
A_1 reson. diffr. prod., $\pi p\to(\pi\rho)p$, unitary coupled-channel anal. 8−8687
A_1 resonance in $\tau\to\nu_\tau\rho\pi$, $\rho\pi$ mass distrib. 8−45902
$c\bar{c}$ meson radiative decays, generalised VMD mechanism 8−8606
$\chi(3.45)$ resonance, time-like $c\bar{c}$ excitation 8−8599
χ mesons, radiative transitions anal. in nonrelativistic quark model 8−8607
$\chi_{1,2}\to\gamma J/\psi$, radiative decays of 2^{++}, 1^{++} mesons 8−21420
$\chi_j\to\psi\gamma$, radiative decay widths of charmonium states, superconvergent sum rules 8−21422
D-meson decay mechs., weak and leptonic two-body decays 8−41535
$e^+e^-\to VX$, polarization states of produced vector meson *(Russian)* 8−25058
$e^+e^-\to$vector mesons, colour quark model for new reson. above 4 GeV 8−17033
f,f' mesons, fueld unitarisation, renormalisation of trajectories with zero quantum numbers 8−21400
F-meson, decay mechs., weak and leptonic two-body decays 8−41535
f-meson production cross section in π^-p inclusive interactions *(Russian)* 8−33098
F-meson semileptonic decay modes, explanation of inclusive electron spectra 8−37202
$f^0(1270)$ production in $\pi^-p\to\pi^+\pi^-n$, cross sections, decay density matrix elements 8−33095
$f^0\to\gamma\gamma$, covariant polarisation density matrix analysis *(Russian)* 8−454
F_1 meson from $\bar{p}p$ reactions, spin-parity anal., boson spin tests from sequential decays 8−29345
f'-meson prod. in 10 GeV/c K^-p interactions 8−4874
$\gamma p\to p+$vector meson, total cross section *(Russian)* 8−8674
$\gamma p\to\pi^+\pi^-p$, Lagrangian model, $\varepsilon(700)$, $\rho(770)$, f(1260), $\Delta(1236)$ resons. 8−17028
$K^+(892)$ resonances in $K^+p\to K^0p\pi^+$ reaction at 5, 8.25 and 16 GeV/c 8−12931
$K^*(1780)$ prod. in $Kp^-\to K^-\pi^+n$ at 6 GeV 8−33087
$K^-p\to\varphi\Lambda$, $\omega\Lambda$, $\rho\Lambda$, $\varphi\Sigma^0$, or $\rho\Sigma^0$, 4.2 GeV/c, cross sections, density matrix elements, hyperon polarisation 8−41580
$K^-p\to\Sigma^+(1385)+X$, 16 GeV/c, spin density matrix of $\Sigma^+(1385)$ by statistical tensor method 8−37235
$K^+p\to K^0p\pi^+$, 3 to 16 GeV/c, resonance production, cross sections and density matrix elements 8−17048
$K^\pm p\to K^\pm\pi^+\pi^-p$, 13 GeV/c, mass depend. of $1^+K^*\pi$ and ρK partial waves 8−8705
$(K^0\pi^+\pi^-)$ system, partial wave anal., prod. in $K^-p\to K^0\pi^+\pi^-n$ 8−45969
NN scatt., small angle, appl. of eikonal vector meson exchange theory 8−17052
ω-f exchange degeneracy, anal. of Pomeron-f complex 8−483
$\bar{p}p$, 100 GeV/c, inclusive ρ^0 and f^0 prod. 8−41605
pp interaction, 52 GeV, two-photon mass spectra, X(2830) prod. 8−21470
φ meson, two-body hadronic decay, quark model 8−25040
π-ρ system, bag model, quark-quark interaction anal. 8−33029

meson resonances continued
$\pi^-p\to p\pi^+\pi^-\pi^-$, 9 and 12 GeV/c, backward enhancement in A_1 region and A_2 prod. 8−45970
$\pi^+p\to$meson resonances, 15 GeV/c, SLAC bubble-chamber expt. 8−41595
$\pi^+p\to\Sigma^+(1385)+X$, 16 GeV/c, spin density matrix of $\Sigma^+(1385)$ by statistical tensor method 8−37235
$\pi\pi$ S-wave phase shift, lower bounds, ε° and ρ poles 8−45953
Q, axial vector mesons, dynamical mixing model 8−24973
Q mesons, SU(3) anal. of mass, widths 8−4802
Y, pot. model, heavy quarks 8−45875
Y, QCD, three gluon jets as test 8−25001
Y(9.4 GeV), mass formulae and splittings 8−33107
Y(9.5 GeV), prod. cross section at ISR energies in pp collisions 8−25085
Y(9.5), cascade-gluon model, bound state of heavy quarks 8−4834
$\upsilon(9.5)$, prod. in e^+e^- annihilation, photoprod., decay modes, quark model 8−12877
Y (9.5), heavy quark charge 8−37180
Y decay, QCD, inclusive hadronic annihilation of heavy quark-antiquark bound states 8−45866
Y meson, asymptotic symm., new duality 8−21348
Y mesons, level struct., masses, new quarkonium state 8−33031
$Y\to$photons+gluons, QCD perturbation theory 8−33028
Y spectroscopy, asymptotic freedom 8−45865
Y'(10.00), two gluon jets 8−29302
Y9.5 GeV dimuon resonance, evidence for fifth quark of 4.7 GeV 8−29312
$X(2.85)\to2\gamma$, obs. in charge-exchange reaction $\pi^-p\to Xn$ 8−25047
$\gamma N\to\eta\pi^\pm$, 9.7 GeV, one-pion-exchange model 8−25054

meson scattering *see lepton-hadron scattering; meson-baryon scattering; meson-deuteron scattering; meson-meson scattering; meson-nucleus scattering; photon-hadron scattering*

meson spin and parity
two body reactions, spin system constraints, quark additivity, geometrical hypothesis 8−29309
$(3\pi)^0$ system, from π^+p, 12 and 15 GeV 8−29359
$\eta'(958)$, spin-parity test from collinear prod. and decay 8−41543
F_1 meson from $\bar{p}p$ reactions, spin-parity anal., boson spin tests from sequential decays 8−29345
$\omega'(1675)$, prod. in $\pi^+p\to\Delta^{++}\pi^+\pi^-\pi^0$ 8−37241

mesonic atoms *see mesic atoms*

mesonic molecules *see mesic molecules*

mesons
for μ mesons see muons
see also cosmic ray mesons; eta mesons; kaons; meson resonances; pions
gluonic resonances in hadronic spectrum, scalar mesons, pomerons 8−21394
gluonium type, solns. to scalar Higgs eqn. *(Russian)* 8−12829
high-spin meson possibility with mag. monopole and antimonopole *(Chinese)* 8−17068
mass formula, quark line rule in u-, d-, and c-quark sector 8−8596
meson spectrum in simple planar bootstrap model 8−8618
multicolour QCD as dual resonance theory, mesons on rising Regge trajectories 8−16987
neutral mesons, quark flavour mixing 8−426
PCAC and dual resonance amplitudes, old and new mesons, charm 8−45885
QED of vector mesons, effective electric charge and asymptotic freedom *(Russian)* 8−45827
quark-antiquark-gluon bound state 8−45877
representation mixing, SU(4), mass formula, EM mass shifts 8−12890
vector mesons in weak interactions, gauge model *(Russian)* 8−45838
Yang-Mills gauge theory, classical soln. in colour meson model 8−45780

mesosphere
acoustic-gravity waves propagation 8−44912
circulation, extensions of Leovy's linear model 8−32201
circulation and clouds, rel. to thermosphere semi-annual temp. vars. 8−45061
daytime neutral winds trace constituents sounding rocket campaign results 8−45071
energetic charged particle precipitation, meas. during European Winter Anomaly Campaign (1975-76) 8−45001
general circulation, anal. of rocket soundings on Kerguelen Island (February-May, 1973) 8−20489
general circulation, radiative transfer, transport processes, review 8−49105
gravity waves induced by Earth's diurnal rotation, heating effects 8−40613
heat budget of mesopause 8−28258
internal gravity waves near mesopause rel. to OH emission 8−12031
ion conductivity, concentration and measurement, meas. via payload B III instrument package 8−45194
ionisation of equatorial lower mesosphere, effect of galactic X-ray source 8−36233
minor constituents distrib. in thermal interface 8−3891
noctilucent cloud aerosol particles, temp. profiles *(Russian)* 8−16093
pitot pressure measurements for density determ. between 50 and 120 km, W.Europe Winter Anomaly Campaign 8−45193
plasma and neutral gas composition and structure, anal. during winter anomaly 8−45191
solar H Lyman-α radiation extinction, meas. rel. to O_2 density, press. and temp. profiles 8−44947
solar Lyman-α extinction, meas. during European Winter Anomaly Campaign (1975-76) 8−45001
stationary planetary waves and zonal wind, southern hemisphere 8−28276
tides and gravity waves, at mid and low latits. 8−36231
travelling neutral disturbances and minor constituent particle mass 8−49189
turbulence characts. from D-region partial refl. method 8−49215
waves and winds over Jicamarca, preliminary multiheight radar obs. 8−36230
wind systems behaviour during transition from summer to winter conditions 8−49097
winds at equatorial latits., observational aspects review 8−36229
winter processes, rel. to wind regime of lower thermosphere 8−4019
H_2O rocketborne obs. in auroral zone 8−7688

mesosphere continued
- Na, K, mesospheric abundances, simultaneous nighttime lidar meas. 8−36239
- O_3, 9.6 μm band radiance calc., excitation processes 8−36350
- O_3 meas. from ground-based mm wave obs., comment 8−11967

metal castings *see castings*

metal clusters
- amorphous metals, icosahedral microclusters as possible structural unit 8−34439
- Be small metallic clusters size fluctuations of work function 8−14792
- boride coating, diffusion soaking effect on struct. 8−18846
- SCF-Xα-MS calc. for H 8−47730
- transition metal surface electronic struct., influence of size and roughness 8−14785
- X_α method of theory of multiple scattering, appl. to props. of metal clusters *(Russian)* 8−38996
- Ag_n, n=7,10,13,19, atom clusters, local density of states, Xα scattered wave calcs. 8−18989
- Au, coalescence on NaCl substrates at room temp. 8−18935
- Be_n^- (n=2,3,4), electronic struct., ab initio calcs. 8−17560
- Cu, atomic clusters, struct. and electronic props., Mulliken-Walsh diagrams, extended Huckel procedure 8−46479
- Cu clusters, visible and near-UV spectra 8−19503
- Cu, interaction with CO, Cu_nCO form., chemisorpt. bond 8−31631
- Cu metal cluster, adsorption of CO, mol. orbital calc. 8−18895
- Gd clusters in faujasite type zeolites, mag. suscept. temp. depend. 8−14925
- Ni, cluster approach to single H atom in single crystal 8−47334
- Ni, dynamic rearrangement of atomics in large cluster using Frohlich-Raimes method 8−30586
- Ni metal cluster, adsorption of CO, mol. orbital calc. 8−18895

metal corrosion *see corrosion*

metal-insulator boundaries
see also metal-insulator-metal structures
- dielectric-plasma like medium interface, image potential 8−14794
- film-covered electrodes, electron transfer reactions, mechanisms, theory 8−20023
- metal-NaCl system, sliding and rolling electrification 8−14796
- polymer, molecular charge states, contact charge exchange 8−14822
- polymer-metal contact, material transfer in contact electrification 8−6432
- solid electrolyte interface, small signal AC response 8−6444
- thermal resistance, role of cond. electrons *(Russian)* 8−19149
- Al-Al_2O_3 triple-barrier structure, negative resist. caused by resonant tunnelling 8−14819
- Al-SiO_2 interface, stress and microstruct. via TEM 8−26797
- Bi-Bi_2S_3 superlattice, elec. props. 8−10558
- Ge-Au-Ni(Pd)(Pt) trilayer film, on SiO_2, annealing behaviour, interdiffusion obs. 8−2308
- $RbAg_4I_5$-metal interface, photocurrents, photoelectrochem. effects 8−34897

metal-insulator-metal devices
- millimetric and IR discontinuous-metal-film detector 8−289
- thin film MIM cold cathode emission density improvement, pinhole and compound insulator methods *(German)* 8−39670
- Ni-NiO-Ni, integrated MOM junctions, characts. at DC and optical freqs. 8−41349
- Ti-TiO_2-Cr, switching, double injection mechanism 8−14771
- W-Ni point contact diode detectors at 10.6 μm, mech. and props. 8−24861

metal-insulator-metal structures
- Al-SiO_x-Al structure, maxima of TSC obs. 8−23178
- cathode, hot electron emission 8−2997
- cathode, radial temp. distrib. *(Russian)* 8−6833
- charge measurement in MIM and MIS struct., MOS system appl. 8−2572
- CL Al_2O_3, film, dielec. const. and resist., thickness depend. 8−39502
- conduction properties in sandwich structures *(Japanese)* 8−43486
- doped electrode junction, tunnelling, Kondo scatt., coherence distance 8−31001
- elastic tunnelling current, phenomenological theory 8−19159
- electroluminescence, comparison with MIM struct. 8−23533
- metal whisker diode, thermal field emission, nonlinearity, response time and polarity reversal 8−2579
- metallic point contact diodes, tunnelling props., geometrical asymmetry effects 8−10576
- MIMS tunnel triodes, hot electron transmission 8−6456
- nonlinear properties, EM signals detect. appl. *(Russian)* 8−34912
- phenol, adsorbed layer, inelastic electron tunnelling spectral lineshapes below 100 mK 8−31000
- tunnel junction, direct calc. of resonance tunnelling 8−14837
- tunnel junction, surface plasmon excitation 8−10578
- tunnelling, tight-binding Green function calc., disorder effect 8−10577
- tunnelling junction, open system normal tunnelling Hamiltonian, stationary state 8−39190
- Al-Al_2O_3-Au, conduction props. in O_2 atmosphere 8−26971
- Al-Al_2O_3-Au sandwich conduction props. 8−2580
- Al-Si_3N_4-Al cathode, fluctuation noise 8−2998
- Al_2O_3 film, RF sputtered, transient currents 8−23184
- Al_2O_3 plasma anodised films, dielec. props. and high-field cond. *(Japanese)* 8−23185
- Mg-MgO-Ag junction, stable room temp. light emission 8−31257
- Nb-Nb_2O_3-Al structures, oxide film space charge density obs. *(Russian)* 8−10579
- Nb-Nb_2O_5-Au thin film, conduction phenomena, drift phenomena 8−2581
- Pb-SiO_2-Au tunnel junction, obs. of conductance anomalies 8−26968
- SiO_2, in MIM struct., dye sensitisation of photocond., steady state and pulse photoelectric props. 8−6408
- TiO_2, rutile ceramic capacitor, elec. cond. meas., anomalous conduction, ageing effects 8−14836
- Y-Y_2O_3-Au junction, defect struct. and local conduction 8−26970
- Y-Y_2O_3-metal junction, electroforming and conduction 8−26969

metal-insulator-semiconductor devices
see also charge-coupled devices
- electron beam induced current technique appl. to semicond. device characts., review 8−21302
- MNOS memory device, charge distrib. of nitride 8−2571
- MoS processing-related interface state meas., transient capacitance method 8−10574

metal-insulator-semiconductor devices continued
- Schottky barrier and conducting diodes with interface traps, capacitance and conductance 8−10564
- Schottky barrier solar cells, photovoltaic props. anal. 8−6448
- SOS, elec. characts., cryst. defects and residual stress effects 8−34906
- InAs, single- and double-layer insulator MOS capacitors 8−14835
- Si, amorphous, MIS diode I-V characts. 8−43485
- Si Schottky barrier solar cell, V-I characts. and efficiency 8−14828
- ZnSe MIS diode, blue electrolum., heat treatment effects 8−19569
- ZnSe MIS diode, forward-bias electrolum. 8−23532

metal-insulator-semiconductor integrated circuits *see field effect integrated circuits*

metal-insulator-semiconductor structures
- buried layer MOS structure, surface and bulk charge transport 8−30990
- capacitor, freq. and temp. tests for lateral nonuniformities, C-V characts. 8−10563
- cyclotron resonance ECR lineshape, quantum theory, two-dimens. electron-impurity system 8−48045
- electron-impurity system in two dimensions, model for MIS struct., cyclotron reson. lineshape theory 8−19332
- hot electron transport, expt. review 8−30994
- III-V semiconductors, MOS processing, review 8−10570
- insulator trapped electron release by UV photoinjection 8−6453
- interface between ordered and disordered material (SiO_2-Al and SiO_2-Si), electrochemical obs. 8−2381
- interface states, evidence for multiphonon emission 8−39220
- inversion layer in quantising mag. field, Einstein relation 8−19156
- inversion layers, implications of coupled electron-phonon system in two dimensions 8−6425
- inversion layers on high-index surface of Si, valley-valley splitting 8−39219
- inversion quantum model 8−30961
- ion implantation and annealing effect on surface and bulk generation currents 8−47883
- ion instability, analytical and phys. model 8−23167
- MAOS capacitor, cond. and charging behaviour 8−26963
- MAS capacitor, cond. and charging behaviour 8−26963
- metal-ZnO-SiO_2-Si structure for SAW appl., fabrication related deterioration 8−14829
- minority carrier generation rate meas. using transient response of MOS capacitor with guard ring 8−2576
- MNOS, pseudostable, characts. 8−19154
- MNOS, Si-SiO_2 interface state density meas. 8−47873
- MNOS capacitor, current transient response, effect of insulator surface conduction 8−34910
- MNOS capacitors, 'write' characteristics, SiO_2 layer thickness effect 8−34904
- MNOS memory device, charge retention by Frenkel-Poole detrapping 8−47874
- MOS, C-V characts., temp. and Si dislocation density effects *(Russian)* 8−6447
- MOS, capacitors, SEM investigs. using electron beam induced current technique 8−23177
- MOS, charge motion, surface state effects 8−2573
- MOS, density of states mass for quantised accumulation layers from C-V characts. 8−26967
- MOS, hole emission from interface states, transient capacitance meas. 8−14830
- MOS capacitor, carrier generation lifetime profiles meas. in diffused layers 8−47803
- MOS capacitor, carrier lifetime profiles meas. in diffused layers 8−47811
- MOS capacitor, drift mobilities of Na^+ and K^+ ions in SiO_2 films 8−10213
- MOS capacitor, generation lifetime determ. from non-equilib. linear sweep current and capacitance meas. 8−47881
- MOS capacitor, high-field electron trapping in SiO_2 8−6449
- MOS capacitor, ionising radiation effect on mobile Na^+ current peaks 8−47876
- MOS capacitor photovoltage characterisation 8−10573
- MOS capacitors, radiation-induced increase of Na ions 8−26956
- MOS devices, irradiated, low-temp. appl. 8−26961
- MOS devices, radiation effects, rel. to multiple trapping model and hole transport for SiO_2 8−6394
- MOS inversion layers, acoustic plasmons 8−18983
- MOS p-channel transistors, ion implantation effect on threshold voltage 8−34903
- MOS parameters, effect of oxidation expanded defects 8−19152
- MOS structure, bulk lifetime determ. by voltage step response method 8−47882
- MOS structure, electron trapping region to improve performance 8−19150
- MOS structure, irradiated, interface state effects 8−39218
- MOS structure, quench-in defects and interface states exam. by transient capacitance techniques 8−39225
- MOS structure, slow-trapping instability, effect of high temp. H_2 annealing 8−47880
- MOS system photocapacitance, influence of surface charge fluctuations *(Russian)* 8−43480
- MOS system surface charge inhomogeneity modelling and analysis *(Russian)* 8−43479
- MOS tunnel device, interface props. 8−34911
- MOS tunnel structure, Si-SiO_2 barrier height, SiO_2 thickness depend. 8−14831
- nonequilibrium response to linear voltage ramp, bulk discrete traps 8−6450
- photocurrent-voltage characts., insulator bulk trapped charge 8−30991
- photovoltaic effects, pulsed 8−2577
- photovoltaic properties of MIS-Schottky barriers anal. 8−26966
- production by neutralised ion beam sputtering 8−3046
- quantised inversion layer, hot carrier transport 8−30993
- resistive-gate MOS structure, in deep depletion, gate potential, transient anal. 8−43482
- RF annealing method for removing radiation damage 8−39224
- Schottky barriers, photocurrent suppression and interface state recomb. 8−39222
- solar cells, influence of interface states, efficiency improvements 8−39227
- surface inversion layers, energy relax. to acoustic phonons 8−26857

metal-insulator-semiconductor structures continued

- surface recombination and photoeffects within a quantum range *(Russian)* 8−39221
- surface state density determ., error caused by numerical differentiation of Q-V data 8−43483
- switching experiments on metal-semi-insulating-n-p^+ Si devices 8−26965
- switching theory for metal-semi-insulator-n-p^+ Si devices 8−26964
- tunnelling Schottky barrier, surface state effect on electrical characts. 8−47877
- two-dimensional electron system in strong mag. field, crystallisation 8−30966
- unbalanced behaviour, external factors affecting *(German)* 8−43477
- Al-Si_3N_4-Si, electrical strength effect of struct. defects in Si_3N_4 *(Russian)* 8−26955
- Al-SiO_2-Si, charge measurement in MIM and MIS struct., MOS system appl. 8−2572
- Al-SiO_2-Si, noncryst. SiO_2, Na ion impurities motion 8−10223
- Al-SiO_2-Si structure, ionic impurities motion in noncryst. SiO_2, trapping layers 8−30999
- Al_2O_3 gate insulator, low temp. radiation response 8−26960
- Cr-SiO_2-Si, solid-phase interaction between Cr and SiO_2, X-ray spectral obs. 8−10560
- GaAs, acoustic plasmons in MOS inversion layers 8−18983
- GaAs, low temp. plasma oxidation and MIS struct. characts. 8−31546
- GaAs MOS device, new method of fabrication 8−47872
- GaAs MOS system, elec. meas. interpretation 8−43484
- GaAs oxidation saturation and MOS diode equivalent cct. 8−47875
- n-GaAs thin films carrier wave amplification, external medium stratification effects *(Russian)* 8−34905
- GaN, reactive sputtering, GaAs MIS struct. fabrication and props. 8−39686
- Ge_3N_4 CVD film prod. and Al-Ge-Ge_3N_4-Al structure V-I and V-C characteristics *(Russian)* 8−47893
- H_2 sensitive, Pd-gate MOS 8−2578
- InAs epilayers in MOS carrier transport coeffs. determ. by multilayer model 8−2575
- p-InP, oxidised, mercury probe, I-V characts., van der Pauw meas. 8−14745
- InP-SiO_2, with reduced interface state density near cond. band 8−26954
- InSb inversion layer, spectroscopy of electron subband levels 8−10569
- InSb MOS capacitor, AC behaviour, semicond.-oxide interlayer effect 8−19151
- n-InSb, surface accumulation layer, sub mm electron cyclotron reson. 8−6576
- Mo-SiO_2-Si, effect of heat treatment after deposition on internal stress in MO film 8−22973
- Mo-SiO_2-Si, thermally stimulated ionic cond. 8−10565
- Na^+ neutralisation characteristics of HCl oxides 8−10572
- PbTe substrate for MIS capacitor, C-V and G-V characts. 8−26962
- Si (100) surface accumulation layer, subband struct. and inter-subband absorption in strong mag. field 8−39177
- Si inversion layer, IR spectrum, 10^5G effect on linewidth 8−946
- Si, inversion layer electrons, temp. depend. cyclotron reson. lineshape 8−10568
- Si inversion layers, discrepancies between absorption and photocond. meas. 8−6451
- Si, inversion layers, far IR emission from hot electrons 8−30995
- Si ion damage critical gettering doses, elec. characts. 8−10085
- p-Si:B-SiO_2 interface in MOS structures, carrier mobility and impurity distrib. 8−34902
- Si-SiO_2, effect of Cl incorporation during prep. 8−11378
- Si-SiO_2 interface charge inhomogeneities effect on surface state density meas. by MOS AC cond. technique 8−14833
- Si_3N_4, amorphous, in MIS struct., high field conductivity 8−23101
- Si_3N_4 degradation due to high-temp. processing 8−6454
- Si_3N_4 film, in MNS structures, dark conduction and photoconduction phenomena 8−30989
- Si_3N_4-Si, thermally grown films for high performance MNS devices 8−48322
- SiO_2, avalanche injection of holes 8−26959
- SiO_2 in MOS struct., exciton transport rel. to surface states 8−34901
- SiO_2 in MOS struct., room temp. cond., mobile Na^+ location 8−39217
- SiO_2 layers, thermally grown, undoped and ion implanted, elec. props. 8−23187
- SiO_2-Si interface of hardened MOS capacitors, radiation effects 8−26958
- n-Si(100) inversion layers on sapphire, surface quantum oscills. 8−19158
- Te, MIS structure, photosensitivity spectrum 8−14834
- (W-Au)-SiO_2-Si:B MOS transistor, ion implantation effect on threshold voltage 8−34903
- ZnO-Si structure, MIS and SAW propag. characts. 8−30988
- ZnSe MIS LED, donor density calc. from C-U meas. 8−47878

metal-insulator transition

- *see also electrical conductivity transitions*
- alkali metal-NH_3 solution, Hall effect and cond. at metal-nonmetal transition 8−2530
- Anderson localisation problem, numerical results 8−23040
- cluster model 8−10351
- disordered system, conductivity and mobility edge, square and diamond lattice calc. 8−43347
- electron microscopy *(French)* 8−26815
- electron-hole drops, mobility and US absorption near metal-insulator transition, effect of fluctuation pairing 8−2434
- ferromagnet, insulator-metal transition, s-d exchange interaction effects 8−2421
- group velocity and minimum metallic cond. 8−23141
- Hubbard model, appl. to TCNQ-NMP 8−18966
- Hubbard model, mag. field effect on Mott transition 8−34748
- Hubbard model, two band, mag., orbital and charge ordered states 8−27012
- inversion layer, threshold conduction 8−43450
- liquid binary semiconducting alloy, metal-insulator transition induced by density changes 8−2529
- liquid metal, metal-insulator transition induced by expansion 8−2529
- low-dimensional systems, infrared problems and phase transitions of continuous order 8−6286
- maximum metallic resistivity, approx. expressions 8−14773

metal-insulator transition continued

- Mott insulator electronic struct. review 8−18963
- one-dimensional Fermi system, mag. susceptibility, and dielec. function of two-dimensional Coulomb gas 8−10387
- polyacetylene: Br(Cl)(I)(AsF_5) electrical conductivity, metal-to-insulator transition 8−10525
- quasi-one-dimensional conductor, chiral charge density waves form. 8−6302
- quasi-one-dimensional conductor, high temp. struct. instability, tight-binding approx. and fluctuation model 8−6292
- quasi-one-dimensional conductors, impurity effect on phase transitions 8−6297
- quasi-one-dimensional metallic system, phase transitions problem, Gorkov-Dzyaloshinskii model 8−6296
- quasi-one-dimensional system, first and second order phase transitions, qualitative theory 8−31086
- quasione dimensional crystals, effect of band filling on features of struct. transition 8−2424
- rare earth compounds electron-phonon interaction influence on electronic phase transitions *(Russian)* 8−47743
- s-f model with electron-hole reson., antiferromag. behaviour and phonon spectrum 8−47992
- semiconductor, layered, electron-hole liq. and metal-dielec. transition *(Russian)* 8−2425
- simple metal alloys, electronic theory for metal-non-metal transition 8−47702
- TCNQ complexes with dipyranylidene and dithiadipyranylidene, high cond. investigs. and related props. 8−6368
- TCNQ derivatives, substituted, org. cond. with low-symmetric acceptors, cond. behaviour rel. to cryst. struct. 8−6365
- TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
- TCNQ salt, DECA $(TCNQ)_2$, struct., phys. props. and irreversible phase transition 8−6273
- TCNQ salt, HMTTF-TCNQ, quasi-one-dimensional organic conductor, mag. susceptibility meas. 8−6508
- TCNQ-HMTTF, metallic state stabilisation at low temp. under press. 8−30911
- TCNQ-NMP, metal-insulator transition theory based on generalised Hubbard model 8−18966
- TCNQ-TSeF:TCNQ-M, thermopower determ. 8−47772
- thin wire, max. metallic resist. 8−14663
- transition metal chalcogenide, possible anionic clusters and mixed valence effects 8−43333
- transition metal chalcogenides, Mott metal-insulator and mag. phase diagrams 8−10354
- transition metal compounds, minimum conductivity and electron localisation near metal-insulator transition 8−30960
- $(TSeF)_x(TTF)_{1-x}(TCNQ)$, interstack hybridisation role in metal-insulator transition temp. determ. 8−6304
- $(TSeF)_x(TTF)_{1-x}TCNQ$, struct., cond., phase transitions 8−47770
- TSeF-TCNQ, Ginzburg-Landau model for metal-insulator transition 8−6301
- TTF and TTN derivatives, quasi-one-dimens. cond., phys. and electronic props. 8−6366
- TTF-DETCNQ, struct. elec. cond. and sp. ht. expts. 8−14662
- TTF-TCNQ:TCNQ-M, thermopower determ. 8−47772
- TTF-TCNQ, possible Lifshitz point, struct. transitions exam. 8−2423
- TTF-TCNQ, symmetry changes and phase transitions 8−6299
- $(TTT)_2I_3$, metal-insulator phase transition, elec. cond. and mag. susceptibility meas. 8−14719
- two band model, dielec. transition in current state *(Russian)* 8−34770
- Ag_2S, metal-nonmetal transition, crystallographic, optical, mag. and transport props. 8−6418
- Ag_2Se, metal-nonmetal transition, crystallographic, optical, mag. and transport props. 8−6418
- $BaSi_2$, semicond.-metal transition, high-press. and temp. 8−43299
- $CeH_{2.70}$, low temp. phase transition, sp. ht. meas. 8−47535
- $Cu_{0.75}VS_2$, cryst. struct. and phys. props. *(French)* 8−14328
- EuO, Eu rich, model Hamiltonian with Coulomb repulsion 8−2422
- $Eu_{1-x}O$, optical absorpt. spectra at metal insulator transition 8−10928
- $Fe_{3-x}Cr_xO_4$, Mossbauer study above Verwey transition 8−43750
- Fe_3O_4, electronic struct. and charge density oscills. near Verwey transition, Mossbauer expt. 8−27150
- Fe_3O_4, magnetite, Compton profile, rel. to Verwey transition 8−35219
- Fe_3O_4, magnetite, low temp. phase transition, magneto-optical exam. 8−27193
- Fe_3O_4, magnetite, polarisation screening effect on charge ordering, pure ionic model 8−6272
- $Fe_3O_4F_x$ $(0 \leqslant x \leqslant 0.25)$,. Mossbauer spectra, Verwey transition suppression 8−15075
- $Ga_{1-x}In_xSb$, press.-induced structural phase transition 8−30751
- Ge, indentation hardness and semicond.-metal transition 8−35499
- Ge, transmutation doped, high field magnetoresist. of hopping transport 8−10474
- H_2, metallic and molecular, transition press. and eqns. of state calc. 8−26685
- H_xWO_3, amorphous, Anderson transition, disorder depend. and optical detection 8−47840
- hexamethylphosphoramide:Li glass, metallic condensation of Wannier-Mott impurity states 8−2420
- $LaH_{2.69}$, low temp. phase transition, sp. ht. meas. 8−14665
- LiH, insulator-metal transition press. calc. 8−34769
- MgO, compressed, SCF electronic struct. calcs., necy. press. for conversion to metallic state 8−43300
- Na-NH_3, nonmetal-metal transition, thermodynamics 8−18964
- $Na_{1.9}V_{12}O_{29.7}$, phase transitions, elec. cond., susceptibility and sp. ht. meas. 8−14776
- Na_xWO_3, $(0.22 \leqslant x \leqslant 0.84)$, ^{183}W NMR, electronic struct. near metal-semicond. transition, Knight shift 8−48063
- NbI_4, quasi-one dimens.,epress.-induced metal-insulator transition 8−43447
- NbO_2, structural phase transform., neutron scatt. obs. 8−14458
- $NdH_{2.70}$, low temp. phase transition, sp. ht. meas. 8−14665
- NiS, spin polarons exam. and metal-insulator transition 8−10377
- $Pb_{1-x}Sn_xGe$:In, press.-induced transition to gapless state, galvanomag. effects 8−19108
- Se, metal-insulator transition induced by temperature 8−2529
- Se, trigonal, electronic struct., near metal transition, press. depend. 8−34758
- Si, indentation hardness and semicond.-metal transition 8−35499

metal-insulator transition continued
  Si:P, heavily doped, electronic sp. ht. meas., rel. to metal-nonmetal transition 8−6162
  $Si_{100-x}Au_x$, amorphous, dielec. anomaly, rel. to nonmetal-metal transition 8−2791
  $Sm_{1-x}Ca_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  $Sm_{1-x}Gd_xS$, calorimetric exam. of metal-semiconductor transition 8−18967
  $Sm_{1-x}Gd_xS$ system, equilib. of isomorphous phases and crit. point 8−34772
  $Sm_{1-x}Gd_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  SmS, nonorthogonal orbitals in intermediate valence 8−43323
  $Sm_{1-x}Th_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  $Sm_{1-x}Y_xS$, effect of valence fluctuations on lattice dynamics 8−47493
  $Sm_{1-x}Y_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  Te, trigonal, electronic struct., near metal transition, press. depend. 8−34758
  TiO_3, semicond.-metal transition, positron annihilation study 8−15246
  Ti_4O_7, optical absorpt. and metal-insulator transitions 8−15165
  Ti_nO_{2n-1}, cryst. growth and characterisation 8−31311
  UO_{2+x}, possible anionic clusters and mixed valence effects 8−43333
  $V_{0.985}Al_{0.015}O_2$, struct. aspects of metal insulator transitions 8−18965
  VO_2, layer, resist. meas. 8−14770
  VO_2, metallic, electronic struct., lattice instability 8−14664
  VO_2, quasi-one-dimens. system, appl. of qualitative theory for phase transitions 8−31086
  VO_2, V_2O_3, film, absorption spectra, semicond.-semimetal transition 8−19512
  VO_2, V_2O_3, V_3O_5, isotope effect on metal-dielectric phase transitions temp. *(Russian)* 8−34771
  VO_x, minimum conductivity and electron localisation near metal-insulator transition 8−30960
  V_2O_3, 500 to 530K, magnetic susceptibility meas., high temp. transition, interacting Hubbard bands 8−39325
  V_2O_3, phase transitions, Raman scatt. expts., 20-300K 8−39538
  V_2O_3:Al, struct., props., rel. to V_2O_3:Cr, X-ray diffr. and elec. resist. obs. 8−2531
  V_2O_3-M_2O_3, M=Ti, Cr, struct. and mag. props. 8−27041
  V_3O_5, dielec.-metal transition obs. and interpretation *(Russian)* 8−23023
  V_3O_5, insulator-metal phase trnasition at 450K, properties 8−39023
  V_3O_5, metal-insulator transition, effect of doping *(German)* 8−30869
  V_3O_5, semiconductor metal transition, IR spectra obs. *(German)* 8−23456
  V_3O_5, struct. and electronic aspects of cond. transition 8−15078
  V_6O_{11} single crystals, heat capacity anomaly at 172K 8−10197
  V_nO_{2n-1}, cryst. growth and characterisation 8−31311
  V_xO_y, film, preparation by calcining vanadium naphthenate, formation process exam. *(Japanese)* 8−30849
  $V_{1-x}Re_xO_2$ ($0 \leqslant x \leqslant 0.15$), DTA, X-ray diffr., mag. susceptibility, elec. cond. meas. 8−10353
  $V_{1-x}Ti_xO_{1.75}$, synthesis and mag. susceptibility obs. 8−23243
  $V_{1-x}Ti_xO_2$ layer, resist. meas. 8−14770
metal-oxide-semiconductor devices *see metal-insulator-semiconductor devices*
metal-oxide-semiconductor field effect transistors *see insulated gate field effect transistors*
metal-oxide semiconductor structures *see metal-insulator-semiconductor structures*
metal-semiconductor boundaries *see semiconductor-metal boundaries*
metal semiconductor field effect transistors *see Schottky gate field effect transistors*
metal-semiconductor-metal structures
  copper phthalocyanine in MSM struct., electronic props. *(German)* 8−23089
  electrogradient EMF, V-I characts. *(Russian)* 8−47852
  Ag-CdTe-Ag, negative differential resist. 8−19161
  Al-Se-Ag switching element, diffusion and electrodiffusion of Ag and its role in switching effect 8−19163
  As_2Se_3, glassy, photostimulated changes in contact props. 8−19162
  $AsSeI_{0.1}$, glassy, photostimulated changes in contact props. 8−19162
  Au-CdSe-Au capacitor, thermally stimulated and isothermal discharges, grain boundary barrier characts. 8−2582
  C film, amorphous, elec. transport props. 8−6457
  Cu_2O, cond. filament props. and bistable switching effect *(German)* 8−2532
  SiC, semi-insulating in struct. with injecting contacts, cond. in strong elec. field 8−19160
  $Te_{43}Se_{30}Sn_7$ in MSM struct., switching effects 8−19164
  V_2O_5-P_2O_5-CaO glass with metal electrodes, elec. characts., thermal conditions effect *(Russian)* 8−47884
  $Zn_{1-x}Cd_xS$ films, polycryst., reactively sputtered, MSM struct. obs. of dielec. props. and cond. mechanism *(French)* 8−14841
metal theory
  see also band structure of crystalline metals; electron gas; lattice dynamics of metallic crystals
  alkali metal, atomic props., accuracy of description depenxence on pseudopotentials *(Russian)* 8−38997
  alkali metal as classical one-component plasma, melting parameter 8−47092
  alloy, nearly-free-electron, random, charge transfer rel. to stability 8−6316
  Animalu transition-metal model potentials, nonlocality 8−6250
  BCC metals, stressed, computer simulation of vacancy and divacancy migration 8−47573
  binary alloy, electron theory of short range order 8−10390
  binary alloys, and intermetallic cpds., struct. and stability, ab initio pseudopot. calcs. 8−34460
  cohesion energy of narrow band metals, intraatomic Coulomb correlations 8−43322
  conduction band X-ray photoemission, intrinsic plasmons effects 8−39661
  core overlap interaction, interatomic forces 8−47724
  core-level binding-energy shifts 8−47740
  cyclotron resonance with almost specular boundary *(Russian)* 8−10778
  density gradient expansion for kinetic energy 8−34794
metal theory continued
  disordered alloy, Blackman-Esterling-Berk approximation, rederivation and proof of analyticity 8−10318
  dynamic screening of ions passing through solids 8−10379
  electron gas, mean free path of low energy electrons, influence of damping 8−10385
  electron gas, pair potential between two ions 8−47723
  electron gas, paramag. susceptibility, RPA calc. 8−43559
  electron gas in metal, free energy virial expansions *(Russian)* 8−10380
  electron response to local fields, X-ray processes 8−23584
  EM properties, general lecture 8−26901
  exchange enhancement of electron-phonon coupling 8−47968
  Fermi fluid, degenerate, spin correlations at metallic densities *(Russian)* 8−43321
  ferromagnet, electron transport with arbitrarily oriented ellipsoidal Fermi surfaces, cyclotron wave excitation 8−23006
  film, electron liquid oscills. *(Russian)* 8−43315
  generalized pseudopotential theory, density functional formulation, d-band metals 8−10389
  heavy metal, relativistic one-particle equation for electron states 8−43280
  Heine-Abarenkov type model potential, parameter determ. 8−6248
  impurity effect on electric field gradient 8−23061
  impurity effect on electronic struct. 8−47692
  impurity interactions in pseudo-molecule form. 8−47735
  interstitials, quadrupole effect on dipolar field width 8−2457
  lattice sums with screened potentials 8−43341
  magnetic metals, crit. transverse US attenuation, spin fluctuations 8−48022
  magnetoresistance of localized impurities, multiple scatt. theory 8−43360
  many-band metals, elect. resistivity from force correlation function method 8−43357
  metal, acoustic breakdown, electron energy spectrum *(Russian)* 8−18948
  model potential parameters 8−47731
  noble metal, electron-ion interaction, model pseudopot. 8−34785
  noble metals, Van der Waals contribution to binding energy 8−2062
  noncubic metal, charge screening enhancement of quadrupole shielding factors 8−43342
  noncubic metal, conduction-electron elec. field gradient, probe valence effects 8−47749
  noncubic metal, possibility of isotopic mass effect on quadrupole coupling const. 8−43725
  noncubic metals, conduction electron electric field gradient, effect of orthogonalisation 8−26832
  nonlinear EM absorption of short-wave sound *(Russian)* 8−43446
  nontransition metals, jellium approach to vacancy energetics 8−47347
  optical surface plasmon modes, spheres 8−2539
  phonon spectrum, nonadiabatic effects, in mag. field *(Russian)* 8−19106
  plasmon dispersion, effect of band struct., dielec. function calc. 8−26825
  plasmon frequencies of small metal spheres, calc. by hydrodynamic theory 8−43319
  plasmon-plasmon interactions 8−30882
  positron-phonon scatt. effect on positron trapping at monovacancies 8−26829
  proton in jellium, self-consistent screening 8−2441
  pseudopotential for electron-ion interaction, appl. to K and Na props. 8−26486
  quasiparticle bands, cond. electron mixing with impurity d(f) ions *(Russian)* 8−10409
  rare earth metals, 5s electron excitation energies 8−10408
  recrystallisation, induced, in thin metal plates *(German)* 8−19783
  short range atomic order, size effect in electron theory, static conc. waves approximation *(Russian)* 8−39049
  superconductor and normal metal, Raman sound scattering *(Russian)* 8−23199
  surface, self consistent electronic struct. effect on atomic positions, computer simulation 8−30969
  surface, tight-binding, dissociative chemisorption of molecule 8−2368
  surface, with substitutional disorder, density of states, Green's function theory 8−23145
  surface electron density of states, random impurity distrib. 8−6424
  surface energy calc. in model of discrete positive charge *(Russian)* 8−38911
  surface potential drop and contact pot. difference in terms of orbital electronegativity 8−2546
  surface region, absorption of EM radiation 8−43456
  surface with substitutional disorder, electronic struct. 8−23144
  temperature dependent multi-ion interactions in simple metals 8−22691
  thermodynamic properties, outer electron contributions *(French)* 8−43091
  transition metal, 2nd and 3rd long period, covalence of atoms 8−47274
  transition metal, 3d, superatomic relax. and positions of inner levels 8−11069
  transition metal, 4d, rel. to systematic struct. in K-edge photoabsorpt. spectra 8−43960
  transition metal, band theory, rel. to bulk props. and cryst. struct. trend 8−34757
  transition metal, Einstein temp. and vibr. entropy, semiquantitative calc. 8−2221
  transition metal, extraatomic relaxation energies *(Russian)* 8−31295
  transition metal, itinerant-localised electron model for magnetism 8−14918
  transition metal, Lorenz number and high-temp. interband transitions 8−26844
  transition metal, nonmag., possibility of mag. monolayer formation 8−15009
  vacancy formation energies and volumes, exam. of models 8−47349
  vacancy type point defects, calc. of migration energies in pure metals and dilute alloys 8−47572
  rel. to volume photoemission 8−2978
  work function depend. on plasmon energy, for periods IV, V and VI 8−18986
  X_α method of theory of multiple scattering, appl. to props. of metal clusters *(Russian)* 8−38996
  XPS lineshape asymmetries, free-electron-like metals 8−14681
  Ag, resonant model potential, energy depend. 8−18952

metal theory continued
- Al, atomic structure factor calc. from band struct. eigenfunctions 8−6030
- Al, electron energy loss spectra 8−34560
- Al, liquid, momentum density of electron 8−6309
- Au, resonant model potential, energy depend. 8−18952
- Be, spin susceptibility, electronic effective mass, spin density functional calcs. 8−43291
- Cd, nonlinear cyclotron absorption of hole doppleron *(Russian)* 8−10779
- Cu, resonant model potential, energy depend. 8−18952
- α-Fe, BCC metals, stressed, computer simulation of vacancy and divacancy migration 8−47573
- Ga, liquid, effective pair potential and entropy *(French)* 8−14267
- Li, binding energy and atomic radius calc., effect of nonlocalised charact. of pseudopot. *(Russian)* 8−18575
- Li, local orbital energy bands using Kohn-Sham and near Hartree-Fock exchange 8−30866
- Li, potentials and wave functions of electrons *(Russian)* 8−47688
- Mg, spin susceptibility, electronic effective mass, spin density functional calcs. 8−43291
- Na, potentials and wave functions of electrons *(Russian)* 8−47688
- Pd, liq., energy bands and electronic density of states, resistivity 8−34755
- Sc, mag. susceptibility, temp. depend., theoretical explanation 8−47944

metal vapor lamps *see metal vapour lamps*

metal vapour lamps
- *see also mercury vapour lamps*
- laser wavelength and bandwidth calibration using optogalvanic effect 8−5514
- Na, high-press. discharge lamp, theory and plasma diagnostics appl. 8−9829

metallic epitaxial layers
- ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
- Ag, epitaxial growth and reaction with SnTe substrates 8−14640
- Au, growth on Ag(111) surface, LEED meas. 8−14632
- Au, growth on clean and contaminated GaAs (001) surfaces 8−26785
- Au, on vacuum deposited Fe, interfacial dislocations 8−30847
- Au, sandwiching of biopolymers, electron microscopy specimen prep. 8−36080
- Cu, epitaxial electrocrystallisation, substrate imperfections effect 8−18921
- Cu film, on (001) Ag, FCC and BCC metal-on-metal epitaxy, geometric factors, electron microscopy 8−22980
- Fe epitaxial growth on Au single crystals, substrate temp. effect on morphology 8−26798
- Fe, on Au, growth processes, ultra high vac. in situ electron microscopy 8−30842
- Ni film, on (001) Ag, FCC and BCC metal-on-metal epitaxy, geometric factors, electron microscopy 8−22980
- Pd-Ag (Cu) alloys, epitaxial growth and surface characterisation 8−14638

metallic glasses
- applications of glasses, review 8−3306
- education, metallic glasses, phase transition and mech., elec. and mag. props. 8−36765
- electrical resistivity, temp. depend. 8−14702
- electronic structure, neutron scatt., elec. resist., Hall coeff., mag. susceptibility and XPS 8−23013
- $Fe_{40}Ni_{40}P_{14}B_6$, amorphous, tape wound core, fluctuations of driving field 8−10726
- ferromagnetic, hyperfine field and spin wave excitations, $T^{3/2}$ depend. 8−10672
- ferromagnetic, quenched from melt, appl. as soft mag. materials *(German)* 8−10676
- glass transition, free vol. theories, and special case of metallic glasses 8−14284
- load relaxation studies 8−48441
- metallic glass, phonon transport below 100K 8−14422
- METGLAS™2826, load relaxation studies 8−48441
- Polk model and struct. 8−42916
- review of prep., characterization, struct., formation, electronic, mag. and mechanical props. 8−3074
- review of properties, current and potential applications 8−30539
- shear deformation, mechanism involving dislocation glide 8−15462
- steel, stainless, amorphous film, sputtered, prep. and characterisation 8−43266
- structure and crystallisation, review 8−2008
- structure and properties, review 8−47245
- Taylor wire prod. by rapid quenching 8−44045
- transition metal based amorphous mag. alloys, elec. field gradient 8−39475
- transition metal-metalloid, struct. simulation 8−38624
- transition metal-metalloid glass, mag. props., charge transfer model 8−39324
- Young's modulus/thermal props. correlation 8−6961
- Be-Zr alloy, quenched from melt, supercond. props. 8−26983
- Co based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
- Co-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513
- $Co_{80}P_{20}$, amorphous, sign and magnitude of ^{60}Co hyperfine field, nucl. orientation 8−48100
- $Co_{75}Si_{15}B_{10}$, amorphous, crystallisation study *(Japanese)* 8−9959
- Cu-Zr, vapour quenching prod. (thermal evaporation and r.f. sputtering), amorphous film for electron microscopy 8−6851
- Cu-Zr (50 or 54 at.%), splat-quenched, glass transition and crystn. temps. determ. 8−22659
- $Cu_{60}Zr_{40}$, stability, crystallisation, ductility meas. 8−47246
- (Fe, Ni, Co)-Si-B, amorphous, compositional effect on struct. changes, after heating up to 700°C, exam. *(Japanese)* 8−48433
- Fe based, B and P glass former additions, elastic consts., flow behaviour correlation 8−44154
- Fe, realistic relaxed struct. model pair distrib. function 8−30544
- Fe-B, amorphous, Invar-type alloy, mag. moment and high field susceptibility 8−34965
- Fe-B metallic glasses, density, mech. and thermal props. 8−31432
- Fe-Cu alloy, vapour-deposited, struct. and thermal stability 8−43265
- Fe-Ni based, hydrostatic press. effect on mag. props. 8−19300
- Fe-Ni-Cr-P-B, Metglas 2826A, TEM of shear bands 8−48483

metallic glasses continued
- Fe-P-B-Al, magnetostriction as function of glass formers 8−19299
- Fe-P-C, amorphous, struct. and mag. props., Mossbauer, X-ray diffr. and elec. resist. meas. 8−2009
- Fe-P-C, embrittlement by crystallisation *(Japanese)* 8−48513
- Fe-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513
- Fe-Si-B, magnetisation meas. 8−23252
- $Fe_{75}B_{25}$, correlation between elastic consts. and flow behaviour 8−44154
- $Fe_{80}B_{20}$, amorphous, crystallization 8−42917
- $Fe_{80}B_{20}$, amorphous, evaluation of complex Mossbauer spectra 8−43755
- $Fe_{80}B_{20}$, amorphous ferromag., temp. depend. of hyperfine field distrib. 8−43756
- $FeB_5C_{15}SSi_{15}Cr_5$, amorphous, exam. of metalloid atom mobility by Auger spectroscopy 8−47575
- $(Fe_{0.65}Co_{0.35})B$, crystalline disordered, evaluation of complex Mossbauer spectra 8−43755
- $Fe_5Co_{70}Si_{15}B_{10}$, amorphous, change of mag. props. by low temp. annealing 8−27058
- $Fe_{78}Mo_2B_{20}$, amorphous ferromag., $T^{3/2}$ depend. of hyperfine field 8−39474
- $Fe_{40}Ni_{40}B_{20}$ glass, phase transform. during isochronal annealing 8−14451
- $Fe_{40}Ni_{40}P_{14}B_6$, amorphous, domain struct. 8−10719
- $Fe_{40}Ni_{40}P_{14}B_6$, amorphous tape wound cores, mag. props. *(German)* 8−10727
- $Fe_{40}Ni_{40}P_{14}B_6$, amorphous, mag. props. 8−10728
- $Fe_{40}Ni_{40}P_{14}B_6$, amorphous alloy, structural relaxation kinetics, X-ray diffr. exam. 8−38627
- $Fe_{40}Ni_{40}P_{14}B_6$, crystn. kinetics, DSC expts. 8−26444
- $Fe_{40}Ni_{40}P_{14}B_6$, ferromagnetic, low temp. heat capacity meas., electronic, phonon contributions exam. 8−10689
- $Fe_{40}Ni_{40}P_{14}B_6$, high-field suscept. and spin wave spectrum 8−10662
- $Fe_{40}Ni_{40}P_{14}B_6$, induced anisotropy energy and saturation magnetisation temp. depend., torque magnetometer meas. 8−10680
- $Fe_{40}Ni_{40}P_{14}B_6$, irradiation swelling 8−30682
- $Fe_{40}Ni_{40}P_{14}B_6$, mag. props. and hyperfine interactions, Mossbauer obs., 4.2-1000K 8−10812
- $Fe_{40}Ni_{40}P_{14}B_6$, metallic glass, acoustic emission generated during viscous flow 8−39853
- $Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, magnetising processes 8−10725
- $Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, acoustic emission during viscous flow 8−42915
- $Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, stability, crystallisation, ductility meas. 8−47246
- $(Fe_xNi_{1-x})_{80}P_{14}B_6$, Mossbauer spectroscopy, mag. hyperfine interaction, Curie temps. 8−6617
- $(Fe_xNi_{1-x})_{0.75}P_{0.16}B_{0.06}Al_{0.03}$, thermal expansion 8−43151
- $Fe_{29}Ni_{49}P_{14}B_6Si_2$, crystn. kinetics, DSC expts. 8−26444
- $Fe_{72}Ni_8P_{13}C_7$, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- $Fe_{80}P_{14}B_6$, ferromagnetic, low temp. heat capacity meas., electronic, phonon contributions exam. 8−10689
- $FeP_{13}C_7$, amorphous, exam. of metalloid atom mobility by Auger spectroscopy 8−47575
- $Fe_{75}P_{15}C_{10}$, glassy ferromag., crit. sp. ht. meas. 8−10716
- $Fe_{75}P_{15}C_{10}$, mag. excitations, inelastic neutron scatt. 8−10674
- $Fe_{75}P_{15}C_{10}$, spin echo NMR of ^{31}P 8−2770
- $Fe_{80}P_{16}C_3B_1$ amorphous filament, produced by glass coated melt spinning, mech. props. 8−15483
- $Fe_{78}Si_{10}B_{12}$, amorphous alloy crystallisation study *(Japanese)* 8−9959
- $La_{1-x}Au_x$, supercond. splat cooled amorphous alloy, sp. ht. 8−19182
- Nb-Ni, synthesis by vapour quenching, and struct. 8−11111
- Nb-Ni metallic glass, temp. depend. of resistivity 8−47759
- $Ni_{75}Si_8B_{17}$, amorphous alloy, crystallisation study *(Japanese)* 8−9959
- Ni-P, amorphous, reversible effects of temp. on struct. 8−34442
- Ni-P alloy, electrodeposited, heat induced struct. changes *(Japanese)* 8−15433
- Ni-P metal metalloid glass forming alloys, gram atomic volumes 8−38628
- Ni-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513
- $Ni_{100-x}B_x$, rapidly quenched, mag. moment, temp. and comp. depend. 8−47957
- $Ni_{40}Fe_{40}B_{20}$ glass alloy, rapidly quenched, explosive welding to A516-70 steel and to itself 8−39954
- $Ni_{60}Nb_{40}$, stability, crystallisation, ductility meas. 8−47246
- $Ni_{80}P_{14}B_6$, low temp. heat capacity meas., electronic, phonon contributions exam. 8−10689
- Pb, film, polycryst. or amorphous, thermal cond., 0.5-11K 8−39260
- $Pb_{0.9}Cu_{0.1}$, film, polycryst. or amorphous, thermal cond., 0.5-11K 8−39260
- Pd-Cu-Si metallic glass, energy loss spectra and Auger spectra 8−23563
- Pd-Ni-P metallic glass, energy loss spectra and Auger spectra 8−23563
- $Pd_{77.6}Cu_6Si_{16.5}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
- $Pd_{781}Cu_{55}Si_{164}$, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- $Pd_{48}Ni_{32}P_{20}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
- PdSi alloys, amorphous thermal behaviour and crystallisation kinetics 8−26446
- $Pd_{80}Si_{20}$, struct. simulation 8−38624
- $Pt_{45}Ni_{30}P_{25}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
- Te-Pb (20 at.%) alloy, amorphous, obtained by rapid cooling from liq. state, crystn. behaviour 8−26445
- $Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8−11292
- $Ti_{50}Be_{40}Zr_{10}$, Metglas 2204, stability, crystallisation, ductility meas. 8−47246
- W, laser-irrad., plasma electron energy profile steepening, polarimetry obs. 8−34349
- $Zr_{0.7}Pd_{0.3}$, supercond., sp. ht. and thermal cond., 0.1-10K 8−26991

metallic hydrogen *see solid hydrogen*

metallic thin films
- *see also discontinuous metallic thin films; electronic conduction in metallic thin films; metallic epitaxial layers; metallic glasses; metallisation*
- 1/f fluctuations *(Japanese)* 8−43448
- 1/f noise theory 8−34872

metallic thin films continued
attenuated total reflection minima, correlation with surface polariton modes, computational study 8−31265
Au film, diffusion of Ag along grain boundaries, scanning Auger microscopy obs. 8−22897
chemisorptive luminescence systems for surface reaction obs. 8−7236
condensed, on supercond. film, effect on T_c and residual resist. 8−47900
electron liquid oscills. *(Russian)* 8−43315
electron penetration and energy transfer in solid metal targets, film bulk method 8−2963
film, evaporated, galvanomag. and mag. props., thickness depend. 8−23181
growth, initial stages, ion bombardment effects 8−14639
holographic recording materials and devices, book contrib. 8−25838
hypersound point excitation in millimetre microwave region *(Russian)* 8−2204
ion sound velocity in mag. field *(Russian)* 8−18982
ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
metal film, laser damage determ. using quartz resonator 8−31286
multicomponent alloy films, struct. form. laws and elec. prop. changes obs. during vacuum condensation 8−6850
noble metal, electronic structure and d-holes of films and surfaces 8−39180
nonferromagnetic film sheet resistance meas., eddy-current method 8−45658
optical consts., determ. from Abeles formulae for reflectance, transmittance 8−15240
PIXE, low energy mass absorpt. coeff., meas. technique 8−7309
pressure effects on intrinsic property meas., case for in-situ measurements 8−39228
quench-condensed, specific heat, 0.6 to 4.4K 8−41309
~~SmS film~~, metallic, interpretation of optical absorption spectrum 8−27344
solid-state plasma, steady-state Langmuir turbulence spectrum and turbulent energy absorption 8−26899
sputtered compressive stress transition 8−10310
structure, on amorphous or crystalline substrate, effect of zero point EM oscills. *(French)* 8−22983
structure-related optical characteristics in visible and UV 8−35217
supported film, thickness determ. using ^{63}Ni radioactive source 8−22989
surface EM wave launching at edge of metal film 8−43945
surface potential of interacting metallic films 8−30968
thermal conductivity and thermal diffusivity, determ. method *(German)* 8−19165
thickness measurement, methods and instruments *(German)* 8−32787
transition metal, chemical compound formation by ion bombardment 8−30846
transition metal, electronic structure and d-holes of films and surfaces 8−39180
transmittance standards in spectrophotometry, semi-transparent metallic thin films use 8−32852
transparent conducting coatings, book contrib. 8−10587
vacuum deposited, internal friction *(Japanese)* 8−47685
vapour deposited coatings, mech. props. 8−6247
AP, RF sputtered, thermal ageing, thickness dependent effects 8−6462
Ag film, He^+ ion bombardment, radiation damage, ion entrapment, gas release and bubble formation 8−30679
Ag film on Cu(111), plasma reson. absorption in interfacial photoemission 8−15289
Ag, high temp. stabilisation using SiO_2 8−1319
Ag, inert gas ion refl., semiempirical analysis, compared with expt., 10-30 keV 8−6823
Ag ion plated film on permalloy, Cu and Vicalloy substrate, AES, SEM and X-ray study *(Japanese)* 8−11128
Ag, low energy electron irrad., visible and UV emission 8−2921
Ag, photodissolution in amorphous As_2S_3 8−26737
Ag, thermal and elec. cond., Lorenz no. 8−43487
Ag, vacuum deposited, internal friction vibr. reed technique 8−43276
Ag, vacuum deposited coating on quartz resonator 8−11116
Ag, vacuum deposited film, surface struct., HEED meas. 8−6234
Ag, vacuum-deposited, removed from substrate, internal strain *(Japanese)* 8−22872
Ag, with thin transparent and absorbing coatings, surface plasma oscills. 8−43951
Al, damage production rates of 5 MeV Al ions 8−47444
Al, electron beam evaporation, on Kapton laminates, and characterisation 8−11373
Al film, electron transmission less than 3 keV *(French)* 8−10109
Al, film, initial oxidation, AES, work function and gravimetric meas. 8−7087
Al film, initial oxidation, electron energy loss spectra 8−7088
Al, lattice and grain boundary diffusion of Cu 8−2303
Al, neutron irradiated, increase of elec. resist. 8−26973
Al, sputtered and electron gun evaporated films, grain size and orientation obs. 8−10308
Al, thickness measurement using Talbot effect 8−9321
Al-SiO_2 interface, stress and microstruct. via TEM 8−26797
Al-Zn-Mg-Cu alloy, X-ray microanalysis in scanning transmission electron microscope, limitations 8−20122
Au (111) film, sputtered, surface struct., HV electron microscopy and theoretical model 8−22981
Au film, detection of faceting on (h,k,0) surfaces by diffr. in electron microscope at 100 kV 8−43273
Au film, low temp. void growth and resistivity decay 8−10302
Au film, threshold current density and incubation time to electromigration 8−14643
Au, in Si detector, electrical contact at He temp. 8−37019
Au, inert gas ion refl., semiempirical analysis, compared with expt., 10-30 keV 8−6823
Au, ion implanted, ellipsometry, 1.8-5.5 eV, dielec. function 8−6697
Au, low energy electron irrad., visible and UV emission 8−2921
Au, on α-quartz substrate, optical consts. evaluation from surface polariton dispersion 8−48249
Au, optical characterisation, inversion method 8−11008
Au overlayer, on GaP photoelectrode 8−14812
Au, pulsed potentiostatic deposition from Au(I) sulphite solns. 8−15321
Au, self-supporting, thermotransmission meas. 1.8 to 3.5 eV 8−27343

metallic thin films continued
Au, vacuum condensation, on mica, saturation density of nuclei 8−18932
Au, vacuum deposited film, surface struct., HEED meas. 8−6234
Au, void growth in early stages of ageing and electromigration 8−38991
Au-Si, film-substrate system, relax. effects, internal friction meas., temp. range 20 to 900°C 8−18886
Au-Sn film, evaporated, interdiffusion and phase formation, in situ He ion backscattering meas. 8−22901
Ba films, chemisorptive luminescence systems for surface reaction obs. 8−7236
Be, growth on W, FEM obs. 8−26799
Cr, evaporated, on die-cast Zn, microstruct. and intrinsic stresses, substrate temp. effects 8−10304
Cr, vacuum deposited coating on Zn substrate, cracking caused by intrinsic stresses 8−6238
Cs film, work function theory, size effect 8−43460
Cu, aging effect of thermoelectric power 8−2584
Cu, electronic structure and d-holes of films and surfaces 8−39180
Cu, inert gas refl., semiempirical analysis, cmpared with expt., 10-30 keV 8−6823
Cu, low energy electron irrad., visible and UV emission 8−2921
Cu on Ag (001), ultrathin film electronic states calc. 8−6318
Cu, on Ni single cryst., diffusion coeff. using method of nets 8−22903
Cu, quench-condensed thin film, annealing effect on resistivity 8−43488
Cu, vacuum deposited film, surface struct., HEED meas. 8−6234
Cu-Al alloy, vacuum deposited, composition, structure, resistivity 8−6852
Cu-Mn-Ni, thin film, vacuum deposited, struct., elec. cond. *(Russian)* 8−19668
Er film, work function, effects of O_2 sorption 8−19125
Fe, amorphous-polycrystalline resistivity transform. temp., of codeposited N_2 8−6461
Fe epitaxial growth on Cu(111), supersaturation and mode of growth, LEED and AES exam. 8−18929
γ-Fe film on Cu (111) mag. props. 8−31098
Fe, vacuum-evaporated contamination, conversion electron Mossbauer spectroscopic obs. 8−23985
Fe-Ni alloy, X-ray microanalysis in scanning transmission electron microscope, limitations 8−20122
Ge-Au-Ni, interdiffusion obs., on annealing 8−2308
Ge-Au-Pd, interdiffusion obs., on annealing 8−2308
Ge-Au-Pt, interdiffusion obs., on annealing 8−2308
Mg films, chemisorptive luminescence systems for surface reaction obs. 8−7236
Mo film, work function, effects of O_2 sorption 8−19125
Mo, on Si, silicide form. 8−43261
Mo, on SiO_2/Si substrate, effect of heat treatment after deposition on internal stress 8−22973
Ni coated Mo and W filaments, creep and recrystn. *(Russian)* 8−19822
Ni film, adsorbed H_2(CO), ferromag. reson. exam. 8−15028
Ni film, CO adsorption effect on galvanomagnetic and magnetic props. 8−43490
Ni film, evaporated, galvanomag. and mag. props. 8−23180
Ni layer, vol. composition of sharp filamentary textures, elec. cond. meas. *(German)* 8−22978
Ni, surface properties and photoelectron spin polarisation 8−14782
Pb, film, deposited on Si substrate, residual strains 8−18915
Pb film, reactive ion beam sputtering 8−19666
Pb film, thermal strain, depend. on cryst. orientation 8−10311
Pb, film, ultra-thin, hexagonal phase, struct. 8−38982
Pb, O ion irradiated, damage rate decrease 8−26604
Pb, oxidised (111) surface, electron microscope anal. of oxides 8−23878
Pb-In films, atom redistrib., ion-ion emission obs. *(Russian)* 8−18926
Pd on Ag (001), ultrathin film electronic states calc. 8−6318
Pt film, RF sputtered, thickness distribution function 8−11083
Re epitaxial film growth on sapphire *(Russian)* 8−35311
SmS, metallic, transmission, refl. and absorpt. spectra 8−19587
Sn film, white, optical props. between 2-15 eV 8−19584
Sn, oxidation mechanism, depth selective Mossbauer spectroscopy method 8−35549
Sn, thermoelec. power, 3.7-8K 8−39231
Ta, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
Ta film, anodisation voltage relationship to oxide thickness *(German)* 8−11443
Ta film, vacuum-deposited, gas adsorpt. effects on photoelec. props. 8−15298
Ta film on Corning glass, N and O content nondestructive determ. *(German)* 8−43272
Ta-Ni alloy, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
Ti, effect of surface and bulk oxidation on charact. electron energy loss spectra *(French)* 8−39641
Ti, electrochem. oxidation, AES, XPS and electrochem. characterisation 8−7086
Ti, film, reactive ion beam sputtering 8−19666
Ti film, work function, effects of O_2 sorption 8−19125
Yb, film, energy-scanning X-ray diffr. technique, stacking faults and coherent domains *(French)* 8−43264
Zn film, vac. deposited, X-ray diffr. study of microstruct. 8−26796
Zn, RF and DC sputtered, thermal ageing, thickness dependent effects 8−6462
Zr film, reactive ion beam sputtering 8−19666

metallisation
see also electrodeposition
delineating large metallisation patterns, technique using non-line-of-sight vacuum methods 8−23615
metal oxides, chemical dissoc. under pressure as alternative to metallisation, feasibility study *(Russian)* 8−48553
plastic-encapsulated IC, metallisation corrosion test 8−11486
steel, unalloyed, electric metallisation, corrosion resistance tests *(Russian)* 8−19935
Al, film deposition from metal plasmas 8−6859
Al, sputtered and electron gun evaporated films, grain size and orientation obs. 8−10308
Al-Cu film, anodic oxidation, corrosion props. 8−35581

metallisation continued
- Al-SiO_2 interface, stress and microstruct. via TEM 8–26797
- Au film, chem. deposition on Si, form., struct. 8–34723
- Au film, threshold current density and incubation time to electromigration 8–14643
- Au, growth on clean and contaminated GaAs (001) surfaces 8–26785
- Au, pulsed potentiostatic deposition from Au(I) sulphite solns. 8–15321
- Cu, film deposition from metal plasmas 8–6859
- $Ga_xIn_{1-x}Sb$ diode, with Au metallisation, interdiffusion effect of heat treatment 8–14820
- Ge-Au-Ni(Pt)(Pd) trilayered films, annealing, interdiffusion 8–22902
- Mo-Si junctions, metallurgical boundary props. and elec. resistivity 8–2568
- Si, (111) surface, Ag interaction, AES 8–14589
- Si-metal contacts, low temp. reactions 8–2567
- Ti-Pd-Au, patterning, by plasma etching of Ti 8–27677

metallising *see metallisation*

metallization *see metallisation*

metallo-organic compounds *see organometallic compounds*

metallocenes *see organometallic compounds*

metallography
- *see also electron microscopy*
- alloy, lamellar multiphase, struct. and spatial comp. variation, analytical STEM 8–24011
- automatic structure analyser, EPIQUANT, banded structure determination in ferrous metals 8–39973
- boride coatings on Ni alloy, thermal stability, exam. of coating 8–44271
- brass, crystal structure and morphology of thin needle-like martensite 8–31425
- brass, failure obs. with optical microscope 8–11472
- brass, shear band development during rolling, twinning, metallographic obs. *(Japanese)* 8–39849
- brass formation by diffusion in multilayer Cu-Zn condensates 8–43186
- bronzes, ancient, chem. polishing and etching for metallographic exam. 8–356
- ceramic, polished section prep. using pedepin *(German)* 8–19983
- ceramic nuclear fuel, porosity characterization, optical and electron microscope exam. 8–44302
- diffusion phenomena determ. between coated metal carbide and steel *(German)* 8–15623
- disperse particles concentration and spacings between them in Poisson point field model 8–39963
- electrolytic deep etching 8–31604
- electrolytically polished surface evaluation 8–35627
- electron microscope, 1000 kV, appl. to metallurgy 8–8472
- electron microscope extraction replicas, X-ray microanalysis, appl. to steel separation estimation *(Bulgarian)* 8–40012
- EPMA design, performance and applic. in materials research 8–35780
- Fe, ingot, cast, exam. of nonmetallic inclusions, size freq. distrib. 8–39989
- FIM atom probe technique, suitability for continuous phase transforms. obs. 8–35621
- FIM techniques, appl. to metallurgical problems, review 8–35620
- fission reactor fuel, metallographic cross sections after high temp. treatment *(German)* 8–29586
- foil thickness measurement in TEM 8–35632
- geikielite, solid soln., phase transform. during reduction *(Russian)* 8–44042
- grinding and polishing apparatus for metallographic specimens 8–23889
- ilmenite, solid soln., phase transform. during reduction *(Russian)* 8–44042
- precious metals, Au, Ag, Pt, Ru, Os 8–3289
- quantitative, errors due to measuring masks *(French)* 8–15622
- quantitative, with automated electron microscope-microprobe systems 8–35631
- radiation damage, FIM and atom probe FIM expts., review 8–35623
- SEM channelling contrast technique for material deform. obs. 8–23917
- specimen prep. using micromilling device *(German)* 8–19980
- steel, austenitic stainless, cast struct., determination of origin using etching techniques 8–39985
- steel, carbonitrided, nature of dark component, metallographic exam. 8–19978
- steel, cast, nonmetallic inclusion size frequency distrib. determ. 8–39989
- steel, constructional, austenite grain shape eval. method 8–35607
- steel, inclusion behaviour investigations using SEM 8–23916
- steel, inclusions, SiO_2 Al_2O_3, FeS, effect of high temp. heating on size, number and distrib. 8–44145
- steel, low C, hot rolling effects on struct. *(Russian)* 8–19793
- steel, Ni-Mo, sintered, martensitic transformation due to cold working, metallographic study 8–44127
- steel, stainless, 0Kh12G14N4Yu2, effect of plastic deform. on biphase struct. 8–44176
- steel, stainless, cold worked, pitting corrosion in NaCl soln. 8–44257
- steel, stainless, martensitic new etchant to reveal prior austenite grain boundaries 8–3290
- steel, stainless, metastable, determ. of strain-deform. martensite content 8–3282
- steel, stainless, type 316, electron beam heating effect on extracted intermetallic precipitate 8–35394
- steel, type 27KhGSNL, castings, exam. of cracks due to treatment 8–44205
- techniques improvement *(Rumanian)* 8–35603
- wear resistant coatings, sprayed-on *(German)* 8–19981
- worn ball, metallographic micro prep. method 8–3274
- Ag-Sn alloys containing Au, splat cooled ribbons, electron microscope exam. 8–39987
- Ag_2S-(As)(Sb)(Bi), temp.-comp. diagram 8–44105
- Ag_2Se-(As)(Sb)(Bi), temp.-comp. diagram 8–44105
- Ag_3Sn, containing Au, etching technique for alloys and amalgams 8–3291
- Ag_2Te-(As)(Sb)(Bi), temp.-comp. diagram 8–44105
- Al alloys, optical contrast enhancement by vacuum deposited ZnTe layers 8–44301
- Al, cold rolled, annealed, fatigue crack propag. rate, temp. effect 8–39904

metallography continued
- Al-Al_3Ni two-phase matrix, Al electrolytic etching in $AlCl_3$ molten salts 8–3280
- Al-Cu (4 wt.%) fractography *(German)* 8–19982
- Al-Ge alloy, Ge particle size, determ. by small- and wide-angle X-ray scatt. 8–19966
- Au, electroplate, delineation of hard from soft by etching 8–3292
- Be, machining damage, SEM exam. 8–39990
- Cu ingot, cast, nonmetallic inclusion size frequency distrib. determ. 8–39989
- Fe alloy, surface layers examination, X-ray method 8–35606
- Fe, cast, Mg-modified, scale for shapes eval. of graphite inclusions 8–35609
- Fe, cast, quantitative metallography, study by image anal. 8–31492
- Fe-Ni, oxidation, Mossbauer spectroscopy, metallography, SEM and X-ray diffr. anal. 8–15577
- Fe-Ni (3 wt.%) alloys, embrittled, microanalysis of grain boundary segregation using STEM 8–35633
- Fe-Ni-Cr alloy, cast, etching methods for determ. of primary struct. 8–23888
- $Fe_{80}B_{20}$, amorphous, crystallization 8–42917
- GeTe, nonstoichiometric, homogenisation 8–44004
- LiF crystal, dislocation movement study with new chem. polish 8–15614
- Ni alloy, STEM microanalytical techniques comparison for precip. comp. determ. 8–35790
- Ni-Cr alloy, cast, etching methods for determ. of primary struct. 8–23888
- Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8–35496
- Ni-W-Co-Cr, superalloy MAR 200, with Hf, cellular composite prod. by isothermal dendrite ripening 8–44150
- Si_3N_4, phase content determ., using X-ray diffr. anal. 8–44281
- steel, 36NKhTYu, aged, rate of discontinuous precipitation of γ'-phase, short high-temp. treatments *(Russian)* 8–11226
- Ti alloys VT23 and VT15, etching as a function of struct. *(Russian)* 8–15568
- Ti-Al-Mo-(Cr), etching as a function of struct. *(Russian)* 8–15568
- $Tm_{1-x}Y_xTe$, $(0\leq x\leq 1)$, single cryst. growth and characts. 8–23603
- Zr, creep, optical and electron metallographic anal., 473 to 873K 8–39986
- Zr, pure, laser microprobe damage, metallographic exam. of craters formed 8–39988
- ZrB_2, etching method using H_3PO_4 and H_2SO_4, effect of Pt 8–44339

metallurgical industries
- *see also forging; rolling mills*
- complex profiled surface alloying, automatic electrode feeding *(Russian)* 8–19936
- electrorefining, recording coulometer for controlled atmosphere reactions of metals in molten salts 8–3344
- hydrometallurgical plant effluent waters, Mo and W determ. by activation analysis with low-power neutron sources 8–7279
- tensile testing, automatic methods *(German)* 8–35598

metallurgy
- *see also ageing; alloys; crystal microstructure; deformation; electrical properties of substances; hardening; heat treatment; magnetic properties of substances; materials testing; mechanical properties of substances; metallography; metallurgical industries; metals; metalworking; phase diagrams; phase transformations; physical chemistry; powder metallurgy; precipitation; recrystallisation; surface treatment; zone refining*
- electron beam for vacuum metallurgy *(Japanese)* 8–18465
- inductive stirring of metal melts, surface velocity meas. on 30000 lb charge 8–11139
- kaolinic clay chlorination in Al production 8–6878
- magnetic materials, soft, magnetism and metallurgy, book 8–31029
- ore, flotation extraction, thermoelectric power, extraction yield depdnd. 8–19686
- oxidizing slag-metal droplet reaction kinetics 8–11153
- recycling of non-ferrous metals, system study, computer simulation 8–35278
- SL/RN direct reduction process, mathematical model 8–6876
- slag-metal interface determination using electrochem. conc. element 8–7114
- smelting cell, C lining, nonfuming room temp. seam mix 8–11495
- standard specimens for spectral analysis, review 8–7273
- thermal plasma engineering in metallurgy, inorganic materials technology 8–3070
- Fe, cast, Mg treated, fading behaviour *(Japanese)* 8–11152
- O_2 technology and conservation in metallurgical extraction 8–7169
- Zr_3Al, ordered, review of physical metallurgy 8–15419

metalorganic compounds *see organometallic compounds*

metals
- *see also actinides; alkali metals; alkaline earth metals; aluminium; bimetals; cadmium; gallium; indium; lattice dynamics of metallic crystals; lead; mercury (metal); metallic thin films; rare earth metals; thallium; thermoelectric effects in metals and alloys; tin; transition metals; zinc*
- adatom pair, on metal surface, effective interaction, from FIM expts. 8–22953
- adhesion of two metals with lattices of different types, theory, incl. dislocations *(Russian)* 8–7165
- adsorption of H_2, interaction between gas atoms on approach to surface 8–14609
- amorphous, electronic and vibr. props. 8–10151
- amorphous, icosahedral microclusters as possible structural unit 8–34439
- anelastic study of intrinsic point defects, irradiation effects 8–47323
- anisotropic metals in perpendicular mag. field, surface impedance behaviour *(Russian)* 8–39145
- annealing temp. for radiation damage field, correlation to melting point in DPAD expts. 8–43737
- anodic dissolution, ionic mass exchange effects on hydrodynamic conditions 8–3349
- atomic absorption spectrometric analysis, of laser-vaporised solid samples 8–7252
- atomic defect config. from X-ray and neutron scattering studies 8–47322
- atomic defect configuration from high resolution TEM 8–47324
- atomic defect props., conf., Argonne, IL, USA, (Oct. 1976) 8–47318
- Auger kinetic and relax. energies in atoms and solids 8–15297

metals continued
- axisymmetric drawing simulation, numerical method development 8−30206
- BCC, computer simulation of stacking faults 8−30653
- BCC, computer simulation of twin boundary and twinning dislocation struct. 8−30644
- BCC, dipole interactions and trapping effects of positive muons 8−47342
- BCC, high temp. positron annihilation 8−47421
- BCC, influence of screw dislocations on cryst. lattice rotations during deform. *(Russian)* 8−6966
- BCC, lattice vibrs., axially symm. and ang. force models 8−26637
- BCC, relation between elastic energies of dislocations and choice of slip system *(Japanese)* 8−18656
- BCC, struct. of twinning dislocations, computer simulation 8−2140
- BCC metal crystallite, mechanisms of growth of vacancy complexes 8−14338
- bimetallic interface energies 8−2545
- binding energy spectrum approach to grain boundary segregation 8−15409
- biometallic interfaces, dynamic response of electrons and dispersion force fields 8−47845
- bulk deformation processes 8−31459
- cast, nonmetallic inclusions, size frequency distrib. determ. 8−39989
- cavitation erosion 8−48538
- charge density perturbation around impurities 8−39058
- chemisorption exam., appl. of field emission techniques 8−35255
- coatings, corrosion testing standardisation 8−11454
- combustion, laser initiated, time resolved spectroscopy 8−7207
- compressibility in presence of anharmonic interaction *(Russian)* 8−23763
- corrosion, metallurgical viewpoint *(Japanese)* 8−39947
- corrosion, use of XPS 8−15586
- corrosion testing in boiling $MgCl_2$ 8−39962
- corrosion theory, rel. to protective coatings 8−19918
- coulostatic deposition at underpot., pot. relax., chem. effects 8−48335
- coulostatic deposition at underpot., pot. relax. 8−48334
- crack propag. mech. and fracture toughness, microstruct. effects 8−19859
- creep, point defects 8−48462
- creep movement of dislocations, effect of stress distrib. of grain boundaries *(Russian)* 8−27564
- creep theory, nonlinear integral eqn., existence and approx. solns. 8−13931
- creep-electron emission relation 8−6994
- cubic, relation between surface energy and Debye temp. 8−10271
- cubic, relationship between defect resist. and bulk resist. at melting temp. 8−6344
- deformation resistance determination, plastometer 8−7121
- deformation strengthening and anisotropy prediction *(Russian)* 8−27533
- deformed, degree of deform. effect on thermophys. props. at high temps. 8−26694
- deformed, dispersion-hardening, theory of strength *(Russian)* 8−35424
- density of states and spin susceptibility, normal and giant surface effects 8−10322
- deposition condition relationship with struct. and props. 8−11369
- diamagnetic domains, helicon attenuation *(Russian)* 8−10721
- dielectric function, inverse RPA calcs. at metal-vacuum interface 8−14789
- diffusion, correlation with entropy of fusion 8−43109
- diffusion, radiation effects 8−47555
- diffusion of H isotopes, nonclassical processes 8−47591
- dislocation multiplication, deformation conditions and initial defect struct. effects 8−30614
- dislocation struct., X-ray diffr. exam. by vibrating crystal method *(Russian)* 8−34519
- dislocation-impurity interactions, electrical and elastic interactions *(Russian)* 8−22758
- ductile fracture surfaces, statistical characts. of microcracks *(Russian)* 8−23807
- dynamic stability of dislocation sub-boundaries during straining, computer simulation 8−30635
- dynamic study of defect mobility using HVEM 8−47327
- elastic constants, resonance method for determ. within 80-300K temp. range 8−46918
- elastic precursor wave model in shock loading, polycrystalline sample 8−1601
- electrical resistivity, comparison between first principles form factor and empirical form factor 8−2463
- electrical resistivity, temperature-depend., continuous contactless meas. method 8−21171
- electron energy loss spectra, threshold potentials and X-ray absorption, band struct. determ. *(Russian)* 8−39009
- electron irradiated, threshold energy for atomic displacement, bulk modulus and interatomic pot. 8−38754
- electron penetration and energy transfer in solid metal targets, film bulk method 8−2963
- electron state effect on mech. props. and electroplasticity 8−14725
- electronic structure, positron annihilation studies *(Japanese)* 8−18951
- electroplastic deform. 8−3200
- electroplating, for engineering components and structures 8−35587
- emission spectrochemical analysis using glow discharge, Grimm lamp struct. and discharge characts. *(Japanese)* 8−27867
- energy gap determ. by optical methods *(Russian)* 8−30867
- entropy/free energy relation 8−15368
- equation of state Gruneisen formulation 8−30733
- equilibrium vacancy conc. 8−38694
- exoelectron emission from surface during fatigue damage 8−44217
- fatigue and inelasticity testing apparatus in symmetrical bending mode, 36 to 330 Hz 8−27722
- fatigue crack growth calc. 8−27638
- fatigue crack growth rate characts., fracture mechanics fatigue design methods 8−7034
- fatigue failure, similarity eqns. in components with stress concentration factors, coeff. anal. 8−39907
- fatigue failure, similarity eqns. in components with stress conc. factors, error estimation 8−39908
- fatigue fracture-stacking fault energy correlation *(Russian)* 8−15499
- Fatigue lives of metals up to crack initiation 8−7050
- FCC, atomic defects, computed electron microscope images 8−26392

metals continued
- FCC, climb model of extended dislocations 8−6059
- FCC, dipole interactions and trapping effects of positive muons 8−47342
- FCC, epitaxial growth, role of lattice fitting 8−34728
- FCC, Frenkel pair annihilation, discrete lattice model *(Russian)* 8−10042
- FCC, grain boundary energy and self-diffusion, effect of solute segregation 8−15412
- FCC, investigation of stage-I_e interstitial nature by TEM 8−47329
- FCC, muon diffusion, theory 8−22883
- FCC, self-diffusion calc. 8−10212
- FCC, structure and dynamics of multiple interstitials 8−47330
- Fermi surface, effect of nonlocal potential, phase shift parametrisation scheme 8−43289
- ferromagnetic cubic, mechanisms for elec. field gradients 8−43340
- ferromagnetic metal polycrystals, model for EM generation of US guided waves 8−22236
- ferromagnetic tetals, simple theory of spin-wave relax. 8−19231
- ferromagnetism, disordered, in crystalline metals 8−19207
- fibre materials, thermal and elec. conductivities 8−10419
- flat plate, electromagnetic-acoustic conversion 8−44320
- flow during rolling *(Russian)* 8−27561
- foil, continuous electrochemical perforation *(Russian)* 8−20020
- foil photoetching profile, quantitative obs. 8−39943
- foil with thin film coating, failure by laser pulse *(Russian)* 8−23561
- forming, limit anal. appl., book contrib. 8−11140
- fracture toughness, micromechanical modelling *(Russian)* 8−31504
- fracture toughness and temp.-rate sensitivity of plastic flow stress 8−35501
- fracture toughness determ. in conditions of similarity to local fracture *(Russian)* 8−31505
- glass-metal material, relation between struct. and props., prod. by hot densification 8−11145
- grain boundary structure model, polyhedra packing 8−47393
- hard, comparison of stress intensity factor depend. on notch base dia. with alumina *(German)* 8−35470
- HCP, atomic struct. of defects 8−30611
- HCP to BCC phase transition and melting 8−14463
- heat conduction, thermal wave, steady-state soln. 8−9527
- heat resistant charact. extrapolation by temp.-time methods, creep data 8−15477
- heat treating and melting with scanning laser or electron beam 8−11406
- heating by laser radiation, calc. allowing for thermal props. temp. depend. 8−30770
- heavy metals in aqueous solns., adsorption on inorganic minerals 8−49006
- hexagonal crystal structure, anisotropy of elastic props. calc. *(Russian)* 8−23749
- higher sound harmonic generation in momentum nonlinearity regime *(Russian)* 8−38783
- Hume-Rothery's class-I metals, Engel-Brewer theory and related phys. props. 8−2059
- impurities, H and He, electronic struct. 8−10402
- intense optical irradiation, behaviour of surface temp. and refl. coeff. 8−15260
- interaction energies between point defects 8−47360
- interbubble fracture mech. of blister form., He irrad. 8−6109
- interferometer for 90° reflecting angle meas. *(German)* 8−164
- interion interaction and interion force constants, effective pots. in nonlocal pseudopot. method *(Russian)* 8−22684
- interstitial diffusion, cooperative nature 8−47556
- ion beam analysis of light elements using nucl. reaction technique *(Japanese)* 8−31744
- ion bombardment, excitation of plasmons 8−34793
- ion plated soft film, friction and wear 8−15549
- ion surface treatment 8−11415
- IR window materials, diamond machinability 8−5586
- irradiated, self-interstitial type defects, combined single-double alignment channelling backscatt. 8−34561
- laminated, laws governing development and retardation of fast cracks 8−15527
- laser irradiation effects on struct. and props. *(Russian)* 8−30665
- laser produced shocks rel. to material damage 8−31285
- lattice decohesion, due to H_2 8−15533
- lattice dynamics, Krebs and Cheveau models, three-body forces inclusion and equilibrium condition 8−47480
- lattice dynamics and three body interaction 8−10139
- lattice dynamics of HCP metals 8−22795
- light reflection, adatom characts. depend. 8−10918
- mechanical degradation of PMMA in presence of metals *(Russian)* 8−31422
- mechanical properties, effect of H_2, methodological approach to study *(Russian)* 8−31507
- mechanical stability, loss of physical model and neck formation *(Russian)* 8−6969
- melting by electron beam sweeping device 8−6889
- melting in suspended state, large vol. and mass samples *(Russian)* 8−44036
- metal, inelastic scatt. of electrons by vibrating dislocations 8−26853
- metal-gas interactions, kinetics and mechanisms, book contrib. 8−11558
- microplasma welding, heat propagation in parent metal *(Russian)* 8−15642
- mirror, diamond turned, optical figure inspection by interferometry 8−5545
- mirror substrates, manufacturing processes, review 8−5542
- mirrors for CO_2 laser fusion systems, material constraints and fabrication 8−5476
- monovalent, low temp. eqn. of state 8−22820
- Mulliken electronegativities, rel. to work function 8−9096
- NDT using positron annihilation technique 8−3293
- NDT using positron annihilation technique 8−3294
- negative ion emission during microsecond laser pulse irrad. 8−2981
- non-Arrhenius diffusion and NMR relax. relationship 8−47568
- non-ferrous, recycling, system study, computer simulation 8−35278
- noncommensurate charge density wave dynamics in K-like metals 8−30913
- nonlinear mechanical response, Swift effect 8−35433

metals continued
  nonlinear photoelectric emission from metals by high power layer radiation review 8−48288
  nonsimple metals, calc. of elec. resist. and thermoelec. power 8−19019
  optical props., high-temp., from emissivity ang. depend. data 8−39519
  oxidation of metal with dispersed oxide phase, charged particle theory 8−19925
  phase stability and elastic const. 8−31387
  photosensitivity of semicond.-metal system, theory *(Russian)* 8−3357
  pinch effect on plastic deform. *(Russian)* 8−35426
  plasma arc refining melting, allowing two phase region and plotting distrib. functions *(Russian)* 8−31358
  plasma-arc refining remelting calc. *(Russian)* 8−18463
  plastic, work hardening, sintered, porous, irreversible deform. 8−19849
  plastic deform., constitutive relns. 8−42544
  plastic deform after pinch effect *(Russian)* 8−27563
  plastic deformation, grain size and microstrain from X-ray diffr. data, moment method *(Czech)* 8−31593
  plastic deformation review *(Russian)* 8−19825
  plastic flow, during extrusion, computer simulation 8−31491
  plastic flow, finite element approach to axisymmetric problems, METFLO 8−31490
  point contact, α^2F depend. of electrical impedance 8−47848
  point defect clusters, TEM obs., review 8−26564
  point defect solute interactions 8−47410
  point defects, lattice theory 8−47321
  polymer-metal pair adhesive interaction during friction 8−3227
  porous, shock speed meas., continuous recording 8−5708
  porous, stresses in deform. region during cold rolling 8−11241
  porous, thermal conductivity meas. 8−18150
  positive muon spin depolarisation, defect study 8−47314
  positron density distribution, temp. effects 8−47739
  positron lifetime spectra, anal. errors 8−19591
  positron self trapping conditions 8−47338
  positron trapping at dislocations 8−10091
  positronium in 'metallic' pore 8−35222
  powders, echo effect at low temp. *(Russian)* 8−34853
  protective coating of metal on metals and alloys, anticorrosion mechanism *(Rumanian)* 8−23853
  protective coatings, chemically vapour deposited 8−44261
  pulsed press. created by electron beam, effect on struct. and mech. props. *(Russian)* 8−34539
  pure, friction stress for high temp. creep 8−11289
  radiation characteristics estimation, classical electron theory *(Russian)* 8−38859
  radiation damage and hyperfine fields 8−38752
  radiative electron capture by channelled ions, theory 8−30685
  reactive, trapping of energetic H$^+$ ions 8−10096
  refractory, BCC, free migration of self-interstitials 8−47574
  refractory metal, strength charact., effect of thermal test conditions 8−39994
  refractory single crystal growth by plasma heating *(Russian)* 8−35292
  relaxation, rel. to defect struct. *(Russian)* 8−19801
  relaxation resistance testing using constantly loaded sample 8−39965
  RF size effect, line shape, exactly solvable models 8−43429
  RF size effect, small-angle scatt., exactly solvable models 8−47821
  scattering of conduction electrons with spin flip by dislocations 8−26852
  self-diffusion, atomic jump processes 8−47562
  self-diffusion, review 8−47561
  self-diffusion acceleration by dissolved H$_2$ *(Russian)* 8−34647
  self-interstitial atoms, review 8−47332
  shearing, scissors type, slip-line analysis 8−23761
  sheet, roll bending on machine with elastic element, bending moment determ. 8−6948
  sheet metal forming, strain hardening and strain rate sensitivity 8−7000
  SHG by surface polaritons, theory 8−9416
  silicide-metal coating system, thermal stresses *(Russian)* 8−13891
  simple single vacancy, relax. energy and form. vol. calcs. 8−38691
  slag-metal equilibrium, thermodynamics 8−44108
  sliding wear, surface topography and integrity effects 8−3235
  small particles, far IR absorption cross-section calc. 8−10879
  small particles, thermodynamics and paramag. props. of electrons 8−31051
  solidifying, heterogeneous nucleation 8−39754
  solution, association 8−15373
  static electrification, surface charge density 8−14797
  strength and corrosion tests, quantitative noncontact meas. of physical and geometric props. *(German)* 8−23909
  stress-strain time dependence based on nonlinear heredity, delayed yielding 8−48452
  submonolayer films on metallic surface, struct. and props. review 8−38972
  sulphidation, high-temp., thermobalance for studying kinetics 8−23876
  superconducting and normal, attenuation, EM generation and detection of US shear waves 8−39261
  superconducting transition, effect of change of electrostatic interaction of defects 8−10610
  surface, clean and adsorbate covered, exptl. aspects of angle-resolved photoemission 8−15294
  surface, clean or oxidised, chemisorbed amine, surface ionisation, mass spectra expts. 8−2360
  surface, dense metallic, diffr. intensities in He scatt., topographic curves 8−15274
  surface, Friedel oscillations around adatom 8−30967
  surface, light refl. from dye molecule monolayer 8−48246
  surface, linearised secondary electron cascades, surface and subsurface sources 8−11036
  surface, linearised secondary electron cascades 8−11035
  surface, low energy atom scatt., theory 8−39648
  surface, mirror electron microscopy for total electron refl. coeff. determ. 8−5994
  surface, near point-defect, annealing, diffusion theory and Monte Carlo anal. 8−47646
  surface, nonlinear photoelectric effect, laser-induced electron emission 8−19638
  surface, photoionic emission 8−48287
  surface, reflectivity, single laser pulses, plasma burst effect 8−19609
  surface, thermionic-field emission anal. 8−19642

metals continued
  surface, thermomechanical treatment by ionic bombardment *(French)* 8−11418
  surface, van der Waals interaction with mol. effect of spatial dispersion 8−10534
  surface, vibr. motion of adsorbed molecules, inelastic scatt. of electrons, model 8−34718
  surface diffusion and atomic interactions, FIM obs. 8−34716
  surface energy of cubic metals, theoretical eqn. 8−43234
  surface finish after diamond turning, differential light scatt. meas. 8−5544
  surface impedance in mag. field, theory *(Russian)* 8−6427
  surface impedance of metal in mag. field normal to surface, reson. singularities 8−10495
  surface investigation, IR spectroscopy *(Japanese)* 8−19470
  surface layer dissolution, effect of rate on softening during plastic strain 8−39957
  surface rippling induced by surface tension during laser melting and alloying 8−11405
  surface roughness meas. using laser speckle 8−8383
  testing, thermoelec. temp. meas., error anal. 8−19975
  thermal desorption of adsorbed atoms, dislocation effects 8−47670
  thermal expansion coeff. of defect-entropy volume 8−26707
  torsional creep under accelerator irradiation, meas. instrument 8−3262
  ultrafine particles, retardation effects on optical props. 8−6677
  US velocity, effects of deform. and high temps. 8−26626
  vacancies and interstitials, electronic struct. 8−47320
  vacancy concentration 8−47319
  vacancy defect mobilities and binding energies obtained from annealing studies 8−47325
  vacancy form. vol. from positron annihilation meas. 8−47339
  vacancy formation parameters and Gruneisen constant 8−22709
  vacancy-solute interaction 8−47409
  valence conduction band transitions, appl. of modulation spectroscopy with synchrotron radiation 8−4710
  vaporization rate improvement in electron-beam vaporizers with water-cooled crucibles 8−21266
  vapour columnar arc instability, mag. fields effect, up to 67 kA 8−9893
  vessel with glass fibre reinforced plastic reinforcing layer, carrying capacity 8−39876
  Vibration modes of split screw dislocations in BCC metals 8−22804
  void lattice, plasma oscill. 8−10382
  wear metals in lubricating oils, spectrographic anal. 8−20114
  whisker thickness meas. using MII-4 microinterferometer 8−166
  work-hardening, plastic, sintered, porous, irreversible deform. 8−35459
  X-ray emission edges, effect of incomplete phonon relaxation 8−35227
  X-ray mass absorpt. coeffs. meas. by thin film technique 8−2942
  X-ray photoelectron and absorpt. spectra, edge singularities in spin-depend. final-state interactions 8−6810
  X-ray scattering, reson., theory 8−11017
  X-ray spectra, effects of correlation interaction of electrons with deep holes 8−31279
  XPS and X-ray absorption spectra, thermal broadening of core levels, many-electron effects 8−31284
  Young's modulus anomalies under Shoenberg effect conditions *(Russian)* 8−35018
  C fibre composite/metal joint, fatigue research 8−15497
  H determ. spectrochemical method *(Russian)* 8−31748
  H-He fluid, phase diagram and transport props., planetary appl. 8−28554
  NaCl-metal system, sliding and rolling electrification 8−14796
  O, determ. in metals, neutron activation anal., sensitivity 8−15742
  Si and N, simultaneous determ. by deuteron irrad., nucl. microprobe anal. 8−7285

metalworking
  see also bending; cold working; forging; hot working
  plastic deformation analysis, plane strain 8−27586
  sheet metal, punch stretching, friction coeff. determ. method 8−27647
  sheet metals, strain-induced changes in mech. props. and press formabilities 8−19781

metamagnetism
  antiferromagnet, single-ion anisotropy, theory of metamag. phase transitions 8−39327
  Ising model, phase diagram and crit. points, const. coupling approx. 8−34991
  l 8−10657
  layer systems, mag. polaritons 8−31060
  review of materials, theories and phys. props. 8−19248
  transition, metamagnetic, in magnets with multi-sublattices *(Russian)* 8−23267
  CeAl, mag. props. and mag. struct. 8−6517
  CeSb, mag. transition, effect of applied mag. field 8−43590
  CoCl$_2$, one-magnon Raman scatt. 8−43877
  FeCl$_2$, metamagnetic, sound propag. near tricritical point 8−48024
  FeCl$_2$, one-magnon Raman scatt. 8−43877
  FeCl$_2$.2H$_2$O, and FeCl$_2$.2D$_2$O, Raman scatt. at metamagnetic phase transitions, mag. hysteresis 8−14958
  PrAl, annealed, mag. props. and mag. struct. 8−6517
  TbF$_3$, mag. phase diagram, crit. and tricrit. behaviour 8−14959

meteor trails *see meteors*

meteorites
  see also meteors; micrometeorites
  Abee, noble gases and gas-rich fractions, stepwise heating study 8−49403
  Allende, ^{33}S anomaly 8−49402
  Allende, Ba and Nd isotopic anomalies in Ca-Al-rich inclusions 8−32409
  Allende, Ca, Mg isotopic comp. of individual crystals, direct loading technique 8−32417
  Allende, Ca isotope anomalies in Ca-Al-rich inclusions 8−32410
  Allende, chondrite, occurrence of Fe-Ni-Cr-S-O compounds *(French)* 8−32411
  Allende, excess ^{26}Mg in anorthite crystal, ion microprobe obs. 8−40882
  Allende, molybdenite in Ca-Al-rich inclusions 8−12170
  Allende, noble gases and gas-rich fractions, stepwise heating study 8−49403
  Allende, search for ^{41}K anomaly prod. by proton-associated alpha-irradiation 8−49398

meteorites continued
Allende, search for fission tracks from superheavy elements 8−32415
Allende meteorite chondrules, primordial mag. field meas. 8−49399
Allende meteorite inclusions, trace element distrib. in mineral separates and genetic implications 8−49400
Allende meteorite trace elements, results from coarse-grained inclusions 8−49401
C1 chondrites, Earth and Moon origins, siderophile and volatile elements 8−7892
carbonaceous chondrite matrix composition 8−12168
carbonaceous chondrites, constraints on origin of chondrules and inclusions 8−32421
carbonaceous chondrites, organic polymer anal. rel. to organic matter origin in early solar system 8−20767
Carlton, octahedrite, analytical electron microscopy of plessite struct. 8−32422
chondrites, H- and LL-group, trace element content 8−12166
chondrites, LL and C1, C, N and noble gases, origin and abundances rel. to terrestrial planets 8−28559
chondrites, nebular condensation of moderately volatile elements 8−12163
chondrites, nebular condensation of moderately volatile elements, comments and reply 8−12164
chondrites, noble gases, exposure ages rel. to ^{26}Al ages 8−7949
chondrites, severely reheated, metallic microstruct. and thermal history 8−12167
chondrites, U isotopic comp. 8−4157
chondrites and 'mysterite' as late condensate in solar nebula 8−7946
chondrites primordial noble gases, abundance pattern established in solar nebula 8−32424
CI meteorites, new sulphide phase, cubanite discovery 8−12173
deep-sea sediment magnetic spherules, ^{40}K/^{41}K ratio rel. to possible meteorite origin 8−11874
Dhajala, H-group chondrite, strewn-field fragments spatial distrib. 8−32423
Dhajala, orbital elements determ. for meteoroid 8−36540
Dhajala, unequilibrated H3 chondrite, props. 8−32425
Dhajala H-group chondrite, cosmogenic and radiogenic noble gases 8−16360
Earth surface large scale circular structures, possible impact craters 8−28237
enstatite achondrites, origin, E-type asteroids as parent bodies 8−32384
eucrite parent body comp. and evolution, evidence from rare earth elements 8−20766
fireballs photographed in central Europe, classification and relation to meteorite falls 8−36534
Gow Lake, N.Saskatchewan, terrestrial meteorite impact crater 8−7640
impact, craters, internal struct. model 8−44825
impact and explosion craters on Earth and Moon 8−45296
impact ejecta, depend. of mass and energy lost on planetary escape vel. 8−45295
initial and terminal mass calc. 8−20769
isotopic anomalies, presolar grains from supernova ejecta 8−20845
Italian chondritic meteorites, Cu, Ir, Pt and Au content by destructive neutron activation anal. 8−12172
Karoonda (C4) chondrite, volatile/mobile trace elements abundances 8−20768
Kirin, China, 1976 March 8, large scale shower obs. *(Chinese)* 8−24495
Leoville, type III carbonaceous chondrite, ^{57}Fe Mossbauer spectroscopy 8−49404
Libyan Desert Glass, redox form. conditions, EPR obs. of as-received and irrad. samples 8−28228
Luna 24 soil samples, meteoritic and submeteoritic metallic phases 8−32367
Marjalahti, VVH cosmic ray nuclei abundance from tracks in olivine 8−36414
Mistastin Lake crater, Labrador, Sr isotopes and trace element geochem. of impact melt 8−32105
Mundrabilla, octahedrite, chem. obs. by neutron activation 8−12171
Murchison, α-hydroxycarboxylic acids discovery 8−45294
Murchison (C II), search for purines and pyrimidines 8−7948
Nordlinger Ries giant meteorite impact crater, K-Ar and fission track dating 8−28236
ordinary chondrites, W abundance and distrib. 8−32412
Orgueil, Ni and S abundances correl. in phyllosilicates 8−12169
pallasites, mineralogy and chemistry 8−7945
pallasites, olivine-metal texture formation 8−7944
parent body era, evidence for primordial mag. field 8−45293
Pasamonte eucrite, formation age and history 8−32413
preservation in Antarctic ice cap 8−36541
presolar grains, isotopic anomalies prediction in K and Ar 8−28761
presolar grains, prod. by supernovae 8−24520
solar nebula, charged dust accretion rel. to Fe, stone and planetesimal formation 8−28548
St. Mesmin brecciated chondrite, noble gases abundances rel. to irradiation history 8−28593
stony, ^{53}Mn determ. by activation anal. for cosmic ray effects investig. 8−12018
Supuhee H6 chondrite, chemistry of 'mysterite'-bearing clast 8−7947
Tieschitz, primitive H3 chondrite, effects of thermal metamorphism on trace elements 8−20765
Tunguska event, comet collision with Earth 8−49390
Tunguska explosion, energy, atm. inhomogeneity, comment 8−20424
Tunguska meteorite, collision between Earth and comet 8−32396
ureilites, trapped noble gases in bulk samples and C-rich veins 8−40883
Vigarano-type carbonaceous chondrites, petrographic vars. 8−32420
volatiles source, abundance in Mars and Earth atm. 8−36482
^{26}Al content of stony meteorites with gas losses 8−32418
Ca-Al rich inclusions, origin rel. to cosmoradiogenic ghosts 8−12162
Fe, group IAB, silicate inclusions, rel. to anomalous stony meteorites 8−32416
Fe meteorites, Ar, Kr and Xe isotopic abundances 8−12165
Fe meteorites, group IC, comp., mineralogy and origin 8−32414
Hf, determ. in silicate rocks, meteorites and lunar samples by neutron activation 8−20547
Li and halogens determ., rel. to cosmochemical processes 8−12111

meteorites continued
Ne-E, anomalous meteoritic Ne component, thermonuclear origin, supernova models 8−45292
Yb isotopic and elemental abundances 8−32419
Zr, determ. in silicate rocks, meteorites and lunar samples by neutron activation 8−20547

meteoroids
see also meteorites; meteors
albedo and size distrib. in 0.3-4.8 AU range 8−36539
density distribution in vicinity of planet 8−20762
Dhajala meteorite, orbital elements determ. for meteoroid 8−36540
fireballs photographed in central Europe, trajectories, orbits and classification 8−36534
mass distribution function for large meteoroids 8−49394
mass scale and meteor emissions at max. brightness 8−20761
micrometeoroid data from Helios 1 8−24485
micrometeoroid orbits, Helios obs. 8−20731
stream widths, rel. to zodiacal light interp. 8−4156

meteorological instruments
see also anemometers; barometers; hygrometers
acoustic-microwave Doppler radar system, wind and wind shear meas. at Dulles Airport 8−32233
aircraft-borne instruments for meas. monsoon clouds elec. parameters 8−7792
Campbell-Stokes sunshine recorder rel. to Dirmhirn global radiation recorder *(German)* 8−44953
electronic high-resolution rainfall intensity recorder and totaliser 8−7793
geostationary weather satellites, global network *(German)* 8−24389
hailpad calibration, comment 8−3986
HF radio acoustic sounder, atm. wind and temp. remote meas. 8−32235
Japanese weather satellite, on board equipment, geostationary orbit 8−4076
mean value data acquisition system *(German)* 8−16220
ocean buoys, environmental data acquisition 8−36287
optical wind and precipitation sensors *(Japanese)* 8−16207
parachute dropsonde as vertical motion sensor 8−16185
pressure jump detector array, gust front detect. at Dulles Airport 8−32234
radar echo systems for upper midwestern U.S., analysis 8−16183
radar for mm wave propag. expt. *(Japanese)* 8−16208
radiometers, hemispherical soft dome net type, recirculating purging system 8−3984
rain gauge, simplified optical path-averaged, based on scintillation detect. 8−40674
rain gauge, standards rel. to homogeneous record of monthly rainfall totals for Norwich (1836 to 1976) 8−3886
tri-Doppler radar, tetrahedral scan appls. 8−16184
visible IR spin-scan radiometer, on Japanese weather satellite 8−49290
wind profile determ. X-band solid-state radar system 8−12028

meteorological optics *see atmospheric optics*

meteorology
see also climatology; wind
W.Africa, criterion for locating subtropical high, rel. to Sahelian drought 8−7718
air pollution meteorology, rel to 1976 USA Clean Air Act amendments 8−11989
analysis of flood freq., storm prediction techniques 8−11976
Antarctic Ocean, interdisciplinary studies 8−11915
Asian monsoon effects on ang. momentum and kinetic energy balances in tropics 8−40630
Asian summer monsoon, hemispheric simulation 8−40629
Asian summer monsoon, simulation by general circulation models 8−40637
asynoptic data continuous assimilation, dynamic-statistical approach 8−3901
atmosphere sound propagation, effects of meteorological phenomena, historical review 8−15
atmosphere surface layer parameterisation, influence of active soil layer *(Russian)* 8−44924
aviation weather, automation in prediction procedures 8−49080
S.Baltic Region weather severity optimum *(Russian)* 8−7723
Baltic Sea region, evaporation-precipitation during IHP 8−44865
Bay of Bengal and Arabian Sea, cyclones and depressions during 1975 8−32148
Belgium, 1975 Dec.-1976 Nov., analysis *(French)* 8−32198
Belgium, fog freq. *(French, Flemish)* 8−11978
Birmingham, England 1917/18-1976/7 winters, snow depth records 8−44890
blocking anticyclones, prediction possibilities, comments 8−44974
blocking problem, role of wavegroup vel. 8−3892
boundary layer, numerical calc. method for meteorlogical variable fields 8−7733
boundary layer heat and pulse transport *(Dutch)* 8−3890
British Isles, 1976 June 23-July 8 heat wave 8−20471
British Isles, meteorological parameters affecting climate 8−7745
British Isles, regular rainfall meas. since 1677, historical review 8−36248
British Isles, systematic rainfall recording since 1677, tercentenary 8−44950
Cambridge, England, sea-breeze front passages 8−44973
Campus Weather Service of Pennsylvania State Univ. 8−3849
chronology of development 8−45452
cloud motions, automatic tracking system using weather satellite picture sequences 8−45022
composite charts, experimental objective classification 8−3906
N.Cornwall, record March rainfall in one day 8−44971
cyclogenesis and anticyclogenesis, optimum modelling of Earth's topography 8−28256
cyclone formation, kinetic energy budget 8−16127
cyclonic weather conditions and short period oscills. in F-region 8−16234
daily temps. and sunshine, spatial variability over uniform terrain 8−3887
data collection and processing system at Leningrad TV tower 8−4004
digital phasemeter optical threshold determ., meteorological Doppler radar station appl. *(Russian)* 8−20560

meteorology continued
diurnal surface temp. range sensitivity to changes in physical parameters 8−3875
dry and wet days occurrences, Markov chain model 8−7698
dynamical meteorology, 350 years of development 8−44970
education, textbook survey 8−16087
S.England, 1977 January 25 rapid pressure var. 8−44972
environmental impact assessment, air pollution problems 8−49124
equatorial vortices over South China Sea and Malaysia during winter monsoon 8−40633
exceptional weather in 1976 over Europe 8−36251
forced plume characteristics 8−18286
forecasting, complex statistical long-term method 8−16129
forecasting, moisture processes in quasi-geostrophic model 8−7696
forecasting dry thermals for gliding 8−49103
forecasting of diurnal average air temp. in N.Vietnam 8−3903
forecasting SW.monsoon onset over Kerala, India 8−32158
forecasts for flat country using Ficker's rules *(German)* 8−45026
four-dimens. analysis of meteorological information in GARP 8−7740
functional dependency recognition using meteorological data *(Russian)* 8−40609
geopotential field numerical analysis using meteorological information 8−7814
geostrophic four level model, predictability, effects of grid point numerical errors 8−40642
global general circulation, 4th order model 8−11952
halo displays, meteorological conditions 8−36282
heat wave and cold wave days in Indian subcontinent 8−7699
hurricane Camille, wind speed and direction, ocean wave height and barometric press. meas. 8−36254
hydrodynamic forecasting problem, coupling-moment atmospheric turbulence characts. 8−7734
hydrometeorological series stationary properties study, Oise river basin appl. *(French)* 8−36210
Indian monsoon, spectrum anal. appl. 8−44957
Kew, monthly potential evaporation totals for 1698-1976 period 8−7724
La Porte (Indiana) precipitation anomaly reexamined 8−49076
La Porte precipitation anomaly, relocation effects 8−49077
Landsat 2 cloud imagery rel. to future meteorological obs. systems 8−40626
long-range prediction of averaged meteorological fields, theoretical scheme 8−3905
macroprocess classification, statistical methods 8−16132
mapping of rainfall by radar 8−24397
mesoscale divergence of horizontal vel. field and press. gradient force, rel. to momentum transport 8−11954
mesoscale winds aloft, numerical prediction models, verification 8−16110
Meteosat, role in obs. 8−36219
Meteosat, single cabinet telecommunication equipment 8−36419
Meteosat ground facilities, European/W.Indian network *(French)* 8−45183
Meteosat image processing 8−36297
Meteosat imaging payload, functional aspects 8−36424
Meteosat launch operations 8−36425
Meteosat programme organisation and management 8−36422
METEOSAT role in global observing system *(German)* 8−36437
Meteosat spacecraft, elec./mech. configurations 8−36423
Meteosat system, missions and performances 8−36421
microclimatic and mesoclimatic stability indices, statistical relation, rel. to pollutants diffusion *(Spanish)* 8−44964
micrometeorological statistical tests 8−3866
SW.monsoon, orographic effects, review 8−44962
monsoon circulation and rainfall S.Asia 8−44958
monsoon depressions, life history, struct. and movements 8−44963
SW.monsoon over India, onset and northern limit 8−49102
monsoon rainfall rel. to summer solar radiation and temperature 8−32154
monsoonal quasistationary ultralong waves, real data numerical prediction over global tropical belt 8−40631
monsoons and Indian Ocean equatorial currents variability, modelling *(Russian)* 8−44839
Mount Kenya, daily weather cycle, obs. on Lewis Glacier 8−24346
nonlinear least squares appls. 8−16182
North Sea, wave and swell forecasting 8−7658
numerical weather computation, modified implicit scheme 8−11959
numerical weather prediction model, limited area nested, for Australian region 8−49111
numerical weather prediction rel. to monsoon problem 8−40635
Observatorio Astronomico Nacional, Baja California, climatological and meteorological characts. 8−20635
omega equation, rederivation, appl. to synoptic situations 8−49106
operational forecasting using automated guidance 8−49147
Oxford, England, private records of rainfall in 1767-1814 period 8−44948
W.Pacific high long-term fluctuation, tropical ocean effects *(Chinese)* 8−16117
Paris region, events recorded in diary of Pierre Driart during 1522-35 period *(French)* 8−32199
persistence, runs and recurrence characts. of precip. 8−3865
planetary scale monsoon, mechanisms affecting structure and evolution 8−40639
planetary scale monsoons, theoretical problems 8−44956
potential evaporation, Priestley and Taylor α parameter for high latitudes 8−3833
Prague, Czechoslovakia, meteorological obs. since 1775 at Clementinum 8−49075
precipitation probability forecasts, nonparametric technique based on pattern recognition algorithm 8−44946
primitive equations model for limited area forecasts 8−11956
public forecasts at Louisville, Kentucky, skill trends 8−49073
rainfall prediction for attenuation prediction in Earth-space paths *(French)* 8−49062
remote sensing *(Japanese)* 8−16205
remote sensing of environment, automated digital data handling 8−3960
river management operational system development using weather radar 8−40718
satellite imaging, A/D conversion for digital processing *(Japanese)* 8−7711

meteorology continued
satellite NOAA, digital signal processing techniques *(Japanese)* 8−24424
S.E.Scotland, potential moisture deficit, 200-year series 8−7746
E.-central Scotland, snow and sleet freq. var. in 1708-1975 period 8−44951
seasonal forecasts based on pressure anomaly rules, accuracy 8−7744
severe storm warning using Doppler radar 8−49148
severe weather computerised forecasting system 8−20498
Siberian anticyclone, intensity rel. to annual motions of Earth rot. and excitation poles *(Russian)* 8−40461
Sierra Leone, monsoon characts. 8−7693
solar activity-weather correlation, anal. 8−40628
solar and wind power, meteorological aspects 8−36250
solar equatorial rotation, rel. to climatic changes 8−7960
Somali coast, wind stress, spatial and temporal var. 8−49092
Soviet meteorological satellite development review 8−16266
stratiform clouds, horizontal dimensions rel. to synoptic situation 8−20490
strong gales in E.Atlantic region, jet stream effects in subtropical lats. *(Spanish)* 8−44966
summer monsoon, mid-tropospheric cyclones 8−40636
summer monsoon over S. Asia, break and active phases 8−3912
summer monsoon rel. to radiation budget 8−40664
summer monsoons over Africa and India, comparison 8−32149
surface atmospheric pressure field, vars. in periods of high and low geomag. activity 8−36245
Switzerland, 1975 August rainfall at Vitznau on Lake Lucerne 8−7743
synoptic scale studies using Numbus 6 SCAMS 8−16114
synoptical eddy scales, rel. to Rossby waves stability *(Russian)* 8−44923
Takoradi-khartoum air route, general synoptic climate 8−28300
tornado vortex simulation at Purdue University 8−40677
tornadogenesis, numerical model of vortex growth 8−49114
tropical cyclone nested grid model, noise control 8−11957
tropical cyclone statistical prediction models, Monte Carlo significance testing 8−44943
tropical cyclones, photometric method for estimating cloud cover from satellite data 8−4007
Tropical Wind, Energy Conversion and Reference Level Experiment (TWERLE), results 8−40605
Tsinghai-Tibetan high movement, annulus simulation, summer flow pattern forecast of high troposphere 8−32211
typhoons transformation, forecasting via extratropical circulation 8−3908
continental United States, 1976-7 winter and prediction of extreme weather 8−49078
USSR, air temp. and precipitation var., five-year changes 8−16130
USSR Hydrometeorological Service, objectives and prospects 8−7770
N.Vietnam, cold intrusions forecasting 3 to 7 days in advance via discrimination anal. 8−3910
visual observation from space, by Salyut-5 astronauts *(Russian)* 8−40796
waterspout of 3 March 1977 at Iraklion, Crete *(German)* 8−16121
wave motions in tropical spectral expt. 8−3893
weather forecast verification, pattern recognition techniques appl. 8−11958
weather forecasting, adaptive learning network approach 8−40643
weather forecasting, balance eqn. soln. with min. correction of mass field 8−36246
weather forecasting, optimization of atm. model 8−20494
weather forecasting impact of meteorological satellites 8−7861
weather modification, physico-chemical agents *(French)* 8−3883
weather modification from cooling tower effluents at conceptual power parks 8−11951
weather modification projects, value assessment, hail suppression example 8−7713
weather prediction, numerical modelling of baroclinic instability *(Russian)* 8−44922
weather radar data transmission using VHF satellite links, expt. 8−20569
weather satellite, detection of 300 Hz pulses 8−36420
weather satellite data, complex demodulation 8−49177
westerly trough unusual SE. movement over India, 1974 December 8−32161

meteors
see also meteorites; meteoroids
atmospheric turbulent diffusion coeff. determ. from meteor trail photographs 8−45073
brightness, magnitude errors and magnitude scales of observers in Sweden and Czechoslovakia 8−36533
α Circinids, shower on June 4, Australian obs. 8−16359
collisional ionisation, thermalisation in atmosphere 8−36346
effective field of view for line sources, theory and obs. 8−36535
fireball of 1977 September 14 over Czechoslovakia 8−32408
fireballs photographed in central Europe, trajectories, orbits and classification 8−36534
Geminids, visible obs. over Waltair during 1961-66 period 8−40881
head echoes, heights 8−36537
hollow trains, expanding cylinder model 8−16357
intense showers and cometary origin 8−16358
Leonids, struct. and relative activity of radiants, 1972 November 8−45291
LF signals attenuation due to meteor trains 8−40726
magnitudes and enduring trains 8−49396
mass scale and meteor emissions at max. brightness 8−20761
mesosphere, meteors rel. to Na seasonal var. 8−36239
Orionid shower, simultaneous radar obs. at Ondrejov and Dushanbe 8−20760
Perseid stream, orbital element dispersion 8−20757
Quadrantids, overdense radio meteors, stream maxima position var. with meteor magnitude 8−12161
radar echo drift, deceleration 8−36538
radar echoes, atm. diffusion coeff. and height relation determ. 8−49187
radar obs. at Ondrejov and Dushanbe 8−20760
red afterglow in meteor wakes, origin 8−36536
showers, LF radio absorpt. events rel. to meteoric constituents ionization 8−40736
sporadic, sunrise effect on persistent radar echoes 8−20759

meteors continued
stream radiant determ. from single station obs. 8−20647
stream radiant distrib. using spherical harmonic analysis 8−20648
streams, statistical simulation of radar obs., algorithm 8−20763
telescope performance for meteor obs. 8−49319
televised spectra of meteor trails, photometry 8−20764
theoretical light cuarves and meteoric mass scale 8−49397
upper atmosphere, meteor wind obs. from Sheffield during January 1976 winter anomaly 8−45070
N_2^+ 4278 Å bands in spectra, quantitative anal. 8−45290
O I 5577 Å emission, vel. dependence 8−20758
O I 5577 Å forbidden line in meteor trains, emission mechanism 8−49395
OH emission, UV photometric obs. 8−7943

metering
see also ammeters; electrometers; frequency meters; galvanometers; level meters; ohmmeters; phase meters; volt-ampere meters; voltmeters; watthour meters; wattmeters; wavemeters
acoustic intensity meter for small machine in a room 8−33975
analogue meters, ballistic performance specification 8−41293
capacitance meter, linear direct reading, cct. *(French)* 8−237
capacitance meters, direct reading using auto-ranging 8−32835
dielectric constant meter, Tangens-2M, sensitivity and static charact. anal. 8−45651
digital impulse meter, 5 to 500 N range 8−191
digital meter for inductance coil parameters meas. 8−12718
HF elec. conductivity meter, semicond.-based, principles and advantages *(Hungarian)* 8−16815
multifunctional digital instruments for school use 8−12504
photosensor time characts. meas. meter 8−283
pointer instrument freq. response determ. by stroboscopic methods *(Polish)* 8−29102
time-interval series meter 8−176
vibration meter, dynamics, sensitivity and accuracy aspects *(Dutch)* 8−36999

meters *see metering*

metrology *see measurement*

metrosils *see varistors*

MHD *see magnetohydrodynamics*

MHD convertors *see magnetohydrodynamic convertors*

mica
alpha-particle tracks, prompt process and post effect 8−43053
asbestiform chain silicates, new minerals and struct. groups 8−28227
defects effect on epitaxial film struct. 8−26794
epoxy mica generator insulation, dielectric stress conc. influence on voltage endurance 8−15094
fluorophlogopite, glass-ceramic, thermal diffusivity, crystallisation effects 8−6190
fluorphlogopite, synthetic, luminesc. props. 8−19579
giant haloes, cleavage cracks enhancing radiation damage 8−7623
light scattering by flakes in water 8−40565
Mossbauer spectra of Fe in mica 8−23380
muscovite, fission track etching and annealing anal., dating appl. 8−32036
muscovites, Himalayan, fission track dating and U conc. estimation 8−40524
NMR, Fe^{2+} distrib. on octahedral sites, PMR investig. 8−15041
phlogopite, solubility in basic aqueous solns. under hydrothermal conditions 8−43127
reactor neutron detection, plastic with ^{65}Zn impurity used as nuclear track and activation detector 8−13346
β-spodumene-mica glass ceramics, phase evolution and TiO_2, MgF_2 additive effects, exam. 8−44089
substrate for Au thin film growth, surface defects on heterogeneous nucleation 8−47684
surface, static SIMS anal. 8−38922
surfaces, van der Waals interactions 8−30973
synthetic phlogopite, Fe content as function of growth rate 8−32089
Van der Waals forces, direct meas. 8−43461
Yugoslav biotites, search for giant halos assoc. with superheavy elements 8−16008
Au ion tracklengths in mica 8−38767
I ion tracklengths in mica 8−38767
ZnSe-mica epitaxial heterostructure, growth and struct. 8−43257

Micelle systems *see colloids*

microcalorimeters *see calorimeters*

microchemical analysis *see chemical analysis*

microcircuits *see integrated circuits*

microcomputers
microprocessor-assisted flow-through anodic stripping voltammeter for oceanographic appls. 8−36324
online vectorcardiographic analysis microprocessors and instrumentation 8−36020
pulsed NMR spectrometer incorporating microprocessor, operational, software and hardware details 8−45666
scientific calculating system with number-oriented microprocessor 8−36983
spectroscopy application techniques *(Japanese)* 8−16855
theodolite microprocessor selection, development, and programming 8−24218

microcopying *see microphotography*

microelectrodes
current and voltage clamp cct. for central nervous system neurons 8−24191
EMG electrode array for single muscle fibre activity measurement *(Swedish)* 8−24193
integrated micro multi-ion sensor using IGFET 8−40439
neurological, W-Re wire, CVD SiO_2 and Mo coatings, elec. cond. and bending props. 8−11752
neuromuscular miniature endplate potential online acquisition microcomputer system 8−36015
stepping motor presettable digital control for neurophysiological microelectrode drive 8−36079
thick film hybrid fabrication of pH-sensitive implantable bioelectrode *(German)* 8−40369

microelectronics *see integrated circuits*

microfarad meters *see capacitance measurement*

microfiche *see microforms*

microfilm *see microforms*

microfilming *see microphotography*

microforms
personal reader, Izon system, using distributed optics 8−29098

microhardness *see hardness*

micromanometers *see manometers*

micrometeorites
black magnetic spherules in marine sediments, origin 8−24494

micrometeoroids *see meteoroids*

micrometers *see micrometry*

micrometry
see also interferometry; strain gauges
arterial diameter meas. using US transit-time micrometer 8−7410
coplanar surface plane deviation meas. appl. *(German)* 8−163
digital micrometer/counter accuracy assessment *(Polish)* 8−45654
Ebert plates, wavelength determ. using microphotometer with micrometer attachment 8−16853
EM position transducers, dynamic characs., contactless displacement meas. appl. 8−41277
graticules, highly accurate calibration technique 8−24762
holographic interferometry appl. *(French)* 8−42305
optical ultramicrometer technique using composite diffr. grating 8−4589
photomicrometry with moire 8−4690
Talcott photoelectric micrometer for Bamberg zenith telescope latitude obs. *(Russian)* 8−4113

microphones
condenser microphones with flat freq., response up to 500 kHz 8−33968
ear simulators, constants meas., for earphone calibration 8−27960
environmental effects on microphones of various constructions 8−13872
outdoor noise monitoring microphone installation and calibration *(Japanese)* 8−42504
pressure microphones, closely spaced, signals cross-spectral density for acoustic intensity meas. 8−9514
probe-tube, for press. fluctuation meas. in flowing combustion plasma 8−18443
road vehicle microphone windscreens, acoustic sensitivity 8−38133
vibration pick-up-type ear microphone and two way communication device 8−1535

microphonics *see microphones*

microphotography
see also microforms
information storage and image retrieval, perforated film, mag. striped film, pocket microfilm reader 8−16779
laser irradiated solid target, picosecond microphotography 8−42828
microfilm recording without after-treatment 8−21243
stroboscopic method for picosecond diagnostics of rapid processes 8−47159
transparent material, small particle impact, high speed photomicrographic recording of shock wave 8−44342

microphotometers *see densitometry; photometers*

microprobe analysis, electron *see electron probe analysis*

microprobe analysis, ion *see ion microprobe analysis*

microprocessor systems *see microcomputers*

microprocessors *see microcomputers*

micropulsations
auroral and solar flare effects on long-period pulsations 8−28424
electron flux modulations rel. to geomagnetic pulsations 8−16247
horizontal propagation, from EM obs. 8−49231
ionosphere, geomag. pulsations damping 8−49218
ionospheric internal gravity wave effects 8−45143
ipcl props rel. to location of dayside cusp 8−20586
long-period, correl. of ground-based and satellite obs. 8−28423
long-period hydromagnetic waves, substorm-associated, longit. extent meas. 8−40772
low-frequency wave packet, passage across stand-off shock front 8−45138
magnetosphere, geomag. pulsations reson. interaction with high-energy radiation-belt electrons 8−28422
magnetosphere, particles pitch angle diffusion by bounce reson. 8−36408
magnetosphere hydromagnetic oscills., VLF noise intensity modulation 8−45139
magnetosphere ULF waves, cold plasma densities meas. comparison with VLF whistlers 8−28436
Pc 1 (pearls), stability of waves in magnetosphere 8−12051
Pc 1 propagation, five-station network obs. 8−40769
Pc 1 pulsations, relation to interplanetary plasma flow struct. 8−45142
Pc 3 and 4, evidence for control of pulsations by solar wind vel. 8−7837
Pc 3 magnetic pulsations, synchronous orbit obs. and assoc. interplanetary mag. field conditions 8−28438
Pc 3-4 and Pi 2, synchronous obs. at meridional and latitudinal stations 8−28425
Pc 4, satellite meas. of Poynting vector of standing MHD waves 8−45162
Pc 4-5, effects on Doppler shift of ducted whistler mode signals 8−4040
Pc 5, storm time, obs. at synchronous orbit, correl. with partial ring current 8−45163
Pc 5, substorms morphological features at high latits. 8−49232
Pc 5 pulsations, features during solar cycle 8−36406
Pi3, long-period irregular mag. pulsations, reviews 8−45164
Pi 1 in mid-latitudes rel. to interplanetary geomagnetic field sector structure *(Russian)* 8−12066
Pi 2, 1971 Dec. 24 and 1972 Jan. 4, high latit. obs. 8−28448
Pi 2, attenuation along meridional profile 8−28426
Pi 2, attenuation rel. to ionospheric conductivity 8−45101
Pi 2, lower ionosphere total cond. vars. effect on propag. 8−40730
plasmapause, correlated electron precipitation and magnetic IPDP events 8−28388
southern auroral zone, pulsations detect. using solenoid with ferrite core 8−24384
structure and propagation, ground obs., rel. to magnetotelluric sounding 8−49230

micropulsations continued
ULF activity in Pc 3-4 range, correl. with interplanetary mag. field radial orientation 8−28434
ULF plasma waves in magnetosphere, high latit. ground based obs. 8−49228
ULF pulsations, meas. using pairs of electrodes inserted into trees as receiving antennas 8−32249
microrecording *see microphotography*
microreduction *see microphotography*
microscopes
see also electron microscopes; ion microscopes; optical microscopes
acoustic, phase imaging in reflection 8−30136
acoustic, scanning, nonlinear imaging of edge 8−38158
acoustic, scanning image resolution 8−26011
Doppler microscope for flow velocity meas. in areas <10 μ dia., signal-analysing system *(Japanese)* 8−22441
grazing incidence optics, total transverse aberration function 8−45765
grazing incidence X-ray microscopy, of laser fusion targets 8−47178
high resolution X-ray optics, for astronomical and laboratory sources 8−45766
scanning acoustic microscope, image enhancement using analogue filters 8−18131
segmentation method of detecting cellular images using colour information *(Japanese)* 8−11783
single line CCD camera to improve positioning 8−41347
US high resolution microscope 8−1529
X-ray holographic microscopy *(Russian)* 8−12799
X-ray imaging, conf., Reston, USA (Apr. 1977) 8−45762
X-ray imaging, MOS solid-state detector arrays 8−47180
X-ray microscope, with high time resolution X-ray streak camera *(French)* 8−42823
microscopy
see also electron microscopy; ion microscopy; optical microscopy
acoustic, principles and appls. 8−18133
apodised condenser, effects on microscope imaging of extended objects, annular source 8−280
biological materials, unmodified, transmission microscopy radiation dose with electrons vs. ultrasoft X-rays 8−11788
biological sample microtoming, freezing technique for long specimens of small width/depth 8−3695
Fourier transform, IR spectroscopy, microscopic technique for sub-ng level anal. 8−32901
scanning acoustic microscope examination of Si IC 8−13877
thermistor bolometer failure anal. appl. 8−24795
X-ray microscopy, coded imaging techniques, of laser fusion plasmas 8−47177
microstructure, crystal *see crystal microstructure*
microtext *see microforms*
microtomes *see laboratory apparatus and techniques*
microtrons
booster resonator in HF path 8−830
cathode focusing and drift apertures, hybrid computer calc. 8−21796
microwave acoustic devices *see acoustic microwave devices*
microwave antenna arrays
miniature dipoles, probe for 0.2 to 12 GHz with fibre optic telemetry system, microwave radiation effects obs. appl. 8−15859
waveguide slot array with const. intensity for biological effects research 8−40450
microwave antennas
see also waveguide antennas
radiation pattern peculiarities in plasma *(Russian)* 8−38504
side-looking airborne radar, Earth surface remote sensing appl. 8−≤±≲+<
microwave circulators *see circulators (microwave)*
microwave detectors
active microwave sensing of atmosphere *(Japanese)* 8−16213
active microwave sensing of Earth surface *(Japanese)* 8−16214
active microwave sensing of ocean surface phenomena *(Japanese)* 8−16215
Earth resources, remote sensing by Skylab microwave radiometer 8−16273
far IR technology and applications, conf., Reston, USA, (Apr. 1977) 8−45711
glow discharge plasma lamp detector design, for real-time microwave holography 8−37859
IR and mm wave techniques, for Cosmic Background Explorer Satellite 8−49344
millimetre wave detector using the pyroelectric effect of PVF_2 *(Japanese)* 8−8444
millimetric and IR discontinuous-metal-film detector 8−289
moisture meas. of granular and powdered materials *(Polish)* 8−12706
probe fibre optic telemetric linked, 0.2 to 12 GHz range, microwave effects obs. appl. 8−15859
radiometers for remote sensing of Earth *(Japanese)* 8−16212
receiver design principles 8−45714
Schottky diode concepts, heterodyne radiometry 8−45713
submillimetre wave heterodyne radiometry, for upper atm. comp. meas. 8−49183
subnormal glow discharge detection of microwaves, internal signal gain 8−16843
superconductor-metal point junction as microwave radiation detectors 8−16847
n-InSb electronic bolometer, appl. in system for millimetre and submillimetre wave detection 8−24860
Nb_3Sn, nonstationary Josephson effect, 13-18.3K, 9-10 GHz, 20 MW *(Russian)* 8−2631
microwave devices
see also acoustic microwave devices; circulators (microwave); Gunn devices; masers; microwave parametric devices; solid-state microwave devices; waveguides
flowmeter, Doppler-effect type, particle moisture content effects 8−9732
Gaussian beam launcher, focal region field aberrations, biomedical appl. 8−44580
ion source, for high-current beams prod. 8−327
plasma radial carrier density profiles, determ. using microwave resonators *(German)* 8−47160
X-band ESR spectrometer, microwave kit for conversion to K-band operation 8−21192
microwave generation
see also microwave oscillators; relativistic electron beam tubes
electron beam excitation of skew comb, mm wave generation *(Russian)* 8−22078
enzyme inactivation system, electronic control to reduce dose variability 8−40285
gamma ray generation of microwaves in Zn *(Russian)* 8−2939
high-power microwave generation by relativistic electron beams 8−5444
millimetric-wave high-power optically-pumped laser performance and applic. 8−5469
millimetric-wave optically-pumped laser CW performance 8−5468
nonisochronic reflecting electron system, high power microwave emission 8−1140
X band gigawatt microwave pulse, produced by relativistic electron beam injection into waveguide *(French)* 8−25781
microwave heaters *see radiofrequency heating*
microwave heating *see radiofrequency heating*
microwave induced delayed phosphorescence *see MIDP*
microwave-infrared double resonance *see optical double resonance*
microwave integrated circuits
see also hybrid integrated circuits
thin and thick film technology, conference, Augsburg, Germany (1977) *(German)* 8−39685
microwave links
11 GHz rain attenuation data, appl. to path engineering 8−24327
11 GHz rain attenuation distribution, from 5-min rain rate statistics 8−24326
20 GHz multi relay links, simultaneous probability of rain attenuation 8−3898
60 GHz rainfall attenuation, 680 m vertically polarized link invest. 8−36238
140 GHz atmospheric attenuation by rain, obs. 8−3914
atmospheric water vapour meas. over 10 years rel. to radiowave propag. 8−3857
attenuation in rain, UK rainfall studies and data 8−11965
differential attenuation and phase shift meas. for 36.5 GHz polarised waves rel. to raindrops 8−3856
rainfall, short and long term rates, link design implications *(German)* 8−49082
satellite, crosspolarisation phase due to ice crysts. 8−7684
troposphere, 10-40 GHz, attenuation/rain-rate relationships 8−40607
tropospheric propagation, satellite-borne monitoring of atmospheric and surface characteristics 8−24353
microwave measurement
see also microwave reflectometry
acoustic-microwave Doppler radar system, wind and wind shear meas. at Dulles Airport 8−32233
ATS-6 to ground link, near horizon meas. over water at 30 GHz 8−24345
cancer detection by microwave thermography 8−24172
cavity resonator, containing dielec. sample, num. soln. of charact. eqn. *(French)* 8−13649
ceramic low-loss foils, permitt. and dielec. loss meas. method *(Polish)* 8−37028
complex dielec. and mag. props., modified von Hippel least square fit determ. 8−21179
complex dielectric constants, meas. at 10 GHz using cavity perturbation method 8−24815
complex dielectric data measurement using coaxial line resonator 8−8419
complex permittivity of low-to-medium loss standard liqs., meas. at 285 GHz 8−15083
conductivity measurement by eddy current loss method, effect of permittivity 8−24817
counters, modern techniques 8−32831
dielectric complex permittivity, two coupler method 8−21167
dielectric constant of low-loss solids, at 1 GHz, coaxial resonator method *(German)* 8−32834
dosimeter, evaluation of implantable elec. field probe within finite simulated tissues 8−40345
flowmeter, Doppler-effect type, particle moisture content effects 8−9732
hazard survey instrumentation and meas. 8−44618
low loss liquids, loss angle temp. var. meas. at microwave freqs. 8−48114
material testing, nonuniformity of dielec. props., at mm wavelengths, method of determining 8−40001
microprobes, non-perturbing, based on cholesteric crystal and dielectric microthermometer 8−16791
moisture meas. of granular and powdered materials *(Polish)* 8−12706
murine malignant tumours, in vivo probe dielectric meas. 8−11761
nonmagnetic materials complex permittivity rapid determ. *(German)* 8−21161
nonperturbing dielectric microthermometer probes 8−11743
one-dimensional conductor, microwave permittivity measurement techniques 8−10825
permittivity meas. of lossy liquids at 70 GHz using precision waveguide cells 8−37032
phase and voltage measured at frequencies above 2 GHz using high speed sampling 8−8418
power leakage from microwave-excited light sources 8−36988
pulmonary diagnosis/monitoring, reflection/transmission meas. method 8−28031
radiation balance microwave thermograph for industrial and medical appls. 8−45621
radiometry in detect. of breast cancer 8−40384
rain attenuation for Earth-space links, comparison between radar- and radiometer-derived data 8−24343
rain slant path attenuation statistics prediction at various locations 8−24344
rainfall distrib. determ. from radiation meas. by Nimbus 6 satellite 8−3981
sea ice, initial forms, microwave refr. index and absorpt. 8−49036
semiconductor microwave conductivity meas. by eddy current loss method 8−8417
semiconductor thin film conductivity monitoring by microwave resonator absorption *(Russian)* 8−23182
solid dielectric props. meas. with superconducting resonators 8−21180
spectrum analysis, using microcomputer 8−41329

microwave measurement continued
Tokamak microwave discharges, refraction losses, from measured plasma density profiles 8−22549
voltmeter, broad-band, based on hot carrier thermoelec. effects, features 8−21166
waveguide impedance meter verification scheme 8−37035
wavemeter calibration, Q-band, using spectrometer *(Polish)* 8−29866
GaAs hot electrons drift rate/field strength characteristic in microwave fields *(German)* 8−43430
Se layer crystallinity meas., combination microwave resonator method *(Russian)* 8−22652

microwave-optical double resonance
see also PMDR
alkali halides:Ga$^+$, Jahn-Teller effect, EPR study 8−43690
alkali halides, EPR in relaxed excited state of F-centres, detection via saturated optical pumping 8−6606
alkaline earth fluoride, EPR of triplet state of self-trapped excitons 8−43684
anthracene-tetracyanobenzene charge-transfer complex, RYDMR of triplet excitons annihilation 8−39448
conference on optical techniques in mag. reson. spectroscopy, Dublin, Ireland (Aug. 1977). 8−43683
dihydroporphin free base, in n-octane cryst., zero-field optically detected mag. reson., triplet state kinetics 8−42103
electron spin coherence in nonphosphoresc. triplet states, optical detect. meas., TADMR and FMDR 8−25578
formic acid, vap., laser lines identification 8−1222
methylene fluoride, ν_9 fundamental band, 9.4-μm CO_2 laser Stark spectroscopy 8−9191
naphthalene, in durene, photoexcited triplet state spin-lattice relax., local phonons effects 8−6605
off-resonant optical radiation, theory of double reson. 8−25579
rare earth ions, optically excited states, EPR, ENDOR 8−43637
ruby, ESR of Cr^{3+} excited state as function of delay time, Zeeman levels explained 8−43695
trifluoroethane, MODR, rot. consts. 8−9177
Ag halide, EPR of triplet state of self-trapped excitons 8−43684
$Ca^{35}Cl$, radical, rot. spectrum, $X^2\Sigma^+$ state, laser MODR 8−5257
CaO, $^3T_{1u}$ state of F-centre, ODMR spectra 8−43685
CaO, $^3T_{1u}$ state of F-centre, paramag. relax. optical detect. 8−43687
CaO, F-centre, selective excitation, detection of EPR 8−43688
CaO, F-centres, laser selective excitation and double reson. in Jahn-Teller systems 8−19379
CaO, line broadening of EPR and zero phonon lines of F centres 8−43686
CaO, phosphoresc. F-centre, phonon assisted conversion of Jahn-Teller states, ODMR under uniaxial stress 8−48084
CsBr, F-centres, EPR in relaxed excited state, detection via saturated optical pumping 8−6606
CsBr, F-centres, relaxed excited state, ESR, detected via optical pumping 8−43693
CsCl, F-centres, EPR in relaxed excited state, detection via saturated optical pumping 8−6606
CsCl, F-centres, relaxed excited state, ESR, detected via optical pumping 8−43693
KBr:P, colour centre fine struct., ODMR 8−6604
KCl:P, colour centre fine struct., ODMR 8−6604
$KMnF_3$, optically detected antiferromag. reson. 8−15029
NH_3, IR-microwave two-photon spectra using CO_2 lasers 8−37664
NH_3+NH_3, vibr. and rot. energy transfer, IR-microwave double reson. study 8−46432
$NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8−1010
NO, laser mag. reson. and IR-RF double-reson. near 5.3 μm 8−5258
$NaNO_2$, cryst., triplet excitons, localised states, zero-field ODMR, dopant effects 8−15062
SrF radical, rot. spectrum of $X^2\Sigma^+$ state, MODR 8−9176
SrO:Co^{2+}, EPR, optical, MCD absorpt. spectra 8−43692
Xe, $5d_{7/2}\rightarrow 6p_{5/2}$ transition struct., laser spectrosc. and double reson. obs. 8−1210
ZnO:Li, luminesc. donor-acceptor pairs, exchange broadened optically detected EPR spectra 8−23373
ZnSe, optically detected mag. reson. of V^- centre and donors 8−10805

microwave oscillators
see also Gunn oscillators; microwave parametric oscillators; parametric oscillators; tunnel diode oscillators
band I, 10 GHz, with noise compressed by acoustic delay line *(French)* 8−16818
Josephson bridge microwave oscill. regenerative effects *(Russian)* 8−2630
GaAs LSA diodes, current controlled LPE for optimum doping profiles 8−35318

microwave parametric amplifiers
No entries

microwave parametric devices
see also microwave parametric amplifiers; microwave parametric oscillators
No entries

microwave parametric oscillators
No entries

microwave reflectometry
see also swept-frequency reflectometry; time-domain reflectometry
No entries

microwave region *see microwaves*

microwave spectra
see also molecular rotation; molecular vibration; radiofrequency and microwave spectra of diatomic inorganic molecules; radiofrequency and microwave spectra of organic molecules and substances; radiofrequency and microwave spectra of polyatomic inorganic molecules
amorphous materials for IR and microwave absoprtion, temp. and freq. depends. 8−39539
n-Ge:P,Ga, compensated, uniaxially compressed, anisotropy of mm. and submm. wave absorpt. 8−19074
o-H_2, isolated in solid p-H_2 energy levels 8−2948

microwave spectrometers
see also magnetic resonance spectrometers
bridge type, 94 GHz, used for SO_2 linewidth obs. 8−42044
electronic sweep of magnet field 8−12717

microwave spectrometers continued
grating spectrometer for mm waves 8−12768
moderate-pressure low-temperature spectrometer for paramag. reson. appl. 8−266
scanning microwave spectrometer (SCAMS) on Nimbus 6 synoptic scale studies 8−16114

microwave spectroscopy
see also microwave spectrometers; paramagnetic resonance
Earth imaging from Nimbus 6 satellite 8−12026
ESR spectrometry, anal., cavity loading effects 8−7253
solar S-component spectrum in 4 to 7 GHz range, radiospectrograph for fine structure *(Russian)* 8−49320

microwave tubes
see also electron-wave tubes; relativistic electron beam tubes
nonisochronic reflecting electron system, high power microwave emission 8−1140
power capabilities for plasma heating *(French)* 8−9801

microwaves
918 MHz rat irradiation, thermographic near field effects and behavioural studies, near field effects 8−7386
atmosphere, modification by space borne microwave beam at water vapour absorption line, 22.2 GHz 8−49171
diffraction by various shaped conducting objects 8−29885
emission and exposure standards 8−44619
holography, computer simulation and image reconstruct. *(German)* 8−46540
holography, fundamentals and appl. 8−37830
International Microwave Symposium, San Diego, Calif., USA (June 1977) 8−5478
near-field diffr. on the axes of disks 8−33652
nonlinear effects in polarised gases, complex dielectric constant evaluation 8−1787
radiation pattern meas. in presence of biological specimens 8−48828
radiation safety meas. and instrumentation 8−44618
submillimetre waves and applications, conf., San Juan, Puerto Rico (Dec. 1976) 8−4712
thunderstorms, microwave radiometric detect. of corona from chaff 8−16106
tropospheric propagation, attenuation by salt water droplets 8−7725
two-frequency microwave holographic imaging with axial resolution 8−1184

mictomagnetism
see also spin glasses
AuMn, mictomagnetic, Hall and magnetoresist. effects 8−43361
Cu-Mn, mag. irreversibility and metastability 8−19279
Cu-Ni alloy, critical conc. for ferromagnetism 8−14969
$Fe_{0.7}Al_{0.3}$, local environment effects and magnetic clustering 8−10658
$(Fe_{0.04}Ni_{0.96})_{80}P_{10}B_{10}$, amorphous, mictomagnetic to ferromag. transition 8−34981
$Mn_{17.5}Cu_{82.5}$, ageing process, alternating mag. susceptibility meas. at 80K and 373K, 8−3157

MIDP
coronene, triplet mol. in n-heptane Shpol'skii sites, distortion and orientation meas. by MIDP 8−37668

Mie theory *see electromagnetic wave scattering*

military equipment
see also aircraft; military systems; ships
armour, lightweight ceramic, ballistic tests, computer simulation, book contrib. 8−48556
avionics interconnection fibre-optic data bus 8−46806
fibre-optic processor serial interconnect system 8−1426
integrated electro-optical A/D convertor, using branching waveguide modulator channels 8−42474
integrated signal processor, using geodesic thin film lenses 8−42475
optical fibre connectors, hot forming versus epoxy bonding of bundles, single fibre techniques 8−42482
optical fibre interconnection components 8−46812
optical fibres, connectors, standardisation 8−30083
protective headgear design, bioengineering considerations 8−11793
ring laser gyro, military appl. 8−42370
T-coupler for multimode optical fibres 8−42457

military systems
see also military equipment
communication, local distribution systems, use of optical fibre cables 8−9457
defence science, effects on advance of astronomy 8−36471
fibre optic connector system characteristics, aerospace user's viewpoint 8−46804
fibre optic long distance tactical communication link, injection laser transmitter appl. 8−42355
fibre optic sonar link, multichannel 8−42446
fibre optics, single mode, and integrated optics, for optical communication 8−42469
fibre optics for defence appls. in UK 8−42440
fibre optics for military appls., review and assessment 8−42438
fibre optics tasks of NASA, review 8−42441
fibre-optic communication systems progress 8−1425
neutron bombs, effects *(German)* 8−814
optical data bus T-system, single multimode fibre, based on access coupler 8−46810
optical data link, single fibre, multimode electro-optic guiding 8−38065
optical fibre applications to military and industrial systems 8−38021
optical fibre cables for use in ocean, design rel. to stresses 8−42439
optical fibre communication, A-7 ALOFT economic analysis, EM interf. and pulse tests 8−42448
optical fibre communication system, cost model 8−42447
optical fibre communications 8−42433
optical fibre digital transmission system, 2 km, for field use at 20 Mb/s 8−38064
optical fibre link for Command and Control System 280 8−42445
optical fibre multiterminal data system for aircraft, based on time division multiplexing 8−46811
optical fibre technology for military aeronautic appl. *(French)* 8−46813
optical fibre waveguide link, colour multiplexing 8−42444
optical fibres and integrated optics, conference, London, England (May 1977) 8−38063

military systems continued
radar system, forward looking IR, effect of ZnS CVD windows 8–46816
underwater detection, effectiveness of distributed sensor concept 8–33944
Milky Way *see the Galaxy*
milliammeters *see ammeters*
mills, rolling *see rolling mills*
m.i.m. devices *see metal-insulator-metal devices*
m.i.m. structures *see metal-insulator-metal structures*
MINDO calculations
acetylene, vibr. freqs., MINDO/3 calcs. 8–13429
n-alkenes, photoelectron spectra, MINDO/1, MINDO/3 and Fenske-Hall calcs. 8–5285
alkyl chlorides, proton affinity correl., ab initio SCF calc., MINDO/3, STO and G basis sets 8–33421
benzaldehyde, proton affinity, MINDO/3 results compared to ICR obs. 8–1103
benzene, vibr. freqs., MINDO/3 calcs. 8–13429
benzyl carbonium ion, internal rot. barrier, MINDO/2(3) forces method 8–9078
C-N spin-spin coupling consts., NMR, MINDO/3 calcs. 8–17694
cyclobutadiene(-d$_1$), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8–13429
cyclopenta[h]cycl[4.2.2]azine, electronic struct., photoelectron data 8–5286
cyclopropyl carbinyl cation, internal rot. barrier, MINDO/2(3) forces method 8–9078
ethane, vibr. freqs., MINDO/3 calcs. 8–13429
ethylene, vibr. freqs., MINDO/3 calcs. 8–13429
interstellar candidate mols. formed by NO ion-molecule reactions, MINDO/3 calcs. 8–28739
methylene, photoelectron spectra, singlet and triplet state calcs. 8–42127
4-methylene-cyclohexadiene-2,6-one-1, proton affinity, MINDO/3 results compared to ICR obs. 8–1103
MINDO/3, limitations for unusually bonded mols. 8–25439
MNDO method, approx. and parameters 8–910
MNDO results for H-, C-, N-, and O-containing mols. 8–911
molecular geometries, reaction paths, MINDO/2(3) forces method 8–9078
molecules, without internal rot., ground state heat capacity and entropy MINDO/3 calc. 8–33450
phenylcarbene, singlet and triplet ground states, rearrangement to cycloheptatrienacarbene, MINDO/3 calc. 8–13430
TCNQ, infinite stacks, all valence electron band struct. 8–39001
TCNQ, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8–995
tropone, proton affinity, MINDO/3 results compared to ICR obs. 8–1103
TTF, infinite stacks, all valence electron band struct. 8–39001
vinyl isocyanate, conformers, geometrical and electronic structures, microwave spectra 8–9142
C-containing mols., MNDO calcs. for ground state 8–911
C_n aggregates in equilib. C vapour, MINDO/2 calc., isomerism 8–29873
H-containing mols., MNDO calcs. for ground state 8–911
H_2 ground state, bond breaking reaction, MINDO/3 CI *(German)* 8–21852
(HBr)$_2$, intermol. distances, dipole moments, MINDO/3 and IR intensities and shifts calcs. 8–46335
(HCl)$_2$, intermol. distances, dipole moments, MINDO/3 and IR intensities and shifts calcs. 8–46335
(HCl)$_2$, vibr. freqs. in inert gas matrix, force const., MINDO/3 calcs. 8–41952
N-containing mols., MNDO calcs. for ground state 8–911
O-containing mols., MNDO calcs. for ground state 8–911
mineral oil industry *see petroleum industry*
mineralogy *see minerals*
minerals
acoustic non-linearity parameter, calc. for twelve isotropic minerals 8–20392
alkali feldspar, deformation, plastic defects, TEM investig. 8–32066
alkali feldspars, TEM study of exsolutions, review *(French)* 8–28224
almandine, synthetic, hydrostatic compression, isothermal bulk modulus 8–40545
almandine-pyrope-grossular garnet, exsolution obs. 8–32074
amber, natural, optical strength and laser induced rupturing 8–7039
amethyst, 3400 cm^{-1} IR spectra fine struct., H impurities 8–43910
aragonite, formation through precipitation of CaCO$_3$.H$_2$O 8–27427
Armorican Massif, occurrences of antimony minerals from ile de Sein and cap Sizun *(French)* 8–11888
arsenolite, As$_2$O$_3$, vapour mol. mass determ. using repulsion Knudsen cell 8–46464
asbestiform chain silicates, new minerals and struct. groups 8–28227
N.Atlantic recent sediments, volcanism effects on mineral comp. 8–44802
auripigment, radiography of geological specimens for determ. of α- and fission-activity 8–20540
axial-plane slaty cleavage and schistosity development, expt. 8–7625
basalt, compressed, appl. to shielding against soft X-ray radiation 8–41865
basalts from Nazca Plate, mag. props. and opaque mineralogy 8–20396
bauxite, Fe-containing, Mossbauer analysis 8–44806
boehmite, γ-ALOOH, structural variability 8–38681
bog Fe ore, Mossbauer effect exam. of annealing effect on struct. 8–19396
bornite-digenite series, superstructuring, vacancy clustering, high-resolution electron microscopy 8–42981
calcite, atm. dust, imaginary refr. index rel. to particle size 8–7763
calcite crystal as radiation-stable thermometer 8–203
calcite speleothems from Britain, palaeoclimatic and geomorphic implications of ^{230}Th/^{234}U dates 8–36128
Cerro Impacto, Venezuela, thermoluminescence radiation dosimetry appl. to Th prospecting 8–32244
chabazite, Cu^{2+}-exchanged, cation and water mol. positions 8–15709
chert artifacts, thermolum. determ. of prehistoric heat treatment 8–24914
minerals continued
chlorite, fission track annealing and age determ. 8–36307
chromite, in Allende meteorite, search for fission tracks from superheavy elements 8–32415
chromites, from India, struct. and comp. 8–44807
citrine, 3400 cm^{-1} IR spectra fine struct., H impurities 8–43910
claudetite, As$_2$O$_3$, vapour mol. mass determ. using repulsion Knudsen cell 8–46464
clay, compressed, appl. to shielding against soft X-ray radiation 8–41865
clay, symposium (New Delhi, 1972, October 10-12) 8–7617
colour values from diffuse reflectance spectra *(French)* 8–11881
COMOD, program for standardizing mineral resource commodity data 8–20524
contour map aeromagnetic data computer processing 8–7819
cordierite-garnet bearing assemblages in granulite facies terrains 8–44810
cryolite, hydrothermal synthesis of large synthetic single crystal, props. 8–19654
crystal growth characts. 8–32072
cubanite, new sulphide phase in CI meteorites 8–12173
Devonian lacustrine sediments, from Caithness, Scotland, palaeomag. and mineralogy 8–28170
diamond, defect struct., recent obs. by new methods 8–30628
diamond, impurity complexes, shape and dimens., diffuse X-ray scatt. obs. 8–47398
dolomite, radiography of geological specimens for determ. of α- and fission-activity 8–20540
dolomite, stacking faults obs. 8–3761
enstatite, wet polycrystalline, high temp. flow 8–32082
enstatite activity and O$_2$ partial pressure effects on point-defect chemistry of olivine 8–40549
enstatite-pyrope system, high press./temp. phase behaviour rel. to Earth mantle 8–11882
erionite, cryst. struct. exam., stacking faults 8–2083
exploration and plate tectonics 8–7607
fayalite (Fe$_2$SiO$_4$), shear strength and press. distrib. in diamond anvil press 8–12710
feldspar, dislocation image contrast in electron microscopy and X-ray topography 8–26573
feldspar, thermolum., anomalous fading, thermolum. dating 8–10999
feldspar crystals, anisotropy of particle-track visualisation 8–25397
feldspars, ^{90}Sr diffusion studies 8–7621
feldspars, synthetic, cryst. struct. 8–34469
feldspars in Amitsoq gneiss, initial Pb isotopic comp. and implications for Earth age 8–20371
ferromagnetic minerals in basalts, stability region 8–16000
fibre production with low dust and zero lubricant contents *(German)* 8–19678
fissionable element impurities, nature and distrib., fission track method 8–44436
flotation extraction, thermoelectric power, extraction yield depend. 8–19686
fluorapatite, proton and photon induced X-ray emission anal., depth sensitivity 8–23988
forsterite, elec. props. 8–34833
fosterite, grown by Czochralski method, trivalent ion distrib. between melt and single crystals 8–9972
French Western Alps, internal mineralogical and petrological investigations of Alpine metamorphism 8–36157
garnet, from Gassetts schist, Vermont, prograde reaction histories from compositional zonation and inclusions 8–36159
garnet content of eclogite *(Chinese)* 8–20413
garnet solid-soln. series, elastic props. 8–40550
geological anal., nuclear track technique, B, Li, U, Th mapping 8–20553
glass shards from set-W tephra, Mount St. Helens, Washington, electron microprobe 8–24274
glauconites, radiogenic Ar as function of mineral recrystallization 8–32090
goethite, FeO(OH), Mossbauer effect exam. of annealing effect on struct. 8–19396
granite, compressed, appl. to shielding against soft X-ray radiation 8–41865
green tuff, cylindrical beads, Japanese, trace elements, neutron activation anal., rel. to archaeological provenience 8–8492
gypsum, atm. dust, imaginary refr. index rel. to particle size 8–7763
gypsum, struct., vibr. spectroscopic obs. *(Russian)* 8–15175
gypsum, thermal conductivity thermal decomposition 8–2310
hilgardite and parahilgardite, piezoelectric zeolite type structures and composition 8–16003
hornblende, grunerite and garnet comp. in Archean Fe formation, Canada 8–7630
hornblende and biotite, ^{40}Ar/^{39}Ar ages across Georgia Inner Piedmont, rel. to tectonothermal history 8–48990
hornblendes, refinement of struct. characts. by reference to PMR data 8–22704
hydrated minerals on Callisto, evidence from IR spectrum obs. 8–4141
hydrothermal ore bodies, nature of porosity rel. to transport phenomena 8–36205
ilvaite, Fe temp. depend. oxidation states, electron hopping, Mossbauer spectra, X-ray diffr. obs. 8–2779
inorganic minerals, aqueous heavy metals adsorption 8–49006
Isukasia, Greenland, C isotope comp. of graphite and carbonate minerals from metamorphosed sediments 8–11896
Jurassic seafloor, Point Sal, California, rare earth and trace element geochem. 8–32094
labradorite, thermal annealing of ion tracks 8–20604
Lake Lisan-Dead Sea aragonite, element and isotropic comp. rel. to pleistocene geochemical evolution 8–49047
laterites, Venezuelan, total Fe determ. by at. absorpt. method 8–31728
Leoville meteorite, minerals identification from ^{57}Fe Mossbauer spectroscopy 8–49404
Libyan Desert Glass, redox form. conditions, EPR obs. of as-received and irrad. samples 8–28228
lodestones, magnetic and microstructural props. 8–16004
lorandite, radiography of geological specimens for determ. of α- and fission-activity 8–20540
low tridymite, SiO$_2$, cryst. struct. 8–36150

minerals continued
magnetic minerals, constraints on Curie isotherms in deep crustal mag. anomalies 8−44805
magnetite, low stress effects on susceptibility and coercive force 8−16001
magnetite, TRM props. of single-domain, pseudo-single-domain and multidomain particles 8−40544
magnetite stressed to failure, mag. behaviour rel. to earthquake prediction 8−32068
marine heavy mineral deposits, extraction, X-ray spectrometric anal. *(German)* 8−20551
modal analysis of rocks, error assoc. with point-counting 8−32232
molybdenite in Ca-Al-rich inclusions in Allende meteorite 8−12170
monazite, giant halo inclusions, evidence against superheavy elements 8−40554
monazite from South India beach sands, superheavy elements search using X-ray fluorescence 8−16017
monazite sand, determ. of Th, U, and K from spectrometry of natural γ-activity 8−20408
multielement analysis by photon or neutron activation 8−12018
muscovite, thermal annealing of ion tracks 8−20604
'mysterite' as late condensate in solar nebula, H6 chondrite evidence 8−7946
'mysterite'-bearing clast in H6 chondrite Supuhee, chemical charact. 8−7947
nonsilicate, EPR, review 8−39384
obsidian, Japanese, trace elements, neutron activation anal., rel. to archaeological provenience 8−8492
obsidian sources, chem. characterisation and hydration rates, W.Mexico 8−348
olivine, plastic flow of oriented single crystals, dislocation struct. interpretation 8−36156
olivine, plastic flow of oriented single crystals, mech. data 8−36155
olivine, point-defect chemistry, effect of enstatite activity and O_2 partial pressure 8−40549
olivine, rheology rel. to thermal stability or instability of asthenospheric shear flow 8−20370
olivine, shock induced high-pressure transformation 8−11883
olivine, thermal annealing of ion tracks 8−20604
olivine and garnet Fe^{2+} and Mg^{2+} partitioning 8−32091
olivine rheology, local nonsimilarity boundary layers rel. to shear flow beneath oceanic plates 8−40521
olivine-metal texture formation in pallasite meteorites 8−7944
opaque, alteration states correl. with temp. in active geothermal system 8−40551
ore analysis by selective gamma-gamma method, elimination of geometrical effects 8−44425
ore body distrib. in Baisoara mine, gravity anomaly data *(Rumanian)* 8−20347
ore deposits, strata-bound, rel. to chemical speciation of Cd, Cu, Pb and Zn in freshwater-brine solns. 8−20409
orthopyroxenes, synthetic, cryst. struct. 8−42970
pallasite meteorites 8−7945
peridot, shock-produced olivine glass, TEM obs. 8−10178
peridotite xenoliths in S.African kimberlites, structurology, upper mantle constitution implications *(French)* 8−11889
phase transformations of minerals and Earth's deep interior materials, review *(Japanese)* 8−28225
phosphates, U content, α-ray autoradiography, fluorimetry, estimation 8−20414
phosphorite nodules on sea floor off Peru and Chile, U isotopes 8−7612
phyllosilicates, from Orgueil meteorite, Ni and S abundances correl. 8−12169
plagioclase grain size of basaltic andesite dykes, Iritono, central Abukuma plateau 8−7618
prospecting by airborne EM method *(Japanese)* 8−24392
pyrochlore, high temperature chlorination 8−11180
pyrope, synthetic, hydrostatic compression, isothermal bulk modulus 8−40545
quantitative anal. by XPS 8−35742
quartz fibres, polar orientation, stereospecific twisting 8−42930
quartz sand from Lasko Polje, determ. of Th, U, and K from spectrometry of natural γ-activity 8−20408
Quaternary lavas, Snake River Plain, Idaho, mineralogy and petrology 8−20402
radioactive, prospecting, thermoluminescence radiation dosimetry appl. 8−32244
radioactive ores, hazard indices rel. to nucl. high-level waste 8−15913
rare earth elements, determ. in geological materials, using thermal and epithermal neutron activation 8−7797
realgar, radiography of geological specimens for determ. of α- and fission-activity 8−20540
red ochre, chem. anal. by Mossbauer spectroscopy, and superparamagnetism 8−20397
Red Sea geothermal system, ore transport and deposition 8−32096
refractory megacrysts and Mg-rich melt inclusions in spinel in oceanic tholeiites 8−32060
regional resource appraisal, statistical methods 8−28326
salt deposits, seismic prospecting by well logging *(Rumanian)* 8−20566
salt-bearing sections, vertical electric sounding *(Russian)* 8−11807
silicate inclusions in group IAB Fe meteorites, rel. to anomalous stony meteorites 8−32416
silicate rocks and minerals, instrumental neutron activation anal. 8−20548
silicate-K-(Fe-S liquid) equilibria and K solubility, in Fe-S liq., planetary implications 8−11843
silicates, lattice imaging 8−30522
spectral signatures of particulate minerals in visible and near IR 8−7620
spinel, natural, solid soln., thermodynamic model *(French)* 8−32065
strontium weilite, $SrHAsO_4$, cryst. struct. 8−38671
sulphide-solvent boundaries, two-layer capacitance meas. *(Russian)* 8−10551
thermoluminescence dating, error sources 8−11006
thermoluminescence dating, phototransfer technique 8−11005
thermoluminescence dating 8−11004
topaz, thermolum. props., dosimeter appl. 8−35957
tourmaline, pyroelectricity, struct. mechanisms 8−10850
uralborite, $Ca_2(B_4O_4(OH)_8)$, accurate cryst. struct. 8−34492

minerals continued
USSR, tectonics and mineral resources *(Russian)* 8−40536
velikite, cryst. struct. determ. 8−2097
wadeite, cryst. struct. refinement, X-ray diffr. meas. 8−2091
yellow ochre, chem. anal. by Mossbauer spectroscopy 8−20397
zeolite:Fe^{3+}, Mossbauer effect and magnetometric exam. 8−6613
zeolite, surface reactions with H and O atoms, EPR anal. via ultrahigh vacuum/flow system 8−7232
zeolite facies alteration of sandstones of Southland syncline, New Zealand 8−32084
zinkenite, electrophysical properties 8−34834
zircon, (sand), thermolum., UV and γ-ray effects 8−2930
zircons from Early Precambrian rocks of W.Greenland and Minnesota River Valley, U-Pb ages 8−11845
α radioactivity, E>11 MeV emulsion and counting techniques 8−8785
Al electrolytes, X-ray determ. of cryolite ratio 8−3417
Au ores, neutron activation and mathematical programming *(Rumanian)* 8−20565
Ca-Al rich inclusions in meteorites, origin rel. to cosmoradiogenic ghosts 8−12162
Fe ore, adsorption methods for determ. of specific surface 8−21096
Fe-Ni-Cr-S-O compounds, occurrence in Allende chondrite *(French)* 8−32411
Hg ores, determ. of Hg content using ^{57}Co isotope and scintillation counter 8−20539
K feldspars from Precambrian igneous rocks, Pb isotope inhomogeneity 8−32095
Mg vermiculite, adsorbed water mol. orientation, elec. pot. calc. 8−26763
Mn nodule, sediment-water interface and submergence dynamics 8−28217
Mn nodule growth rate meas. using radioactive ^{10}Be and ^{26}Al 8−40537
Mn nodules and Deep Ocean Mining Environment Study phase I and II, prospects 8−16164
$(NH_4)_2SO_4$, atm. dust, imaginary refr. index rel. to particle size 8−7763
$NaF-MgF_2-MgO-SiO_2$, phase formation 8−27460
^{18}O distrib. among mineral triplets in igneous and metamorphic rocks 8−32071
SiO_2 budget of Antarctic waters, effects of glacial weathering 8−20436
SiO_2, vitreous, radiation behaviour of optical props. 8−21655
SiO_6 octahedra, var. of mean Si-O bond lengths 8−18577
Te ores, geochem. test of nucleon stability 8−8667
U ores, dusts and mill tailings, simultaneous determ. of ^{238}U, ^{234}U, ^{230}Th, ^{226}Ra, and ^{210}Pb 8−15736
UO_2, ^{236}U activity meas. *(Spanish)* 8−44822
UO_2, equilib. conc. of fission products, ^{235}U induced fission and ^{238}U spontaneous fission *(Spanish)* 8−44823
UO_2, equilib. conc. of fission products, calc. comparison with expt. values *(Spanish)* 8−44824
mines (coal) *see mining*
mines (mineral) *see mining*
minimax techniques
aperture in elastic body, optimal form *(Russian)* 8−22270
plate, increase of first natural freq. and buckling load by optimal fields of initial stresses 8−13945
minimisation
see also minimisation of switching nets
bending plastic collapse, mm. cost in elastoplastic structs. 8−30197
composite materials, cylindrical shells, probability anal. of stability, mass minimisation 8−42553
cross-spring hinge problem, 2-D, use of minimization methods in solving 8−18163
cylinders, stiffened, subjected to pure torsion, min. weight design 8−1582
energy functional, direct minimisation in LCAO-MO density matrix formalism 8−5118
flexible bar, min. vol. design by dynamic programming *(Polish)* 8−13965
general-purpose molecular mechanics program construction principles 8−13411
image reconstruction from kinoforms and distorted holograms *(Russian)* 8−13664
optimal plastic design, superposition principles and bounds on min. cost 8−42538
optimal plastic design of circular plates, linear programming appl. 8−42539
power reactor Xe oscillations optimal control problem *(German)* 8−46153
reactor fuel, selected enrichments for minimisation of blending losses, optimal set 8−17402
minimisation of switching nets
see also logic design
No entries
minimization *see minimisation*
mining
Baisoara mine, gravity anomaly rel. to ore body distrib. *(Rumanian)* 8−20347
concentrator X-ray on stream anal. design, installation and commissioning 8−35778
Deep Ocean Mining Environment Study phase I and II, prospect 8−16164
geophysical prospecting by pseudobaseband pulse radar 8−24398
large particle size photometric sorting machine, DATAC system, design principles 8−32853
maps of workings on microfilm, correlation with topographic maps 8−32259
methane gas interferometer for coal mine safety 8−44423
mineral processing isotope on-stream anal. 8−35777
New York State, earthquakes related to hydraulic mining and natural seismic activity 8−48986
ocean mining, position location system 8−45046
ore Au content determ., methods 8−35076
potash mine salt thickness meas. by EM depth sounding 8−28324
rock failure, scale invariant properties 8−3758
seismicity in deep-level mine, influence of mine geometry and closure volume 8−3723
seismicity increase prior to moderate rock burst 8−3722
siesmic moment and source size determ. for mining tremors 8−3717

mining continued
  tremors, seismic recording stations, optimal config. 8−20359
  tremors in anisotropic media, optimal recording 8−3718
  U mine, Rn aerosol particle size distrib. *(French)* 8−32195
minmax technique *see minimax techniques*
minor planets *see asteroids*
minority carrier conduction *see minority carriers*
minority carriers
  deep level investig. by new optical method 8−6331
  degenerate materials with position depend. band struct. carrier densities and emitter efficiency calc. 8−43378
  DH devices, interface recomb. effects on transient response anal. 8−22127
  diffusion length determ. near p-n junction, SEM appl. *(French)* 8−43466
  generation rate meas. using transient response of MOS capacitor with guard ring 8−2576
  heterojunction isotypic, under transient depletion conditions, information-carrying charge 8−26944
  MIS Schottky barrier and conducting diodes with interface traps, capacitance and conductance 8−10564
  MIS-Schottky barriers, photovoltaic props. anal. 8−26966
  p-n junction, diffusion length meas. of minority carriers, accel. voltage of primary electrons effect *(Czech)* 8−34844
  recombination at surfaces, dislocations and microdefects, luminesc. evaluation 8−6769
  semiconductor, cathodoluminescence meas. of minority carrier lifetime, appl. to GaP 8−19572
  semiconductor device, surface recombination, effect on steady-state relationships 8−39191
  semiconductor diodes, minority and majority mobilities, transit time effect determ. 8−14753
  semiconductor-electrolyte solar cell, minority carrier transfer, energy levels role 8−39209
  semiinsulator, minority carrier injection effect on TSC 8−10466
  transmutation doped, stabilisation 8−10449
  $Al_xGa_{1-x}As$-GaAs heterostructure, nonradiative large dark spots rel. to minority carrier transport 8−9378
  $Al_xGa_{1-x}As$-GaAs heterostructures, nonradiative large dark spots exam. 8−23149
  p-$CuInSe_2$, minority carrier lifetime and surface recomb. velocity, photoelectromag. meas. 8−19085
  $Ga_{1-x}Al_xAs$-$Ga_{1-y}Al_yAs$ p-n heterojunction, minority carrier lifetime, elec. characts. and electrolum. meas. 8−2554
  GaAs film, vapour-grown, effect of gas-phase stoichiometry on deep levels 8−10393
  n-GaAs, Schottky barriers, minority carrier trap meas. 8−26951
  n-GaP, LPE, non-radiative recombination 8−19565
  GaP, minority carrier lifetimes at dislocations, SEM meas. using photon counting 8−23109
  (Pb,Sn)Te, (Pb,Sn)Se IR detector diodes, junction resist. comparison, minority carrier lifetimes 8−24858
  Si epitaxial layer substrate junctions, carrier lifetime and abnormal conduction phenomena *(Korean)* 8−47888
  Si, heavily doped layer, electronic characts., electron beam induced current obs. 8−10473
  Si, minority carrier lifetime degradation by $POCl_3$ emitter diffusion 8−2496
  Si, minority carrier lifetime and surface recombination velocity meas. by photocurrent 8−10515
  Si, minority carrier lifetime meas. by contactless technique 8−23102
  Si multilayer structure dopant distrib. and minority carrier diffusion length, SEM obs. *(Russian)* 8−10543
  Si, neutron irradiated, resistivity and minority carrier lifetime, radial inhomogeneity *(Russian)* 8−26881
  Si, photodiode, shallow junction n^+-p, spectral response limitation mechanisms 8−37058
  Si planar structures, Haynes-Shockley expt. for students 8−28888
  Si ribbon solar cell, EFG, diffusion length enhancement under illum. 8−14756
  Si, ribbons produced through capillary action shaping, elec. and struct. characts. 8−47804
  Si, solar cell, minority carrier lifetime *(Korean)* 8−23103
  Si, solar cell, minority carrier excess charge and time const. 8−30938
  TiO_2 electrode, sensitised, for photoelectrolysis of water in sunlight, minority carrier diffusion length 8−19143
mirages *see atmospheric optics; light refraction*
mirrors
  achromatic metal-dielectric mirror coating, computer synthesis 8−46750
  adherent dielectric coatings of diamond-turned mirrors 8−33810
  alignment testing in converging beams 8−30044
  aspheric mirror testing, interferometric method with computer-generated holograms 8−46845
  bent glass optics 8−45767
  blank fabrication for large azimuthal telescope primary mirror, work program 8−16302
  Bragg mirror emission and absorpt. losses in waveguide mode *(Russian)* 8−1272
  compound wedge cylindrical stationary concentrator, charact. 8−33815
  cone collectors for finite sources 8−46742
  confocal unstable resonator beam props., astigmation in two-mirror config. 8−46670
  conic mirrors, caustic coordinates in Platzeck-Gaviola test 8−33799
  conic reflectors, basic props. of meridional and sagittal caustics 8−25948
  decentered concave mirror in three-mirror concentric objective, for astigmatism correction 8−46749
  dielectric compound parabolic concentrator 8−5533
  dielectric mirrors, reflection and wavefront shaping, limits of coexistence 8−46747
  dielectric multilayer systems for optical appls., computer program synthesis *(German)* 8−46788
  dielectric semitransparent wide-band mirror, synthesis method 8−13785
  diffuse light collection onto extended absorber, mirror designs 8−22186
  double focon, concentration factor 8−1316
  electron-beam and photolithographic fabrication of guided-wave optical components 8−13818
mirrors continued
  electrostatic, transaxial, for large-incidence ang. ion beams 8−37798
  electrostatic, two-electrode, transaxial, for large incidence ang. electron beam 8−37797
  energy coupling arrangement for parallel concentric lasers *(German)* 8−33757
  fast off-axis parabolic mirrors, design and fabrication 8−46741
  flat mirrors, flatness meas. theory, Foucault method 8−33802
  flat plate collector energy yield increase by planar reflector, modelling appl. 8−33813
  flatness meas. by plane lattice point light source *(Japanese)* 8−9463
  glass-Na vap. interface, dye laser frequency locking by selective refl. 8−29992
  grazing incidence X-ray microscopy, of laser fusion targets 8−47178
  high-speed mirror photochronograph 8−37098
  hyperbolic cone-channel condenser system 8−33811
  imaging system with obscured pupils, OTF and point spread function 8−25809
  IR optical components, diamond turning fabrication 8−5590
  large azimuthal telescope, primary mirror testing in observatory 8−20642
  laser, for Fabry-Perot interferometer, coeff. of reflection meas. *(Russian)* 8−1237
  laser beam steerer-expander device, two-mirror afocal telescope design 8−46700
  laser mirror, SEM obs. of laser induced damage *(German)* 8−37929
  laser mirror reflectivity meas. technique, precision 8−17947
  laser multielement resonant reflector design, temp. and wavelength depend. props. 8−17945
  laser resonator optimal output mirror 8−13735
  lens-mirror combinations with max. conc. 8−9422
  machining of nonconventional shapes, for laser systems 8−5589
  mechanical devices for light beam refl. *(Japanese)* 8−5540
  metal mirror, diamond turned, optical figure inspection by interferometry 8−5545
  metal mirrors for CO_2 laser fusion systems, material constraints and fabrication 8−5476
  metal polishing and lapping 8−5587
  metal surface, diamond turned, finish meas. by differential light scatt. 8−5544
  metal surfaces for laser mirrors, ion polishing and vac. annealing 8−5588
  metal-dielectric interference mirror coatings, high mech. strength 8−30043
  metallic film, IR reflectivity, mirror appl. 8−5536
  metals for mirror substrates, manufacturing processes, review 8−5542
  multidithered segmented COAT mirror, surface wave control 8−46752
  multilayer dielectric reflectors, optical props. calc. 8−30041
  multilayer light scattering and laser gyro 8−33764
  multilayer mirrors, for X-ray and far UV radiation 8−1313
  multimirror system stray light mask calc. method *(Russian)* 8−1312
  Newton's formula validily in Fourier transform. config. 8−42281
  optical beam-guide lines, elec. length instability 8−46748
  optical resonant reflectors, two elements, expression derived for finesse 8−33809
  optical rotation multiplier, lens-mirror reflector system *(Russian)* 8−46745
  orbiting mirrors, solar illumination after dark appl. 8−33816
  Perspex for astronomical telescope mirror manufacture 8−36458
  plane surface scanning, 4th order matrix operator formulation *(Russian)* 8−18037
  plasma mirror in electron beam controlled CO_2 laser 8−17976
  plastic optical components and systems 8−25967
  position control in Michelson interferometer by means of capacitor probes 8−21119
  rectilinear laser scanning of wide formats application of additional mirrors 8−33803
  reflection coefficient meas. instrument 8−18036
  reflection polarisers for vacuum UV, design and performance 8−33801
  reversible mirror design, for real time holographic interferometry 8−33705
  rotating, for synchrospeed synchroballistic camera 8−41366
  scanning system with reflecting elements, angular distortions 8−37965
  sectional mirror, optoelectronic control system 8−20645
  SEM cathodoluminescence microscopy, mirror detector system 8−24000
  soft X-ray interference mirror 8−41385
  solar concentrator using catenary curve reflecting surfaces 8−46744
  solar mirror materials, reflected beam profile characterisation 8−33814
  solar power stations appl., surface specularity obs. 8−13786
  spherical for IR imaging, astigmatism 8−33804
  spherical mirror resonator, misaligned, open, spatial struct., phase and amplitude distrib. 8−46676
  spherical mirror with piezoelectrically controlled curvature 8−33796
  surface profile testing with set of spherometers, math. analysis 8−13823
  telescope primary mirror testing by Hartmann method during manufacture 8−20641
  toroidal mirror fabrication for soft X-ray imaging 8−41384
  trihedral reflectors, for holography with local reference beam 8−37853
  waxicon, nonlinear, for laser beam transform., design and fabrication 8−5543
  X-ray mirror, for HEAO-B X-ray telescope, design, fabrication and expected performance 8−49330
  Ag-Sb alloy, reflectivity, effect of electrodeposition conditions 8−13784
  Al coated Pyrex double ellipse cavity 8−5503
  Al-Cu(Bi), multilayer mirrors, for X-ray and far UV radiation 8−1313
  Au coated surface, reflectivity in soft X-ray range 8−45221
  C-Au, multilayer mirrors for X-ray and far UV radiation 8−1313
  Co-Fe laminated mirror, with Ti-Gd sublayer, in polarising neutron guide 8−9012
  $LiNbO_3$ waveguide, Ti diffused, partial reflector, optical branch and switch fabrication 8−33834

m.i.s. devices *see metal-insulator-semiconductor devices*

m.i.s. integrated circuits *see field effect integrated circuits*

m.i.s. structures *see metal-insulator-semiconductor structures*

miscibility *see solubility*

missiles
  ballistic trajectory algorithm, analytic, including Earth oblateness 8−4476
  ring laser gyro, military appl. 8−42370

mixed conductivity
  electrode, kinetic parameters determ., method and appl. to Li_3Sb 8−14772
  β-Ag_2S, electrogalvanic and elec. props., and range of existence *(French)* 8−43175
  Ag_2S(Se), ionic-electronic mixed conductor, solid state controlled growth using cryst. rotation 8−31338
  Cu_2S(Se), ionic-electronic mixed conductor, solid state controlled growth using cryst. rotation 8−31338
  GaAs:Cr, photoconductivity and photo Hall spectra 8−19091
  Li_3Sb, mixed conducting electrodes, kinetic parameters determ. 8−14772
  Li_3Sb(Bi), evaluation as electrode material, electrochem. expts., 360-600°C 8−11526
  MnO-SiO_2-TiO_2 melt, electrical cond. meas. and electrolytic anal. *(Japanese)* 8−38861
  Na_2O-TiO_2-SiO_2 glass, elec. props. and energy gap 8−26921
  ThO_2 ceramics, CaO and Y_2O_3 stabilised density, elec. cond., permittivity 8−47838
  $YO_{1.5}$-PrO_x, phase relns. and electrophys. props. of solid solutions 8−23686
  ZrO_2-CeO_2, semiconducting ceramics, electronic conductivity and oxido-reduction *(French)* 8−26919

mixed state
  see also flux creep; flu2 flow; flux-line lattice; flux pinning
  A15 compounds, martensitic and supercond. transition models, anisotropy of vortices and US anomaly, review *(Japanese)* 8−23216
  film, nonequilibrium, inhomogeneous state onset 8−14875
  Ginzburg-Landau parameter crit. value 8−10597
  local state form. along dislocation, crit. field and current for destruction *(Russian)* 8−14905
  type I superconductor, two dimens. mixed state *(Russian)* 8−19193
  vortices, transport entropy theory 8−43534
  Nb, nonequilib. mixed state, with pinning centres, mag. flux interactions *(Russian)* 8−39275
  Nb, sp. ht., 0.03-0.3K, electronic and nucl. contribs. 8−10621
  TaS_2 (2H) single crystal, specific heat meas. in mag. field, 0.3 to 3K, AC calorimetry technique 8−43516

mixers (circuits)
  see also frequency convertors; radio receivers
  receiver design principles 8−45714
  submillimetre wave mixers, review 8−45712

mixes *see mixtures*

mixing
  see also blending; dissolving; heat of mixing; mixtures; solubility; solutions
  air pollutants dispersion from area sources in convective turbulence, model 8−28303
  alkali feldspars, TEM study of exsolutions, review *(French)* 8−28224
  atmosphere, convectively mixed layer, flux ratio relation to energy ratio 8−49107
  Baltic Sea, mixing in thermocline and halocline layers 8−40571
  compressible gases interface, turbulent mixing 8−1683
  fluidised bed, large scale, gas backmixing, solids movement, bubble activities 8−30349
  groundwater flow, fresh-salt water interface, mixing zone *(Japanese)* 8−11927
  high-level radioactive waste, ultimate disposal on seabed, rel. to oceanographic circulation 8−13273
  jets, mixing in transverse flow 8−5779
  liquid binary and ternary mixtures, Hildebrand fluidity eqn., viscosity calc. 8−38867
  LMFBR commercial plant design 8−8877
  LMFBR outlet plenum mixing, 3-D numerical simulation 8−8880
  LMFBR piping tee, multiple jet thermal mixing 8−8879
  Mississippi River and Gulf of Mexico waters, Ba non-conservative behaviour 8−32120
  mixer-settler, problems of construction and operation 8−29096
  molecular thermodynamics appl. to phase separation and critical phenomena *(German)* 8−14447
  ocean cyclonic rings, warm saline water/cooler fresher water mixing 8−44861
  ocean surface layer, dye plumes diffusion, expt. 8−44871
  pollutant dispersion in oscillatory fluid flow 8−44881
  Stepanov method, liq. mixing in shaper hole, simulation device 8−3022
  stratified flow, turbulence, mixing 8−22400
  stratosphere, H_2O vapour mixing ratio, Australia, 1973-76 period 8−49116
  troposphere and stratosphere, H_2 mixing ratio vertical profiles 8−32181
  tubular reactor, effect of axial mixing on start-up time, with first order isothermal irreversible reaction 8−9723
  turbulent jet mixing rates with self-excited acoustic oscills. 8−47008
  turbulent mixing in shear flow, model 8−1650
  turbulent mixing layers, free-stream turbulence effect 8−46949
  two-phase flow, mixing and condensation in high-speed flow, review 8−47014
  two-stream mixing, variational soln. 8−38266
  water/Na temp. fluctuation correlation mixing tee expts. 8−8878
  D_2-HCl electric discharge gasdynamic laser, turbulent mixing characts. 8−9366
  LiCl+$NaNO_3$, apparent and partial molar volumes in aq. soln. 8−44396
  Ni-Cu semiconducting cast ingots, effect of EM stirring on struct. *(Russian)* 8−6915
  UO_2, condensed vapour following core disruptive accident, particle-size distribs. using first-generation model 8−13295

mixing, heat of *see heat of mixing*

mixing circuits *see mixers (circuits)*

mixtures
  see also critical mixtures; mixing; solutions
  acetonitrile-carbon tetrachloride-n-butanol, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
  acetonitrile-toluene-n-butanol, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
  aerosol, spherical particle phoresis in multicomponent gas mixtures 8−22446
  n-alkane binary mixtures, infinite dilution activity coeffs. 8−15695
  alkanes, mixtures, order, enthalpy of mixing, calorimetric obs. *(German)* 8−18773
  alkanoate, Li, Na, K and Rb salt mixtures, DSC anal. 8−10192
  aqueous heterogeneous systems, NMR, substrate struct. and H_2O mol. relax. 8−7247
  aromatic compound-carbon tetrachloride, liq. mixture, sound vel. theories 8−2199
  binary, anal. by computer decomposition of mol. fluoresc. spectra 8−15735
  binary hard-sphere mixture, mutual isothermal diffusion Onsager reciprocity relations effect 8−30773
  binary liquid, stimulated Raman scatt., intensity changes, selective excitation 8−13753
  binary liquid mixtures, excess internal press. and intermolecular interaction 8−35640
  binary liquid mixtures, nonassociated, thermodynamics 8−18797
  binary liquid mixtures, viscous flow props., mol. thermodynamic theory 8−2280
  binary melts, short-range order, X-ray and neutron scatt. *(German)* 8−14272
  binary mixture supersaturated vapour condensation, homogeneous nucleation 8−2247
  binary mixture vapour condensation, forced-free convection, finite difference treatment 8−5741
  binary nonelectrolyte liquid mixture, hard sphere eqns. of state 8−47495
  binary vapour mixture condensation into immiscible liquids *(German)* 8−18760
  chloroform-carbon tetrachloride mixture, Lennard-Jones pots., mol. dynamics calcs. 8−34418
  clay-water systems, NMR, substrate struct. and H_2O mol. relax. 8−7247
  concentrated electrolyte, solutions, viscosity, mixture law 8−18818
  cyclohexane+benzene, excess volume 8−47527
  cyclohexane+n-hexane, effect of pressure on excess enthalpies at 298.15K 8−48689
  cyclohexane-methanol, crit. opalescence, AC elec. field effect 8−35159
  cyclopentane+isomeric octanes, excess volume 8−47527
  1,2-dichloroethane+benzene(toluene)(p-xylene), liq., molar heat capacities 8−18787
  dioxan-cyclohexane-chloroform, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
  direct analysis, MIKES method 8−44413
  dodecan-1-ol+n-hexane, vap. press. and thermodynamic props., 298.230 to 342.824K 8−47528
  Dufour's effect and hydrodynamic stability *(French)* 8−30284
  elastic, 2-phase interpenetrating mixtures, closed system of eqns. *(Russian)* 8−16652
  elastic mixtures, stability criteria 8−18514
  electrolyte mixtures, in aq. soln., viscosity, individual electrolyte effects *(German)* 8−22881
  ethanol-water mixtures, specific volume, compressibility, viscosity, up to 3200 bar, 15, 25°C 8−10113
  ether-water mixtures, miscibilities, enthalpy of mixing, solvation *(German)* 8−18779
  fluid, multiphase system, vapour bubble collapse, charact. functions 8−18156
  fluid 2-component mixtures, stability conditions and wave speeds 8−30344
  fluid mixtures, analytic and perturbation theories 8−18516
  fluid multicomponent mixture, number-conc. struct. factors 8−18526
  formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566
  gas, binary mixture, thermal slip along spherical aerosol particle surface 8−34168
  gas, binary mixtures, diffusion coeffs. lists 8−34254
  gas, multicomponent gaseous diffusion coeffs., mean free path theory 8−18365
  gas mixture production method, composition control 8−1765
  gas mixture separation by membranes *(Japanese)* 8−48691
  gas-gas immiscibility in binary fluid mixtures 8−34627
  gas-liquid mixture, arbitrary amplitude acoustic wave propag. 8−38122
  hard sphere mixture, Ornstein-Zernike eqn. with Yukawa closure 8−18513
  hexan-l-ol+n-hexane, vap. press. and thermodynamic props. 298.230 to 342.824K 8−43129
  n-hexane-n-dodecane 'ideal' mixture, viscosity, theory *(German)* 8−22882
  hydrocarbon-simple fluid gas streams, second virial coeffs. calcs. 8−1777
  hydrocarbons, liq. mixtures, thermodynamics *(German)* 8−20047
  hydrocarbons, thermodynamic props., multiparameter conformal solution theory 8−18796
  ideal mixture, viscosity, theory *(German)* 8−22882
  inert gas binary mixture, unlike mol. force consts. from viscosity data, thermal cond. 8−33565
  ionic fluids binary mixtures, critical conc. fluctuations 8−34596
  Kneser liquids, vibrational energy exchange probabilities 8−38780
  large asymmetric mol. interaction with small mol., target factor, mixture thermodynamic props. 8−26225
  liquid, binary mixture, viscosity, semi-empirical procedure, data correlation 8−34643
  liquid, excess Gibbs free energy, quasilattice local composition model, phase equilib. 8−31681
  liquid, nonideality, prediction and meas. of thermodynamic excess functions 8−27818
  liquid, viscosities, empirical formula, continuum theory and generalised Navier-Stokes system 8−14498

mixtures continued
  liquid and gas mixtures, thermodynamic props., conf., Braunschweig, Germany (May 1976) 8−20046
  liquid mixtures, activity coeffs. calcs. using struct. group contribs. *(German)* 8−18777
  liquid mixtures, thermodynamic props., mol. theory 8−18515
  liquid mixtures, thermodynamic props. for mixed fluid densities 8−18775
  liquid-liquid phase equilibria, theory, chem. models 8−18781
  2,6-lutidine-water, spinodal decomposition, light scatt. obs. 8−34625
  molecular fluids, binary mixtures, hydrodynamics eqns., VH light scatt. 8−35158
  multicomponent fluorescent mixtures, quantitative anal. of data 8−27833
  multicomponent polymer system, liq.-liq. phase separation, thermodynamic aspects of polymer compatability 8−14469
  nonideal gas, dissociating, composition and thermodynamic props., initial at. method 8−40034
  oligomeric liquid mixtures, transition to, polymer systems, thermodynamics 8−20048
  organic liquids, positronium form., spur process 8−1113
  perfluoromethylcyclohexane-tetrachloromethane, specific heat temp. depend., critical composition mixture near critical temp. 8−26689
  petroleum-acetylene-O_2 combustion products, seeded, elec. cond., for MHD power plant 8−34256
  phase equlibria, molecular thermodynamics calculations, practical appls. *(German)* 8−18733
  physical-chemical separation and thermodynamics, review *(German)* 8−18774
  polar/nonpolar mixtures, pot. of mean force, approx. theories, clustering of solute mols. 8−26401
  polyoxymethylene-copolyamide blend melt, viscoelastic peculiarities *(Russian)* 8−38263
  quantitative analysis by ^{13}C NMR 8−31716
  rational description, theory 8−20053
  real gases, thermodynamic props. and intermol. pots. *(German)* 8−17743
  rhodamine 6G, delayed fluoresc. of simple associates in polar and nonpolar solvent mixtures *(Russian)* 8−48185
  salts, molten, liquidus surface and eutectic pts. 8−30736
  scaled particle theory results for dense mixtures of convex shaped mols. 8−1969
  solid-liquid phase equilib., binary and ternary systems, excess Gibbs free energy 8−30736
  tetrafluoromethane-inert gas, compressed fluids, ang. momentum relax., NMR 8−19355
  triethylamine/alcohol mixtures, theoretical evaluation of sound vels. and AB interactions 8−18706
  triethylamine/phenol mixtures, theoretical evaluation of sound vels. and AB interactions 8−18706
  vapour phase organic solute conc. estimation, from rel. humidity meas. 8−34614
  vapour-liquid equilib., high press., phenomenological description, review 8−30737
  vapour-liquid equilibrium, generalised one-parameter Redlich-Kwong eqn., mixtures 8−34589
  water vapour, dissociating, composition and thermodynamic props., initial at. method 8−40034
  water-2-propanol, density, US vel. meas. 8−18529
  water-ethanol mixtures, hydrophobic interaction, scaled particle theory 8−22625
  Ar, Ar-N_2(Xe), detection gas suitability for proportional scintillation counter *(German)* 8−41901
  Ar-ethylene mixtures for drift chamber appl. 8−25391
  Ar-Kr mixtures, liq.-vap. isotope fractionation factors 8−33626
  Ar-SF_6, thermophysical props., second virial and diffusion coeffs., thermal diffusion factors 8−42699
  CO_2+Kr(Xe), ^{13}C-mag. shielding density depend. 8−9173
  Fe-Ni-C, Redlich-Kister eqns., activity coeffs., phase equilib. 8−23664
  H-He fluid, phase diagram and transport props., planetary appl. 8−28554
  H_2SO_4-H_2O, aerosol form., nucleation calcs. 8−31709
  Kr, Kr-Xe, detection gas suitability for proportional scintillation counter *(German)* 8−41901
  Kr mixtures, binary and ternary, viscosity meas. 8−18367
  Kr+ethene, liquid mixture thermodynamic excess functions 8−48690
  N_2+methane, liquid mixture, press. effect on excess thermodynamic functions 8−47494
  NaCl-KCl electrolyte mixtures, in aq. soln., viscosity, individual electrolyte effects *(German)* 8−22881
  Na_2O+GeO_2, molten mixture, EMF measurements 8−43144
  UCl_4 molten mixtures with alkali metal chlorides, physicochemical props. 8−38915
  Xe+He(Ne)(Ar)(Kr), binary mixture viscosity and diffusion coeffs. 8−38443
mm waves *see microwaves*
MO calculations *see molecular orbitals calculations*
mobility, carrier *see carrier mobility*
modeling *see modelling*
modelling
  see also brain models; identification; physiological models; semiconductor device models; simulation
  acoustic field formation by superposition with phase shift *(Russian)* 8−18087
  adhesive bonds, physical modelling, US attenuation effects 8−7141
  aerial radiometric data modelling program 8−46237
  aerodynamics, unsteady, modelling, for arbitrary motions 8−14033
  air pollution, plume dispersion modelling for inversion breakup at power plant 8−3933
  air pollution model, parameter estimation from simulated LIDAR data 8−28302
  air-water bubbly mixtures, press. wave propag. *(French)* 8−22402
  Ariane launch vehicle, model firing tests, acoustic field, heat flux, press. distrib. 8−4062
  atmospheric boundary layer turbulence, three vel. component modelling 8−28252
  atmospheric CO_2 effect on global radiative heat balance 8−3863
  bidimensional surface waves, periodic correlational random field model *(Russian)* 8−20430
  biological cell image, Fourier transforms 8−36007
modelling continued
  biomedical research 8−31755
  chemical and biological systems, network thermodynamics appl. 8−20955
  climate models, forced noise level 8−44978
  closed basins, three-dimens. rigid-lid model 8−32131
  cohesive sediments, modelling of transport, erosion and deposition 8−15994
  combustion, turbulent premixed and diffusion, engineering flow modelling computation 8−1756
  dielectrics break-up by pulsed discharges, non-ore materials milling appl. *(Russian)* 8−27653
  dissipative mufflers with locally reactive lining, finite element method 8−13849
  Earth, linear inference and underparameterised models 8−49000
  easy glide, computers modelling, range of permissible parameters *(Russian)* 8−47375
  electric field disturbances, in conducting fluid *(Russian)* 8−231
  EM power deposition in prolate spheroid models of man and animals at resonance 8−31905
  estimation aided by instrumental variables, regression model *(German)* 8−29080
  fibre-optic scattering loss dependence on launching condition, lossy-layer model 8−5577
  fission-fusion electric energy supply system modelling 8−740
  fission-fusion hybrid power plant economics 8−789
  flame, turbulent premixed with sequential chemistry, closure model 8−35683
  flat plate collector energy yield increase by planar reflector, modelling appl. 8−33813
  float glass, heat transfer and temp. control in annealing, computer appl. 8−27543
  flow, general discrete time compartmental model 8−1625
  flow, unsteady, viscous, separated, laminar, numerical modelling 8−46933
  flow through isotropic granular porous media, constricted unit cell model 8−30350
  fluid, of hard hetero/homonucl. diats., Monte-Carlo simulations 8−42873
  fusion reactor breeders, models for T_2 and ^4He transport 8−17424
  gaseous reactor wastes, dispersal forecasting *(French)* 8−8995
  Gaussian noise, simple models 8−32763
  geophysical time series, Hurst range of independent normal summands, distribution 8−16081
  geopotential with point mass anomalies, systematic approach 8−40465
  glass making process, math. and phys. models, review 8−3083
  global processes, sedimentary cycling models 8−16162
  groundwater natural recharge, math. modelling 8−11934
  Gulf of Gdansk, lithodynamical processes, theoretical anal. and scale model tests *(Polish)* 8−40540
  image formation, super-resolution derivation by analytical continuation methods 8−29915
  image registration, practical limits assessment *(Russian)* 8−37811
  inertial systems constructed on double-gyroscope frame base, generalised models *(Russian)* 8−28937
  jet, noise modelling by geometrical acoustics, outside silence cone 8−34177
  jets discharging into quiescent ambient, finite difference anal., turbulence modelling 8−30332
  lakes, winter season energy balance *(Polish)* 8−24315
  laser compression and heating of shell target *(Russian)* 8−1860
  LMFBR vented assembly cores, appl. to nonlinear network anal. to hydraulic modelling 8−13207
  low and high pressure discharges, aspects *(French)* 8−14240
  magnetic bubble generator modelling and optimisation 8−6547
  marine modelling (vol.6 of 'The Sea') 8−16047
  measurement data processing system error analysis 8−41288
  monochromatic coherent plane wave scatt. by living cell *(Russian)* 8−48765
  nuclear reactor fuel elements, struct. anal. 8−41814
  nuclear reactor system anal., empirical modelling appl. 8−25284
  ocean dynamics, coastal jet conceptual model for shallow seas 8−16051
  ocean general circulation models 8−16048
  ocean seasonal thermocline, one-dimens. models 8−16050
  ocean tides, numerical models 8−16049
  oceanography, continental shelf sediment transport 8−15995
  photoresist, positive, simultaneous exposure and development model 8−4715
  polymer molecule, in soln., end-to-end distance relax., Monte Carlo simulation, model depend. 8−22061
  Port of Leba, Poland, reconstructed entrance, storm tides prediction, math. modelling *(Polish)* 8−40568
  primary production model including circulation influences in Lake Superior 8−49041
  PWR, internal vibration calc. rel to operational safety condition *(Czech)* 8−8915
  PWR system nonlinear model comparison with test results 8−29571
  radioactive waste disposal options, modelling studies 8−41830
  reactor fuel, rod modelling, utility requirements 8−21747
  reflector phased array aberration effects, optical modelling *(Russian)* 8−16290
  relativistic electron ring azimuthal oscillations in resonator with stabilising medium *(Russian)* 8−29889
  reservoir sedimentation process and detention structure model 8−44892
  reservoirs with Markovian inflows, first passage times 8−16080
  response surface, for stat. analysis 8−4470
  river outflow to sea, 3D model, Herault river example *(French)* 8−36209
  sea temp. vertical distrib., modelling and prediction on expedition *(Russian)* 8−16190
  sediment transport near ocean bed, theoretical flow models 8−15996
  sedimentation, three-parameter Markov model 8−34183
  semiconductor, low-symmetry, modelling of elec. props. 8−19036
  sensitivity analysis, nonlinear, of multiparameter model systems 8−28931
  shoreline changes due to dredged holes, math. and lab. models *(Japanese)* 8−11878
  shoreline evolution, beach sand transport modelling 8−15993
  short single-mode optical fibre polarisation effects 8−1393

modelling continued
  solar radiation data, stochastic modelling and forecasting appl. 8−36243
  sonar towed array modelling, steady-state and transverse dynamic motion study 8−30112
  spacecraft surface material performance modelling 8−4061
  steam generator combustion chamber, combustion product recirculation results *(Czech)* 8−27759
  surface-mounted beaded thermocouple transient response models 8−8405
  transmission system design, influence of optical component baseband frequency response 8−1415
  tropical oceanic circulation 8−16055
  turbulence, models, two-dimens., vortex and Fourier mode 8−46945
  turbulent convection in vertical layer, numerical modelling *(Russian)* 8−9636
  turbulent jet flow, mixing length calc., using finite element method 8−38295
  two phase mixtures permittivity prediction 8−48107
  viscous flow, over mobile base, Navier-Stokes eqns. 8−46921
  water surface, long-wave propag., modelling criteria, appl. to tsunamis 8−26132
  He I, cryofluid free convection, at supercritical pressures 8−26745

modelling, computer *see computer-aided analysis*

models *see modelling*

moderation (neutron) *see neutron moderation*

moderators
  see also beryllium; graphite; heavy water
  FFHR, tailoring the breeding-fission ratio by neutron moderation with iron 8−21677
  graphite, CO formation at initial stages of H corrosion 8−11355
  graphite, fast neutron flux effect on irradiation damage 8−22768
  graphite, prestressing effects on nuclear graphites 8−14482
  graphite, pyrolytic crystals, surface topography, bombarded with Ar$^+$, N$^+$, He$^+$ ions 8−6820
  graphite, radiation damage effect on erosion by H 8−21640
  graphite, reactor material, laser microemission spectroscopy for local determ. of impurities *(German)* 8−7161
  graphite cylindrical thin shell, thermal shock, fundamental heat cond. soln. 8−29575
  graphite powder, characterisation, use in HTR fuel compact matrices 8−29631
  pyrocarbon coatings, mass spectrom. determ. of fission gas permeabilities 8−12785
  B_4C, effect of fast neutron irradiation on struct. 8−26597
  Eu_2O_3, mech. and physical props. rel. to reactor control rod appl. 8−21641
  SiC protective coatings, on graphite for HTR, corrosion *(German)* 8−3248
  U, reson. absorpt., effect of annular fuel elements 8−666

modes, laser *see laser modes*

modes, lattice vibrations *see lattice dynamics*

modes, vibration *see vibrations*

modular circuits *see modules*

modulation
  see also amplitude modulation; angle modulation; demodulation; demodulators; modulation spectroscopy; modulators; optical modulation; pulse modulation; Schwarz-Hora effect
  acoustic wave in nonlinear medium, modulation rel. to low-freq. noise waves excitation 8−9472
  acoustical-gravity waves in plane waveguide, self-modulation *(Russian)* 8−36221
  displacement transducer using second harmonic type magnetic modulator 8−21115
  FM signal modulation by smoothed random telegraph signal, appl. to underwater acoustic meas. 8−18130
  ionosphere LF signals, modulated reception method for refl. coeff. determ. 8−45114
  magnetosphere VLF noise intensity, modulation by hydromagnetic oscills. 8−45139

modulation factor *see modulation*

modulation index *see modulation*

modulation spectroscopy
  see also appearance potential spectroscopy; electroabsorption; electroreflectance; magnetoabsorption; magnetoreflectance; piezoreflectance; thermoreflectance
  adsorption of isolated atoms, quantum theory 8−22957
  tris(2,2′-bipyridine) ruthenium(II) cation, IR-optical double reson. and thermal modulation spectra 8−25576
  double wavelength rapid scanning spectrophotometry of intact mitochondria 8−4699
  Fourier spectrometers, sinusoidal interference modulation and path difference control *(Russian)* 8−29176
  Kramers-Kronig relations, anal. in modulation spectroscopy 8−23423
  laser wavelength-modulation spectroscopy, high sensitivity 8−24868
  maleic anhydride, struct., DRM microwave spectra, isotope shifts 8−21918
  optically active crystal, circ. dichroism, modulated polaris. spectra 8−23429
  phase-shift-difference method, modulated, appl. to excitation absorption energy meas. in $CuGaS_2$ 8−39565
  polarisation spectroscopy, using phase modulation spectrophotometer, optical calculi 8−45715
  saturation transfer EPR spectroscopy, source modulation, mol. reorientation effects 8−41339
  SISAMs, sinusoidal interference modulation and path difference control *(Russian)* 8−29176
  stress spectroscopy of resonant bandmode with far IR laser 8−2847
  vacuum UV, with synchroton radiation, review 8−4710
  wavelength modulated derivative UV absorpt. spectrometry, improving analysis 8−45731
  $AgGaSe_2$ wavelength-modulated reflectance, optical electronic transitions, 1.5-5.5 eV 8−35170
  CaCl, free radical, $A^2\Pi$-$X^2\Sigma^+$ system obs. by saturation spectroscopy 8−46353
  He-Ne lasers levels, modulation spectroscopy 8−46572

modulation transfer function *see optical transfer function*

modulators
  see also demodulators; modulation
  bidirectional square wave modulator, for NQR spectrometer 8−256
  laser diode modulator using current switching bipolar transistors 8−1288
  magneto-optical, IR, using CaVG polycryst. 8−10900
  phonocardiograph modulator design trends 8−24171

modules
  see also CAMAC
  dead time correction system, standard 8−17532
  emitter-coupled integrated circuits, application to nanosecond nuclear electronics 8−5101
  image convertor camera, with microchannel intensifier, modular design 8−42427
  nuclear reactor containment, primary, electrical penetration assembly 8−716
  photogrammetric automaton 'Zenit', program-control module for interference coordinate measuring system *(Russian)* 8−21103
  programmed, for transducer response linearisation 8−45604

modulus, Young's *see Young's modulus*

Moire fringes
  contouring by Moire holography 8−1183
  contouring method by parallel light Moire holography 8−33702
  contouring of large objects by scanning technique 8−32791
  finite element method use in modelling Moire method effects 8−38259
  liquid, detection of impurities using moire patterns 8−8440
  measurement sensitivity enhancement by line density increase, using two superimposed gratings *(German)* 8−21211
  Moire Rosette method for determ. of principal strain and direction 8−27695
  photomicrometry with moire 8−4690
  projection topography accuracy and sensitivity 8−45677
  projection-type Moire topography theory 8−16776
  stress/strain meas. appl., in viscoelastic plastic compounds *(German)* 8−22309
  surface rapid motion under dynamic loading, high speed photography of Moire fringes 8−32789
  surface roughness, high sensitivity interferometric measurement appl. *(Japanese)* 8−37048
  surface topography meas. of high speed deform. 8−36970
  tensile specimen, normal mech. anisotropy meas. by Moire technique 8−16788
  three dimensional deformation measurement, Moire and light slicing methods 8−8382
  Young's experiment with n holes, appls. *(French)* 8−42274

moistening *see wetting*

moisture
  see also humidity
  diffusion in activated alumina, study 8−10219
  diffusion is sorbent solids, diffusion cell and pore diffusion 8−10210
  domestic coal, radiometric method for determ. of heating value, rel. to moisture content 8−20111
  infiltration in homogeneous isotropic porous medium, moisture profiles and wetting 8−18336
  laminate, fibre reinforced composites, moisture diffusion, 3-D Fick's law 8−10218
  microwave Doppler-effect flowmeter, particle moisture content effects 8−9732
  organic solvents, trace H_2O determ., IR spectrophotometric method 8−31731
  soil moisture, estimation of effective capillary press. in Green and Ampt infiltration eqn. 8−3844
  soil moisture content, determ. by meas. of reflectance in ultrashort radio wave band 8−16075
  soils, theoretical model and expts. of rainfall infiltration 8−49058
  thermal insulator corrosion behaviour, in steel-sheathed pipe system *(German)* 8−31580
  transient heat conduction and moisture migration problems, finite element approach 8−12653
  soil, surface moisture content parametrization, use in atm. prediction models 8−49052

moisture content *see moisture*

moisture measurement
  see also humidity measurement
  dew meter, β-absorpt. type, appl. to meas. on soil and plant surfaces 8−24803
  granular and powdered materials, microwave method *(Polish)* 8−12706
  remote sensing simulator for soil moisture meas. 8−49143
  soil, using airborne imaging passive microwave radiometer 8−36310

molar volume *see density*

molecular alignment *see molecular orientation*

molecular beams
  see also molecule-surface impact; particle velocity analysis
  analogue detection device for mol. beam scatt. expts. and vel. anal. 8−33635
  broad-frequency chopper with adjustable duty cycle, appl. in modulating mol. beams 8−22054
  chopper, using active permanent magnet suspensions 8−24829
  detector with Ti sorption pump 8−21150
  elastic scatt. differential cross section deconvolution by iterative van Cittert process 8−17746
  epitaxy apparatus, mol. beam controlled by quadrupole mass spectrometer *(French)* 8−15315
  excited state processes, collision rates obs. using single at. or mol. beam 8−13567
  formaldehyde, mol. beam, vel. meas. by Doppler effect on RF spectrum splitting *(French)* 8−13627
  monokinetic spectroscopy *(French)* 8−25751
  orbiting molecular beam laboratory on Space Shuttle 8−35242
  recycling reactor for study of reactive molecule-surface collisions 8−1109
  RF spectroscopy, interference effects *(French)* 8−42038
  supersonic jet beam, seeded with CsF, (LiF), vibr. relax. 8−37716
  supersonic seeded molecular beam, vibr. relax. 8−17761
  surface reactions, possible expts. on Space Shuttle 8−35243
  velocity distribution function, and moments, from TOF meas. 8−5371

molecular beams continued
- CO, $d^3\Delta_i$ v=4 state dipole moment, laser-induced transition in mol. beam 8−25513
- $Cl+Br_2 \to BrCl+Br$, crossed mol. beam, translational energy depend. 8−25693
- F_2+UO_2, reaction kinetics, molecular beam study 8−46157
- K_2, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
- LiF, supersonic seeded molecular-beam, vibr. relax. 8−17761
- Na_2, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
- Na_2, supersonic mol. beam, characterisation by multiphoton ionisation 8−23946
- NaK, laser-induced fluoresc. in supersonic nozzle beams 8−25593
- RbKr, magnetic resonance meas. of spin-rotational interaction 8−33528

molecular biophysics
see also biomembrane transport; biomolecular effects of radiation; DNA; lipid bilayers; proteins
- actin-myosin filament overlap rel. to number of Ca binding sites on glycerinated muscle fibres 8−44465
- actinomycin-DNA bindings, first-neighbour specificities, circular dichroism 8−3442
- actomyosin, head rot. and dissoc., muscle exponential rate processes rel. to MgATP conc. 8−44468
- adenosine 5′-monophosphate, UV resonant Raman spectra 8−48756
- adenylyl 3′-5′ adenosine, conform. equilib., Raman temp. jump obs. 8−8450
- adenylyl cyclases, stimulation by hormones and regulation by nucleotides, review 8−15760
- L-α-alanine, cryst., cationic radicals, EPR 8−11537
- albumin, bovine serum, hydrated, dielectric props. at 9.9 GHz 8−15758
- albumin, bovine serum, in soln., five-component dielec. dispersion 8−15759
- albumin, human serum, AsF_3^- NMR probe for anion binding sites 8−48748
- albumin-unsaturated fatty acid binding kinetics, fluoresc. anal., rel. to struct. lability of biomembranes 8−15755
- amino acid monolayers and ordered films on Cu, surface struct. LEED 8−38968
- amino acid racemization, appl. to geochronology and geothermometry 8−20341
- amino acids, polycryst., proton mag. relax. and mol. motion 8−20139
- antimalarials, interaction with coenzyme-Q_{10}, theory 8−27885
- astaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- Na^+, K^+-ATPase, identification of membrane-embedded segment of large polypeptide chain 8−3447
- Na^+,K^+-ATPase, membrane, as digitalis receptor binding model 8−40111
- bacteria, photosynthetic, triplet-state EPR spin polaris., intramol. model 8−44469
- bacteriochlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
- bacteriochlorophyll monolayer quantum yield and image contrast in photoelectron microscopy 8−44453
- bacteriochlorophyll of green bacteria, resolution of absorpt. and fluoresc. spectra into components 8−20152
- bacteriophage DD6, contracted tail, three dimensional struct. 8−11608
- bacteriorhodopsin, purple membrane struct., Halobacterium halobium 8−15782
- bases, biologically important, and derivatives, optical crystallographic props. 8−3449
- basic pancreatic trypsin inhibitor, methyl group PMR, 360 MHz 8−27887
- biopolymer, electronic transport mechanisms, asymmetry role 8−6370
- biopolymer thermodynamic props. in helical and coiled state, 4 to 400K, calorimetry 8−20140
- biopolymers, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
- blue proteins, activation of electron transfer reactions 8−44446
- bone powder and ash, PMR and IR spectra, chem. anal., bond lengths 8−3414
- Bose condensation, microscopic approach to Frohlich's theory 8−24022
- n-butyl retinal Schiff bases, absorpt. spectral props., rel. to bathochromic shift in visual pigments 8−40117
- β-carotene, electronic struct., classical and double beam photoemission obs. 8−9285
- β-carotene, in CS_2, reson. Raman spectra, room temp. 8−35803
- β-carotene, solubilised in lecithin liposomes, linear dichroism, absorption statistics 8−1014
- β- carotene, valence bands, XPS obs. 8−24030
- cell membranes, effects of hydrostatic pressure, review 8−15790
- ceruloplasmin, human, mol. wt. determ. by hydrodynamic methods and low-angle X-ray scatt. 8−15761
- chemical reactions of biological molecules, Raman difference spectroscopy 8−44368
- chiral biomolecules, temp.-jump relaxation studies, transient CD meas. 8−5372
- chlorophyll, photooxidation, triplet state mechanism 8−27791
- chlorophyll, transfer of electronic excitation energy from monomer to dimer *(Russian)* 8−27289
- chlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
- chlorophyll A low-intensity two-step absorpt. in vivo 8−35801
- chlorophyll pigments, aggregated forms in soln., spectral-luminesc. characts. *(Russian)* 8−23529
- chlorophyll-a, nonlinear absorpt. spectra 8−25522
- chlorophyll-a, spectral props. of liquid crystal solutions 8−27291
- chlorophyll-a arrays, exciton transition calculations 8−35802
- chlorophylls, luminesc., conference, Szeged, Hungary (Aug. 1976) 8−27279
- chlorophylls, luminesc. analysis of triplet states *(Russian)* 8−27288
- chlorophylls, triplet state ESR, fine struct. and rate consts. determ. 8−25574
- chlorophylls, triplet state ESR, fine structs. and rate consts. determ. 8−25575

molecular biophysics continued
- cholesterol transmembrane movement in human erythrocytes, radioactive tracer expt. 8−3459
- cholesteryl oleate (linoleate), solid-solid transition, glass transition, cryst. nucleation temps., DSC obs. 8−34604
- chromatin nucleosome core particle, ^{31}P mag. reson. of DNA 8−40112
- Cl Mn II complex with protein, EPR spectra and zero field splitting interaction 8−35793
- colchicine, cryst. struct., multiple soln. direct methods 8−34384
- collagen, axial arrangement of α-chains, intramolecular polar and apolar interactions 8−27891
- collagen fibril, probabilistic aspects of struct. 8−27886
- collagen triple helical struct. study using Fourier transform 8−7318
- concanavalin A receptor, of human erythrocytes, receptor function in lipid bilayers 8−48764
- cooperative behaviour, Bose condensation, Frohlich model 8−35797
- cyanine fluorescent dye membrane probe effects on cell props., rel. to bacterial chemotaxis 8−35815
- cytochrome c oxidase, oxidised and reduced, X-ray absorpt., edges, using synchrotron radiation 8−48758
- cytochrome c-$Fe(CN)_6$ electron transfer, verification of vibronically coupled electron tunnelling 8−48750
- cytochrome c-phospholipid interaction, studied by pulse radiolysis 8−48746
- cytochrome-c, hydrated, dielectric props. at 9.9 GHz 8−15758
- dimyristoyl lecithin lipid vesicles, sonicated, ^{13}C relax. times model for gauche-trans isomerisation 8−33520
- dipalmitoyl phosphatidylcholine monodomain samples with varying concs. of water and other ingredients, prep. 8−15780
- DNA, cetavlon salt, cryst. struct., X-ray diffr. meas. 8−2105
- DNA, helical to coiled relax., statistical mech. approach, formaldehyde denaturation 8−3443
- DNA, luminescence, excitation wavelength depend. in UV/VUV region 8−31768
- DNA, polymorphism, X-ray diffr. and computerised model building study 8−27894
- DNA, RF II ΦX174, melting profiles 8−24027
- DNA, supercoiling, elastic model 8−15767
- DNA cetavlon salt, struct., small-angle X-ray diffr. meas. 8−11609
- DNA with heavy atom, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
- dye-detergent model systems, degree of fluoresc. polarisation 8−27287
- electron transfer in bacterial photosynthesis, low-temp. 8−44470
- enzymatic catalysis, orbital perturbation anal. 8−31623
- enzyme, diffusion-controlled reaction rate to buried active site 8−35796
- enzyme-substrate interaction forces influence on reaction rates 8−31765
- enzyme-substrate reaction with ferroelec. behaviour, rel. to Frohlich brain wave model 8−44490
- epitaxial sandwiching of biopolymers, electron microscopy specimen prep. 8−36080
- epithelioid fibre system decoration by sera, immunofluorescence microscopy visualisation 8−15801
- erythrocyte ghost membrane struct. effects of fusogenic agent, fusion mechanism 8−31782
- erythrocyte membrane struct. changes due to cAMP, spin-probe study 8−31779
- ethylcellosol, aq. soln., light scatt. rel. to conc. fluctuations *(Russian)* 8−3450
- ferrihaemoglobins, $(Fe^{3+})d^5$ config. 8−39071
- flash photolysis, appl. to biological systems, review 8−11530
- fluorescence and fluorescent probes, appls. 8−15932
- fluorescence polarisation decay in membranes, theory 8−20138
- fluorescence spectroscopy in study of biochem. processes review 8−11784
- fluorescent probe binding to proteins error in interpretation of double-reciprocal plot and Scatchard plot 8−24021
- L-glutamic acid, solid, amino group reorientation, PMR second moment obs. 8−35046
- glycine, cryst., cationic radicals, EPR 8−11537
- glycophorin, of human erythrocytes, receptor function in lipid bilayers 8−48764
- gramicidin A channel struct., elec. meas. with lipid bilayer membranes 8−15783
- haeme a, low-spin ferrous, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- haemin, hyperfine interactions and related props. 8−44451
- haemin, mag. interaction down to 0.03K, Mossbauer effect 8−44450
- haemoglobin, absorpt. spectra, light scatt. method meas. *(Russian)* 8−21939
- haemoglobin, deoxygenated sickle cell, gels, liq. cryst. props. 8−3445
- haemoglobin, human, liganded, kinetics of alkaline tetramer-dimer dissoc., laser scatt. obs. 8−48749
- haemoglobin, sickle cells, 3-dimens. reconstruction of fibres 8−44452
- haemoglobin derivatives, hyperfine interactions and related props. 8−44451
- haemoglobin S solution, acoustical props. 8−3453
- haemoglobin S solution, effect of deoxygenation on US absorpt., rel. to sickle cell blood 8−44477
- haemoglobin-haptoglobin deoxygenated complexes, Mossbauer spectroscopy 8−24020
- helical to coiled relax., statistical mech. approach, appl. to DNA secondary struct. 8−3443
- helix-coil transitions in specific sequence biopolymers 8−35794
- n-hexadecyltrimethylammonium bromide micelles, ^{13}C relax. times model, for gauche-trans isomerisation 8−33520
- high-potential Fe protein of Chromatium vinosum, low-lying excited state, EPR 8−3448
- histone F2a solutions, effect of ionic composition of medium on struct. and effectiveness of intermol. interactions 8−48744
- histone H4 N-terminal oligopeptide struct., circular dichroism and IR spectroscopy 8−24025
- informational interaction, cooperative mechanism 8−15756
- insulin and analogue, side-chain mobility and tyrosyl circular dichroism 8−15770
- ionone, dipole moment determ. 8−27882
- iron porphyrin chlorides, X-ray, EPR and mag. susceptibility obs., intermol. exchange interaction 8−10765
- isomerism, L- and D-mol. reaction rates; weak neutral currents 8−415
- lecithin, adsorbed monolayer on aerosil, IR spectra 8−15753

molecular biophysics continued
- lecithin bilayer, ion-induced changes in head group conform, ^{31}P and ^{2}H NMR 8−3452
- lecithin cryst. growth rel. to mol. bilayer props. 8−31780
- leghaemoglobin of Lupinus luteus, cryst. struct. of first component 8−27893
- LF phonons, biological functions *(Chinese)* 8−24024
- light scattering under high press. *(Dutch)* 8−27901
- lipid monolayers and bilayers, phase transitions, model 8−44460
- lutein, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- lysozyme, hydrated, dielectric props. at 9.9 GHz 8−15758
- lysozyme, stepped character of thermal denaturing, optical density at 290 nm 8−15763
- lysozyme bound water, thermally-stimulated press. and current 8−15757
- macromolecular structure, linked-atom least-squares reciprocal-space refinement system, LALS, incorporating stereochemical restraints 8−26377
- macromolecules, computer simulation of solvent struct. 8−40113
- membrane, plastic deformation during freeze-cleavage, reviews 8−14400
- metalloenzyme, metal ion geometry and mechanism from PAC expts. 8−44449
- Cd-metallothionein, test object for dark field electron microscopy of protein struct. 8−11610
- 6-methylmercaptopurine riboside, 4 MeV electron irrad., 77K radicals form., EPR obs. 8−39405
- Mossbauer measurements on Fe-containing mols., using ^{3}He-^{4}He refrigerator 8−24909
- muscle, striated, mol. basis of force development 8−40126
- muscle contraction cross-bridge model 8−44475
- muscle water transverse and longit. NMR relax. rates 8−35810
- myoglobin , oxyhaeme complex, single cryst., visible spectrum, electronic struct., coord. geometry 8−44456
- myoglobin-Fe^{3+} compounds, Mossbauer and suscept. expts. 8−24019
- myosin head return to thick filaments after muscle contraction 8−7319
- myosin molecule binding to two actin filaments 8−27884
- myosin subfragment-1 attachment to actin, effect on equatorial X-ray refls. 8−27880
- 11-cis-N-methyl PRSB-benzene complexes, spectral props., CNDO/S calcs., bathochromic shift 8−31767
- neurotoxin, snake venom, appl. mol. graphics to struct. determ. 8−27892
- nuclear acids, effective force constant corrections, in redundant mol. coords. 8−13634
- nucleic acid components, UV resonant Raman spectra 8−48756
- nucleic acid-water interactions, review 8−44448
- nucleic acids, atom-atom potential parameters, determ. of nonvalent interactions 8−25648
- oxidative phosphorylation, role of respiratory chain 8−15795
- oxyhaemoglobin, mag. props. and structure 8−48751
- oxyhaemoglobin, mag. susceptibility of frozen aq. soln., 25 to 250K 8−6507
- peptide-Cu II interaction, EPR and optical absorpt. 8−27881
- perturbed gamma-ray angular correlations 8−44739
- phase-shift fluorometer using laser and transverse electrooptic modulator for sub-nsec lifetime meas. 8−20319
- pheophytins, lowest triplet state, zero field splitting consts., decay rate consts., EPR determ. 8−27896
- pheromone of cabbage looper moth, IR emission, candle flame as sexual mimic 8−35871
- pheromone of cabbage looper moth, IR emission, tapping modulation 8−35872
- phosphatidylcholine bilayer endothermic transitions, Raman difference spectroscopy 8−40119
- phosphatidylcholine dispersion, phase transitions obs. with interference refractometer 8−44459
- phosphatidylcholine hydration, adsorpt.-desorpt. isotherm and PMR 8−15781
- phospholipid bilayers, selectively deuterated, neutron diffr. study of mol. struct. 8−24036
- phospholipid monolayers, polymorphism 8−40120
- phospholipid transmembrane asymm. studied by NMR spectroscopy with displacing reagents 8−31984
- phospholipid vesicles, conform. change and fusion phenomenon, dynamic light scatt. obs. 8−11615
- phycobilin pigment role in photosynthesis 8−48752
- phytochrome subunit, evidence for symmetry 8−27890
- plasma low density lipoproteins, human, size and surface effects rel. to phase transitions 8−3446
- polyacrylamide gel block electrophoresis instrument 8−7549
- polymers, circular dichroism and optical rot., review 8−44457
- polypeptides, 3_1 helix-coil transition, circular dichroism obs. 8−35795
- polypeptides, structured, nature of 4.5 Å max. on X-ray diffuse scatt. curves 8−31769
- polysaccharide gels, spectral broadening of Rayleigh scattering 8−31771
- porphin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- porphyrin, triplet-state EPR spin polaris., intramol. model for photosynthetic bacteria 8−44469
- porphyrin a, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- prealbumin, human plasma, secondary struct. refinement from circular dichroism data 8−27888
- protein: Eu^{3+}, luminesc. spectra and binding centres 8−15754
- protein, long-range interactions, approx. method 8−7317
- protein, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
- protein conformation in nerve membrane, and energy changes, rel. to action pot. 8−44497
- protein dynamic states, role of geometry and elastic strains 8−48745
- protein molecule, simulation of single mol. images combining computer and electron micrograph analysis 8−37781
- protein structure factors from electron density, test on model crystal 8−47204
- protein structure factors from electron density distrib., theoretical foundations 8−47203
- protein structure prediction from amino acid sequence 8−24026
- protein-ligand equilibrium binding, mathematical models 8−48688
- proteins, conform. changes in aqueous soln. and in mixed solvents, IR absorpt. spectra 8−15762
- proteins, nature of 4.5 Å max. on X-ray diffuse scatt. curves 8−31769
- proteins, plastic deformation during freeze-cleavage, review 8−14400
- proteins, PMR spin-lattice relax. time, role of cross-relax. 8−35800
- proteins, triplet state energy transfer 8−20143
- protohaeme, low-spin-ferrous, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- proton relay model systems, reaction field theory of solvent effects 8−44346
- protoporphyrin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- Raman spectroscopy, recent advances, reivew 8−41359
- retinal$_1$, all-trans, valence bands, XPS obs. 8−24030
- retinal, dipole moment determ. 8−27882
- 11-cis-retinal, donor energy effects on triplet-sensitized isomerization 8−3353
- trans-retinal, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
- retinal electronic structure 8−15764
- 11-cis-retinal prep. by irrad. of all-trans-retinal and high press. liq. chromatography 8−40453
- retinal Schiff-base, photochem. step of vision, H-bonds, intermol. associations 8−31812
- trans-retylidene-n-butylamine, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
- rhodopsin, bathochromic shift origin 8−31767
- rhodopsin, cattle, phosphorylated, isoelec. focusing 8−15766
- rhodopsin and intermediates, absorpt. spectra and orientational change of chromophore 8−7321
- rhodopsin conformation, spectral studies 8−15765
- rhodopsin lateral diffusion in surface membrane of rat retina rod external segment 8−15828
- rhodopsin photosensitivity, thermal stability and metarhodopsin prod., extractant effects 8−7355
- tRNA$_{yeast}^{phe}$, Fourier transform PMR in aq. soln., ^{1}H exchange and relax. rates meas. method 8−15049
- tRNA, conformation and intensity fluctuation spectroscopy, melting curves 8−35798
- SEM cathodoluminescence probing of biomol. species at 100 Å resolution or below 8−24197
- serine proteases, enzymatic reaction mechanism, CNDO/2 mol. orbital calcs. 8−27751
- solute-water-macromolecule interactions rel. to membrane props., review 8−15789
- solution, aqueous bimolecular, attractive and repulsive dispersion forces 8−44447
- stearic acid, large single cryst. growth from organic soln. 8−31314
- stearic acid, single cryst. growth mechanism 8−30562
- STEM use for two-dimensional molecular assemblies construction 8−24201
- steroids, maximum overlap. mol. orbitals versus ab initio HF-SCF-MO calc., dipole energy 8−9070
- Δ^{5}-steroids, methyl group rot. barriers from ^{13}C relax. data, geometry effect 8−13626
- streptomycin oxime selenate tetrahydrate, antibiotic, cryst. and mol. struct. 8−24028
- tetraglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
- thaumatin antibodies as model of sweet taste receptor 8−27975
- tobacco mosaic virus, solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas. 8−48187
- triglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
- trypsin inhibitor, mol. dynamics, computer simulation 8−9932
- tryptophan, Fourier transform PMR in aq. soln., ^{1}H exchange and relax. rates meas. method 8−15049
- DL-tryptophan, polycryst., amino group rot., reorientation, mol. struct., 77-555K, PMR obs. 8−35047
- DL-α-valine in aq. soln., dielectric dispersion 8−20141
- viral DNA, nucleotide sequence 8−40114
- viruses in biological fluids, real time meas. using virometer 8−48869
- visual pigment unprotonated chromophore-protein bond, ^{13}C NMR spectra 8−11607
- visual pigments, oil droplets and spectral sensitivity, pigeon 8−11655
- water, lyotropic phase orientation, ^{17}O and ^{2}H NMR study 8−27905
- water+glycine(serine) zwitterions, interaction pots., ab initio SCF LCAO calcs. 8−48747
- xanthines, (theophylline, theobromine, caffeine), UV PES, constitutive subunits, methylatron effects 8−29798
- zeaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- ^{13}C, NMR of peptides and proteins, review 8−24023
- Ca salts, biological mineralization mechanism 8−31764
- Co complex, oxygenated CoII amino acid-imdazole, XPS 8−21968
- S-S bond chirality, biomolecule struct. and activity depend., review 8−27889

molecular bonds *see bonds (chemical)*

molecular clusters
- chromophore aggregates, circular dichroism spectra, calc. involving band shape 8−46478
- Clebsch-Gordan coefficients, chain SU(2)$\supset$D$_{\infty}'\supset$D$_{4}'\supset$D$_{2}'$, mol. aggregates 8−17552
- diamond clusters and corresponding saturated hydrocarbon ab-initio HF and PCILO calcs. 8−42951
- ion clusters in heteromolecular nucleation, steady state thermodynamic model 8−48687
- localised HF orbitals for mol. clusters, layers and solids 8−9076
- metal clusters, bonding topology, graph-theoretical interpretation 8−33408
- trimer grouDd states, quantum exchange effects 8−1117
- CO$_2$, supersonic jet, (CO$_2$)$_n^-$ cluster formation and electron attachment 8−5385
- HBr-nN$_2$ aggregates, near IR spectra in monatomic matrix 8−21921
- HCl-nN$_2$ aggregates, near IR spectra in monatomic matrix 8−21921
- H$_3$O$^+$.H$_2$O, cluster ion form. mech., rate coeffs. 8−25764
- LiCl aqueous soln., ion-water clusters, electronic struct., Compton profile 8−47227
- LiF, aggregation, microcryst. form., IR spectra obs. 8−46331

molecular clusters continued
$Mo_2Cl_8^{3-}(Mo_2Cl_9^{3-})$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
N_2, gas with clusters, free expansion, upper rot. levels population *(Russian)* 8−33581
NH_4^+, mutual neutralisation, with simple and clustered positive (negative) ions 8−44372
$(NH_3)_nBi^+(Rb^+)(K^+)$, gas phase clusters, relative bond strengths, thermodynamic props. 8−35649
$(NaCl)_n$ (n=1-7) equilib. configs., total energy calcs., far IR spectra 8−29872
$Nb_2Cl_9^{3-}$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
$Re_3Cl_9^-$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118

molecular collision processes *see elastic scattering of atoms and molecules; molecular inelastic collisions*

molecular configuration interactions *see molecular electron correlations*

molecular configurations
see also bond angles; bond lengths; inorganic molecule configurations; isomerism; macromolecular configurations; molecular orbitals calculations; organic molecule configurations; X-ray diffraction examination of molecular structure
dimers, intersystem crossing, struct. 8−33537
ethylene+cis-N_2H_2, chem. reaction, intermediate geom. calcs. 8−35655
fragmentary composition, determ. by IR, EPR and US mag. reson. spectra *(Russian)* 8−13624
gas electron diffr., torsional vibr. effect on determ., pot. barrier height estimation 8−25743
inverted file structure for searching large data bases 8−35738
iterative EHT calcs. 8−46271
molecular topology, branching, distance matrix, information theoretic calcs. 8−25405
optimisation, of 1st row mols., using bond function augmented basis sets 8−905
photoelectron spectroscopy, review 8−1026
polyatomic molecules, Franck-Condon factors calcs. 8−17723
polyatomic molecules, structure recognition, from IR, UV, NMR and mass spectra, computer method 8−25737
r_m structural determ. from rot. consts., test on OCS synthetic data 8−42236
Raman spectroscopy, vap., medium resolution, appls., review 8−42065
reaction paths, heat of formation, MINDO/2(3) forces method 8−9078
stable molecules, matrix isolation spectroscopy obs., appls. 8−46320
substitution structure, r_s struct. 8−42237
transition state characterisation by struct.-reactivity coeffs. 8−40026
X_3YO molecules, ab initio MO calcs., geometry, electronic struct. 8−41940
X_3YOH molecules, ab initio MO calcs., geometry, electronic struct. 8−41940

molecular conformations *see molecular configurations*

molecular dissociation
see also heat of dissociation; molecular dissociation energies; molecular electron impact dissociation; molecular photodissociation; molecular predissociation
acetic acid, viscosity of dissociating vapour 8−5840
Acree relation, re-evaluation of its conceptual foundations *(French)* 8−7172
alkanes, tritiated, fragmentation by β-decay, dissoc. of daughter species 8−31669
allylmethylether, thermal and IR laser induced unimol. decompositions 8−20012
amino acids, ^{15}N-labelled, nanomole isotopic assay by collision induced dissoc. MS 8−20095
atom+diatom, collision induced dissoc., multiple scatt. theory 8−21999
atom+diatom, collision-induced dissoc., quantum mech. probability calcs. 8−25657
n-butane, decomposition in RF discharges, 10-40 torr 8−3318
butyric acid, viscosity of dissociating vapour 8−5840
collision-induced, Morse oscill. model 8−37710
cortisol, gas phase fragmentation, high voltage scanning field desorption obs. 8−3320
diatomic gas, direct molecular simulation, using Monte Carlo method 8−23934
diatomic gas, dissociation past strong shock waves 8−42683
diatomic molecule dissociation in thin films *(Russian)* 8−34558
diazomethane, electronic struct., least energy dissoc. path to CH_2 and N_2 products 8−5131
dichlorodifluromethane, dissoc. into metastable fragments following electron impact excitation 8−37757
dioxirane, decomposition products, mass spectrometric obs. 8−11504
dissociation-recombination, collision induced, exactly soluble model 8−7191
dissociative charge transfer collisions, vibr. enhancement 8−33597
double-charged mols., investigation of single-charged ion products 8−37753
electron spectroscopy, coincidence experiments, two-parameter 8−20135
ethane, decomposition in RF discharges, 10-40 torr 8−3318
ethane, two-channel dissoc., dynamical effects, classical trajectory study 8−40042
ethylacetate, thermal and IR laser induced unimol. decompositions 8−20012
ethylene, decomposition in RF discharges, 10-40 torr 8−3318
exponential transition probilities for collision induced dissoc. and vibr.-rot. relax. 8−27749
formic acid, viscosity of dissociating vapour 8−5840
gas, dissociating, thermal cond. meas., temp. jump at gas-solid boundary 8−42701
glassy polymer multi-phase Stefan problem describing swelling and dissolution 8−2263
isopropanol, on α- and β-V_2O_5 bronzes, 186-300°C, kinetics and mechanism 8−11553
isopropylbromide, thermal and IR laser induced unimol. decompositions 8−20012
ketene, photoionis., ion fragmentation kinetic energy 8−9206
mass spectrometry, energetics of theory, review 8−319
metastable unimolecular transition, collision-induced transition, energetic analysis by static mass spectrometers *(Rumanian)* 8−46460
methane, decomposition in RF discharges, 10-40 torr 8−3318

molecular dissociation continued
methane, photoionis., ion fragmentation kinetic energy 8−9206
molecular gas, laser irrad., field avoided crossings, new transition channels 8−33477
naphthylamines, excited state $pK_a{}^*$ values, proton-induced fluorescence quenching 8−21958
nonideal gas, dissociating, composition and thermodynamic props., initial at. method 8−40034
nonradiative transitions, vibr. spectra *(Russian)* 8−21864
oxalyl fluoride, radiative and nonradiative transitions, self-quenching, unimol. dissoc. 8−17708
photochemical smog, rate parameters and computer simulation 8−48677
poly(oxycarbonylimino-1,4-phenylene), apparent sublimation: thermal decomposition+condensation repolymerisation 8−3332
polyamides, molecular breaking under load, hydrolysis 8−11519
polyatomic, high temp. effect 8−35675
polyatomic molecule, dissoc., natural collision coords. 8−44373
polyatomic molecule, selected fragment vibr. energy distrib. in dissoc. processes 8−1036
propionic acid, viscosity of dissociating vapour 8−5840
small molecule, IR laser induced collisional pumping 8−25630
small molecule IR laser induced collisional pumping 8−25629
tetramethyldioxetane, collisional dissoc. by supersonic Xe beam, chemiluminesc. 8−40029
trichlorofluoromethane, dissoc. into metastable fragments following electron impact excitation 8−37757
water vapour, dissociating, composition and thermodynamic props., initial at. method 8−40034
BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
Br_2, dissociating flow in supersonic nozzles, atomic recomb. and vibr. relax. effects 8−42677
Br_2, in Ar, deactivation and dissoc., microscopic process simulation 8−11511
Br_2+K, inelastic scatt., total cross-sections, trajectory surface hopping calcs. 8−46420
CH_3^++small molecules, binary and ternary reactions at thermal energies, rate coeffs., product distribs. 8−44358
CO+Ar, shock heated steady state dissoc. rate consts. calc. 8−40039
CO^++CO, metastable and $X^2\Sigma^+$ states dissoc. 8−33587
CO_2, dissoc., high temp. effect 8−35675
CS_2+Ar^*, Penning ionisation and dissoc. fluoresc, collisional energy depend. 8−33584
$Cs_2+He(Ne)(Ar)(Kr)(N_2)(CH_4)$, collision-induced dissoc., atom-mol.-exchange optical pumping 8−22008
CsXe excimer laser, form. and dissociation rates, fluoresc. meas. 8−1216
CuCl laser, dissoc. pulse cct. inductance effect 8−29936
H_2 dissociation in microwave discharge 8−23935
H_2, electron impact dissoc. ionis., 75 eV emitted H^+ energy spectrum ang. depend. 8−17812
H_2 ground state, bond breaking reaction, MINDO/3 CI *(German)* 8−21852
H_2 interstellar cooling, dissociation and IR emission in shocked clouds 8−41009
H_2+Ar, Arrhenius dissoc. activation energy, vibr. depend., trajectory calc., 4500K 8−35662
$H_2+H^+(H_2^+)(He^+)(O^+)$, H^+ prod., from H_2^+ dissoc. states or H_2^{2+} 8−20015
H_2^++He, collisional dissoc., expt. and quasiclassical trajectory calcs., eV region 8−42201
HCS^+-CSH^+ system, pot. surface for H abstraction, internuclear bending for ground and excited states 8−29744
HCl+Ar, shock heated steady state dissoc. rate consts. calc. 8−40039
HF, fragmentation, enhanced vibr. excitation effect, mass spectra 8−20004
HF, IR laser induced collisional pumping 8−25629
HF, IR laser induced collisional pumping 8−25630
HF+Ar, shock heated steady state dissoc. rate consts. calc. 8−40039
HN_3, decomposition and ionisation in shock tube *(Russian)* 8−7182
H_2O, electron impact, dissoc. excitation, core pot. correction 8−25724
HOCl, ab initio MRD CI calc., electronic spectrum, dissoc., heat of reaction, formation 8−21857
HO_2NO, unimol. dissoc., rate consts., temp. depend., atmospheric implications 8−7175
$H_3O^+.H_2O$, mobility in He, flow drift tube obs. 8−34257
He+H_2, collisional dissoc., quasiclassical trajectory calcs. 8−42172
He^++H_2, dissoc. charge transfer, vibr. enhancement 8−33597
I_2, $(B^3\pi_{0+u})$, dissoc. reaction, computer simulation 8−48639
I_2, energy levels near B-state dissoc. limit, two-photon spectra 8−9210
$K+D_2O\rightarrow OD^-+K^++D$, 100-200 eV, $D_2O^-(^2A_1)$, state 8−17770
Kr microwave afterglow, Kr_2^+ dissoc. recombination coeff., electron temp. depend. 8−30501
Kr_2^+ dissoc. recomb., rate coeff. and excited state prod., electron temp. depend. 8−22040
Li^++H_2, dissoc., multiple scatt. theory 8−21999
M_2^+ ions, dissociative collisions, mol. effects in charge state distribs. 8−17755
$MoCl_5$, pulsed discharge dissoc., for Mo I oscill. strengths meas. 8−25479
N_2, radiation chem., primary neutral dissoc. excitation, isotopic exchange mechanism 8−48670
NF_3, dissoc. electron attachment, rate consts. meas. 8−3326
$NH_2^+\rightarrow NH^++H$, pot. energy surface of NH_2^+ quintet state 8−25419
NH_3 adsorption on Mo, and catalytic decomposition, field emission study 8−14596
NH_3, flow in steel tubes, wall heat transfer with catalytic dissoc. 8−14099
NH_3^+, fast mol., dissoc. in thin C foils, Doppler broadening obs. 8−22019
NO, decomp. on Ru 8−18903
N_2O^+, fluoresc. and dissociation lifetimes of vibr. excited states 8−42108
NaCl+Ar, dissoc.-ionis. process rates in shock tube 8−35674
O_2, dissoc. induction times, high-temp., exact simple model numerical calcs. 8−9230
O_2, dissociation rates, nonequilib., vibr. populations in elec. discharges 8−46427
$O_2+H^+(He^+)(O^+)$, dissoc. ionisation, kinetic energy spectra 8−25684

molecular dissociation continued
O_3^-+X→O^-+O_2+X, X=He, Ar, CO_2, long-lived excited (or isomeric) state of O_3^- 8−5318
OH, $A^2\Sigma^+$ state, predissociation, tunnelling 8−29824
OH^-+inert gas, collision-induced dissociation 8−29834
OH_2^+, and OH_3^+, fast mols., dissoc. in thin C foils, Doppler broadening obs. 8−22019
P_4S_{10}, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
P_4S_3, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
P_4S_7, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
SF_6, unimolecular reaction model 8−7189
SF_6^-+He, decomposition, SF_5^- form. 8−29833
SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
TlF+Kr(Xe), collision-induced ion-pair formation 8−17749
Tl_2F_2+Kr(Xe), collision-induced ion-pair formation 8−17749
UF_4 optical interference layers, electron-beam decomposition 8−34541

molecular dissociation energies
atomic particles, equilib. const. and parameters of interaction pot. 8−1045
cyclopropane, double SCF method for electron correl., ring-opening energy 8−17575
group IV A monosulphides 8−29733
metal carbonyls, gaseous, metal-carbon bond, dissoc. energy and enthalpy of form. 8−44393
AlO, ground state, pot. energy curve, dissoc. energy 8−46286
BO, spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
Ba+$Br_2(I_2)$→BaBr(BaI)+Br(I), time-of-flight chemiluminesc., mol. bond energies determ. 8−40051
BeO, $X^1\Sigma^+$ state pot. energy curve, ground state dissoc. energy 8−41977
CO_3^-, O^- bond dissociation energy 8−7193
CSe, atomisation energies, enthalpy of form. 8−33631
CSe_2, atomisation energies, enthalpy of form. 8−33631
H_2, channel coupling theory of covalent bonding, dissoc. energy 8−13419
H_2, ground state dissociation energy, Born-Oppenheimer pot. calcs. 8−37542
HCN-HF, dimer, rot. transition intensity, dissoc. energy determ. 8−46323
HNB,(HNBH), spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
HOB,(HBO), spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
KLi, appearance pot., dissoc. energy, ionis. pot., mass spectra obs. 8−25750
KrF* radiative lifetime, pulsed photolysis obs. 8−29819
LiF-NH_2 adduct, mol. consts., ab initio SCF LCAO MO calcs. *(French)* 8−13423
LiH, electron correl., double SCF method 8−17575
LiH, LiH^-, pot. energy curves, electron affinity, spectroscopic consts. 8−5129
MgH, Morse and Lippincott pots., r-centroids, dissociation energy 8−13446
MgO, dissociation energy from RKRV potential energy curve 8−37768
N_2, MRD CI calc., lowest dissoc. limits 8−21859
N_2, nonequilibrium dissociation rates in electrical discharges, temp. depend. 8−33447
ND, $d^1\Sigma^+$-$c^1\Pi$, spectra, equilib. consts., dissociation energy 8−33517
NH, $d^1\Sigma^+-c^1\Pi$, $d^1\Sigma^+$-$b^1\Sigma^+$, spectra, equilib. consts., dissociation energy 8−33517
NaAu(Ag), mol. dissoc. energy, third law enthalpy and heat of formation, mass spectra 8−40033
NaK, appearance pot., dissoc. energy, ionis. pot., mass spectra obs. 8−25750
NaLi, appearance pot., dissoc. energy, ionis. pot., mass spectra obs. 8−25750
O_3^-, O^- bond dissociation energy 8−7193
SSe, dissoc. energies determ. 8−33632
Se_2, dissoc. energies determ. 8−33632
SeTe, dissoc. energies determ. 8−33632
$SnSe_2$, rel. to p-T projection of phase diag. of SnSe-Se 8−27485

molecular electron correlations
acetylene, electron density distrib., electron correl. effects, approx. HF-CI calcs. *(German)* 8−33439
acetylene, electron impact ionisation, valence orbitals, momentum distrib. and correl. effects 8−5361
acrolein, triplet state vertical and adiabatic excitation energies, CI calcs. 8−9083
aniline, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
azomethane. trans-cis isomerisation, INDO-SCF and CI calc. 8−25440
benzene, X-ray photoelectron spectra, C 1s shake-up struct., PPP CI calc. 8−42126
Bethe-Goldstone time-depend. first-order theory, short range correl., transition moments 8−25449
bond order, maximum principle, LCAO formalism 8−29728
caffeine, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
chemisorbed atoms, theory, CI calcs. *(German)* 8−31707
cinnamaldehydes, electronic spectra, CNDO CI calcs. 8−29774
closed shell system, limited CI calcs., spin algebra graphical method 8−46273
closed shell systems, ionis. pot., Koopman's theorem 8−906
closed-shell systems, interactions, correl. energy, RPA calcs. 8−25646
configuration interaction, perturbation theory, partial transformation 8−37562
configuration interaction method formulation for triplet states 8−37536
configuration mixing calculations, transverse interaction, vector spherical harmonics expansion calcs. 8−9086
correlation energy calc. by many-body diagrammatic perturbation theory 8−9087
CT complex, equilib. distances and stabilisation energy, PCILO calc. 8−41963
cyclobutadiene(-d_1), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8−13429
cyclopentadienone, photoelectron spectra, ionisation pot., PERTCI method and obs. *(German)* 8−42130
molecular electron correlations continued
cyclopenta[h]cycl[4.2.2]azine, electronic struct., photoelectron data 8−5286
cyclopropane, electron correlation, double SCF method 8−17575
cyclopropenyl radical and anion, planar, E state pot. surfaces, CI and SCF calcs. 8−5155
direct CI method with contracted config. expsn. 8−5145
double SCF method 8−17575
doublet and quartet states, abstraction reactions, pot. energy surfaces calcs. 8−31627
electron in strong randomly rotating mag. field 8−37163
electron pair distrib. functions, SCF CI wavefunctions 8−41966
energy functional, direct minimisation in LCAO-MO density matrix formalism 8−5118
ethane, ab initio MRD-CI calc., 14-25 eV PES region, Rydberg states 8−41962
ethylene, singlet Rydberg states, CI calcs. 8−33437
ethylene, valence XPS spectrum satellite struct., C(2s) region, correlation states 8−5278
first-row hydrides (CH_n, NH_n, OH_n, FH_n), equilib. geometries calcs. 8−33435
fluorobenzene, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
formaldehyde, $^1A_2$-state, radiative and nonradiative decay calcs., rel. to photochem. decomp. 8−37669
formaldehyde, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
formaldehyde, vertical photoexcitation and photoionisation spectra, CI calc. 8−918
free radical reactions, selection rules 8−7181
Gaussian geminals basis set calc. of correlation energy 8−41960
geometry of electron pair correlation, Lie algebra 8−29754
glyoxal, lowest triplet state, excitation energies, electron correl. effects 8−5147
glyoxal, triplet state excitation energy calc., modified CI method 8−37536
heavy-ion collision, quasimolecular L X-rays, relativistic self-consistent correlation diagram 8−5247
hydrides, first row, $AH_2(H_3)(H_4)$, and positive ions, chemical equilibria, correl., ab initio calc. 8−35714
ionisation potentials, electron affinities, perturbation theory-CI calcs. 8−9084
ions, ionisation potentials, electron affinities, perturbation theory-CI calcs. 8−9084
linear Hubbard model, RPA and CI test calcs. 8−25411
local approach, molecular correlation energies, intraatomic correlations 8−41967
localised orbital construction for calcs. using multiconfigurational SCF methods *(Russian)* 8−922
methane, localised orbital construction for calcs. using multiconfigurational SCF methods *(Russian)* 8−922
methyl anion, geometric struct., electron correlation effects, self-consistent electron pairs 8−22050
methyl radical and anion, electron affinity determ., ab initio SCF and CI calcs. 8−5149
methylene, photoelectron spectra, singlet and triplet state calcs. 8−42127
methylene, quadruple energy, self-consistent electron pairs with higher order effects 8−46276
methylsilylene, closed shell states, isomerisation, config. calcs. 8−35652
minicomputer open ended configuration interaction program, BERKELEY 8−37563
molecular polarisability, ground and excited state, perturbation treatment 8−5144
MRD-CI method for electronic wavefunctions 8−46278
multiplet ratios for photoionisation and electron attachment, shell model, LS coupling and correl. 8−17636
negative molecular ions, theoretical calcs., review 8−37552
one-electron functionals for correlation energies 8−25447
open shell system, limited CI calcs., spin algebra graphical method 8−46274
pairwise correlated generalised valence bond model, electron correl. model 8−41959
s-trans-1,3-pentadiene, photoisomerisation, excited state pot. energy curves, CIPSI calc. CNDO/2 parametrisation 8−11505
perturbation calc. using Gaussian-type geminals 8−17578
phenol, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
photoemission, many-electron theory, in electron spectroscopy book 8−17714
polyacenes, electronic transition bands, Franck-Condon factors, PPP SCF MO/CI calc. 8−33430
polyenes, energy spectrum, electron correlation effects 8−46279
polyenic aldehydes, energy spectrum, electron correlation effects 8−46279
programmable spin-free method for CI calcs. 8−9088
programme for CI calcs. 8−9089
pyrrole, ground state, (π-π*) state, ab initio SCF CI calcs. 8−33438
quasiparticle theory of large-scale configuration on mixing calcs. 8−13437
self-consistent electron pairs method, higher order effects 8−46276
small molecules, HMO-CI, HMO-AO-CI methods, quantum chemistry model studies *(German)* 8−29753
syndnone, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
toluene, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
transition from collective motion model of π-electrons to semiempirical Pariser-Parr-Pople theory *(Russian)* 8−5146
transition metal compounds, electronic excitation energy calc., correl. energy correction 8−17576
Ar_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
Ar_2^+, near UV absorption spectra, config. interaction methods 8−17680
BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
BH, correlation energy, many-body Rayleigh-Schrodinger perturbation theory calc. 8−894
BH, electronic distribution functions and correl. holes, theory 8−17562

molecular electron correlations continued
BH_3NH_3, complexation energies and interatomic distances, SCF and CEPA calcs. 8−25446
BO, spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
CO ($^1\Sigma^+$), X-ray and electron diffr. scatt. intensities, electron correlation effects 8−17577
CO, C_{1s} ionis., CI calcs. of satellite peaks 8−916
$CO+Li^+$, rot. excitation, ab initio CI pot. energy surface, classical mech. and coupled states calcs. 8−25665
CO_2, valence states study by (e,2e) momentum spectroscopy 8−22039
Cl_2, ground and ionised states, Koopman's theorem and Mo relax. in ab initio calcs. 8−1035
$ClF(ClF_2^-)(ClF_3)$, ground and ionised states, Koopman's theorem and Mo relax. in ab initio calcs. 8−1035
Cr^{3+} in octahedral fluoride lattice, optical spectrum open shell SCF MO cluster CI calc. 8−19501
DCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
F_2, ground and ionised states, Koopman's theorem and Mo relax. in ab initio calcs. 8−1035
H+methane, abstraction and exchange reactions, energy barriers, UHF-CI calcs. 8−11512
H_2, correlation energy, perturbation calc. using Gaussian type geminals 8−17578
H_2, electronic distribution functions and correl. holes, theory 8−17562
H_2 ground state, bond breaking reaction, MINDO/3 CI *(German)* 8−21852
H_2, low-lying excited states, Rydberg and valence-shell characters 8−5152
H_2^+, Compton profile and momentum distribution, impulse approx. 8−25626
HCCN, free radical, matrix isolation spectra and ab initio calcs. 8−46329
HCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
HCS^+-CSH^+ system, pot. surface for H abstraction, internuclear bending for ground and excited states 8−29744
HCl^-, resonance states, CI calcs., pot. energy curves 8−29755
HD, nonadiabatic effects in the B, C and E, F states, rot. line strengths 8−5148
$H_2(D_2)$, Compton profile, impulse approx., electron correl., vibr. and rot. effects 8−17585
HF, correlation energy, many-body Rayleigh-Schrodinger perturbation theory calc. 8−894
$HF+H'\rightarrow H+H'F$, transition state geometry, SCF CI calcs. 8−20009
HNB,(HNBH), spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
HNSi, struct. and microwave freqs. calcs., rel. to interstellar emission lines 8−36648
HO_2, vertical electronic spectrum, MRD-CI calcs. 8−37646
H_2O, correlation energy, many-body Rayleigh-Schrodinger perturbation theory calc. 8−894
H_2O, double SCF method for electron correl., stretching force const. 8−17575
H_2O, iterative natural orbital procedures, convergence props. 8−46257
H_2O^+, pot. energy surface, linear approach 8−41978
H_3O radical, stability, ab initio UHF-CI calcs. 8−5137
HOB,(HBO), spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
HOCl, ab initio MRD CI calc., electronic spectrum, dissoc., heat of reaction, formation 8−21857
H_2S, $L(S_2)$-MM Auger energies, MC SCF calcs. 8−21977
HSiN, struct. and microwave freqs. calcs., rel. to interstellar emission lines 8−36648
He_2^{2+}, autoionising states, adiabatic pot. energy curves calcs. 8−42140
HeH^+, bond energy calcs., using density matrix partitioning 8−46417
Kr_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
Kr_2^+, near UV absorption spectra, config. interaction methods 8−17680
KrF*, excimer electronic struct., config. interaction, electrostatic model 8−927
Li^++CO, differential cross-sections, ab initio CI vibrotor pot. energy surface calcs. 8−46421
$Li^++CO(N_2)$, differential cross-sections, classical trajectory calcs. 8−29841
Li_2, core-excited states, theoretical and experimental investigation 8−37655
Li_3, spin density, Gaussian basis set 8−33427
LiH, correlation energy calc. by many-body diagrammatic perturbation theory 8−9087
LiH, electron correl., double SCF method, mol. dissoc. energy 8−17575
LiH, electronic distribution functions and correl. holes, theory 8−17562
LiH, LiH^-, pot. energy curves, electron affinity, spectroscopic consts. 8−5129
LiH, variational Hylleraas-type wavefunction, correl. 8−9082
Mg_2, Mg_2^+, electronic struct., pot. energy curves, multiconfig. SCF calcs. 8−5124
N containing molecules, N NMR, nuclear mag. shielding, X-ray photoelectron spectra 8−17695
N_2, core-ionised, core-valence excited and shake-up states, all electron MRD CI calc. 8−21858
N_2, electron density distrib., electron correl. effects, approx. HF-CI calcs. *(German)* 8−33439
N_2, electronic ground state correl. energy, many-body diagrammatic perturbation theory calc. 8−917
N_2, MRD CI calc., lowest dissoc. limits 8−21859
N_2, self-consistent electron pairs with higher order effects, quadruple iteration convergence 8−46276
N_2, vertical electronic spectrum, MRD-CI method calcs. 8−42033
NCO^+, partial pot. energy surfaces, ab initio SCF CI calcs. 8−37554
NH^+, pot. curves, ab initio CI calcs., equilib. distances 8−17579
NH_2, X^2B_1, A^2A_1 and B^2B_2 states, ab initio SCF CI calcs. 8−29746
NH_3, photodissoc., ab initio SCF and CI calcs. 8−21984
NO dimerisation, equilib. const. anal., trans-/cis-$(NO)_2$ zero pt. correlation energy difference 8−11509
NO_2, NO_2^+, NO_2^-, SCF and MC SCF CI calcs. 8−46280
NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8−25518
$N(^4S)+O_2(^3\Sigma_g^-)\rightarrow NO(^3\pi_u)+O(^3P)$ doublet surface minimum energy path calcs. 8−7194

molecular electron correlations continued
NaAr, $X^2\Sigma$, $A^2\Pi$ and $B^2\Sigma$ state, ab initio CI calcs. 8−9085
Ne_2^+, near UV absorption spectra, config. interaction methods 8−17680
Ne_2F, energy surfaces, application of molecular electronic struct. theory 8−25452
O_2, $a^1\Delta_g$ and $b^1\Delta_g^+$ state, MCSCF wavefunctions 8−37561
O_2, excited state geometries and energies, ab initio pot. energy surfaces 8−5151
O_2, RH-GTO-MCSCF calc., 1s photoelectron spectra, multiplet intensity ratio 8−5134
O_2, valence states, ab initio config. interaction calcs. 8−25448
O_3, cyclic, stability, ab initio GVB-POL-CI calcs. 8−915
SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
Xe_2^+, near UV absorption spectra, config. interaction methods 8−17680

molecular electron impact dissociation
aliphatic chlorocarbons, electron impact dissoc., ≲10 eV, negative ion prod. 8−5359
diatomic molecule, electron impact dissociation by vibrational excitation *(Russian)* 8−1096
ion cyclotron resonance spectrometer, positive ion trapping in electron beam 8−21254
methane, electron impact dissoc., excitation of H Lyman β and Balmer α radiation 8−46450
photon emission from electron+molecule collisions *(Dutch)* 8−5362
As_2O_3, multiple reactions by single electron impact 8−22037
CO on Rh (110), electron-impact props. 8−6225
CO_2, electron impact ionisation, dissoc. ionisation 8−13610
Cl_2, electron impact dissoc. excitation, metastable fragment form. translational spectra 8−1094
D_2, dissociative attachment of electrons *(Russian)* 8−13621
D_2, electron impact dissoc., anticrossing signals, Doppler-profile technique 8−33619
D_2, electron impact dissociative excitation 8−13618
D_2, excited atom kinetic energy distrib. *(Russian)* 8−22045
D_2^+, electron impact, dissoc. recomb., highly excited atom form. *(Russian)* 8−33621
D_2O, electron impact reson. observed in $A^2\Sigma^+\rightarrow X^2\Pi$ radiation of OD 8−46455
F_2, low energy dissociative attachment and vibr. excitation, reson. scatt. theory 8−46453
GeX_4, (X=Br,Cl), electron impact dissoc., low-energy reson. capture 8−9263
H_2, electron impact dissoc. ionisation, energetic protons for autoionising states 8−25728
H_2, electron impact dissoc., anticrossing signals, Doppler-profile technique 8−33619
H_2, electron impact dissociative excitation obs. 8−1090
H_2, electron impact dissociative excitation 8−13618
H_2, excited atom kinetic energy distrib. *(Russian)* 8−22045
H_2, HD, dissociative attachment of electrons *(Russian)* 8−13621
H_2^+, electron impact, dissoc. recomb., highly excited atom form. *(Russian)* 8−33621
H_2^+, electron impact dissoc. recomb. cross sections, Rydberg states form., merged-beams expt. 8−25725
H_3^+, electron impact dissoc. recomb. cross sections, Rydberg states form., merged-beams expt. 8−25725
HD, electron impact dissociative excitation 8−13618
$H_2(D_2)$, electron impact dissoc., cross sections, isotope ratios and polarisation, B H_α and H_β emission 8−25729
H_2O, electron impact reson. observed in $A^2\Sigma^+\rightarrow X^2\Pi$ radiation of OH 8−46455
KrF* excimer laser, discharge pumped, influence of electron-F_2 collisions 8−42326
N_2O, dissoc. in alternating elec. field, kinetic and energetic data *(French)* 8−13620
PH_3, electron impact dissoc. ionisation, mass spectrometric obs. 8−9264
SiX_4, (X=Br,Cl), electron impact dissoc., low-energy reson. capture 8−9263

molecular electron impact excitation
adsorbed molecule vibration excitation on metal surface 8−18910
adsorption enhancement by electron beam excitation of gas mols. 8−43238
atmospheric gases, electron impact cross-sections 8−28398
atmospheric gases, yield spectra calcs. 8−28401
benzene, electron impact, electronic energy levels, (below 7 eV) obs. 8−17807
benzene, electron impact-induced generalised oscill. strength, 400 eV, 500 eV, momentum change depend. 8−1088
benzene, excited electronic states, variable angle electron impact spectroscopy 8−13612
benzene-acetone donor-acceptor pair, energy transfer cross sections rel. to generalised oscill. strengths 8−46452
bremsstrahlung in resonance scatt. *(Russian)* 8−37752
1,3,5-cycloheptatriene, singlet→singlet (triplet) excitation, electron impact energy loss spectra 8−46451
diatomic molecule, electron scatt., vibr. and rot. transitions, close coupling theory 8−22041
diatomic molecule electron scatt. vibr. and rot. transitions, hybrid and close-coupling theory 8−22042
diatomic molecules, electron reson. scatt., ang. distrib., vibr. and rot. excitation, theory 8−22043
diatomic polar molecules, electron scatt., calcs., Born approx. limitations 8−17794
dichlorodifluromethane, dissoc. into metastable fragments following electron impact excitation 8−37757
ethyne, electron energy loss spectra, excited states investig., electron impact spectrometer 8−25756
fluorobenzenes, excited electronic states, variable angle electron impact spectroscopy 8−13612
halomethanes, 2.5 keV electron impact energy loss spectra, inner shell excitation 8−42232
long optical lifetimes meas., distortion effects 8−9276
methane, electron impact, H,D(2s,2p) prod. 8−42230

molecular electron impact excitation continued
methane, electron impact dissoc., excitation of H Lyman β and Balmer α radiation 8−46450
photon emission from electron+molecule collisions *(Dutch)* 8−5362
photon-electron angular correlations, Hund's case (b) coupling case 8−42231
polar molecular ions, rot. excitation by slow electrons, calc. 8−5360
polar molecule, electron scatt. cross sections, threshold behaviour *(Russian)* 8−5347
POPOP, vap., electron energy loss spectra rel. to lasing 8−29947
review, of expt. and theory 8−25699
scattering cross-sections, ab initio calcs., incl. polarisation 8−5341
p-terphenyl, vap., electron energy loss spectra rel. to lasing 8−29947
total inelastic scatt. cross section, detector solid angle depend., approx. bounds 8−17798
trichlorofluoromethane, dissoc. into metastable fragments following electron impact excitation 8−37757
vibrational struct. of resonance in electron-molecule scatt. 8−17813
vibrationally excited gas, in elec. discharge, sound propag. 8−18370
xanthene dye N-92+inert gas buffer, electron beam excited, fluoresc., energy transfer 8−25877
CH^+, rot. excitation by slow electrons, calc. 8−5360
CO, electron impact, energy loss spectra, electronic transitions obs. 8−17805
CO, electron impact, vibr. levels stepwise excitation 8−1095
CO, electron reson. scatt., ang. distrib., vibr. and rot. excitation, theory 8−22044
CO, resonances in metastable and UV emitting levels 8−25727
CO-N_2 discharge, energy balance influence of N_2 rot. level reson. excitation 8−17903
CO_2, 3.8 eV resonance, vibr. struct. in electron-molecule scatt. 8−17813
CO_2, electron impact, cross sections for rot. excitation 8−17809
CO_2, electron impact, energy loss spectra, electronic transitions obs. 8−17805
CO_2, reson. electron impact vibr. excitation, 3-5 eV 8−25726
CO_2-N_2-He discharge, energy balance, influence of N_2 rot. level reson. excitation 8−17903
Cl_2, electron impact dissoc. excitation, metastable fragment form. translational spectra 8−1094
D_2, electron impact, Balmer-α, β, γ radn. emission cross sections 8−1091
D_2, electron impact, H,D(2s,2p) prod. 8−42230
D_2, electron impact dissociative excitation 8−13618
D_2O, electron impact reson. observed in $A^2\Sigma^+ \rightarrow X^2\Pi$ radiation of OD 8−46455
F_2, low energy dissociative attachment and vibr. excitation, reson. scatt. theory 8−46453
H_2, ${}^3\Sigma_g{}^+ \rightarrow b\ {}^3\Sigma_u{}^+$ light emission meas. by electron impact excitation 8−33618
H_2, electron energy loss spectra, $B^2H_u{}^+$ state cross sections, Franck-Condon factors 8−13616
H_2, electron impact, Balmer-α, β, γ radn. emission cross sections 8−1091
H_2, electron impact, H,D(2s,2p) prod. 8−42230
H_2, electron impact, rot. excitation, comparison of local exchange pots. 8−5346
H_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
H_2, electron impact dissociative excitation obs. 8−1090
H_2, electron impact dissociative excitation 8−13618
H_2, electron impact rot. excitation, low energy, close-coupling calcs. 8−1092
H_2, excitation of $G^1\Sigma_g{}^+$ state, emission cross-section meas. 8−37755
H_2, relativistic yield spectra from electron impact cross sections 8−13614
H_2, two-step excitation, Hanle effect obs. 8−25730
HCN, electron impact excitation of low lying electronic states, assignments 8−25671
HCl, electron impact, H,D(2s,2p) prod. 8−42230
HCl, rot. excitation, energy dependence of elastic and inelastic cross sections 8−37756
HCl, vibr. excitation by electron scatt., virtual state interpretation 8−17808
HD, electron impact, H,D(2s,2p) prod. 8−42230
HD, electron impact dissociative excitation 8−13618
HD^+, rot. excitation by slow electrons, calc. 8−5360
HF, rot. excitation, energy dependence of elastic and inelastic cross sections 8−37756
H_2O, electron impact, dissoc. excitation, core pot. correction 8−25724
H_2O, electron impact, H,D(2s,2p) prod. 8−42230
H_2O, electron impact reson. observed in $A^2\Sigma^+ \rightarrow X^2\Pi$ radiation of OH 8−46455
H_2O, vibrational excitation by electron impact, threshold structs. 8−22038
H_3O^+, rot. excitation by slow electrons, calc. 8−5360
K_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
Li_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
LiF, elastic and rot. excitation cross sections for electron scatt. 8−46446
N_2, 2.4 eV shape resonance, vibr. struct. in electron-molecule scatt. 8−17813
N_2, electron impact excitation, $x^1\Sigma_g{}^-$ and $y^1\Pi_g$ states lifetimes meas. 8−17806
N_2, electron impact excited, broadband photon yield meas. *(French)* 8−25723
N_2, electron scatt. ground state vibr. levels population 8−1093
N_2, electronic states, 12.5-14.2 eV energy-loss region 8−17811
N_2, electronic states, differential cross sections, 10-50 eV 8−13619
N_2, electronic states, integral cross-sections, 10-50 eV 8−17810
N_2, in CO_2-N_2-He laser, electron impact excitation, V-V resonant transfer 8−5452
N_2, inner shell $(1s)^{-1}(\pi 2p)^1\Pi$ state, energy, vibr. struct., electron impact investig. 8−13611
N_2, resonances in metastable and UV emitting levels 8−25727
N_2, vibr. populations of excited states under auroral conditions 8−42035
NH_3, electron impact, H,D(2s,2p) prod. 8−42230

molecular electron impact excitation continued
NO, doublet-quartet transitions, 5-7.4 eV, electron-impact spectroscopy, 5-80° 8−37754
NO, electron impact, energy loss spectra, electronic transitions obs. 8−17805
N_2O, electron impact, energy loss spectra, electronic transitions obs. 8−17805
Na_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
O_2, electron impact, energy loss spectra, electronic transitions obs. 8−17805
O_2, electronic electron impact excitation, rot.-electronic coupling 8−9265
$O_2{}^+$, second negative bands excitation cross-sections, rel. to auroral emissions 8−37745
PH_3, electron impact dissoc. ionisation, mass spectrometric obs. 8−9264
PH_3-PD_3, electron impact dissoc. ionisation, mass spectrometric obs. 8−9264
XeCl laser, electron beam excitation *(Russian)* 8−22115

molecular electron impact ionisation
acetylene, electron impact ionis., valence electron momentum distribs. 8−33617
acetylene, electron impact ionisation, valence orbitals, momentum distrib. and correl. effects 8−5361
atmospheric gases, electron impact cross-sections 8−28398
atmospheric gases, yield spectra calcs. 8−28401
double-charged mols., investigation of single-charged ion products 8−37753
electron wavefunctions for (γ,2e) and (e,3e) processes at high energy, double Fourier transform 8−17628
electrostatic electron energy analysers, cylindrical mirror appls., review 8−21265
methane, semiempirical electron impact ionis. cross-sections 8−1089
photon emission from electron+molecule collisions *(Dutch)* 8−5362
review, of expt. and theory 8−25699
total inelastic scatt. cross section, detector solid angle depend., approx. bounds 8−17798
$CH(CH_2)(CH_3)$, semiempirical electron impact ionis. cross-sections 8−1089
CO_2, electron impact ionisation, dissoc. ionisation 8−13610
CO_2, valence states study by (e,2e) momentum spectroscopy 8−22039
H_2, electron impact dissoc. ionis., 75 eV emitted H^+ energy spectrum ang. depend. 8−17812
H_2, electron impact dissoc. ionisation, energetic protons for autoionising states 8−25728
Li_2, core-excited states, UV photoabsorpt. and ejected electron spectra 8−37655
LiI, electron-mol. beam collisions, autoionising states, electronic spectra *(Russian)* 8−22023
N_2, glow discharge, ionis. mechanism 8−13613
NH_3, electron impact ionisation, threshold to 180 eV, mass spectrometric obs. 8−13615
NH_3-ND_3, electron impact ionisation, threshold to 180 eV, mass spectrometric obs. 8−13615
O_2, electron impact ionisation, in RF ion source, effective cross-sections 8−22034

molecular electron scattering *see elastic scattering of electrons by atoms and molecules; molecular electron impact dissociation; molecular electron impact excitation; molecular electron impact ionisation*

molecular electronic states
see also charge transfer states; molecular metastable states; triplet state
π electron Hamiltonian, ab initio derivation by nonperturbative open shell formalism 8−21846
acetaldehyde+CO_2, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
acetylene, electron density distrib., electron correl. effects, approx. HF-CI calcs. *(German)* 8−33439
alkali metal dimers, ${}^1\Sigma_g{}^+$ ground state, density functional theory 8−37573
alkyl cadmium, valence and core electron energies, photoelectron spectra, ab initio calc. 8−25613
benzaldehydes, in mixed cryst., T_1/T_2 interstate interactions, modulation polaris. phosphoresc. spectra, 4.2K 8−9185
benzene, and -d_6, ${}^1B_{2u}$ excited state, force field, normal coords. 8−5193
benzene, excited electronic states, variable angle electron impact spectroscopy 8−13612
benzene, Jahn-Teller active states, vibronic struct., vibr. perturbation, spectral obs. 8−13440
tris(2,2′-bipyridine) ruthenium(II) cation, IR-optical double reson. and thermal modulation spectra 8−25576
carotenoids related to visual chromophore, electronic struct., band shape model 8−20142
cyclobutadiene(-d_1), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8−13429
cyclobutenedione derivatives, photoelectron spectra, 2p lone pair delocalisation 8−46392
1,3,5-cycloheptatriene, singlet→singlet (triplet) excitation, electron impact energy loss spectra 8−46451
delocalisation, organic chemistry courses 8−4426
dimers, bandshape prediction, incoherent exciton scatt. model 8−42132
diphenyloctatetraene, two-photon spectra, ${}^1A_g$ state confirmation 8−17736
electronic excitations, degree of collectivity 8−37570
ethanol, conformational analysis and electronic structure 8−33429
ethylene, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
ethylene, singlet Rydberg states, CI calcs. 8−33437
ethyne, electron energy loss spectra, excited states investig., electron impact spectrometer 8−25756
excited state vibrational energy transfer, for optoacoustic spectroscopy 8−37724
ferrocene, electronic struct., excited states, semiempirical PEEL MO calcs. 8−33431
first-row diatomic molecules, bonding, spin density functional theory 8−17558
fluorobenzenes, excited electronic states, variable angle electron impact spectroscopy 8−13612

molecular electronic states continued
- fluorobenzenes, radical cations, $B(\pi^{-1})$ excited states, radiative relax. 8−13546
- formaldehyde, electronic states, oscill. strengths calcs. 8−9095
- formyl chloride, rot. Zeeman effect of low-J transitions 8−25519
- n-hexylamine-nickel di-acetylacetonate, ^{13}C nucl. spin relax., electron spin delocalisation 8−5248
- hydrocarbons, mol. thermodynamics, information-theoretic aspects 8−13409
- laser techniques, vis. and UV, small mols., electronically excited states, book contrib. 8−9277
- linear triatomic molecule, photodissoc. dynamics, moment anal. 8−13557
- methane, $1B_1(1T_2)$ state, photodissoc., extended basis calcs. 8−9093
- methyl iodide, UV absorpt. spectra, ionis. limit region, assignment 8−21940
- myoglobin , oxyhaeme complex, single cryst., visible spectrum, electronic struct., coord. geometry 8−44456
- N,N′-dioxy-2, 6-diazoadamantane, exchange interaction, spin density delocalisation 8−9056
- 1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
- open shell states, operators for cases not fitting Roothaan-like model 8−21848
- pairwise correlated generalised valence bond model, electron correl. model 8−41959
- phenylcarbene, singlet and triplet ground states, rearrangement to cycloheptatrienacarbene, MINDO/3 calc. 8−13430
- photoelectron angular distribs., oriented or rot. resolved unoriented mols., dynamic and struct. data 8−37682
- polar molecule-electron systems, variational method for bound state calc. 8−46261
- polar solvents, equilib. electronic states, basic eqn., broken symmetry 8−37535
- proton transfer photoreaction kinetics, in singlet excited state 8−48671
- pyrrole (π-π^*) and ground state, ab initio SCF CI calcs. 8−33438
- pyrylium, substituted, electronic struct., CNDO/S calcs. 8−29749
- quasiparticle theory of large-scale configuration on mixing calcs. 8−13437
- retinal electronic structure 8−15764
- Rydberg INDO method, mol. Rydberg S←S and T←S transitions and oscill. strengths 8−17572
- spherical-top molecules, rot.-vibr. transition moments in excited states 8−25639
- superheavy quasimolecules, electronic states, spectroscopy 8−37706
- thioacetamides, CNDO calcs., internal rot., ionisation pots., photoelectron spectra 8−5143
- topology concept of molecular structure 8−46253
- transition metal compounds, electronic excitation energy calc., correl. energy correction 8−17576
- trimeric molecular complex, excitation localisation and transfer, monomeric internal vibr. effect 8−17581
- unstable molecular states, with memory effects, prep., decay, EM pulse excitation 8−46384
- uranyl complexes, fluoresc. state, rel. to electronic struct. *(Russian)* 8−5274
- variational cellular model for mol. and cryst. elec. struct. 8−29726
- vinyl isocyanate, conformers, geometrical and electronic structures, microwave spectra 8−9142
- virial partitioning of mol. charge distrib., defn. of bond paths and directions 8−886
- AgO, electronic spectra in rare gas matrix 8−996
- Ar_2^+, bound-free absorpt. cross section for Π and Σ states 8−5140
- Ar_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
- AuO, electronic spectra in rare gas matrix 8−996
- BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
- BeO, $X^1\Sigma^+$ state pot. energy curve, ground state dissoc. energy 8−41977
- Bi_2, in Ar matrix, electronic states, vis. and near IR absorption spectra 8−5213
- CH, interstellar, ground state inversion, collisional excitation 8−28503
- CO, electronic states, oscill. strengths calcs. 8−9095
- CO^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
- CS, $X^1\Sigma^+$ ground state, diagrammatic perturbation theory calcs. 8−29737
- CuO, electronic spectra in rare gas matrix 8−996
- CuO, fluoresc., matrix isolation spectra 8−46381
- D_2, $^1\Sigma_g^+$ states, adiabatic calc. of vibronic states 8−5198
- D_2, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
- D_2, $G(3d)^1\Sigma_g^+$ and $g(3d)^3\Sigma_g^+$ singlet-triplet anticrossing 8−42138
- D_2O, polarised photofluoresc. excitation spectra, VUV photodissoc. excited state lifetimes 8−5261
- $D_2O^-(^2A_1)$, obs. in K(Cs) ionis. collisions with D_2O, 100-200 eV 8−17770
- FeS_6^{10-}, electronic struct., SCF-Xα scatt. wave calcs., rel. to spectra of FeS, FeS_2 8−5138
- H_2, HD, $^1\Sigma_g^+$ states, adiabatic calc. of vibronic states 8−5198
- H_2, HD, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
- H_2, low-lying excited states, Rydberg and valence-shell characters, CI calcs. 8−5152
- H_2^+, ground and first excited states in homogeneous magnetic field 8−925
- H_2^+, variational cellular model 8−29726
- HCN, electron impact excitation of low lying electronic states, assignments 8−25671
- HCN, electronic states, oscill. strengths calcs. 8−9095
- HCl, emission K spectra, vibronic and core hole effects, nonempirical orbital defreezing calc. 8−5200
- HD, nonadiabatic effects in the B, C and E, F states, rot. line strengths 8−5148
- $H_2(E,F^1\Sigma_g^+)$, two-photon excitation, cross section, radiative lifetime, quenching rate, IR fluoresc. obs. 8−37698
- HF, emission K spectra, vibronic and core hole effects, nonempirical orbital defreezing calc. 8−5200
- HI, UV absorpt. spectra, ionis. limit region, assignment 8−21940
- H_2O, electronic states, oscill. strengths calcs. 8−9095

molecular electronic states continued
- H_2O, ground state, energy, bond parameters, diagrammatic perturbation theory calcs. 8−25414
- H_2O, polarised photofluoresc. excitation spectra, excited state lifetimes, VUV photodissoc. 8−5261
- H_2O, Rydberg states, visible spectra 8−9162
- H_2O_2, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
- He_2, molecular spectrum and structure, singlet Π states 4pπ-9pπ 8−42080
- He_2^{2+}, electronic energies, James-Coolidge method calcs. 8−17564
- $^4He_3$, Efimov states and binding energies, Faddeev coord. momentum approach 8−46259
- I_2, electronically excited states, vis. and UV laser techniques, book contrib. 8−9277
- I_4^{2-}, electronic struct., binding energy, charge distrib. from free electron model *(German)* 8−29741
- $I_2(B^3\pi_o{}^+{}_u)$, ps excitation, in CCl_4 soln., ultrafast decay and spectrum 8−9184
- ICN, photodissoc. dynamics, moment anal. 8−13557
- IrO, ground state, matrix isolation spectra 8−46352
- Kr_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
- KrAr, photoionisation spectra of ground and excited states 8−5297
- KrF*, excimer electronic struct., config. interaction, electrostatic model 8−927
- Li_2, radiative lifetimes of $B^1\Pi_u$ states, model pot. calcs. 8−46397
- LiCl aqueous soln., ion-water clusters, electronic struct., Compton profile 8−47227
- $(LiH)^+$+meson system, ground and 1st excited state pot. surfaces, quantum mech. calc. 8−5377
- Mg_2, Mg_2^+, electronic struct., pot. energy curves, multiconfig. SCF calcs. 8−5124
- MgH, Morse and Lippincott pots., r-centroids, dissociation energy 8−13446
- Mo complex, hexadimethylamino molybdenum, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
- $Mo_2(NH_2)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
- $Mo_2(OH)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
- N_2 ($^1\Sigma_g^+$), charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
- N_2, electron density distrib., electron correl. effects, approx. HF-CI calcs. *(German)* 8−33439
- N_2, electron impact excitation, 10-50 eV, differential cross-sections 8−13619
- N_2, electron impact excitation, $x^1\Sigma_g^-$ and $y^1\Pi_g$ states lifetimes meas. 8−17806
- N_2, electron impact excitation, 10-50 eV, integral cross-sections 8−17810
- N_2, electron impact excitation, 12.5-14.2 eV energy-loss region 8−17811
- N_2, inner shell $(1s)^{-1}(\pi 2p)^1\Pi$ state, energy, vibr. struct., electron impact investig. 8−13611
- N_2, transition moments between excited electronic states 8−5204
- N_2^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
- NCO, $A^2\Sigma$ state, Fermi resonance and vibr. relax. in solid Ar 8−5212
- NH_2, X^2B_1, A^2A_1 and B^2B_2 states, ab initio SCF CI calcs. 8−29746
- NH_2^+, quintet states, pot. energy surfaces, ab initio SCF MO calc. 8−25419
- $NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8−1010
- NO, $I^2\Sigma^+$ state, valence bands, absorpt. spectra 8−46361
- NeF, low energy state pots. energy curves, fluores. and dipole moment 8−21991
- O_2 ($^3\Sigma_g^-$), charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
- O_2, $a^1\Delta_g$ and $b^1\Delta_g^+$ state, MCSCF wavefunctions 8−37561
- O_2, $A^3\Sigma_u^+$, $C^3\Delta_u$ and $C^1\Sigma_u^-$ states in van der Waals solids, electronic spectra, dynamics 8−1000
- O_2, electronic electron impact excitation, rot.-electronic coupling 8−9265
- O_2, excited state geometries and energies, ab initio pot. energy surfaces 8−5151
- O_2, valence states, ab initio config. interaction calcs. 8−25448
- O_2^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
- O_3, cyclic, stability, ab initio GVB-POL-CI calcs. 8−915
- OH ($A^2\Sigma^+$)+H_2(N_2)(Ar), collisionally induced population change rates, laser-induced fluoresc. obs. 8−5326
- P_4, allowed multiplets, coordinate wavefunctions 8−33444
- PH, $b^1\Sigma^+$ band emission visible and UV regions 8−46357
- PN($X^1\Sigma^+$), VUV photoelectron spectrum 8−1024
- Pb-Pb quasimolecular states, inner shell ionis. spectra during form. 8−33592
- PtO, ground state, matrix isolation spectra 8−46352
- PtO, ground state identification from 3800-7000 Å emission spectrum 8−21937
- Rb_2, $X^1\Sigma_g^+$ state, Raman spectra, fluoresc., vibr. energy 8−46345
- SF_6, multiphoton pathways, rot.-vibr. transition moments in excited states 8−25639
- SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
- UO_2^{2+}, relativistic X_α scatt. wave calcs. 8−46268
- Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
- XeAr(XeKr) photoionisation spectra of ground and excited states 8−5297

molecular electronic structure *see molecular electronic states*

molecular energy level calculations
- *see also molecular electron correlations; molecular orbitals calculations; molecular rotation calculations; molecular rotation-vibration calculations; molecular vibration calculations; VB calculations*
- acetylene, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
- atom+diatom, collinear collision with exponential repulsive interaction, generalised distorted wave calcs. 8−9060

molecular energy level calculations continued
  Clebsch-Gordan coefficients, chain $SU(2)\supset D_\infty'\supset D_4'\supset D_2'$, mol. aggregates 8−17552
  computer program MOLMEC, design and performance 8−13410
  diatomic molecule, wave functions and intensity factors, using effective Hamiltonian *(French)* 8−5114
  diatomic molecule Hamiltonian, homogeneous derivation for spectrum anal. *(French)* 8−5113
  diatomic molecules, electronic states, variable-screening method 8−25410
  double antisymmetrisation 8−21836
  ethylene, π-electron system, self-consistent many-body theory 8−25432
  exact counting of internal energy levels, backtracking algorithm 8−25407
  exchange perturbation theory, Eisenschitz-London type 8−41915
  exchange perturbation theory, Hirschfelder-Silbey model 8−41916
  exchange perturbation theory, multicentre electron systems 8−41914
  excited molecule, energy level statistics on destruction of integrals of motion *(Russian)* 8−21864
  formyl chloride, photoelectron spectrum, vibr. struct., ionis. pots., assignments 8−9195
  general-purpose molecular mechanics program construction principles 8−13411
  hydrides, localised mol. orbital density, spatial distrib., principal lobe description evaluation 8−888
  interconversion pot. energy surfaces, geometries, electronic structs. 8−35660
  localised molecular orbital density, spatial distrib., principal lobe description evaluation 8−888
  many-electron systems, electron density, Schrodinger inequalities and asymptotic behavior 8−21845
  neutral molecules, total energy and eigenvalue sums 8−21835
  nonbonded interactions, density response theory, appl. to rot. barriers 8−41913
  orbtial and total SCF energies, Ruedenberg's formula evaluation 8−37537
  polyatomic systems, self-consistent nonorthogaonl group function approx., for closed-shell system 8−9059
  polymers linear conjugated, π-electron energies calc. 8−17830
  quantum dynamics in effective system states basis, not in radiation field, perturbation theory 8−33499
  self-consistent electron pair theory for open shell wavefunctions 8−25408
  symmetric deorthogonalisation, constrained variation method 8−37540
  two-dimensional multichannel scattering, wavefunction corrections averaging method 8−9060
  π-electron systems, self-consistent many-body theory 8−25432
  C_2N_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
  CO, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
  CO_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
  HCN, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
  HCl, electric field gradient at Cl, two- and one-centre wavefunction expsn. 8−17561
  HCl, one-centre-expsn. SCF calc., electric field grad., Sternheimer effect 8−37550
  H_2O, many-body Green's function, electronic mol. props. 8−25417
  He^+, Xα statistical exchange method, orbital energies, HF method comparison 8−9071
  HeH^+, electronic states, variable-screening method 8−25410
  Li_2, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
  LiH, many-body Green's function, electronic mol. props. 8−25417
  LiH, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
  Mo complex, μ-oxo bridged oxomolybdenum(V) dimers, conform. anal. by ang. overlap method, triplet ground states 8−5119
  N_2, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
  N_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
  N_2O, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
  XeF_6, energy levels, nonrigid mol. effects 8−41931

molecular energy levels
  see also macromolecular energy levels; molecular electronic states; molecular energy level calculations; molecular fine structure; molecular hyperfine structure; molecular libration; molecular polarisability; molecular reorientation; molecular resonant states; molecular rotation; molecular rotation-vibration; molecular vibration; molecular vibronic states; nuclear screening
  acetylene, electron impact ionis., valence electron momentum distribs. 8−33617
  alkanes, linear, elec. struct., evolution of electronic level towards band struct. *(French)* 8−5282
  alkanes, linear, electronic struct., electronic relax. during photoemission *(French)* 8−5283
  benzene, electron impact, electronic energy levels, (below 7 eV) obs. 8−17807
  charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
  core regions, in linear polyatomic molecules, radial density functions calcs. 8−900
  diatomic molecules, linear, substituted fragment series, electronic struct. transferability, mutual at. influence 8−9066
  ethylchloride, d_0-d_5, microwave spectra, elec. field gradient tensor at Cl nucleus *(German)* 8−46325
  6-methylmercaptopurine riboside, 4 MeV electron irrad., 77K radicals form., EPR obs. 8−39405
  occupation number dependence 8−13417
  organic compounds, photoelectron spectroscopy, ionis. pots., MO models 8−17716
  paradichlorobenzene, electronic struct., X-ray emission obs. 8−5246
  polar molecule-electron systems, variational method for bound state calc. 8−46261
  polyatomic molecule, transform. of complete electron-nuclear Hamiltonian to intramolec. coords. 8−9054
  polyatomic molecules, energy levels, classification 8−9052

molecular energy levels continued
  polyatomic systems, Cartesian coords., charge densities, field gradients 8−29771
  polymethinecyanines, symm., solvent effects on electronic struct., ^1H, ^{13}C NMR 8−13516
  projection of wave functions on states with definite ang. momentum 8−12590
  quasiparticle picture, at. and mol. systems, breakdown for inner valence electrons 8−5112
  rigid rotor, asymmetric, semiclassical energy levels determ., tunnelling 8−37624
  triatomic molecules, linear, substituted fragment series, electronic struct. transferability, mutual at. influence 8−9066
  BH, electronic distribution functions and correl. holes, theory 8−17562
  H_2, electronic distribution functions and correl. holes, theory 8−17562
  $HSiO^+$, $HOSi^+$, quantum mechanical study 8−37541
  I_2, energy levels near B-state dissoc. limit, two-photon spectra 8−9210
  LiH, electronic distribution functions and correl. holes, theory 8−17562
  LiO, struct., spectra, SCF MO calcs. 8−17559
  Li_2O (LiOLi, LiLiO), struct., spectra, SCF MO calcs. 8−17559
  LiOO, struct., spectra, SCF MO calcs. 8−17559
  N_2 ($^1\Sigma_g{}^+$), charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
  O_2 ($^3\Sigma_g{}^-$), charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
  Sb (III) compounds, orbital population anal. using ^{121}Sb Mossbauer data 8−21953
  Ti (III) halides, bonding, struct., ligand field splitting, electron gas calcs. 8−17557

molecular excitation *see beam-foil spectra; chemical reactions; Davydov splitting; discharges (electric); molecular fluorescence; optical pumping; photoionisation; radiation quenching*

molecular fine structure
  biaryls, model, mol. vibronic circular dichroism 8−37665
  bromotrifluoromethane, photoelectron spectra, spin-orbit splitting, vibr. fine struct. 8−21974
  chlorophylls, triplet state ESR, fine struct. and rate consts. determ. 8−25574
  chlorophylls, triplet state ESR, fine structs. and rate consts. determ. 8−25575
  chlorotriflouromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
  dichlorodifluoromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
  electron impact excitation, photon-electron ang. correlation, fine/hyperfine struct. effects 8−42231
  fluoromethanes, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
  inorganic molecules, UV photoelectron spectroscopy, spectral assignment criteria, bonding 8−17717
  iodotrifluoromethane, photoelectron spectra, spin-orbit splitting, vibr. fine struct. 8−21974
  methane, and $-d_4$, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
  trichlorofluoromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
  $BaCl(C^2\Pi_{3/2},\ \nu=0)+Ar$, intermultiplet energy transfer, laser induced fluoresc. obs. 8−9227
  H_2-inert gas, bound complex form., anisotropic intermol. pot., IR spectra anal. 8−37634
  $NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8−1010
  $O_2{}^+$, IR spectra, rot. anal. of b $\Sigma_g{}^-a^4\pi_u$ first negative band 8−5219
  $(O_2)_2$, struct., energy transfer, high resolution electronic spectra 8−25550
  O_3, combination bands $(\nu_1+\nu_2)$ and $(\nu_2+\nu_3)$, anal. 8−9150
  OH, laser induced fluorescence, preferential population of π^+ component of Λ doublet in $H+NO_2\rightarrow OH+NO$ 8−31620

molecular fluorescence
  acenaphthene, vibronic spectra, electronic-vibr. interactions 8−1021
  acenaphthene in n-alkane matrices, Shpolskii spectra fluorescence 8−9190
  acetaldehyde$+CO_2$, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
  acridizinium ion, fluoresc. quenching by external heavy atom, via charge-transfer complex 8−42112
  adsorbed molecules, on Ta (111), electron bombardment induced luminesc. and bremsstrahlung *(Russian)* 8−31290
  adsorbed molecules on metal surface, ang. intensity distrib. of emitted light 8−18907
  3-amino-N-methylphthalimide, in polar-nonpolar solvent mixture fluorescence band struct. 8−15213
  1-anilino-8-naphthalene sulphonate, bound to chloroplast membrane, fluoresc. study of proton and cation effects 8−24034
  1,8-anilinonaphthalene sulphonate, aq. and ethanolic solns., excited singlet state decay pathway 8−17703
  anthracene, optical determ. of vapour conc., vap. press. and heat of sublimation 8−22840
  anthracene, spectral evidence for green incipient dimers after photooxidation and photodimerisation 8−15687
  9-anthracene-$(CH_2)_n$-N,N-dimethylaniline, electrogenerated chemiluminesc., intramol. exciplex form. 8−11503
  anthracene-dimethylpyromellitimide, CCT crystals, mag. field effect on fluorescence 8−19543
  anthracenes, anthronyl substituted, solvent-assisted form. of luminesc. intramol. exciplexes 8−25589
  anthracenes, nonradiative relax. of higher excited triplet states, double excitation obs. 8−29805
  p-(9-anthryl)-N,N-dimethylaniline derivatives, excited emitting states in polar solvents, fluoresc. 8−5263
  aromatic compounds, isothermal recomb. fluoresc., decay kinetics 8−29809
  auramine O, fluoresc. efficiency, solvent viscosity effects at high press. 8−9188
  azoalkanes, fluoresc., solvent isotope effect 8−25591
  bacteriochlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
  bacteriochlorophyll of green bacteria, resolution of absorpt. and fluoresc. spectra into components 8−20152

molecular fluorescence continued
BBOT, time-depend. fluoresc. depolarisation, mol.-rot., slip boundary conditions in soln. 8−9179
benzene, electron impact-induced generalised oscill. strength, 400 eV, 500 eV, momentum change depend. 8−1088
benzene, fluoresc. quantum yield in soln., dipole-dipole interaction 8−25598
benzene, fluoresc. quenching by pulsed proton irrad. of cyclohexane soln. 8−5270
benzene, S_1 state, mode to mode vibr. energy flow, low pressure fluorescence spectra exam. 8−25664
benzimidazole, excited states, solvent interactions, fluoresc. obs., rel. to chromophore 8−37670
binary mixtures, anal. by computer decomposition of mol. fluoresc. spectra 8−15735
biological applications of fluoresc. and fluoresc. probes 8−15932
tris(2,2′-bipyridine) ruthenium(II) cation, IR-optical double reson. and thermal modulation spectra 8−25576
Brownian rotational motion, effects on nonlinear fluoresc. characts. *(Russian)* 8−5275
carbazole-labelled phospholipid, fluoresc. quenching meas. of pesticide uptake into membranes 8−7323
chlorofluorocarbene, $(^1A'')$ state, radiative lifetime, quenching rate, press. depend., laser-induced fluoresc. obs. 8−5259
chlorophyll, transfer of electronic excitation energy from monomer to dimer *(Russian)* 8−27289
chlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
chlorophyll a of photosystem II, fluoresc. when electron transport on acceptor side is blocked 8−7324
chlorophyll fluorescence changes in isolated broken chloroplasts and involvement of elec. double layer 8−44464
chlorophyll-a, spectral props. of liquid crystal solutions 8−27291
chromophore, excited state, solvent interactions, fluoresc. obs. 8−37670
collision-induced emission with laser irrad., cooperative chemical and optical pumping 8−22012
coronene, fluorescence spectra, zero field line splitting *(Russian)* 8−17604
coronene-rhodamine 6G, energy transfer in PMMA matrix, fluoresc., temp. depend. 8−13539
coumarin, aqueous solution, fast neutron irrad., dosimetry appl. 8−44613
cryptocyanine, soln., $S_2 \rightarrow S_0$ fluoresc. 8−13541
crystal violet, fluoresc. efficiency, solvent viscosity effects at high press. 8−9188
cyanine fluorescent dye membrane probe effects on cell props., rel. to bacterial chemotaxis 8−35815
cyclopropane, vibr. energy transfer processes, laser induced fluorescence exam. 8−25663
delayed fluorescence, quantum mech. model 8−29804
diarylalkane, in isooctane soln. triplet excimer form., phosphoresc., delayed fluoresc., triplet-triplet absorption 8−25597
4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
dichlorocarbene, $^1B_1$ state, radiative lifetime, quenching rate, press. depend., laser-induced fluoresc. obs. 8−5259
9,10-dicyanoanthracene, exciplexes, electronic struct. by electro-optical expts. 8−25581
3,3′diethylthiacarbocyanine iodide-rhodamine 6G, mixed dye laser system, laser and fluorescence behaviour 8−25876
dimethylaminophenyl-(methylene)$_n$-(1-pyrenyl), intramolecular charge transfer, heteroexcimer formation processes 8−27783
9,10-dimethylanthracene, conc. solns., fluoresc. quenching by anthracene and derivatives 8−17711
9,10-dimethylanthracene derivative, intramol. fluoresc. quenching, attached CBr_3 groups 8−42113
1,6-diphenyl-1,3,5-h-hexatriene and derivatives in n-paraffins, electronic spectra and fluoresc. 8−13509
1,6-diphenylhexatrienes, electronic and fluoresc. spectra, solvent effects, 77K 8−21959
diphenylketyl radical, fluoresc. lifetime and quantum yield, organic matrix, 77-130K 8−42110
dipoles, magnetic and electric, close to plane interface, radiation patterns 8−37675
dipoles, magnetic and electric, close to plane interface, total radiated power 8−37674
dye molecule relax. rates from intracavity spectroscopy *(Russian)* 8−25582
dye solns., two-component, before-relax. energy transfer and absorpt. spectra overlap 8−27285
dye solution, fluoresc. yield, photoacoustic determ. method 8−42117
dye solutions, mixed, energy transfer and conc. depolarisation of fluoresc. 8−25583
dye-detergent model systems, degree of fluoresc. polarisation 8−27287
electron impact excitation, photon-electron ang. correlation, fine/hyperfine struct. effects 8−42231
eosin, in glycerine-water mixture, excitation and emission peaks, concentration shifts 8−33540
erythrosin in water-acetone, subnanosecond fluoresc. lifetime meas., environmental effects 8−5268
erythrosine dye, vibrational decay and fluoresc. in S_1 excited state 8−25605
ethyltoluenes, fluoresc. and triplet state quantum yields, biacetyl method 8−37671
excimer, fluorescence, relative yield following triplet-triplet annihilation, re-encounter effects 8−33538
exciplexes, electronic struct. by electro-optical expts. 8−25581
excitation by standing wave radn. field, mol. relax. processes 8−29803
fibrinogen solution, effect of scavengers on radiation-susceptible sites 8−11701
fluoranthene, vapour, laser excited fluorescence 8−29807
fluorenone fluoresc. in plastic, high press. effects., quantum yield 8−25601
fluorobenzenes, radical cations, $B(\pi^{-1})$ excited states, radiative relax. 8−13546
fluoromethane, laser pumped, overtone fluoresc., intermode energy flow 8−37673
formaldehyde, $^1A_2$-state, radiative and nonradiative decay calcs., rel. to photochem. decomp. 8−37669

molecular fluorescence continued
α-(β-)heptacyclene, vibronic spectra, electronic-vibr. interactions 8−1021
hexamethylbenzene charge-transfer complexes, heavy atom effect on radiative and radiationless transitions 8−25607
histone F2a solutions, effect of ionic composition of medium on struct. and effectiveness of intermol. interactions 8−48744
7-hydroxycoumarin, absorpt. and emission spectra, ionic forms 8−21955
7-hydroxycoumarine, one- and two-photon absorption, fluoresc. obs. 8−46407
7-hydroxycoumarine, two-photon visible absorpt. spectra, fluoresc. obs. 8−42147
7-hydroxylepidone, solns., multiple fluoresc. emission 8−33547
indole, fluoresc. polaris., solvent effects 8−33542
indole decapeptide luteinising hormone, high-press. liq. chromatography, fluorometric detect. 8−20096
indoles, excited states, solvent interactions, fluoresc. obs., rel. to chromophore 8−37670
indoles, fluoresc. anomalies, mixed valence-Rydberg states 8−17707
inelastic collisions, rot. ang. momentum distrib., reson. fluoresc. meas. 8−33580
ions, radiative lifetimes, threshold electron-phonon coincidence meas. 8−13550
isotropic rigid solutions, polarisation of fluorescence 8−31228
laser near-reson. scatt. from collisionally perturbed mol. 8−1033
laser techniques, vis. and UV, small mols., electronically excited states, book contrib. 8−9277
laser-induced, review 8−37678
luminescence conference, Szeged, Hungary (Aug. 1976) 8−27279
luminescence-vibrational relaxation interaction, master eqn. calcs., theory 8−42123
malachite green in glycerol, subnanosecond fluoresc. lifetime meas., environmental effects 8−5268
membranes, fluoresc. polarisation decay theory 8−20138
methyl thiyl radical, emission spectrum, collisional quenching 8−13543
9-methylanthracene, in acetylcellulose foil, time-depend. fluoresc. anisotropy, crit. transfer distance *(German)* 8−21964
methylcyclohexane:styrene-d_0, -d_3, -d_5, d_8, fluorescence meas., 77K 8−25606
naphthalene, fluorescence quenching by biacetyl, effect of viscosity 8−29810
2-naphthalensulphonate, fluoresc. and phosphoresc., external heavy atom effect 8−29812
naphthylamines, excited state pK_a* values, proton-induced fluorescence quenching 8−21958
β-naphthylmethyl amine, solvent-induced intramol. exciplex fluoresc. 8−25592
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
organic laser dyes, fluorescence decay, aggregation effects 8−25879
organic molecules in soln., scintillator systems 8−21966
oxalyl fluoride, radiative and nonradiative transitions, self-quenching, unimol. dissoc. 8−17708
pentacene, narrow band laser excitation, fluoresc. decay, optical free induction, dipole moment 8−21956
phase-shift fluorometer using laser and transverse electrooptic modulator for sub-nsec lifetime meas. 8−20319
phenol (oestrogen) compounds, high-press. liq. chromatography, fluorometric detect. 8−20096
phenylene compounds in n-paraffins, electronic spectra and fluoresc. 8−13509
photosynthesis of green plants, tripartite model for photochem. apparatus 8−44474
phthalocyanine, in n-alcanes and polyethylene, absorpt. and fluoresc. spectra, 4.2 and 77K 8−976
phycobilin pigment role in photosynthesis 8−48752
poly-1-vinyl napthalene, excimer dissoc., time resolved fluoresc. spectra 8−33643
polycyclic aromatic hydrocarbons, alternant and nonalternant, fluoresc. quenching by nitro cpds. *(German)* 8−21967
polycyclic aromatic hydrocarbons, matrix isolated, quasilinear Shpol'skii fluoresc. spectra 8−9189
polymethine dyes, relax. mechanisms in picosecond range *(German)* 8−33737
porphin, free base, in n-octane crystal, S_1 from S_0 transition, freq. shift and dephasing temp. depend. 8−25584
porphyrin solns., quenching of excited states by nitro-cpds., donor-acceptor interactions 8−2899
propanolol, (adrenergic blocking agent), high-press. liq. chromatography, fluorometric detect. 8−20096
protein-probe binding, error in interpretation of double-reciprocal plot and Scatchard plot 8−24021
proton transfer photoreaction kinetics, in singlet excited state 8−48671
purple membrane protein chromophore, fluoresc. 8−44454
pyrene, micellar solns., fluoresc. quenching 8−25588
pyrene vapour, laser excited fluorescence 8−29807
pyrene-h_{10}, -d_{10}, dual fluoresc. quenching by O_2 and NO 8−5266
pyrene-N,N-dimethylaniline heteroexcimer systems, micellar solns., fluoresc., photoinduced electron transfer 8−25590
pyridine, vapour, $S_1(n,\pi^*)$ state fluoresc. 8−5267
pyrimidine, $^1B_1$ state zero level fluoresc. decay, press. effects 8−13540
quantum yield measurements, real, observed and mol. parameters, ref. soln. standards 8−32898
quinine sulphate, acid soln., edge excitation red shift and proton migration 8−1028
quinoxalinones, new class of high-efficiency laser dyes 8−46597
resonance light scattering, two level density matrix description 8−25840
rhodamine 6G, delayed fluoresc. of simple associates in polar and non-polar solvent mixtures *(Russian)* 8−48185
rhodamine 6G, in methanol, fluoresc. lifetime meas. 8−29811
rhodamine 6G+BBOT donor-acceptor system, intermol. electronic energy transfer 8−17702
rhodamine B, in glycerine-water mixtures mol. agglomeration effect on fluoresc. polaris. spectrum 8−25595
rhodamine solns., anti-Stokes fluorescence 8−27284
rose bengal, excited state orientational relax., in protic and aprotic solvents 8−46383
rose bengale, fluoresc. polaris., solvent dipole moment effect 8−25596

molecular fluorescence continued
SEM cathodoluminescence probing of biomol. species at 100 Å resolution or below 8−24197
spectra, synchronously excited, peak wavelength and intensity prediction 8−20082
spectroscopy, in study of biochem. processes review 8−11784
tetracyanoethylene(d), charge-transfer complex, fluoresc. quantum field and decay time 8−42107
s-tetrazine, fluoresc. excitation spectra, 1K rot. struct. 8−1020
s-tetrazine-benzene, mixed cryst., 2K, lifetime limited photochem. hole burning 8−9183
TMPD, 2,2,4-trimethylpentane, fluoresc. quenching by elec. field, above photoionis. threshold 8−33539
TMPD, fluoresc. in nonpolar organic liqs. for excitation energies above and below photoionis. threshold 8−1018
toluene, fluoresc. quantum yield in soln., dipole-dipole interaction 8−25598
trans-stilbene, fluoresc. lifetimes, 77-295K 8−1029
transfer of electronic excitation energy between like mols. in soln. *(German)* 8−21965
two-photon excited molecular fluorescence, in optically dense media 8−33534
uranyl complexes, fluoresc. state, rel. to electronic struct. *(Russian)* 8−5274
UV fluorescence lifetime determ., correction of instrumental time response var. with wavelength 8−5374
van der Waals molecules, mol. fluoresc., vibr. predissoc. model 8−42120
velocity redistribution by optical processes 8−38448
X-ray fluorescence polarisation 8−1003
xanthene dye N-92+inert gas buffer, electron beam excited, fluoresc., energy transfer 8−25877
xylenes, fluoresc. and triplet state quantum yields, biacetyl method 8−37671
Zeeman effect, anomalous, Doppler-free standing wave saturated resonance, book contrib. 8−9279
AlO, produced by $Al+O_2 \rightarrow AlO+O$, product rot., vibr., translational energy 8−23928
BO_2, reson. fluoresc. assignment of vibr. and vibronic transitions 8−17663
$BaCl(C^2\Pi_{3/2}, \nu=0)+Ar$, intermultiplet energy transfer, laser induced fluoresc. obs. 8−9227
Br_2, and isotopic forms, new rot.-vibr. lines, laser reson. fluoresc. obs. 8−991
BrF, fluoresc. decay lifetimes and quenching cross-sections for excited $B^3\Pi(0^+)$ states 8−1030
$Br(4^2P_{1/2})+CO_2(COS)(CS_2)$, electronic to vibrational energy transfer rates 8−29839
C_2, in comets, synthetic spectra calcs. 8−28579
C_2, reson. fluoresc. statistical equilib. calc., appl. to comets 8−1016
C_2^-, matrix isolated, vibr. energy transfer, fluoresc. 8−46382
CH_2 radical, fluoresc. induced by laser 588.9-595.6 nm, $(a^1A_1-X^3B_1)$ energy separation 8−42121
CO, $A^1\Pi \leftarrow X^1\Sigma^+$, (2-0) band, three photon excitation, fluoresc. obs. 8−13481
CO, fluorescence, lifetime meas. for rot. levels of (0,0) band, $A^1\pi$ to $X^1\Sigma^+$ transition 8−29808
CO, solid and liq., vibr. relax. and vibr. diffusion rates, 66-79K 8−17757
CO, two-photon excited vac. UV fluoresc. 8−5264
CO^+, fluoresc. and production cross-sections by photoionis. of CO 8−9204
$^{12}C^{16}O$, in Ar matrix, vibr. population time evolution temp. depend., master eqn. 8−9180
CO_2, anomalous Zeeman effect, nonlinear optical techniques, book contrib. 8−9279
CO_2, laser excited, dealignment relaxation meas. by fluorescence 8−25587
CO_2^+, laser excitation spectra, $A^2\Pi_u \rightarrow X^2\Pi_g$ fluoresc., rot. struct. 8−1019
CO_2^+, radiative lifetimes, threshold electron-phonon coincidence meas. 8−13550
CO_2+N_2, vibr. energy transfer, time-resolved laser induced fluorescence 8−29842
COF_2, laser excited IR fluoresc. C=O and C-F stretching modes 8−21960
CS_2, fluorescence due to laser excitation, Hanle effect 8−25628
CS_2+Ar^*, Penning ionisation and dissoc. fluoresc, collisional energy depend. 8−33584
CaCl, free radical, $A^2\Pi$-$X^2\Sigma^+$ system obs. by saturation spectroscopy 8−46353
Cl_2, resonance fluoresc. by Ar ion laser excitation 8−42122
Cl_2CS, fluoresc. decay from second excited singlet state 8−25600
Cn free radical, $B^2\Sigma^+$ state lifetime, photon-photon cascade meas. 8−5273
CsXe excimer laser, form. and dissociation rates, fluoresc. meas. 8−1216
Cu_2, fluoresc., A-X system, rot. consts. *(French)* 8−33544
CuO, fluoresc., matrix isolation spectra 8−46381
D_2O, polarised photofluoresc. excitation spectra, VUV photodissoc. excited state lifetimes 8−5261
H_2, $^3\Sigma_g^+ \rightarrow b\ ^3\Sigma_u^+$ light emission meas. by electron impact excitation 8−33618
H_2, electron impact, excitation of $G^1\Sigma_g^+$ state, emission cross-section meas. 8−37755
H_2, superluminescence in surface discharge *(Russian)* 8−37676
H_2+Ar, near-reson. energy transfer, fluoresc. excitation 8−9187
$HCl(\nu=1,2)+O(^3P_g)$, reaction and deactivation, laser-induced fluoresc. obs. 8−35669
$H_2(E,F^1\Sigma_g^+)$, two-photon excitation, cross section, radiative lifetime, quenching rate, IR fluoresc. obs. 8−37698
H_2O, polarised photofluoresc. excitation spectra, excited state lifetimes, VUV photodissoc. 8−5261
$H_2{}^{18}O$, vibr. relax. rate consts., fluoresc. method determ. 8−17762
$H_2^*+H_2$, van der Waals mols., mol. fluoresc., vibr. predissoc. model 8−42120
He_2, electronic and rot. energy relax., reactive collisions by isotope selective excitation 8−33541
HeI_2, rot. fluoresc. spectra, nonlinear equilib. struct. 8−37672
Hg_2, absorpt., fluoresc. and two-photon spectroscopy 8−998
Hg_2, fluoresc. and absorpt. spectra anal., pot. energy curves 8−999

molecular fluorescence continued
Hg_2, fluoresc. decay, 335 and 485 nm 8−46387
Hg_2, optical pumping, continuous emission obs. 8−5296
$HgNH_3^*$, excited complex photosensitised luminesc. and fluoresc. phase shifts 8−33535
I_2, electronically excited states, vis. and UV laser techniques, book contrib. 8−9277
I_2, excited by circ. polaris. light, mol. collisions, emission depolaris. 8−33577
I_2, laser fluoresc., relax. of oriented ground and excited mols. 8−46390
I_2, laser fluoresc., spectral assignments at 5145 Å 8−46389
I_2 vapour low conc. detect. by laser fluoresc. excitation 8−27871
$I_2(B^3\pi_0{}^+{}_u)$, ps excitation, in CCl_4 soln., ultrafast decay and spectrum 8−9184
$IBr(B^3\pi_0{}^+)$, lifetimes determ. from time resolved fluoresc. 8−46385
ICl, IF, fluoresc. decay lifetimes and quenching cross-sections for excited $B^3\Pi(0^+)$ states 8−1030
$^{127}I_2$, B-X electronic transition, systematic hyperfine struct. meas. 8−9267
KrF, laser, e-beam pumped Kr-F_2 mixtures, form. and quenching processes 8−42322
KrF*, bound-free emission spectra, simulation 8−29806
Kr_2^*, form. and UV fluoresc. under monochromatic excitation and collision processes 8−9237
LaO, fluoresc. spectra, atom+ROH O atom abstraction reactions, fluoresc. study 8−48643
Mg_2 excimer system, laser induced fluoresc. 8−33548
MgO, $B^1\Sigma^+$-$X^1\Sigma^+$ and $B^1\Sigma^+$-$A^1\Pi$ fluoresc. 8−21963
N_2 $(C\ ^3\Pi_u)$ vibr. levels radiative lifetime, transition moment internucl. distance depend. 8−1027
N_2, molecular centre, in Ar matrix, vacuum UV luminesc., 8K 8−10958
N_2^-, vibr. autodetaching states, from H^-+H_2, excitation and decay, Franck-Condon factors 8−33620
N_2^+, fluoresc. and production cross-sections by photoionis. of N_2 8−9204
$N_2+C^+(N^+)(O^+)$, luminescent charge transfer, metastable and ground state ions 8−42202
ND_3, Hg-photosensitised luminesc. at low press. 8−13542
NH_2, (A^2A_1), fluoresc., form. by photolysis of $NH_3(A^1A_2'')$ 8−13547
NH_3, decay of saturation reson., IR ν_2 as Q(8,7) transition 8−25609
NH_3, Hg-photosensitised luminesc. at low press., isotope effects 8−13542
NH_3, mol. alignment relax. rate, laser saturation reson. technique 8−25755
NO_2, $^2B_2$ state, fluoresc. anomalous mag. depolaris. 8−21962
NO_2, fluoresc. quenching mechanism 8−25599
NO_2, fluoresc. spectra from selectively excited HFS levels 8−21961
NO_2, reson. Raman spectra, vibr.-rot. scatt. Q branch enhancement 8−989
NO_2, vibr. excited, from nitroalkane photodissoc., fluoresc. obs. 8−37693
N_2O, anomalous Zeeman effect, nonlinear optical techniques, book contrib.. 8−9279
N_2O, IR combination band spectral emissivity, 1200, 1700, 1900K, shock tube obs. 8−5287
N_2O^+, fluoresc. and dissociation lifetimes of vibr. excited states 8−42108
N_2O^+, fluoresc. and production cross-sections by photoionis. of N_2O 8−9204
NO^*+NO, van der Waals mols. in mol. fluoresc., vibr. predissoc. model 8−42120
NaK, laser-induced fluoresc. in supersonic nozzle beams 8−25593
Ne-N_2, charge transfer kinetics, weak H^+ beam effects 8−9243
NeF, low energy state pots. energy curves, fluores. and dipole moment 8−21991
$O_2+O(^1S)$, collisional interaction products, reson. fluoresc. obs. 8−46423
$(O_2)_2$, struct., energy transfer, high resolution electronic spectra 8−25550
OD, $A^2\Sigma^+ \rightarrow X^2\Pi_i$ radiation after dissociative excitation of D_2O 8−46455
OH, $(A^2\Sigma^+ \rightarrow X^2\pi)$ fluoresc. prod. by H_2O photodissoc., cross sections 8−25604
OH $(A^2\Sigma^+)+H_2(N_2)(Ar)$, collisionally induced population change rates, laser-induced fluoresc. obs. 8−5326
OH, $A^2\Sigma^+ \rightarrow X^2\Pi_i$ radiation after dissociative excitation of H_2O 8−46455
OH, in inert gas matrix, H-bonding and charge transfer, fluoresc. 8−25602
OH, laser induced fluorescence, preferential population of π^+ component of Λ doublet in $H+NO_2 \rightarrow OH+NO$ 8−31620
O(Se)(S)+inert gas, ^1S-^1D collision-induced transitions 8−33588
PtAl, form. in hollow cathode discharge, emission spectrum obs. 8−27819
PtD, form. in hollow cathode discharge, emission spectrum obs. 8−27819
PtH, form. in hollow cathode discharge, emission spectrum obs. 8−27819
PtO, form. in hollow cathode discharge, emission spectrum obs. 8−27819
Rb_2, $X^1\Sigma_g^+$ state, Raman spectra, fluoresc., vibr. energy 8−46345
S_2, fluoresc. quenching by He, Ar, Xe, N_2, S_2, CF_4, C_2F_6, fluoresc. lifetimes 8−46386
SF_6, collisionless fluoresc., 16 μm, following laser pumping, vibr. quasi-continuum 8−42111
SO_2, fluoresc. and photosensitised phosphoresc. of biacetyl, quenching and triplet theory transfer 8−25608
$Sc+O_2(NO)(SO_2)$, nascent product state distribs., laser fluoresc. detect. 8−7187
ScO, fluoresc. spectra, atom+ROH O atom abstraction reactions, fluoresc. study 8−48643
ScO, optical emission spectrum, wave functions and intensity factors, using effective Hamiltonian *(French)* 8−5114
UF_6, electronically excited, laser-induced time-resolved emission, self-quenching 8−42114
UF_6, electronically excited, emission quenching by organic mols. 8−42115
UF_6, electronically excited, emission quenching by inorganic mols. 8−42116

molecular fluorescence continued
  XeF^*, lifetime and collisional quenching meas., XeF_2 photolysis 8−33545
  Xe_2^*, form. and UV fluoresc. under monochromatic excitation and collision processes 8−9237
  $Y+O_2(NO)(SO_2)$, nascent product state distribs., laser fluoresc. detect. 8−7187
  YO, fluoresc. spectra, atom+ROH O atom abstraction reactions, fluoresc. study 8−48643

molecular force constants
  see also Coriolis force
  (3×3) order systems, force const. calcs. using isotopic freqs., parametric method 8−21907
  alkali trimers, semiempirical pot. energy surfaces calcs. 8−25649
  anthracene, harmonic force fields, bond orders, normal coord. anal. 8−25418
  benzene, and $-d_6$, $^1B_{2u}$ excited state, force field, normal coords. 8−5193
  benzene, normal vibr. anal. 8−13487
  benzenes, trisubstituted, valence force fields, normal modes of planar vibrations *(French)* 8−37626
  biphenylene, harmonic force fields, bond orders, normal coord. anal. 8−25418
  blue proteins, activation of electron transfer reactions 8−44446
  cis-butene-1, microwave rot. spectrum, centrifugal distortion effects, rot. consts. 8−9137
  2-chloro-3-fluoro-1-propene, struct. and conformers, force field and vibr. amplitudes 8−25747
  chloroalkanes, modified Urey-Bradley force field calcs. 8−25500
  2-chloropropane, conformation, vibr. spectrum, from simple harmonic force field 8−33494
  computer program MOLMEC, design and performance 8−13410
  decanoic acid, mol. config. change in cryst., IR spectra, normal coord. anal. 8−33506
  deformation force constants, rel. to valence force consts. *(Russian)* 8−29742
  diamond clusters and corresponding saturated hydrocarbon ab-initio HF and PCILO calcs. 8−42951
  dimethylmercury, mol. force field, generalised inverse method for calc. 8−25505
  ethane, force consts., model potential function vs. mol. orbitals calcs. 8−29829
  ethane, force consts., vibr. stress and isotope effects 8−21897
  ethylene+cis-N_2H_2, chem. reaction, intermediate geom. calcs. 8−35655
  force field representations, vibr. stress, isotope effects and struct. of ethane 8−21897
  generalised inverse method for calc. 8−25505
  group II halide-periodate complexes, force consts., compliance and Coriolis consts. calc. 8−42242
  Group V trideuterides, Coriolis coupling consts., progressive rigidity method calcs. 8−929
  Group V trihalides, Coriolis coupling consts., progressive rigidity method calcs. 8−929
  inert gas binary mixture, unlike mol. force consts. from viscosity data, thermal cond. 8−33565
  inert gases, mean force constants and rectilinear law of mean force calcs. 8−33414
  isotopic freqs. for evaluation, parameter representation, algebraic approach 8−33493
  methane, parametric representation method 8−25503
  methane($-d_4$), force field representation, equilib. struct. 8−42238
  methanethiol, ab initio force consts., anharmonic vibr. 8−21898
  methanol, ab initio force consts., anharmonic vibr. 8−21898
  methyl chloride, ab initio force consts., anharmonic vibr. 8−21899
  methyl fluoride, ab initio force consts., anharmonic vibr. 8−21899
  methyl iodide, rot. microwave spectra, nucl. quadrupole, spin-rot. and nucl. shielding tensors 8−42040
  methylamine, ab initio force consts., anharmonic vibr. 8−21898
  N-methylcarbamoyl chloride($-d_1$), vibr. spectra, normal coord. anal. 8−33497
  model 8−963
  molecule, intensities dipolaris. ratios, polarisability, matrix rotation, isotopic rules 8−5288
  monothioformic acid, cis-, trans-rotamers, rot. spectrum, force consts. and isotopically substituted struct. 8−9145
  MX_4^n-type ions, modified Urey-Bradley force field 8−21905
  naphthalene, harmonic force fields, bond orders, normal coord. anal. 8−25418
  perylene, harmonic force fields, bond orders, normal coord. anal., mean amplitudes calcs. 8−25418
  polyatomic molecules, vibr. spectrum, intermolecular interaction effects *(Russian)* 8−37621
  polyatomic systems, Cartesian coords., charge densities, field gradients 8−29771
  Raman excitation profiles and mol. spectra synthesis, vibronic and exciton-in-mol. theory 8−42076
  Raman spectroscopy, vap., medium resolution, appls., review 8−42065
  tetrafluoromethane, ^{19}F chem. shielding, depend. on internal coords. 8−5249
  tetrahedral molecules, thermodynamic isotope effect 8−20000
  tetrahydrofuran, effective force constant corrections, in redundant mol. coords. 8−13634
  tetramethylurea-d_0,-d_{12}, IR spectra, normal coord. anal. 8−978
  trigonal planar molecules, thermodynamic isotope effect 8−20000
  trimeric molecular complex, excitation localisation and transfer, monomeric internal vibr. effect 8−17581
  trimethylantimony(V) dihalides, normal coord. anal., comparison of force fields 8−968
  uranyl complexes, IR spectra, complexation effects on force consts. and bond lengths 8−980
  valence force constants, rel. to deform. force consts. *(Russian)* 8−29742
  virial theorem, appls. 8−41904
  XY_2 nonlinear system, mol. dynamics calcs. 8−41975
  XY_3, pyramidal halides, mean amplitude, Coriolis coupling const. and centrifugal distortion const. 8−29735
  XY_3 pyramidal mols., intramol. forces, fundamental vibr. freqs., centrifugal distortion consts., PF_3 appl. 8−5202
  XY_4, XY_3, mols., force field anal., parametric representation method 8−25503

molecular force constants continued
  XY_4 square-planar type ions, force consts., bond polarizability 8−5201
  $AlCl_3$, matrix isolated, vibr. spectrum, struct., vibr. freqs. 8−46339
  AlO, spectra, vibr. consts., pot. curves, Franck-Condon factors and r-centroids 8−42243
  Ar_2, mean force constants and rectilinear law of mean force calcs. 8−33414
  $AsCl_3$, 100 to 200 GHz spectra, mol. struct., harmonic force field 8−42042
  AsF_3, millimetre rot. spectra, vibr. excited states, anharmonic force field 8−33502
  BF_3, ^{19}F chem. shielding, depend. on internal coords. 8−5249
  BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
  BO, spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
  BX_3, (X=Br, Cl, F), ellipticity of symm. force field, force consts. 8−17646
  BX_3, X=F, Cl, Br, I, parametric representation method 8−25503
  BaF_2, force consts., mean amplitudes of vibr. 8−17647
  1-bromo-1-chloro-1-fluoroethane($-2-d_1$), IR and Raman spectra, vibr. assignments, normal coord. anal. 8−42053
  CO, isotopic mols., Dunham pot. energy coeffs. 8−41979
  CO_2, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
  CO_3, and isotopic forms, struct., normal coord. anal. 8−965
  CaF_2, force consts., mean amplitudes of vibr. 8−17647
  CeF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8−17650
  $Cl_3SiOSiCl_3$, normal vibs. and force field, calcs. using electron diffr. strlct. determ. *(Russian)* 8−46317
  Co_4 $(CO)_{12}$, heptane soln. Co-Co force consts., prereson. Raman spectra, rel. to solid IR spectra *(French)* 8−31193
  $Cs_2UO_2Br_4$, force consts., IR spectra 8−5216
  GeF_2, force consts., mean amplitudes of vibr. 8−17647
  GeH_4, tetrahedral mol., force field calcs. 8−29734
  GeO_4^{4-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
  GeX_4, X=H, F, Cl, parametric representation method 8−25503
  HBr, Dunham pot. energy coeffs. 8−41979
  $(HCl)_2$, vibr. freqs. in inert gas matrix, force const., MINDO/3 calcs. 8−41952
  HI, Dunham pot. energy coeffs. 8−41979
  HNB,(HNBH), spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
  H_2O, double SCF method for electron correl., stretching force const. 8−17575
  HOB,(HBO), spectroscopic properties, PNO-CI and CEPA calcs. 8−41961
  $H_3O^+(H_2O)_n$, H^+ motion energetics, ab initio calcs. 8−25413
  $K_2UO_2Br_4$, force consts., IR spectra 8−5216
  Kr_2, mean force constants and rectilinear law of mean force calcs. 8−33414
  LaF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8−17650
  LiF-NH_2 adduct, mol. consts., ab initio SCF LCAO MO calcs. *(French)* 8−13423
  $LuCl_3$, pyramidal struct. and force field coeffs., electron diffr. obs. 8−9250
  MgF_2, force consts., mean amplitudes of vibr. 8−17647
  N_2, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
  NH_3, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
  NH_3-CO_2 complex, matrix isolation IR spectrum, struct., ab initio SCF calcs. 8−5209
  $(NH_4)_2S_5$, Raman spectra, vibrs. and rot. isomers of Sn^{2-} (n=4-8) *(German)* 8−13504
  NO_2 and isotopic forms, total quartic potential function 8−13486
  NO_2Cl, force fields calc. 8−42241
  NO_2F, force fields calc. 8−42241
  O_2, excited state geometries and energies, ab initio pot. energy surfaces 8−5151
  OH, Dunham pot. energy coeffs. 8−41979
  PF_3 pyramidal mols., intramol. forces, fundamental vibr. freqs., centrifugal distortion consts. 8−5202
  S_4Cl_2, Raman spectra, vibrs. and rot. isomers of S_n^{2-} (n=4-8) *(German)* 8−13504
  $S_4N_4H_4$ $(S_4N_4D_4)$, vibr. spectra, force consts. *(German)* 8−13499
  SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
  SO_4, and isotopic forms, struct., normal coord. anal. 8−965
  S_2O, isotopes, force consts., mean amplitudes of vibr. 8−970
  SbO_4^{3-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
  ScF_3, pyramidal struct. and force field coeffs., electron diffr. obs. 8−9250
  SeF_6, IR vibr. band contours, isotope substitution, force consts. 8−17670
  SiF_4,$(SiCl_4)$, parametric representation method 8−25503
  SiF_4, ^{19}F chem. shielding, depend. on internal coords. 8−5249
  SiH_4, tetrahedral mol., force field calcs. 8−29734
  SnH_4,$(SnCl_4)$, parametric representation method 8−25503
  SnH_4, tetrahedral mol., force field calcs. 8−29734
  SnI_3^-, vibr. intensities, forms and freqs. anal. SCF MO LCAO CNDO calcs. 8−9274
  SnO_4^{4-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
  SrF_2, force consts., mean amplitudes of vibr. 8−17647
  TeO_4^{2-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
  TiF_2, force consts., mean amplitudes of vibr. 8−17647
  UF_5, monomer struct. and pot. consts., IR and Raman spectra in inert gas matrices 8−5215
  WO_3, force field, normal coord. anal., kinetic consts. method, thermodynamic props. 8−25504
  XeO_3F_2, mol. consts., general valence force field calcs. 8−21906
  YF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8−17650
  ZnXY, (X,Y=Cl,Br or I), matrix isolation, vibr. spectra, isotope effects, force consts. and geometry 8−46337

molecular force fields *see molecular force constants*

molecular hyperfine structure
  acetyl cyanide-d_1, microwave spectra, r_s, r_0-struct. 8−13491
  copper porphine, Xα multiple scatt. calcs., EPR and electronic spectra 8−13426

molecular hyperfine structure continued
1,4-diazaphenanthrene, zero-field splitting, basic triplet states, H bond effects 8−5366
1,4-diazatriphenylene, zero field splitting, basic triplet states, H bond effects 8−5366
electron impact excitation, photon-electron ang. correlation, fine/hyperfine struct. effects 8−42231
haemin, hyperfine interactions and related props. 8−44451
haemoglobin derivatives, hyperfine interactions and related props. 8−44451
hydroxymethyl radical, isotropic hyperfine coupling consts., temp. depend., nuclear vibrs. 8−35039
3-iodopropene, microwave spectra, rot. consts. and HFS 8−975
methane, mag. struct. of vibr.-rotational transition, review of laser appl. to precision meas. 8−42246
methane, nonlinear optical reson. shift in mag. field, vibr.-rot. transition 8−13549
methyl iodide, rot. microwave spectra, nucl. quadrupole, spin-rot. and nucl. shielding tensors 8−42040
methyl radical, isotropic hyperfine coupling consts., temp. depend., nuclear vibrs. 8−35039
nuclear energy levels, observation by laser technique book contrib. 8−9212
quinoxaline, zero-field splitting, basic triplet states, H bond effects 8−5366
$_2$, photoluminesc. spectrum, ^{31}P Fermi interaction, hyperfine struct. 8−33536
CH, interstellar, rot. levels struct., excitation mechanisms 8−21908
CN, radical, $X^2\Sigma^+$ ground state, microwave absorpt. spectrum 8−17657
CuCl, hyperfine struct., microwave rot. spectrum obs. 8−21917
^{57}FeBr$_2$, matrix isolation Mossbauer spectra, isomer shift, quadrupole splitting 8−42104
^{57}FeCl$_2$, matrix isolation Mossbauer spectra, isomer shift, quadrupole splitting 8−42104
^{57}Fe$_2$Cl$_6$, matrix isolation Mossbauer spectra, isomer shift, quadrupole splitting 8−42104
HNC, quadrupole coupling constant determ. 8−1101
ICN, microwave spectrum, mag. hyperfine struct., I nucl. shielding tensor 8−17661
^{127}I$_2$, hyperfine struct. in electronic spectrum, saturated absorption spectroscopy 8−37645
^{127}I$_2$, visible spectra, HFS at 586.82 nm 8−9395
N_2D^+, lab. rest frequencies 8−1102
NH_2, hyperfine level crossing spectroscopy of (0, 9, 0) and (0, 10, 0) vibr. states 8−17728
NH_4^+, ND_4^+, in lyotropic mesophase, ^{14}N NMR, and quadrupole splitting 8−17690
$NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8−1010
NO, laser mag. reson. and IR-RF double-reson. near 5.3 μm 8−5258
NO_2, fluoresc. spectra from selectively excited HFS levels 8−21961
OD, $^2\Pi_{3/2}$ state EPR spectra 8−21949
OH, Λ-doublet transitions induced by ion collisions 8−9222
OH, vibr. ground-state, MFS, rot. spectra and electronic band anal. 8−5206
SiH$_3$^{81}Br, high resolution rot. microwave spectrum, 8-40 GHz, mol. consts. 8−21916

molecular inelastic collisions
see also atom-molecule collisions; atom-molecule reactions; ionisation of molecules; molecular rotational-vibrational energy transfer; molecule-molecule reactions
bimolecular quasiresonant processes, impact approx. 8−33571
body-fixed theory, two-system collision, arbitrary ang. momenta 8−25642
Born inelastic cross sections, Pade approximants 8−17742
chiral systems, differential scatt. of spin ±$^1/_2$ neutrons, theory 8−33622
chiral systems, differential scatt. of spin ±$^1/_2$ neutrons, Condon oscillator model 8−33623
chlorophyll, electronic excitation, transition monopole theory 8−22016
2-chloropropane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
classical scattering of charged particles, single and multiple scatt. at small angles 8−17740
collision-induced emission with laser irrad., cooperative chemical and optical pumping 8−22012
collisional ionisation in intense laser field, quasimol. state reson., quantum mechanical anal. 8−33589
complex molecular systems, collision phenomena by stochastic model, observables distribs. and information entropy 8−25640
cross-sections, computational technique, exponential distorted wave and effective Hamiltonian 8−37709
diatomic transition operator, separable approx., variational approach 8−42150
differential cross-sections, from classical trajectory studies, Legendre polynomial series 8−17738
differential scatt. cross sections from classical trajectories, Legendre moment method 8−3314
dissociation-recombination, collision induced, exactly soluble model 8−7191
electronic excitation energy transfer by reabsorption 8−37735
energy moments of final state distrib., direct moment method 8−33562
ergodic collision theory of intermolecular energy transfer 8−9224
excimer, fluorescence, relative yield following triplet-triplet annihilation, re-encounter effects 8−33538
excited state processes, collision rates obs. using single at. or mol. beam 8−13567
large asymmetric mol. interaction with small mol., target factor, mixture thermodynamic props. 8−26225
laser near-reson. scatt. from collisionally perturbed mol. 8−1033
Liouville equation, reduced form 8−33569
maser, three-level, collisional relax. times 8−13675
methane, collision-induced light scatt., spectral features 8−13493
methane+methane, ^{1}H and ^{13}C mag. shielding, intermol. effects 8−37571
methyl thiyl radical, emission spectrum, collisional quenching 8−13543
molecular gas, laser irrad., field avoided crossings, new transition channels 8−33477
molecular inelastic collisions continued
nonspherical molecule, rot. and vibr. inelastic scatt., rot. IOS approx. calcs. 8−46433
protein dynamic states, role of geometry and elastic strains 8−48745
reactivity band boundaries, trapped trajectories, theory 8−29836
rotational infinite-order sudden-approximation, low energy appls. 8−1052
stochastic theory in perturbation limit 8−1042
structureless polyatomic molecules, phenomenological energy exchange, kinetic models 8−42168
tert-butyl chloride, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
tetrachloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
tetrafluoromethane, collision-induced light scatt., spectral features 8−13493
trichloroethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
trichloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
xanthene dye N-92+inert gas buffer, electron beam excited, fluoresc., energy transfer 8−25877
Ar_2, collision-induced Raman spectrum, absolute cross sections 8−46349
Ar_2, collision-induced Raman scatt., polarisability anisotropy 8−46350
CH, interstellar, rot. levels struct., excitation mechanisms 8−21908
$CO+H_2$, pot. energy surface anisotropy in nonreactive region, ab initio calcs. 8−29832
CO^++CO, metastable and $X^2\Sigma^+$ states dissoc. 8−33587
Cs_2+methane, collision-induced dissoc., atom-mol.-exchange optical pumping 8−22008
H_2, (oriented), scatt., total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
HBr-Ar, IR fundamental region, line intensity, line breadth, tunable laser meas. 8−46328
HCl, linewidths and shifts in fundamental band broadened by D_2 and H_2 *(French)* 8−972
HD, dipole spectrum, influence of intracollisional interference 8−33492
HNO_3, spectral linewidth, broadened in air, O_2 and N_2 at 200 and 300K 8−46399
$H_3O^+.H_2O$, mobility in He, flow drift tube obs. 8−34257
$He_2+N_2(O_2)$, $He_2(2^3\Sigma)$ quenching reactions 8−22014
I_2, laser fluoresc., relax. of oriented ground and excited mols. 8−46390
Kr_2, collision-induced Raman spectra, absolute cross sections 8−46351
NH_3, collisional broadening, vel. depend., IR optical saturable absorpt. technique, book contrib. 8−9201
O_2+N_2, collision induced UV absorpt., Herzberg continuum, dimer form. 8−9167
O_2+O_3, collisional deactivation of laser excited $O_2(^1\Delta_g)$, addition effects and pathways 8−25673
OH, Λ-doublet transitions induced by ion collisions 8−9222
S_2, fluoresc. quenching by He, Ar, Xe, N_2, S_2, CF_4, C_2F_6, fluoresc. lifetimes 8−46386
SF_6, multiphoton isotope selective dissoc., pulse shape, energy, press. and geometry effects 8−25733
UF_6, electronically excited, emission quenching by organic mols. 8−42115
UF_6, electronically excited, emission quenching by inorganic mols. 8−42116
Xe_2, collision-induced Raman spectra, absolute cross sections 8−46351

molecular internal mechanics *see molecular vibration*

molecular internal rotation *see rotational isomerism*

molecular libration
acetic acid-d_0, -d_1, -d_4, H bonding in solid, IR spectra, vibr. and librational modes 8−43843
alkali halides:NH_4^+, inelastic neutron scatt. 8−14407
condensed phase mol. reorientation, correlation times, librational model 8−1968
diamantane, low temp. soft librational mode, Raman spectra exam. 8−30730
hydroxylapatites, IR spectra, stretching and librational bands of OH groups, and hindered rotation 8−2841
ice, isotopic, I_h, single crystal Raman intensities, OH bond polarisability, librational modes 8−27208
methane-d_4, solid phases I, II, librational excitations 8−2212
molecular liquids, depolarised Rayleigh-wing scatt. and far IR absorpt. spectra 8−39532
naphthalene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
neopentane, mol. motion in cryst., liq. and plastic phases, neutron scatt. obs. 8−6021
NMR signal for quadrupole, chem. shift., dipole-dipole interactions, mol. solids, rigid-body vibr. effect 8−15056
phenanthrene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
polystyrene, substituted, Raman, IR and neutron spectra of LF vibs. 8−2848
propylene, liquid, effect of libration transitions on sound absorpt. 8−2203
quasi-one-dimensional conductor, chiral charge density waves form. 8−6302
solid, rotational tunnelling, neutron scatt. theory 8−18561
TTF-TCNQ, metallic conductivity temp. depend. 8−2851
Ba hexafluorometallates, $BaMF_6$, (M=Si,Ge,Sn,Ti), Raman spectra, at press. up to 25 kbar 8−6670
CO_2-N_2O, mixed cryst., librational motion, Raman obs. 8−6661
$CoCl_2.2H_2O$, wagging and rocking band intensities of water 8−27200
p-D_2, solid, orientationally ordered state, anomalous far IR absorption spectrum 8−10876
H_2, solid, inelastic neutron scatt., theoretical analysis 8−34569
H_2O, hydrates librational modes in IR spectra 8−48161
KCN, lattice dynamics in disordered cubic phase 8−38794
KCN, phonon freq. distrib., cubic and monoclinic phases 8−22800
KCN-KCl mixed system, order-disorder transition, Raman spectra obs. 8−15113
$MnCl_2.2H_2O$, wagging and rocking band intensities of water 8−27200
α-N_2, solid, librational motion, spin-lattice relax. 8−15047

molecular libration continued
- N_2, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
- N_2-CO mixed cryst., librational motion, Raman obs. 8−6661
- NH_4 compounds, tunnelling frequency of NH_4 ion in crystals, cubic and noncubic 8−38633
- NH_4^+, in NH_4Cl, ion dynamics in disordered states, neutron scatt. exam. 8−26459
- $(NH_4)_2SnCl_6$, NH_4^+ ion rot. states, inelastic neutron scatt. obs. 8−30552
- NaCN, lattice dynamics in disordered cubic phase 8−38794
- NaCN, Raman spectrum, hydrostatic press. effects 8−6663
- $Ni(NH_3)_6X_2$, X=Cl,Br,I, rotational tunnelling by inelastic neutron scatt. 8−30553
- $TlSbF_6$, Raman spectra, at press. up to 25 kbar 8−6670

molecular librational states *see molecular libration*

molecular magnetic susceptibility
- alkanes, diamag. susceptibility, graph theoretical anal. 8−33449
- alkenes, diamag. susceptibility, graph theoretical anal. 8−33449
- chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
- diamagnetic molecule, mag. susceptibility, nucl. mag. shielding, calc. methods *(German)* 8−33448
- Hartree-Fock perturbation technique, CNDO/2 *(French)* 8−37559
- hydrides, second row, ab initio calcs. using FSGO basis, mol. parameters correlation 8−901
- Kirkwood equation applicability charged anisotropic harmonic oscill., mol. diamag. 8−5365
- myoglobin-Fe^{3+} compounds, Mossbauer and suscept. expts. 8−24019
- organo-silicon compounds, diamagnetic susceptibility, semiempirical calcs. 8−17820
- paraffins, solid and liquid, diamagnetic susceptibility 8−14923
- thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8−25520
- BH, mag. field depend. susceptibility, gauge invariant GO calc. 8−1100
- H_2, mag. field depend. susceptibility, gauge invariant GO calc. 8−1100
- H_2, mag. susceptibility calc. by distinguishable electron method 8−897
- HF, mag. field depend. susceptibility, gauge invariant GO calc. 8−1100

molecular mass *see molecular weight*

molecular metastable states
- electron spectroscopy, coincidence experiments, two-parameter 8−20135
- CO^++CO, metastable and $X^2\Sigma^+$ states dissoc. 8−33587
- ClONO, form., reaction kinetics, IR spectra 8−35641
- H_2, electron impact excitation, two-step, Hanle effect obs. 8−25730
- $H_2(c^3\pi_u)$, theoretical radiative lifetime, from mag. dipole, elec. quadrupole interaction 8−33553
- He_2+$N_2(O_2)$, $He_2(2^3\Sigma)$ quenching reactions 8−22014
- $He_2(^3\Sigma_u)$+Ne(Ar)(N_2)(CO)(C_2)(CH_4), excitation transfer reaction rates 8−5332
- $He_2(2^3\Sigma_u^+)$+He_2(Ne), reaction rate consts. meas. in afterglow 8−7173
- N_2, glow discharge, ionis. mechanism 8−13613
- O_2, HF discharge, prod. of cold plasma rich in metastable species *(French)* 8−14238

molecular moments
- benzaldehyde, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
- bicyclo[3.1.0]hex-2-ene, microwave spectra, rot. consts., ring struct. and config. 8−42041
- bromoacetylene, microwave spectrum, dipole moment 8−17660
- bromomethane, ab initio SCF MO calcs., ionis. pots., dipole moment, config., electronic props. 8−1104
- butadienes, optical activation energy and dipole moment, electron repelling and attracting groups 8−46341
- 4-chloro-3-nitrobenzotrifluoride-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
- 4-chloro-3-nitrotoluene-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
- 2-chloroanisole and sulphur analogue, benzene dipole moment anal. 8−25748
- o-chloronitrobenzene-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
- 2-chlorophenol and sulphur analogue, benzene dipole moment anal. 8−25748
- chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
- CPHB, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
- 1-cyano-1,3-cyclopentadiene, microwave spectrum, rot. consts., dipole moment 8−42043
- diatomic radiative transitions, electronic-vibr. dipole moment, band strength 8−46400
- 2,4-dichloroanisole and sulphur analogue, benzene dipole moment anal. 8−25748
- 2,4-dichlorophenol and sulphur analogue, benzene dipole moment anal. 8−25748
- 9,10-dicyanoanthracene, exciplexes, electronic struct. by electro-optical expts. 8−25581
- electric dichroism spectroscopy 8−1013
- ethanol, conformational analysis and electronic structure 8−33429
- ethylene, quadrupole moment and shape parameters, in virial coeffs. calc. 8−9743
- ethylene molecules, long range forces in multipole expsn., ab initio calcs. 8−9219
- ethylenes, optical activation energy and dipole moment, electron repelling and attracting groups 8−46341
- exciplexes, electronic struct. by electro-optical expts. 8−25581
- Fermi and molecular min. dipole moment for binding electron 8−12
- fluoromethane-d_3, laser Stark spectra, ν_6 band, vibr.-rot. consts., dipole moment 8−5277
- fluoromethanes, dipole moment derivatives and infrared intensities, transferable polar tensors 8−17668
- formaldehyde, IR spectra, Coriolis-coupled ν_4, ν_6 and ν_3 fundamental bands 8−5227
- 4′-n-heptyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
- hydrides, diatomic, dipole moments, atomic anisotropies effective charges 8−46458

molecular moments continued
- hydrides, second row, ab initio calcs. using FSGO basis, mol. parameters correlation 8−901
- hydrides, ten electron, localised orbitals, moment analysis 8−41945
- ice, IR absorpt., O-H stretching vibrs., orientation polaris. 8−31177
- iodomethane-d_3, ν_2 band, laser Stark saturation spectra 8−42125
- ionone, dipole moment determ. 8−27882
- maximum overlap mol. orbitals versus ab initio HF-SCF-MO calc. dipole energy 8−9070
- methanes, halogenated, interacting segment model for elec. tensor props. 8−5111
- methylene fluoride, ν_9 fundamental band, 9.4-μm CO_2 laser Stark spectroscopy 8−9191
- methylene ketene, microwave spectrum, rot. and centrifugal distortion consts., dipole moment 8−17659
- 4-methylene-cyclohexadiene-2,6-one-1, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
- polydiethylene terephthalate chains, dipole moment, config. props. 8−9288
- pyridine, in benzene single cryst., electronic spectrum Stark modulation, dipole moment 8−29814
- s-trans-3-pyridinecarbaldehyde, microwave spectrum, assignments 8−21912
- retinal, dipole moment determ. 8−27882
- trans-retinal, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
- trans-retylidene-n-butylamine, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
- semirigid molecules, Stark effect, isometric groups, elec. dipole moments theory 8−29815
- N-sulphinylaniline, microwave rot. spectra, torsional freq., dipole moment and internal rot. barrier 8−973
- tetracyclo[3.2.0.$0^{2,7}$.$0^{4,6}$]heptan-3-one, microwave spectrum and effect of cyclopropyl-carbonyl group interactions on dipole moment 8−9138
- thioacetic acid, $-d_1$, principle axis method anal. of microwave spectra 8−9139
- thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8−25520
- thiopen-2,5- dicarboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8−1004
- thiophen-2-carboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8−1004
- trans-propargyl amine, microwave spectra, dipole moments and struct., isotopic species 8−974
- 1,2,4-trifluorobenzene, microwave spectrum, dipole moment and centrifugal distortion constants 8−37630
- tropone, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
- BeO(BeO^-), electron affinity and dipole moment, ab initio calc. 8−41938
- BrF_2^--, $BrFCl^-$-, $BrCl_2^-$, inert gas cpds., localised MOs and bonding nature 8−9061
- C-containing mols., MNDO calcs. for ground state 8−911
- CO, $d^3\Delta_i$ v=4 state dipole moment, laser-induced transition in mol. beam 8−25513
- CO, dipole moment expsn. determ. from vibr. intensities *(French)* 8−42240
- CO_2, quadrupole moment and shape parameters, in virial coeffs. calc. 8−9743
- ClF_n-, ClF_n^+-, ClF_n^--, inert gas cpds., n=1-6, localised MOs and bonding nature 8−9061
- DCN, dipole moment, relative sign w.r.t. normal coords. 8−46457
- F compounds, ground states, mol. parameters, MINDO calcs. 8−41955
- FCN, IR laser Stark spectra, C-F stretching mode, dipole moments, rot. consts. 8−1022
- H-containing mols., MNDO calcs. for ground state 8−911
- $(HBr)_2$, intermol. distances, dipole moments, MINDO/3 and IR intensities and shifts calcs. 8−46335
- HCN, dipole moment, relative sign w.r.t. normal coords. 8−46457
- HCO, IR spectra of ν_2 fundamental, laser elec. reson. 8−5226
- $(HCl)_2$, intermol. distances, dipole moments, MINDO/3 and IR intensities and shifts calcs. 8−46335
- $(HCl)_2$, vibr. freqs. in inert gas matrix, force const., MINDO/3 calcs. 8−41952
- HD, elec. dipole vibr.-rot. spectrum, line strengths, ab initio calcs. 8−25514
- H_2O, many-body Green's function, electronic mol. props. 8−25417
- H_2O-(HF)(F_2) complexes, CNDO/2 calcs. for electronic struct. and props. 8−25442
- HOCl, ab initio MRD CI calc., electronic spectrum, dissoc., heat of reaction, formation 8−21857
- KrF*, excimer electronic struct., config. interaction, electrostatic model, dipole and transition moments 8−927
- LiF(LiF^-), electron affinity and dipole moment, ab initio calc. 8−41938
- LiH, many-body Green's function, electronic mol. props. 8−25417
- LiH, mol. elec. polarisabilities and dipole moments calcs. 8−41976
- LiO, struct., spectra, SCF MO calcs. 8−17559
- Li_2O (LiOLi, LiLiO), struct., spectra, SCF MO calcs. 8−17559
- LiOO, struct., spectra, SCF MO calcs. 8−17559
- MgO(MgO^-), electron affinity and dipole moment, ab initio calc. 8−41938
- N-containing mols., MNDO calcs. for ground state 8−911
- N_2, photoabsorption, moment anal. 8−46321
- N_2, quadrupole moment and shape parameters, in virial coeffs. calc. 8−9743
- N_2, transition moments between excited electronic states 8−5204
- NH_3-(HF)(F_2) complexes, CNDO/2 calcs. for electronic struct. and props. 8−25442
- NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8−25518
- NaF(NaF^-), electron affinity and dipole moment, ab initio calc. 8−41938
- NeF, low energy state pots. energy curves, fluores. and dipole moment 8−21991
- O-containing mols., MNDO calcs. for ground state 8−911
- O_3, combination bands (ν_1+ν_2) and (ν_2+ν_3), anal. 8−9150
- OPF_3, forbidden transitions, mol. beam elec. reson. obs. using avoided crossings 8−29775

molecular moments continued
4′-n-pentyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
$SiH_3{}^{81}Br$, high resolution rot. microwave spectrum, 8-40 GHz, mol. consts. 8−21916

molecular nuclear coupling
adamantane, nucl. spin echoes ^{13}C magnetisation and intermol. dipolar coupling 8−35062
aminoacetonitrile, microwave rot. spectrum, quadrupole hyperfine struct. 8−17658
benzenesenol, CCl_4 soln., PMR, barrier to internal rot. 8−1006
bromomethanes, ^{13}C-Br spin-spin coupling consts., isotope effects 8−13522
butadiene, J_{c-h} spin-spin coupling const., bond length depend. 8−37660
CIDNP, polarisation transfer, scalar paramagnetic exchange mechanism 8−25557
CNDO-MO calcs. 8−912
cyclopropane, J_{c-h} spin-spin coupling const., bond length depend. 8−37660
deuteron quadrupole coupling freqs. from ab initio wavefunctions 8−29801
3,5-dichlorobenzyl mercaptan, PMR, barrier to rot. about C-C bond 8−17696
N,N-diethylaniline-pyrene, photochem. polarisation transfer, scalar paramagnetic exchange mechanism 8−25557
dimethylsulphide-d_3, two interacting C_{3v} rotor system, mol. coupling parameters, Raman spectra 8−42074
fluoromethane-d_3, deuteron quadrupole coupling const. 8−33522
3-iodopropene, microwave spectra, rot. consts. and HFS 8−975
methane, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
methane-d_0,-d_1,-d_2,-d_3,-d_4, ^{13}C NMR chem. shifts, coupling consts. 8−37657
methyl derivatives, simple, organometallic, spin-spin coupling between metal nucleus and protons 8−37656
methyl group, ^2H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methyl group, proton spin relax. due to intermol. proton coupling, reorientation 8−25564
methyl iodide, and -d_1, dissolved in nematic phase, C-H bond orientation, ^{13}C NMR 8−46371
nitrobenzene, liq., ^{14}N and D NMR, ^{14}N quadrupole coupling const., environmental effects 8−48052
nonaqueous electrolyte solutions, ionic nuclei, quadrupolar interaction, mag. relax., infinite dilution limit 8−35692
nuclear energy levels in visible spectra, observation by laser technique, book contrib. 8−9212
polymethinecyanines, symm., solvent effects on electronic struct., ^1H, ^{13}C NMR 8−13516
pyridine, and -d_1, microwave spectra, mol. struct., rot. consts. 8−25517
cis-stilbene radical anion, ESR, proton coupling const. 8−21948
transition metal complexes, proton NMR chem. shift, covalency parameters calcs. 8−42098
trimethylene oxide, ^{12}C NMR, coupling consts. 8−25570
trimethylene sulphide, ^{12}C NMR, coupling consts. 8−25570
triphenylmethyl-^{13}C phosphonium chloride, Ph_3P^+-$^{13}CH_2$· EPR, reorientation and hyperfine coupling tensor 8−6574
two interacting C_{3v} rotor system, mol. coupling parameters, Raman spectra 8−42074
vinyl isocyanate, conformers, geometrical and electronic structures, microwave spectra 8−9142
CH^+ indirect nucl. spin-spin coupling const., Hartree-Fock and polarisation propag. calcs. 8−9170
CO, indirect nucl. spin-spin coupling const., Hartree-Fock and polarisation propag. calcs. 8−9170
CuCl, hyperfine struct., microwave rot. spectrum obs. 8−21917
D_2O, matrix isolation spectra, vibr.-rot. lines, nucl. spin interconversion 8−46336
FH, indirect nucl. spin-spin coupling const., Hartree-Fock and polarisation propag. calcs. 8−9170
HD, indirect nucl. spin-spin coupling const., Hartree-Fock and polarisation propag. calcs. 8−9170
HD, nuclear spin coupling const. calc., using ab initio LCAO MO SCF method 8−25558
HDO molecules in solid hydrates, D quadrupole coupling consts., O-H and O-D stretching freqs., H bond distances 8−29773
HF, nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
H_2O, matrix isolation spectra, vibr.-rot. lines, nucl. spin interconversion 8−46336
H_2O, nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
$Hg_2{}^{129}I_2$, Mossbauer effect, bonding, quadrupole coupling const., comparison with $Hg^{129}I_2$ 8−2774
NH_3, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
$^{15}NH_3$, nucl. spin-spin coupling consts. calc., vibr. averaging effects 8−33521
$NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8−1010
Sb (III) compounds, orbital population anal. using ^{121}Sb Mossbauer data 8−21953
$SiH_3{}^{81}Br$, high resolution rot. microwave spectrum, 8-40 GHz, mol. consts. 8−21916
TiO, $C^3\Delta$ term anomalous triplet splitting 8−13514

molecular orbitals *see molecular energy levels*

molecular orbitals calculations
includes calculations of electronic and geometric molecular structure
see also APW calculations; CNDO calculations; EHT calculations; GO calculations; GTO calculations; HMO calculations; INDO calculations; KKR calculations; LCAO calculations; MINDO calculations; OPW calculations; PNO calculations; PPP calculations; STO calculations
acetylene, average mol. polarisability, Frost model wavefunctions calcs. using p-type Gaussians 8−41924
n-alkenes, photoelectron spectra, MINDO/1, MINDO/3 and Fenske-Hall calcs. 8−5285
alkyl cadmium, valence and core electron energies, photoelectron spectra, ab initio calc. 8−25613

molecular orbitals calculations continued
atomic cluster total energy, diatomics-in-mol., LMTO calc. pot. curve, Lanczos eigenvalue method 8−9291
atomic sphere overlap, Xα-SW MO projection of LCAOC MO's 8−25422
back-of-the-envelope calcs., teaching 8−16593
Bethe-Goldstone time-depend. first-order theory, short range correl., transition moments 8−25449
bond function augmented basis sets, appl. to 1st row mol. geometry optimisation 8−905
bromomethane, ab initio SCF MO calcs., ionis. pots., dipole moment, config., electronic props. 8−1104
caffeine, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
chemical bond transferability, group or loge functions 8−41939
CT complex, equilib. distances and stabilisation energy, PCILO calc. 8−41963
cyclopropanone, electronic struct., UV photoelectron spectrum 8−33428
diabatic mol. states, shielded diatomic orbital method 8−5121
diamond clusters and corresponding saturated hydrocarbon ab-initio HF and PCILO calcs. 8−42951
diatomic bound molecules with zero bond order, excited biexcitons 8−9049
diatomic mols., multipole expansion of diatomic overlap, MEDO calcs. 8−46264
diatomic orbitals, bonding criteria 8−46254
9,10-dicyanoanthracene, exciplexes, electronic struct. by electro-optical expts. 8−25581
Dirac bra-ket notation for second quantisation 8−41910
distorted frozen-orbital method for diabatic mol. orbitals 8−41936
electric-field-variant orbitals, Slater- and Gaussian-type 8−37543
electronic excitations, degree of collectivity 8−37570
ethane, force consts., model potential function vs. mol. orbitals calcs. 8−29829
ethylene, average mol. polarisability, Frost model wavefunctions calcs. using p-type Gaussians 8−41924
ferrocene, electronic struct., excited states, semiempirical PEEL MO calcs. 8−33431
first-row hydrides (CH_n, NH_n, OH_n, FH_n), equilib. geometries calcs. 8−33435
fluoromethane, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
formaldehyde, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
formaldehyde, vertical photoexcitation and photoionisation spectra, CI calc. 8−918
graph theory, of MO, symmetrical analysis and calc., eigenpolynomials 8−29729
HAM/3 semiempirical MO theory, correl. energy, self-repulsion 8−13416
HAM/3 semiempirical MO theory, photoelectron spectra calcs. 8−13414
HAM/3 semiempirical MO theory, SCF method 8−13413
HAM/3 semiempirical MO theory, unoccupied orbitals, excitation energies and electron affinities calcs. 8−13415
heteroconjugated molecule, LCAO MO graph-theoretical formulation 8−890
integral explicit expressions, generalised Chong method 8−892
intramolecular electron transfer amplitude, basis function overlap effect 8−9080
intramolecular potentials, quantum chemical calc. 8−13436
inverse Gaussian transforms, general props., Slater type orbitals appl., coord. and momentum representation 8−37549
linear Hubbard model, RPA and CI test calcs. 8−25411
localised mol. orbital struct., octet rule violations, fractionality 8−25445
lone pair orbital explicit representation, augmented contracted Gaussian basis set 8−25423
mass spectrometry results comparison with MO calcs. 8−320
materials science appl. 8−29732
methane, $1B_1(1T_2)$ state, photodissoc., extended basis calcs. 8−9093
methanol, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
methyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
methylamine, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
methylene, singlet-triplet separation, configuration interaction study 8−13438
molecular, relativistic orbitals for double group D_{3h} 8−41968
molecular electron affinities, qualitative molecular orbital theory 8−5122
molecular spectra, full quantum mechanical theory, mol. eigenstates generator coordinate method 8−21895
molecular vibr. freq. calc. using MNDO method 8−25508
multiconfiguration wave functions, optimisation 8−33411
multiplet ratios for photoionisation and electron attachment, shell model, LS coupling and correl. 8−17636
NDO schemes, calc. of largest mol. integrals over orthogonal hybrid orbitals 8−41956
negative molecular ions, theoretical calcs., review 8−37552
optimum minimal basis of exponential atomic orbitals 8−41921
orbital SCF and total SCF energies, approx. relation 8−5123
organic reaction mechanisms, generalised mol. orbital theories, review 8−44366
pairwise correlated generalised valence bond model, electron correl. model 8−41959
s-trans-1,3-pentadiene, photoisomerisation, excited state pot. energy curves, CIPSI calc. CNDO/2 parametrisation 8−11505
polyatomic mols., multipole expansion of diatomic overlap, MEDO calcs. 8−46264
polypyridines, photoelectron spectra, SCF LCAO calcs. 8−33551
porphin, electron spectra, PPDP/S approx. calc. *(Russian)* 8−13435
Schrodinger-Infeld-Hull factorisation, quantisation condition, matrix elements and selection rules 8−41909
second-quantisation representation, with nonorthogonal basis set of one particle functions 8−889
semi-empirical methods based on NDO, reson. integrals 8−41907
semiempirical all-valency MO methods, derivation using restricted HFR theory *(German)* 8−21853

molecular orbitals calculations continued
- Simons-type model potentials, mol. calcs. appls. 8−5120
- solvated electrons, fractional charge MO model 8−31752
- symmetric group theory and Waller-Hartree spin-free method 8−41908
- syndnone, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
- system, 1 s σ orbital, variational calc. 8−37707
- Tamm-Dancoff approx., relativistic correction 8−9090
- three-centre two-electron exchange integral *(Russian)* 8−37551
- transition metal complex ions, MY_4^{n-4}, MY_6^{n-6}, alkali metals and alkaline earth outer-sphere cations, spectroscopic splitting parameters 8−39075
- transition metal compounds, electronic excitation energy calc., correl. energy correction 8−17576
- transition metal tetrahalogeno anions, ligand field spectra, MO model 8−17654
- trifluoromethyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
- two-parameter omega technique 8−41933
- undergraduate course, localised and delocalised MOs to polyatomic mols., bonding 8−32630
- valence-shell MO calc. with pseudopot. 8−907
- X_3YO molecules, ab initio MO calcs., geometry, electronic struct. 8−41940
- Ag, chemisorpt. of CO, N_2, NO, semiempirical calcs. 8−14611
- $B_2H_5^+$, FSGO ab initio calc. of geometry, CNDO/2 calc. 8−41943
- $B_nH_n^{2-}$, n=5-12, localised orbitals, bonding, PRDDO calcs. 8−13431
- BrF_2^--, $BrFCl^-$-, $BrCl_2^-$, inert gas cpds., localised MOs and bonding nature 8−9061
- C-C bond length electron difference density depend., approx. HF calc. *(German)* 8−5127
- $C_2B_{n-2}H_n$, n=5-12, localised orbitals, bonding, PRDDO calcs. 8−13431
- C_3Li_4, structure calculations 8−5364
- CN^-, electron density distrib., SCF mol. orbitals calcs. 8−9058
- CO adsorbed on Ni(001), orbital energy spectrum 8−2369
- CO, numerical coupled Hartree-Fock parallel polarisability, partial wave SCF calc. 8−9079
- CO_2, localised mol. orbitals, ab initio PRDDO SCF calc., isoelectronic struct. 8−25441
- CO_3^{2-}, localised mol. orbitals, ab initio PRDDO SCF calc., isoelectronic struct. 8−25441
- ClF_n-, ClF_n^+-, ClF_n^--, inert gas cpds., n=1-6, localised MOs and bonding nature 8−9061
- Cr^{3+} in octahedral fluoride lattice, optical spectrum open shell SCF MO cluster CI calc. 8−19501
- Cu, chemisorpt. of CO, N_2, NO, semiempirical calcs. 8−14611
- D_2, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
- D_2^+, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
- F compounds, ground states, mol. parameters, MINDO calcs. 8−41955
- FCN, CNF, isomer pairs, mol. orbitals calcs., using PLA and LEDO integral approx. methods 8−13418
- GaAs (110) face, adsorption of one Cs atom, mol. orbital study *(French)* 8−38958
- (H,H) system, 1 s σ orbital, variational calc. 8−37707
- H-like ion, elec. multipole polarisability, relativistic corrections, shielding factors, Dirac eqn. 8−13441
- H_2, electron elastic low energy scatt., ab initio pseudostates calc. 8−9247
- H_2, nonempirical calc. for molecules in electric field 8−25459
- H_2, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
- H_2, shielded diatomic orbital method, two-interacting state system 8−5121
- H_2^+, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
- H_2^p, Temple lower bound mol. orbitals, GTO calcs. 8−41935
- H_3, spin-optimised SCF general spin orbitals calcs. 8−5125
- H_3^{2+}, Temple lower bound mol. orbitals, GTO calcs. 8−41935
- HCN, CNH, isomer pairs, mol. orbitals calcs., using PLA and LEDO integral approx. methods 8−13418
- HCN, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
- HCl, mol. cryst., angles of H-bonded mols., ab initio calcs. 8−6037
- $H_2(D_2)$, Compton profile, impulse approx., electron correl., vibr. and rot. effects 8−17585
- HF H-bonded dimers, PCILO calc., energies, geometries 8−37557
- HF, numerical coupled Hartree-Fock parallel polarisability, partial wave SCF calc. 8−9079
- H_2O H-bonded dimers, PCILO calc., energies, geometries 8−37557
- H_2O, iterative natural orbital procedures, convergence props. 8−46257
- H_2O, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- H_2O, shape, electrostatic force study with floating wavefunction 8−37545
- H_2O, sum rule props., SCF optimizations of MO and VB calcs. 8−5156
- HOCl, ab initio MRD CI calc., electronic spectrum, dissoc., heat of reaction, formation 8−21857
- $H_3O^+(H_2O)_n$, H^+ motion energetics, ab initio calcs. 8−25413
- H_2S, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- He+Ne collisions, MO calcs. for excitation processes 8−25676
- He^{2+}+H, electron transfer, 0.1-20 keV, mol. orbital calc., convergence 8−42210
- HeH^+, Temple lower bound mol. orbitals, GTO calcs. 8−41935
- K_2^+, Simons-type pseudopots. calcs. 8−5120
- Li_2^+, Simons-type pseudopots. calcs. 8−5120
- LiCN, electron density distrib., SCF mol. orbitals calcs. 8−9058
- LiF-NH_2 adduct, mol. consts., ab initio SCF LCAO MO calcs. *(French)* 8−13423
- LiH, variational Hylleraas-type wavefunction, correl. 8−9082
- N_2, core-ionised, core-valence excited and shake-up states, all electron MRD CI calc. 8−21858
- N_2, electron elastic low energy scatt., ab initio pseudostates calc. 8−9247
- N_2, MRD CI calc., lowest dissoc. limits 8−21859
- N_2, nonempirical calc. for molecules in electric field 8−25459
- N_2, vertical electronic spectrum, MRD-CI method calcs. 8−42033
- NH_3 H-bonded dimers, PCILO calc., energies, geometries 8−37557
- NH(NF)(NCl), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
- Na_2^+ Simons-type pseudopots. calcs. 8−5120
- Ne+Ne, distorted frozen-orbital method for diabatic mol. orbitals 8−41936
- NeH_2^+, ab initio potential surfaces, frozen orbital approximation calcs. 8−41927
- Ni, chemisorpt. of CO, N_2, NO, semiempirical calcs. 8−14611
- $Ni(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
- O_2, effective spin-spin parameter, ab initio calc. 8−9067
- O_2, nonempirical calc. for molecules in electric field 8−25459
- PH(PF), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
- PN($X^1\Sigma^+$), VUV photoelectron spectrum 8−1024
- Pd, chemisorpt. of CO, N_2, NO, semiempirical calcs. 8−14611
- $Pd(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
- Pt complexes, X-ray absorpt. spectra, mol. orbital interpretation 8−42097
- $Pt(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
- S_2, effective spin-spin parameter, ab initio calc. 8−9067
- S_8, cyclic, electron deformation density distrib., SCF-Xalpha-scatt. wave method 8−33425
- S_2N_2, $(SN)_x$, (x=2 or 3), minimal STO-3G basis HF ab initio LCAO SCF MOC, geometry 8−903
- SO_2, effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
- SiH_3F, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
- SiH_3NH_2, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
- SiH_3OH, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
- SiO^+, vac. UV photoelectron spectra, ab initio mol. orbital and $X\alpha$ calcs., ($X^1\Sigma^+$) state 8−46395
- SnF_2, valence bands, electronic struct., UPS 8−39656
- UO_2^{2+}, relativistic X_α scatt. wave calcs. 8−46268
- X_3YOH molecules, ab initio MO calcs., geometry, electronic struct. 8−41940

molecular orientation
- anthracene: tetracene cryst., triplet-state EPR for isolated mol. orientation 8−26583
- anthracene, orientation in polyethylene film, linear dichroism 8−29864
- azoxybenzenes, nematic, mag. susceptibility, orientational order parameter 8−34426
- benzene, partially ordered solid, NMR line shape, orientational distrib. 8−35048
- cellulose hydrated film, orientational heterogeneity, IR spectra and dichroism obs. *(Russian)* 8−38990
- chlorophyll-a, spectral props. of liquid crystal solutions 8−27291
- cholesteric liquid crystals, spiral twisting, orientational order effect *(Russian)* 8−42906
- coronene, triplet mol. in n-heptane Shpol'skii sites, distortion and orientation meas. by MIDP 8−37668
- crystalline polymer, epitaxial crystallisation on surface of drawn polytetrafluoroethylene 8−14626
- 4-cyano-4'-octyloxybiphenyl, nematic-smetic-A transition, optical birefr. temp. coeff. 8−47505
- cyclohexylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724
- dense gas, of dipolar mols., electron localisation, density fluctuation, mol. orient. 8−38446
- diammonium oxalate monohydrate, NMR spectra, ^{13}C-^{13}C interaction, chemical shift effects 8−29800
- dihydroporphin free base, in n-octane cryst., zero-field optically detected mag. reson., triplet state kinetics 8−42103
- EBBA-non-mesogenic binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
- ferroelectric smectic-C liquid crystal film, freely suspended, two-dimensional mol. orientation fluctuations, light scatt. meas. 8−47236
- formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566
- ice, IR absorpt., O-H stretching vibrs., orientation polaris. 8−31177
- isotropic-nematic liquid crystal phase transition, theory including mol. orientation correlation 8−47508
- linear dichroism spectroscopy for mol. orientation in model membrane systems 8−29864
- liquid, cooperative mol. orientation, rel. to OH proton chem. shift 8−1974
- liquid crystal, deuterated compounds, molecular order and conformation changes in phase transitions 8−47237
- liquid crystal, short rod, short range correl. and orientational energy 8−1978
- liquid crystal, spiral-like, struct., PMR of dissolved mols. 8−1981
- methyl iodide, and -d_1, dissolved in nematic phase, C-H bond orientation, ^{13}C NMR 8−46371
- molecular crystal, quadrupole analogue of Ising model 8−29063
- naphthalene: anthracene, cryst., triplet-state EPR for isolated mol. orientation 8−26583
- nematic liquid crystal film, with two free surfaces, mol. orientation 8−47238
- nematic liquid crystals, Marangoni effect 8−6009
- oxalic acid dihydrate, NMR spectra, ^{13}C-^{13}C interaction, chemical shift effects 8−29800
- phenylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724
- PMMA, oriented by extrusion, stress-optical study 8−47248
- polyester fibres, orientation in drawn fibres, birefringence meas. 8−35344
- polyethylene, elongation, conform. set change IR obs. *(Russian)* 8−37778
- polyethylene, oriented, Raman active modes 8−23457
- polyethylene terephthalate, elongation, conform. set change IR obs. *(Russian)* 8−37778
- polymer film, stretched, orientation and transition moment directions of small planar molecules 8−1015
- polymer processing technology, prod. of high chain extension 8−31378
- polymer solution, short-range order and solvent crystallisation; spectroscopic and microcalorimetric, methods *(Russian)* 8−26416
- polymer solution, short-range solvent orientational order, IR dichroism and photoelasticity obs. *(Russian)* 8−26415

molecular orientation continued
polystyrene, oriented amorphous, supermol. structures rel. to mech. behaviour 8−22673
pyridine, in benzene single cryst., electronic spectrum Stark modulation, dipole moment 8−29814
solid, partially ordered, orientational distrib. from NMR and EPR line shapes 8−35048
sulphonic acids, adsorption and orientation on Al_2O_3, tunnelling spectroscopy obs. 8−34707
1,3,5-tribromobenzene mesophase, spiral-like, struct., PMR of dissolved mols. 8−1981
1,3,5-trichlorobenzene mesophase, spiral-like, struct., PMR of dissolved mols. 8−1981
water, lyotropic phase orientation, ^{17}O and ^{2}H NMR study 8−27905
$Fe(CO)_4$, in N_2, Ar low temp. matrix, IR laser photochemistry, orientational and site selectivity 8−23954
o-H_2, solid FCC, orientational ordering, SCF approx. 8−2029
Mg vermiculite, adsorbed water mol. orientation, elec. pot. calc. 8−26763

molecular photodissociation
acetyl iodide, photodissoc., secondary product decomposition 8−25636
acetyl radical, photofragment spectroscopy, collision dynamics 8−25636
alkyl bromides, and perfluorinated mols., Br branching ratios, broadband flash photolysis 8−27787
alkyl iodide molecules, photodissoc. by 254 nm radiation 8−3354
atmospheric positive ions, photodissoc., 5300 to 6700 Å, mass spectroscopic obs. 8−16095
carbon tetrachloride, isotropically selective dissoc. by NH_3 laser radiation 8−17815
chloroethane-d_1, laser multiphoton dissoc., intramolecular isotope effect 8−17733
chloromethane-d_3, multiphoton IR C-Cl dissoc. classical trajectory calc. 8−11532
coherent multiphoton processes, effective two level hamiltonian 8−29921
dianthracene, photodissoc., electronically excited products 8−27790
dibromofluoromethane, photolysis, IR matrix isolation spectra of CF_2Br free radical 8−27788
dichlorodifluoromethane, dissociation by CO_2 laser radiation into trifluorochloromethane 8−40062
1,2-dichloroethylene, photodissoc., photoisomerisation, sensitised laser-induced reactions 8−7179
diphenylmercury, mol. photoionisation, up to 13.5 eV, formation of $HgPh^+$ 8−25633
ethylene, multiphoton absorption, luminesc. and dissoc. in laser pulse field 8−1040
formaldehyde, $^1A_2$-state, radiative and nonradiative decay calcs., rel. to photochem. decomp. 8−37669
formaldehyde, photodissoc., H_2 and CO relative quantum yields, 270-360 nm 8−44384
glyoxal, selected state photodissoc., vibronic effects, CO quantum yield, 1-10 torr 8−37691
haemoglobin, human, liganded, kinetics of alkaline tetramer-dimer dissoc., laser scatt. obs. 8−48749
halocarbons, multiphoton dissociation, product identification 8−37694
ketene→CH_2+CO, phooodissoc. at 337 nm, visible fluoresc. of CH_2 8−42121
linear triatomic molecule, photodissoc. dynamics, moment anal. 8−13557
linear triatomics, photodissociation, coupled eqns. calcs., final states interactions 8−25637
methane, $1B_1(1T_2)$ state, photodissoc., extended basis calcs. 8−9093
methyl nitrite, IR multiphoton dissoc., time resolved IR emission from prods. 8−29822
multiphoton disso. of polyatomic mols., population distrib., phenomenological model 8−33560
multiphoton IR photodissoc., pot. energy surface classical trajectory calcs. 8−11532
nitromethane, photodissoc., vibr. excited NO_2 form., fluoresc. obs. 8−37693
2-nitropropane, photodissoc., vibr. excited NO_2 form., fluoresc. obs. 8−37693
perfluoroalkyl halides, at. I form., quantum yields 8−3355
polyatomic molecule, radiative dissoc. in laser field *(Russian)* 8−9207
polyatomic molecules, collisionless dissoc. mechanism in laser field *(Russian)* 8−37696
polyatomic molecules, photodissociation dynamics, review 8−37697
selective dissociation, ionis., and chem. reaction stimulation, by ultrashort pulses, isotope separation *(Russian)* 8−29825
single/multiphoton dissoc., ab initio theory 8−17735
trifluoromethyl iodide, ^{13}C isotope separation by selective multiphoton dissoc. 8−25734
CO_2, 1060-1175 Å photodissoc. quantum yield and $O(^1S)$ decayplots 8−27798
CO_2, negative ion form., photodissoc., mass spectrometric obs. 8−13558
CO_2, photolysis, 1470 and 1302-1306 Å, absolute O atom yield 8−48681
CO_2, selected fragment vibr. energy distrib. in dissoc. processes 8−1036
CO_2-O_2, negative ion form., photodissoc., mass spectrometric obs. 8−13558
ClOO, stratospheric chem., formation and loss reactions 8−16138
DCN, selected fragment vibr. energy distrib. in dissoc. processes 8−1036
D_2O, polarised photofluoresc. excitation spectra, VUV photodissoc. excited state lifetimes 8−5261
H_2, H(2s)/H(2p) branching ratio, photodissoc. near threshold 8−21983
H_3^+, photofragmentation vibr. energy levels and wavefunctions calcs. 8−42143
HCN, photodissociation coupled eqns. calcs., final states interactions 8−25637
HCN, photofragmentation, initial excitation effects calcs. 8−17734
HCN, selected fragment vibr. energy distrib. in dissoc. processes 8−1036
H_2O, dipole oscillator strengths, 10-60 eV, for photoabsorpt., photoionis. and fragmentation 8−42133
H_2O vapour, photodissoc., production cross section meas. for $OH(A^2\Sigma^+$ to $X^2\Pi)$ fluoresc. 8−25604

molecular photodissociation continued
H_2O_2, in atmosphere, UV absorpt. cross sections and photodissoc, coeffs. 8−42086
H_2O_2, vapour, atmospheric, UV absorpt. cross sections, photodissoc. rate 8−32222
HOCl, HOOCl, stratospheric chem., formation and loss reactions 8−16138
$HgBr_2$ photodissociation for laser action on HgBr radical 8−13695
I_2, nonlinear photodissoc., at. reson. UV fluoresc. and photoionis. obs. 8−37692
ICN, photodissoc. dynamics, moment anal. 8−13557
ICN, photodissociation, coupled eqns. calcs., final states interactions 8−25637
LiH, laser irradiated, single/multiphoton dissociation, ab initio theory 8−17735
NH_3, photodissoc., ab initio SCF and CI calcs. 8−21984
NH_3, selective two-step dissoc. by laser, ^{14}N, ^{15}N separation, book contrib. 8−9208
NO_2, atmospheric, rate constant depend. on altitude 8−11949
N_2O, photoionisation and ion dissoc., isotope effects, mass spectra 8−9203
$NO^+.H_2O$, photodissoc. cross sections, mass spectrometric determ. 8−1038
$NO^+.NO$, photodissoc. cross sections, mass spectrometric determ. 8−1038
O_2, ionisation, photodissoc. of positive and negative ions, mass spectrometric obs. 8−13559
O_2, photodissoc., $O(^1D)$ production quantum yields, 1160-1770 Å 8−33557
O_2^+, predissociation of $b^4\Sigma_g^-$, $c^4\Sigma_u^-$ states, threshold photoelectron-photoion coincidence 8−42144
OsO_4, isotope separation by dissociation in two-freq. IR laser field 8−25638
SF_6, collisionless dissoc. using two reson. freq. CO_2 laser fields 8−5305
SF_6 dissoc. by multiphoton IR absorption, focused beam approach 8−42369
SF_6, IR multiphoton dissoc., energy randomization 8−21982
SF_6, IR multiphoton dissociation F atoms obs. by chemi-ionis. method 8−31661
SF_6, isotopically selective collisionless laser induced dissoc. 8−1037
SF_6 laser isotope separation, rot. and vibr. relax. in mixture 8−25634
SF_6, multiphoton isotope selective dissoc., pulse shape, energy, press. and geometry effects 8−25733
SF_6, multiple photon dissociation threshold behaviour, chemilum. obs. 8−42145
SF_6, photodissoc. by IR laser pulse, selectively excited vibr. levels 8−9209
SF_6, radiative dissoc. in laser field *(Russian)* 8−9207
SF_6, unimolecular reaction model 8−7189
SF_6, vibrationally excited, collisionless intramolecular energy transfer 8−37663
$S_2O_6F_2$, heating and laser excitation fluorosulphate radical prod. and spectrum 8−35647
SeF_6, isotopically selective IR photodissociation 8−42142

molecular polarisability
see also molecular moments
AB_2 and AB_4 molecules Raman overtone and combination transition intensities, bond-polaris. approach 8−42034
acetylene, average mol. polarisability, Frost model wavefunctions calcs. using p-type Gaussians 8−41924
p-n-alkoxybenzoic acid, homologs, principal mol. polarisabilities calc., refr. indices of nematic mesophase meas. 8−2004
atom abstraction reactions, empirical correlation of activation energy and mol. polarisability 8−40038
benzene, reson. Raman cross sections, forbidden electronic transitions, depolaris. ratios 8−42075
CNDO/2 calculation 8−913
dielectric solids, molecular optics model, electrodynamic eqns. derivation 8−27151
electric-field-variant orbitals, Slater- and Gaussian-type 8−37543
ethylene, average mol. polarisability, Frost model wavefunctions calcs. using p-type Gaussians 8−41924
ethylene molecules, long range forces in multipole expsn., ab initio calcs. 8−9219
fluid, polar, equilib. theory, graph theoretical treatment 8−6002
geometric approximation, various perturbation theories 8−17819
ground and excited state, perturbation treatment 8−5144
hydrides, second row, ab initio calcs. using FSGO basis, mol. parameters correlation 8−901
hydrocarbons, deuterated, mol. polarisability and intermol. dispersion energy, 1-D delta pot. function 8−29862
ice, isotopic, I_h, single crystal Raman intensities, OH bond polarisability, librational modes 8−27208
Kirkwood equation applicability charged anisotropic harmonic oscill., mol. diamag. 8−5365
liquid crystals, polarisability anisotropy of nematic homologous series 8−38614
methane (-d_1,d_2,d_3,d_4) Raman electro-optical parameters, overlay least squares calcs. 8−42105
methanes, halogenated, interacting segment model for elec. tensor props. 8−5111
methanes, substituted, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
methyl acetylene, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
molecule, intensities dipolaris. ratios, polarisability, matrix rotation, isotopic rules 8−5288
negative ions, dynamic polarisability, many-centre short-radius model pots. 8−25735
pentacene, in p-terphenyl, polarisability calcs., from Stark meas., anisotropic Lorentz approx. breakdown 8−5276
polyatomic molecules containing transition elements, delta function strength 8−46459
Raman spectra intensity analysis, electrooptical parameters transferability 8−29820
rotational Raman scattering, collision-induced and dipole-quadrupole polarisabilities 8−25546
tetracene, in p-terphenyl, polarisability calcs., from Stark meas., anisotropic Lorentz approx. breakdown 8−5276

molecular polarisability continued
XY_4 square-planar type ions, force consts., bond polarizability 8−5201
Ar_2, collision-induced Raman scatt., polarisability anisotropy 8−46350
CO, numerical coupled Hartree-Fock parallel polarisability, partial wave SCF calc. 8−9079
CO_2, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
CO_2, static polarisabilities, ab initio SCF HF calcs., internucl. separation depend. 8−9073
H-like ion, elec. multipole polarisability, relativistic corrections, shielding factors, Dirac eqn. 8−13441
H_2, electric dipole polarisabilities and hyperpolarisabilities, perturb. theory calcs. 8−17563
H_2, electric dipole polarisability, many-body perturbation theory calcs. 8−21839
HF, mol. hyperpolarisability, second-order SCF perturbation method, coupled Hartree-Fock calc. 8−33422
HF, numerical coupled Hartree-Fock parallel polarisability, partial wave SCF calc. 8−9079
H_2O, vap., depolarised Rayleigh scatt., rot. Raman spectra, mol. polarisability 8−33513
KCl, polarisability, near-Hartree-Fock limit SCF MO calc., bond length 8−42239
LiH, electric dipole polarisabilities and hyperpolarisabilities, perturb. theory calcs. 8−17563
LiH, mol. elec. polarisabilities and dipole moments calcs. 8−41976
N_2, static polarisabilities, ab initio SCF HF calcs., internucl. separation depend. 8−9073
OH_n, LCAO-MO-SCF with Gaussian polarisation functions, energetic effect of p-, d-, and f-functions 8−41944
SH_n, LCAO-MO-SCF with Gaussian polarisation functions, energetic effect of p-, d-, and f-functions 8−41944

molecular potentials *see potential energy functions*

molecular predissociation
acetaldehyde-d_1(-d_3), fragmentation processes, H scrambling, photoionis. mass spectra 8−42139
diatomic molecules, shifts and widths of predissoc. levels 8−5304
molecular gas, laser irrad., field avoided crossings, new transition channels 8−33477
molecular ion gas prestripping in tandem accelerator 8−46185
rotational predissociation, Weyl's theory and Jeffrey's approx., resons. 8−926
van der Waals molecules, mol. fluoresc., vibr. predissoc. model 8−42120
CD_4^+, rot. predissociation, observed by metastable peak struct. in translational spectra 8−25635
CH_4^+, rot. predissociation, observed by metastable peak struct. in translational spectra 8−25635
$CO_2^+(C^2\Sigma_g^+)$, formation and predissoc., photoelectron spectra 8−5300
H_2, electron impact dissociative excitation obs. 8−1090
H_2, predissociation of $4p\pi^1\Pi_u^+$ state, due to UV radiation 8−37695
HCN, photofragmentation, initial excitation effects calcs. 8−17734
HCN(DCN), photodissoc. dynamics, rot. (vibr.) energy disposal 8−48672
H_2^*, vibr. excited mols., time-of-flight spectra 8−42146
$H_2^*+H_2$, van der Waals mols., mol. fluoresc., vibr. predissoc. model 8−42120
HgH, rot. predissociation, Weyl's theory and Jeffreys' approx., resons. 8−926
$^{127}I_2$, B-X electronic transition, systematic hyperfine struct. meas. 8−9267
ND, $d^1\Sigma^+$-$c^1\Pi$, spectra, equilib. consts., dissociation energy 8−33517
NH, $d^1\Sigma^+$−$c^1\Pi$, $d^1\Sigma^+$-$b^1\Sigma^+$, spectra, equilib. consts., dissociation energy 8−33517
NH_3, (A^1A_2'') predissoc., vac. UV photolysis, NH_2 form. 8−13547
NO^*+NO, van der Waals mols. in mol. fluoresc., vibr. predissoc. model 8−42120
O_2^+, predissociation of $b^4\Sigma_g^-$, $c^4\Sigma_u^-$ states, threshold photoelectron-photoion coincidence 8−42144
O_2^+, radiative lifetimes and UV spectra, $b^4\Sigma_g$-$a^4\Pi_u$, $A^2\Pi_u$-$X^2\Pi_g$ transitions 8−17724
OH, $A^2\Sigma^+$ state, predissociation and tunnelling 8−29823

molecular quadrupole moments *see molecular moments*

molecular relaxation *see chemical reactions; molecular fluorescence; molecular inelastic collisions; molecular spectra; time resolved spectra*

molecular reorientation
alcohol, dielec. const., hindered mol. rot. influence 8−43767
alignment relaxation rate, laser saturation reson. technique 8−25755
alkali halides:NH_4^+, inelastic neutron scatt. 8−14407
alkali halides, luminesc. polarisation and low-temp. photoinduced orientation change in O_2 and S_2 mol. centres 8−6735
n-alkanes, orientational phase transitions with mol. config. change 8−14444
amino acids, polycryst., proton mag. relax. and mol. motion 8−20139
anthracene-TCNB charge transfer crystal, EPR spectra of triplet excitons, and Raman spectra 8−26817
anthranilic acid, solid, amino group reorientation, PMR second moment obs. 8−35046
benzaldehydes in EBBA liq. cryst., NMR, mol. struct., reorientation and order matrix 8−5251
bromomethanes, ^{13}C-Br spin-spin coupling consts., isotope effects 8−13522
t-butyl chloride, solid phases, mol. motion, cold neutron scatt obs. 8−26460
d-camphor systems, mol. reorientation dynamics, Raman spectra 8−31178
chlorobenzene-d_0, -d_1, mol. reorientation and D nucl. relax. time, temp. depend. 8−39424
3-chlorodiphenyl, in dipolar aprotic solvent, internal rot. barrier, ^{13}C T_1, obs. 8−29860
2-chloropropane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
2-chloropyrimidine, CS_2 soln., nucl. mag. relax. of ^{1}H, ^{13}C 8−27105
condensed phase mol. reorientation, correlation times, librational model 8−1968
coupled molecular rotational diffusion and conform. change 8−22613
CPHB, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
cyclohexane, thermal cond. and sp. ht. under press. 8−22906

molecular reorientation continued
1,2-dichloroethane, orientationally disordered crystal., mol. orientation 8−34448
dichloromethane, liq. and dil. CCl_4 soln., far IR spectra and Rayleigh scatt. for planar itinerant oscillator 8−47229
3-dichlorophenyl, in DMSO, NMR spin-lattice relax. obs. *(German)* 8−31121
N,N'-diethyl-p-nitroso aniline, dil. benzene soln., dielec. props., microwave region, mechanisms 8−35085
diethylcarbonate, liq., alkoxy group internal torsion, extended microwave/far IR anal. 8−19457
2,4-dihydroxy benzoic acid, PMR obs., proton second moment, 77 to 383K effect of OH group rot. 8−10784
N,N'-dimethyl-p-methyl aniline, dil. benzene soln., dielec. props., microwave region, mechanisms 8−35085
dimethylcarbonate, liq., alkoxy group internal torsion, extended microwave/far IR anal. 8−19457
1,1-dimethylcyclopropane-d_0,-d_6, internal rot., Raman spectra 8−985
dipolarly coupled spin pairs, correlation function and relaxation time, group theory approach 8−48068
ethanol, US studies of mol. relax. 8−22790
fluid, of rough spheres, translational and rot. motion, particle roughness depend. 8−26403
fluid of partially rough spheres, translational and rot. diffusion coeffs. 8−26404
fluoroapatite, IR spectra, H motion in nonstoichiometric cryst. 8−35125
Fokker-Planck fluid of symmetric top mols., orientational relax. 8−5996
L-glutamic acid, solid, amino group reorientation, PMR second moment obs. 8−35046
4'-n-heptyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
2,4-hexadiyne, solid, methyl group tunnelling and torsion, neutron scatt. 8−18560
hydrocarbon chain, gauche-trans isomerisation, ^{13}C relax. times and nucl. Overhauser enhancement model 8−33520
hydrodynamic boundary conditions and radii, appl. to rot. rough sphere friction with chloroform 8−9926
hydroxylapatites, IR spectra, H motion in nonstoichiometric cryst. 8−35125
hydroxylapatites, IR spectra, stretching and librational bands of OH groups, and hindered rotation 8−2841
in-cage reactions controlled by mol. reorientation 8−44362
isopropanol, US studies of mol. relax. 8−22790
isotropic-nematic transition, model, mol. shape, vol. effects on orientational ordering 8−30741
linear diatomic rigid mol. chain, mol. dynamics, rot. phase transformation, struct. factors 8−26635
lipid membranes, orientational phase transitions with mol. config. change 8−14444
liquid, configurational heat capacity, correlation formula, corresponding states method 8−30766
liquid, far IR absorpt., rot. dynamics studies *(French)* 8−39534
liquid, IR absorpt. lineshape, orientation density fluctuation effects 8−48171
liquid, IR spectra, calc. involving vibr. and reorientational relax. 8−48170
liquid phase band contours, data processing, band shape corrections 8−27215
liquid-state dipoles in weak const. elec. field, orientation relaxation *(Russian)* 8−43886
MBBA, isotropic, depolarised Rayleigh doublet, de Gennes viscosity coeffs. 8−31207
methane, heavy, cryst., temp. depend. of Debye-Waller factor, Monte Carlo calc. 8−47492
methanol, US studies of mol. relax. 8−22790
methanol molecule enclosed in β-quinol clathrate, dielec. meas. 8−2026
4-methyl 2,6-di-tertiary butyl phenol, change in barrier to methyl group rotation near cryst. surface 8−38634
methyl (CH_3D) group tunnelling in solids, quantum model rel. to two T_1 temp. depend. minima 8−2028
methyl bromide, liq., NMR relax., anisotropic mol. reorientation 8−2764
methyl group, ^{2}H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methyl group, proton spin relax. due to intermol. proton coupling, reorientation 8−25564
methyl groups, detection of proton NMR at arbitrary temps. of tunnelling system 8−39432
methyl groups, reorientation in solids, nonexponential Zeeman relax. 8−6589
methyl iodide, liq., expt. comparison with rough sphere rot. diffusion model 8−30532
methyl-containing mol. solids, proton NMR line shape, methyl group tunnelling 8−6588
molecular fluid, itinerant oscillator model, non-Markovian probability density function 8−47222
trans,trans-mucodinitrile solid, NMR relax., mol. motions between unequal pot. wells 8−19353
trans,trans-muconodinitrile, mol. reorientation, unequal well pot. energy calcs. 8−26461
multicomponent solid solution, mean field approx. 8−22688
naphthalene-TCNB (PMDA), Raman spectra orientational disorder, charge transfer cryst. 8−19459
nematic liquid crystal, oriented, transient behaviour of field induced reorientation 8−30536
nematogens, isotropic phase, direct obs. of picosecond mol. reorientation 8−1991
neopentane, mol. motion in cryst., liq. and plastic phases, neutron scatt. obs. 8−6021
t-nitrobutane, phase, II, quasielastic neutron scatt. 8−26458
noble metal complexes, hexafluoro, review of struct. obs., pseudorot., press. effects 8−6045
nonadecane, mol. motion in solid, ^{1}H spin relax. 8−15048
nuclear relaxation in symm. groups, phonon-induced transition model 8−38635
orientational autocorrelation functions, appl. to rot. Brownian motion 8−18520

molecular reorientation continued
PAA, methyl group rotation in solid and nematic phases, NMR obs. 8-6595
PAA with deuterated methyls, nematic phase, quasieleastic neutron scatt. study of fast reorientations 8-14280
pentachloronitrobenzene crystal, anomalous microwave permittivity, IR absorption and Raman spectra *(Japanese)* 8-15169
perdeuterobenzene, liquid, reorientation and spin-rotation interaction 8-39423
4-phenyl n-pentyl ester, Nematel 105, nematogen, isotropic phase, Rayleigh scatt. and mol. reorientation 8-34429
pivalic acid, orientationally disordered crystal., mol. orientation 8-34448
plastic crystal, dipolar autocorrelation function, phonon contrib., IR absorption 8-42928
PMMA, amorphous, reorientational relax., 6-165°C, polarised laser beam scatt. correlation 8-2864
polar fluids, intermol. and thermodynamic potentials, angle-depend. pot. 8-22618
polar fluids, intermol. and thermodynamic potentials, preaveraged pot. 8-22617
polydisperse rod suspension, elec. birefringence relax. 8-23430
n-propanol, US studies of mol. relax. 8-22790
pyrrole, liq. and nonaq. solns., ^{14}N NQR, ^{1}H line shape anal. 8-6598
quasiquadrupolar echoes in solid with dipolar coupled rotating methyl groups 8-23366
quinine sulphate, acid soln., edge excitation red shift and proton migration 8-1028
rose bengal, excited state orientational relax., in protic and aprotic solvents 8-46383
rotational tunnelling, neutron scatt. theory 8-18561
rough sphere, rot. in bath of spheres, microscopic boundary layers 8-18521
saturation transfer EPR spectroscopy, source modulation, mol. reorientation effects 8-41339
spherical particles, hydrodynamic interaction, translational, rot. and translational-rot. diffusion 8-26405
spin-lattice relax., effect on mol. groups in solids of symm.-restricted spin diffusion 8-39431
succinonitrile, orientationally disordered crystal., mol. orientation 8-34448
succinonitrile, plastic phase, mol. reorientation and rotational isomerization, anal. of elastic incoherent struct. factor 8-22674
symmetric top molecules in liquid state, book contrib. 8-22623
tert-butyl chloride, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8-27244
tetrachloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8-27244
thiourea-cyclohexane inclusion compound, phase changes, molecular motion exam. 8-31116
toluene-d_0, -d_1, mol. reorientation and D nucl. relax. time, temp. depend. 8-39424
translation and rot. dynamics, microscopic Hamiltonian anal., inelastic neutron scatt. elastic consts. 8-38632
s-triazene, second order phase transition, mol. reorientation, ^{14}N NQR 8-48074
trichloroethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8-27244
trichloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8-27244
trichlorophosphazenes, ^{35}Cl NQR spectra and reorientational motion of PCl_3 group 8-25567
trimethylphosphate, plastic and hard crysts., liq., nucl. spin-lattice relax. mol. motion 8-48065
triphenylmethyl-^{13}C phosphonium chloride, Ph_3P^+-$^{13}CH_2\cdot$ EPR, reorientation and hyperfine coupling tensor 8-6574
DL-tryptophan, polycryst., amino group rot., reorientation, mol. struct., 77-555K, PMR obs. 8-35047
uniaxial rotator in N-fold cosine pot., correlation functions, neutron incoherent scatt. law 8-9970
β-Al_2O_3.$(NH_4)_2O$, neutron scatt. study of NH_4^+ motion 8-30785
Ar, solid, NH and ND impurities, role of rotational and translational modes in vibr. relax. 8-10132
AsD_3, IR spectra, vibr. relax., rot. reorientation in solid phase 8-19463
AsH_3, IR spectra, vibr. relax., rot. reorientation in solid phase 8-19463
AsH_3, plastic cryst., dipolar autocorrelation function, phonon contrib., IR absorption 8-42928
$CaSO_4.2H_2O$, mol. reorientations and mol. diffusion, PMR 8-43671
Cd complex, aminoacetate, PMR, activation energy for NH_3 reorientation determ. 8-31119
Cl_2, liq., mol. motion, Raman spectrum 8-5236
Cl_2, liq., mol. reorientation, Raman spectra obs. *(French)* 8-31192
$Cl_3PNPO(CCl_3)_2$, NQR spin-lattice relax. study of PCl_3 and CCl_3 group reorientation 8-2767
t-cyanobutane, solid, uniaxial molecular reorientation, quasielastic neutron scatt. 8-42927
GeH_4, crystalline, determ. of mol. symm. from IR spectrum 8-9969
HCl aqueous soln., H^+ mobility, 15, 25, 40°C, up to 5000 atm 8-10207
H_2O reorientation in HCl aq. soln., 15, 25, 40°C, up to 5000 atm 8-10207
KCN, liq., mol. dynamics computer simulation 8-38609
KCN-KCl mixed system, order-disorder transition, Raman spectra obs. 8-15113
KCl:NH_4Cl, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8-27104
α-N_2 simulation of dynamical props. of molecular solids 8-30710
$(ND_4)_2PbCl_6$-ND_4Cl polycryst. mixture, D spin-lattice relax. times, ND_4^+ reorientation activation energies 8-6587
NH_3, mol. alignment relax. rate, laser saturation reson. technique 8-25755
NH_4 compounds, tunnelling frequency of NH_4 ion in crystals, cubic and noncubic 8-38633
NH_4^+, in NH_4Cl, ion dynamics in disordered states, neutron scatt. exam. 8-26459
NH_4^+, NMR line shapes at low temp., composite tunnelling, reorientation 8-48054
$(NH_4)_2Ce(NO_3)_6$, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591

molecular reorientation continued
NH_4ClO_4, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591
$(NH_4)_2Cr_2O_7$, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591
NH_4ReO_4, PMR, NH_4^+ tunnelling, ground torsional level struct. 8-27097
NH_4ReO_4, proton absorpt. lineshape and spin-lattice relax., ^{187}Re anomalous temp. depend. 8-48067
$(NH_4)_2SiF_6$, cubic, trigonal, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591
$(NH_4)_2SnCl_6$, NH_4^+ ion rot. states, inelastic neutron scatt. obs. 8-30552
$(NH_4)_2SnCl_6$, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591
NaCl, aq. soln., isothermal compressibility, hydration parameters, up to 350°C and 10^3 kg cm^{-2} 8-10112
Ni complex, $[Ni(OCH_3)\ (acac)\ (CH_3OH)]_4$, sp. ht., 0.4-285K, methyl group internal rotation 8-47531
$Ni(NH_3)_6X_2$, X=Cl,Br,I, rotational tunnelling by inelastic neutron scatt. 8-30553
$NiSiF_6.6H_2O$, dielec. loss and relax., 100-270K, reorient. mech. 8-35088
4′-n-pentyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8-34434
RbCl:NH_4Cl, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8-27104
SiH_3D, in polycryst. SiH_4, mol. motions and symmetries, IR obs. 8-48163
$Sr(NH_3)_6$, PMR linewidth, proton tunnelling and NH_3 rot., rapid NH_3 diffusion 8-35045
Zn complex, aminoacetate, PMR, activation energy for NH_3 reorientation determ. 8-31119

molecular reorientational states *see molecular reorientation*

molecular resonant states
see also Fermi resonance; molecular vibronic states
absorption line shape, coupling strength incoherence 8-17721
bimolecular quasiresonant processes, impact approx. 8-33571
dynamic electrooptical effects, reson. modulation of light *(Russian)* 8-9192
electron scatt. reson. using dilatation transforms., dilatation stability condition 8-46445
ethylene, excited states, continuum embedded, SCF-stabilisation approach 8-928
ethylene, multiphoton absorption, luminesc. and dissoc. in laser pulse field 8-1040
impurity crystal, in-band resonance states 8-27268
laser near-reson. scatt. from collisionally perturbed mol. 8-1033
N-methylthioacetamide(-d_1), reson. Raman spectra obs. and mechanism 8-17672
multi-level excitation theory, analytic approximations 8-29922
N-level molecules, coherent dynamics, anal. solns. 8-22105
N-level molecules, coherent dynamics, numerical expts. 8-22104
optical transient signals, saturation dips 8-18020
polar molecule, electron scatt. cross sections, threshold behaviour *(Russian)* 8-5347
pyrazine, multiphoton ionisation spectra, of three-photon ionisation region 8-37689
pyridine, multiphoton ionisation spectra, of three-photon ionisation region 8-37689
Rydberg spectra, resonance line shape 8-17720
two- and three-photon resonances, Doppler-free power broadening 8-5308
variational calculation of reson. width and energy 8-33445
vibrational struct. of resonances in electron-molecule scatt. 8-17813
widths, purely L^2 method 8-46283
C_2, reson. fluoresc. statistical equilib. calc., appl. to comets 8-1016
CO, electron impact excitation, resonances in metastable and UV emitting levels 8-25727
CO_2, 3.8 eV resonance, vibr. struct. in electron-molecule scatt. 8-17813
CO_2, reson. electron impact vibr. excitation, 3-5 eV 8-25726
D_2, electron scatt., low energy, rot. resons. 8-33608
D_2O, electron impact reson. observed in $A^2\Sigma^+ \rightarrow X^2\Pi$ radiation of OD 8-46455
H_2, electron scatt., low energy, rot. resons. 8-33608
H_2^- resonant states, Feshbach projection-operator calc. 8-5153
HCl^-, resonance states, CI calcs., pot. energy curves 8-29755
HCl^-, resonance states, interpretation of low energy HCl-electron scatt. 8-17808
H_2O, electron impact reson. observed in $A^2\Sigma^+ \rightarrow X^2\Pi$ radiation of OH 8-46455
HgH, rot. predissociation, Weyl's theory and Jeffreys' approx., resons. 8-926
N_2, 2.4 eV shape resonance, vibr. struct. in electron-molecule scatt. 8-17813
N_2, electron impact excitation, resonances in metastable and UV emitting levels 8-25727
N_2^-, resonances in N_2 electron impact excitation *(French)* 8-25723

molecular rotation
see also molecular force constants; molecular reorientation; molecular rotation calculations; molecular rotational-vibrational energy transfer; molecular spectra; rotational isomerism
acetyl cyanide-d_1, microwave spectra, r_s, r_0-struct. 8-13491
acetylene, IR spectra, rot. and vibr. struct. 8-21922
acetylene, Raman spectra, high resolution using laser source 8-42072
aminoacetonitrile, microwave rot. spectrum, quadrupole hyperfine struct. 8-17658
BBOT, time-depend. fluoresc. depolarisation, mol.-rot., slip boundary conditions in soln. 8-9179
bicyclo[3.1.0]hex-2-ene, microwave spectra, rot. consts., ring struct. and config. 8-42041
bromomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8-13551
Brownian rotational motion, effects on nonlinear fluoresc. characts. *(Russian)* 8-5275
1,3-butadiene, UV spectra, polarisation of strongest Rydberg transitions 8-46360
C_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8-5241

molecular rotation continued
centrifugal distortion in weakly bound linear triatomic molecules 8−9136
cetyltrimethylammonium bromide, micelles, solubilised nitroxide spin probes, ESR 8−21950
3-chlorodiphenyl, in dipolar aprotic solvent, internal rot. barrier, ^{13}C T_1, obs. 8−29860
chloromethane-d_2, microwave spectrum, rot. consts. 8−9140
chloromethane-d_3, and isotopic forms, optically pumped mm laser transition assignments, 792 micron line 8−42328
1-cyano-1,3-cyclopentadiene, microwave spectrum, rot. consts., dipole moment 8−42043
cyanomethane, collisional rot.-line widths and shifts, microwave region 8−25619
diatomic molecules, spectral line collisional broadening, numerical method 8−25622
dimethylphosphine, microwave spectra, internal rot. barrier 8−5205
dimethylsulphide, Raman spectra, torsional pot. consts. and kinetic coeffs. 8−5233
o-fluoroaniline, conformation by microwave spectroscopy, rot. consts. 8−9144
formaldehyde, IR spectra, Coriolis-coupled ν_4, ν_6 and ν_3 fundamental bands 8−5227
formyl chloride, rot. Zeeman effect of low-J transitions 8−25519
formyl radical-d_0,-d_1, microwave spectroscopy, high field Zeeman effect 8−37631
heat capacity and entropy, mol. without internal rot., MINDO/3 calc. 8−33450
hexafluoroethane, far IR multipole induced absorpt. 8−37639
indane, 271 nm spectrum, rot. band contour anal., puckering vibr. 8−1001
iodomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
iodomethane, collisional rot.-line widths and shifts, microwave region 8−25619
3-iodopropene, microwave spectra, rot. consts. and HFS 8−975
ion+atom slow collision, atomic excitation by quasimolecular orbital rot. coupling, uniform Airy approx. 8−25644
IR molecular absorption spectra, effect of rotational coupling on torsional bands 8−13497
isocyanoacetylene theoretical study and rot. const. 8−33633
isocyanoethynyl radical, theoretical study and rot. const. 8−33633
methane, phase II, IR and Raman spectra of ν_3 and ν_4 modes 8−2834
methane, rotational anal. of $(\nu_3+\nu_4)$ combination bands *(French)* 8−21900
methyl iodide, rot. microwave spectra, nucl. quadrupole, spin-rot. and nucl. shielding tensors 8−42040
methyl isocyanide-d_2, IR spectrum, rovibr., ground state struct. 8−25537
methylene ketene, microwave spectrum, rot. and centrifugal distortion consts., dipole moment 8−17659
monothioformic acid, cis-, trans-rotamers, rot. spectrum, force consts. and isotopically substituted struct. 8−9145
naphthalene, nonradiative transition rates, rot. struct. 8−42119
pyridine, and -d_1, microwave spectra, mol. struct., rot. consts. 8−25517
s-trans-3-pyridinecarbaldehyde, microwave spectrum, assignments 8−21912
r_m structural determ. from rot. consts., test on OCS synthetic data 8−42236
Raman high-resolution molecular spectroscopy, review 8−42064
N-sulphinylaniline, microwave rot. spectra, torsional freq., dipole moment and internal rot. barrier 8−973
symmetric top, rigid, rot. partition function 8−46260
tetracyclo[3.2.0.0^{2,7}.0^{4,6}]heptan-3-one, microwave spectrum and effect of cyclopropyl-carbonyl group interactions on dipole moment 8−9138
s-tetrazine, fluoresc. excitation spectra, 1K rot. struct. 8−1020
thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8−25520
thioformyl ion, theoretical study 8−37553
trans-propargyl amine, microwave spectra, dipole moments and struct., isotopic species 8−974
trifluoroethane, MODR, rot. consts. 8−9177
Ag_2, dispersion absorption spectra, 1500 to 5300 Å, rot. anal. 8−42089
AsF_3, millimetre rot. spectra, vibr. excited states, anharmonic force field 8−33502
B_2F_4, molecular structure, barrier to internal rotation, temperature effects 8−13625
C_2, Phillips system, 2.3-0.9 μm, rot. consts. 8−21925
CD_4^+, rot. predissociation, observed by metastable peak struct. in translational spectra 8−25635
CH_4^+, rot. predissociation, observed by metastable peak struct. in translational spectra 8−25635
CH_2F, far IR laser mag. reson. spectrum 8−9174
CN, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
C_2N_2, gas, high resolution Raman spectra 8−17673
CO_2, IR absorption spectrum using Nd:glass intracavity spectrometer *(Russian)* 8−33512
CO_2^+, laser excitation spectra, $A^2\Pi_u \rightarrow X^2\Pi_g$ fluoresc., rot. struct. 8−1019
$COCl_2$, microwave spectra, 24-154 GHz, rot. and centrifugal distortion consts. 8−46324
CS, near UV spectra, rot. anal. of $a^3\pi_r = X^1\Sigma^+$ transition 8−5242
CaCl, $E^2\Sigma$-$X^2\Sigma$ transition, rot. anal. 8−37652
$Ca^{35}Cl$, radical, rot. spectrum, $X^2\Sigma^+$ state, laser MODR 8−5257
chloromethane, collisional rot.-line widths and shifts, microwave region 8−25619
Cl_2, liq., mol. reorientation, Raman spectra obs. *(French)* 8−31192
$^{35}Cl^{35}Cl$, $B^3\Pi(0^+) \rightarrow X^1\Sigma^+$, 6300 to 9900 Å, rot. anal., mol. consts., equilib. internuclear separation 8−42082
$^{35}Cl^{37}Cl$, $B^3\Pi(0^+) \rightarrow X^1\Sigma^+$, 6300 to 9900 Å, rot. anal., mol. consts., equilib. internuclear separation 8−42082
Cu_2, fluoresc., A-X system, rot. consts. *(French)* 8−33544
CuCl, hyperfine struct., microwave rot. spectrum obs. 8−21917
CuO, rot. anal. of red $A'\ ^2\Sigma^+ - X\ ^2\Pi_i$ system 8−13508
D_2, electron scatt., low energy, rot. resons. 8−33608
D_2, photoabsorpt. spectra, rovibronic interactions 8−992
$D_2{}^{16}O$, IR spectra, ν_2 band, rot. struct. 8−982
$F^+ + H_2 \rightarrow FH^+ + H$, rot. effects 8−27744

molecular rotation continued
FCN, IR laser Stark spectra, C-F stretching mode, dipole moments, rot. consts. 8−1022
$H + Br_2 \rightarrow HBr + Br$, HBr ang. momentum alignment, scatt. ang. depend. 8−3323
$H + ICl \rightarrow HCl + I$, IR chemiluminesc., product energy distrib. 8−23926
H_2, electron impact rot. excitation, low energy, close-coupling calcs. 8−1092
H_2, electron scatt., low energy, rot. resons. 8−33608
H_2, photoabsorpt. spectra, rovibronic interactions 8−992
H_2, photoelectron ang. distrib., rot. states anal. 8−33550
H_2, rot. energy, specific heat, temp. depend. determ., demonstration 8−12465
HCN, laser plasma, microwave spectra of excited vibr. states 8−17656
HCN-HF, dimer, rot. transition intensity, dissoc. energy determ. 8−46323
HCO, IR spectra of ν_2 fundamental, laser elec. reson. 8−5226
HD, dipole spectrum, influence of intracollisional interference 8−33492
HD, nonadiabatic effects in the B, C and E, F states, rot. line strengths 8−5148
HN_3, and DN_3 pure rot. Raman spectra, rot. consts., K-depend. parameters 8−29791
HNCO, a-type rot. spectrum in excited bending states, rot. consts. 8−21915
HNCO, microwave and RF spectra, b-type rot. transitions 8−21914
$H_2O(D_2O)$, VUV absorption spectra, Rydberg series, rot. line shapes, quantum defect 8−5244
$HSiO^+$, $HOSi^+$, rot. consts. from theoretical study 8−37541
HeI_2, rot. fluoresc. spectra, nonlinear equilib. struct. 8−37672
I_2, energy levels near B-state dissoc. limit, two-photon spectra 8−9210
N_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
NF_3, Raman spectra, Coriolis coupling and transition dipole 8−39533
NH_3, and -d_n IR matrix isolation spectra, rotation and inversion 8−5218
$NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8−1010
NO, electronic spectrum, press. induced config. demixing 8−42090
NO_2, Ne matrix isolated, 6K, B←X band system 8−993
O_2, electronic electron impact excitation, rot.-electronic coupling 8−9265
O_2 isotopes, $^{17}O_2$, $^{16}O^{17}O$, $^{17}O^{18}O$, pure rot. Raman spectra, bond lengths 8−42071
O_2, Raman spectra of fundamental vibr. band, rot. consts. 8−21932
O_2^+, $b^4\Sigma_g^-$-$a^4\Pi_u$ band, rot. lines, rel. intensities, theoretical and exptl. results 8−13505
O_2^+, IR spectra, rot. anal. of $b\ \Sigma_g^- a^4\pi_u$ first negative band 8−5219
OCS, collisional rot.-line widths and shifts, microwave region 8−25619
OCS, IR spectra using spin-flip Raman laser, combination band near 1890 cm^{-1} 8−37640
OCS, microwave spectra, rot. Q-band *(Polish)* 8−29866
OCS, r_m struct. determ. from rot. consts. 8−42236
OH, $(A^2\Sigma^+)$, abnormal rot. following H_2O photodissoc., semiclassical calcs. 8−40069
OH, vibr. ground-state, MFS, rot. spectra and electronic band anal. 8−5206
$OH(^2\Pi)$, rot and translational temps. in gas discharge 8−5243
OPF_3, forbidden transitions, mol. beam elec. reson. obs. using avoided crossings 8−29775
^{16}O, $^{18}O_2$, vac. UV absorpt. spectra, band intensities and designations 8−5245
PrO, visible spectra, 7500-8500 Å, VII and X systems, rot. anal. *(French)* 8−46355
$SO_2 + H_2O(N_2)(SO_2)$, linewidths, intensities, isotope shifts, 91.5-95.5 GHz 8−42044
S_2O, 3400 Å bands, rot. anal., upper state struct. 8−13506
SbN, 3300-4000 Å, rot. and vibr. perturbations and rot. anal. *(French)* 8−37651
SeO, IR bands of 10296 and 10491 Å, rot. struct. 8−5224
SiCl, $(A^2\Sigma^+$-$X^2\Pi)$ transition, rot. anal., equilib. consts. 8−37648
$SiH_3{}^{81}Br$, high resolution rot. microwave spectrum, 8-40 GHz, mol. consts. 8−21916
$(SiH_3)_2S$, rot. consts., internal rot. parameters, anal. of microwave spectra 8−46316
SrF, $B^2\Sigma^+$-$X^2\Sigma^+$ system, rot. anal. using a cw tunable dye laser 8−9165
SrF radical, rot. spectrum of $X^2\Sigma^+$ state, MODR 8−9176
U+Pb, K-vacancy form., rot. coupling effect in quasimol. L-shell 8−25692
YF, $^3\Phi - ^3\Delta$ system, rot. anal. 8−9149

molecular rotation calculations
diatomic molecules, soluble potential 8−21996
diatomic polar mol., rot. level Stark effect in strong field 8−25611
polyatomic molecule, radiative dissoc. in laser field *(Russian)* 8−9207
polyatomic molecule, transform. of complete electron-nuclear Hamiltonian to intramolec. coords. 8−9054
quartic and sextic centrifugal effects, book contrib. 8−21910
rigid rotor, asymmetric, semiclassical energy levels determ., tunnelling 8−37624
rotational predissociation, Weyl's theory and Jeffrey's approx., resons. 8−926
symmetric top mol., overlapping press. broadening, nonreson. microwave absorpt. line radii 8−17662
CH, interstellar, rot. levels struct., excitation mechanisms 8−21908
HCN(DCN), photodissoc. dynamics, rot. (vibr.) energy disposal 8−48672
$H_2(D_2)$, Compton profile, impulse approx., electron correl., vibr. and rot. effects 8−17585
H_2O, matrix of rotational energy Hamiltonian, calc. *(Russian)* 8−37622
H_2O, rot. consts. for ground states and (110) and (011) interacting states 8−21902
H_2O_2, lone pair orbital explicit representation, augmented contracted Gaussian basis set 8−25423
HgH, rot. predissociation, Weyl's theory and Jeffreys' approx., resons. 8−926
I_2, $(B^3\pi_{0+u})$, dissoc. reaction, computer simulation 8−48639
N_2H_4, lone pair orbital explicit representation, augmented contracted Gaussian basis set 8−25423

molecular rotation calculations continued
NH(NF)(NCl), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
NO_2Cl, force fields calc. 8−42241
NO_2F, force fields calc. 8−42241
O_2, effective spin-spin parameter, ab initio calc. 8−9067
OH radicals in glow discharge, rot. levels distrib., temp. meas. 8−47169
PH(PF), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
S_2, effective spin-spin parameter, ab initio calc. 8−9067
SO_2, effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067

molecular rotation in solids *see molecular reorientation; nuclear magnetic resonance; plastic crystals*

molecular rotation-vibration
see also molecular force constants; molecular rotation-vibration calculations
(3×3) order systems, force const. calcs. using isotopic freqs., parametric method 8−21907
acetylene, Raman spectra, high resolution using laser source 8−42072
allene-d_4, Raman and IR spectra, rot.-vibr. bands, ground state constants 8−25545
bromomethane, IR spectra, $2\nu_2$, $2\nu_5$ and $\nu_2+\nu_5$ 8−42059
chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
diatomic, photoelectron ang. distrib. and intensity, vibr.-rot. struct. 8−42128
fluoromethane-d_3, laser Stark spectra, ν_6 band, vibr.-rot. consts., dipole moment 8−5277
methane, mag. struct. of vibr.-rotational transition, review of laser appl. to precision meas. 8−42246
methane-d_1, ν_6 band at 8.6 μm, vibr.-rot. band 8−21923
methyl isocyanide-d_2, IR spectrum, rovibr., ground state struct. 8−25537
naphthalene, vap., Doppler free two-photon absorption spectra 8−5307
photoelectron angular distribs., oriented or rot. resolved unoriented mols., dynamic and struct. data 8−37682
polyatomic molecules, collisionless dissoc. mechanism in laser field *(Russian)* 8−37696
Raman high-resolution molecular spectroscopy, review 8−42064
tetrafluoromethane, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
Zeeman effect, anomalous, Doppler-free standing wave saturated resonance, book contrib. 8−9279
BF_3, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
Br_2, and isotopic forms, new rot.-vibr. lines, laser reson. fluoresc. obs. 8−991
Br_2, reson. Raman spectrum, vibr.-rot. struct. 8−17674
C_2N_2, gas, high resolution Raman spectra 8−17673
CO_2, IR spectra, 401←000 and 411←010 absolute intensities 8−21976
CO_2, Venus IR absorpt. bands, 3900-10000 cm^{-1}, assignment 8−7896
$^{12}C^{16}O_2$, vibr.-rot. Raman spectrum, in Fermi reson. region 8−42073
$^{12}CS_2$, $^{13}CS_2$, vibration-rotation bands 2700-2900 cm^{-1} *(French)* 8−25521
ClO, vibr.-rot. bands, intensity parameters 8−17722
DCl and $(DCl)_2$, matrix isolated Raman spectra 8−42063
D_2O, matrix isolation spectra, vibr.-rot. lines, nucl. spin interconversion 8−46336
H_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
H_2-inert gas, bound complex form., anisotropic intermol. pot., IR spectra anal. 8−37634
H_{22} quadrupole vibration-rotation transition probabilities 8−25512
HBr, fundamental IR band, solvent effect *(Russian)* 8−13501
HCO, IR spectra of ν_2 fundamental, laser elec. reson. 8−5226
HCO, ν_2 fundamental band, laser mag. reson. spectra 8−5256
HCP, ν_1 and $\nu_1+\nu_2-\nu_2$ IR absorpt. bands 8−42060
HCl and $(HCl)_2$, matrix isolated Raman spectra 8−42063
HF, vibr.-rot. emission, from highly rot. excited states, in ClF_x-H_2 chem. laser 8−17926
HI, 7-0 vibr.-rot. band in near-IR absorpt. spectrum, equilib. mol. consts. 8−21936
HNO_3, high resolution spectral meas. of 11.3 μm band, using tunable diode lasers 8−33504
H_2O, IR line intenisties and widths, ν_2 rot.-vibr. band 8−9200
H_2O, matrix isolation spectra, vibr.-rot. lines, nucl. spin interconversion 8−46336
H_2O, roto-vibrational structure, correlated bender theory 8−37627
$H_2^{16}O$, vibr.-rot. intensities of $3\nu_2$, $\nu_1+\nu_2$, and $\nu_2+\nu_3$ bands 8−5291
K_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
Li_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
LiH, isotopic species, $A^1\Sigma^+ \rightarrow X^1\Sigma^+$ bands 8−42091
NO, and isotopic forms, $X^2\Pi$ state, IR obs., mol. consts. 8−42045
NO, laser mag. reson. and IR-RF double-reson. near 5.3 μm 8−5258
NO, vibr.-rot. bands of Raman spectra 8−29173
^{15}NO, vibr.-rot. transitions, Λ-doubling, optoacoustic spectroscopy meas. 8−42062
NO_2, reson. Raman spectra, vibr.-rot. scatt. Q branch enhancement 8−989
$^{14}N^{16}O_2$, IR spectra, $2\nu_2+\nu_3$ and $\nu_1+\nu_2+\nu_3$ bands, vibr. and vibr.-rot. consts. 8−983
Na_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
OCS, IR spectra using spin-flip Raman laser, combination band near 1890 cm^{-1} 8−37640
OCS, vibr.-rot. bands of Raman spectra 8−29173
OH, vibr. ground-state, MFS, rot. spectra and electronic band anal. 8−5206
POF_3, IR rot.-vibr. spectrum, mol. consts., laser Stark spectroscopy obs. 8−33508
RbKr, magnetic resonance meas. of spin-rotational interaction 8−33528
SF_6, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171

molecular rotation-vibration continued
SO_2, IR spectra, $\nu_1+\nu_2$ combination band, rot.-vibr. anal. 8−5225
SiF_4, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171

molecular rotation-vibration calculations
Clebsch-Gordan coefficients, chain $SU(2)\supset D_\infty'\supset D_4'\supset D_2'$ 8−17552
diatomic molecule Hamiltonian, homogeneous derivation for spectrum anal. *(French)* 8−5113
Dunham coeffs., nuclear mass depend., Born-Oppenheimer approx. breakdown 8−21904
formic acid, vap., laser lines identification 8−1222
Fues potential, vibr.-rot. spectra, Schrodinger eqn. soln., pot. energy curves *(Spanish)* 8−36784
group II halide-periodate complexes, force consts., compliance and Coriolis consts. calc. 8−42242
methane, ν_2 and ν_4 bands Coriolis interaction, using a general Hamiltonian formalism *(French)* 8−5192
methane, nonlinear optical reson. shift in mag. field, vibr.-rot. transition 8−13549
methane, vibration-rotation ν_3-ν_4 band, theoretical spectra 8−42037
rotational energy levels, quartic and sextic centrifugal effects, book contrib. 8−21910
rotational line width of vibr. bands, self- and foreign gas-broadening 8−33552
spherical top mols., matrix elements for vibr.-rot. operators 8−5194
triatomic molecule, large-amplitude Hamiltonian for vibr.-rot. 8−25511
triatomic molecules, model with two large-amplitude coords. 8−5196
water, vap., rot.-vibr. levels, nonperturbative multimode model, 2 interacting Morse oscills. 8−9135
XY_4 spherical top mols., general rot.-vibr. Hamiltonian formalism *(French)* 8−5192
CN (0,0) vibr. band in Comet Mrkos (1957 V) 8−20734
$^{14}C^{16}O_2$, band centre at 4.5 μm, tunable diode laser spectroscopy 8−33503
D_2^+, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
H_2, photoelectron angular distrib. and intensity, vibr.-rot. struct. 8−46393
H_2^+, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
HD, elec. dipole vibr.-rot. spectrum, line strengths, ab initio calcs. 8−25514
HF, pot. curves, diagrammatic perturbation theory, spectrosc. consts. 8−25458
H_2O, rot.-vibr. Hamiltonian, rigid and semirigid bender models 8−5197
He_2, vibr.-rot. interaction factor 8−42036
Li^++CO, differential cross-sections, ab initio CI vibrotor pot. energy surface calcs. 8−46421
LiCN, vibr.-rot. spectra, model with two large-amplitude coords. 8−5196
NO_2 and isotopic forms, total quartic potential function 8−13486

molecular rotational energy transfer *see molecular rotational-vibrational energy transfer*

molecular rotational states *see molecular rotation*

molecular rotational-vibrational coupling *see molecular rotation-vibration*

molecular rotational-vibrational energy transfer
see also atom-molecule reactions; molecule-molecule reactions
acetaldehyde+CO_2, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
acetonitrile, ν_2, ν_3 and $2\nu_3$ bands, vibr. relax., Raman spectra of liq. and dil. soln. 8−9154
air, afterglow plasma, interaction with glass, Cu, steel walls, calorimetric method obs. 8−14177
air, vibr. energy transfer rates rel. to HF sound absorpt. meas. 8−1475
air-water fogs, rot. and vibr. relaxation rel. to audible sound propag. 8−1473
alignment relaxation rate, laser saturation reson. technique 8−25755
anharmonic molecules, vibr. relax. under strongly pumped conditions, anal. theory 8−5328
anthrone, 533 nm excited state absorpt. kinetic, triplet quenching solvent, internal conversion, vibr. relax. 8−21935
atom+diatom, rot. and vibr. excitation, S-matrix element calcs. 8−17763
atom+linear molecule, rot. excitation, classical and quantum calcs. 8−1059
atom+polyatomic molecules, vibr.-translational energy transfer in thermal reactions 8−23924
benzene, S_1 state, mode to mode vibr. energy flow, low pressure fluorescence spectra exam. 8−25664
benzene, vibr. relax. in soln., ν_1 C-H stretching band Raman spectra 8−25540
benzene-d_0, -d_6, intramol. vibr. energy relax. calcs. 8−33574
benzene-d_6, liq., Raman spectra vibr. relax. and band widths 8−23440
camph.r, separated optical isomers, rot.-vibr. transitions, IR-RF double reson. obs. 8−21951
collisional line broadening of microwave spectra, semiclassical theory 8−29776
condensed systems, vibrational relaxation times calc. from low-freq. mol. spectrum 8−2205
cyanomethane, collisional rot.-line widths and shifts, microwave region 8−25619
cyclopropane, vibr. energy transfer processes, laser induced fluorescence exam. 8−25663
1,1-cyclopropane-d_2, rearrangement, collisional vibr. energy transfer, temp. depend. 8−15668
dense media, energy transfer between coupled mol. vibrs. *(German)* 8−37719
dense media, radiationless vibr. phase relax. theory *(German)* 8−37720
diatom+diatom, vibrorot. energy transfer, optical pot. theory, distinguishable mols. 8−13575
diatomic molecular gas, vibr. excited, on surface, accommodation coeff. *(Russian)* 8−38973
diatomic molecule, electron scatt., vibr. and rot. transitions, close coupling theory 8−22041
diatomic molecule electron scatt. vibr. and rot. transitions, hybrid and close-coupling theory 8−22042
diatomic molecules, electron reson. scatt., ang. distrib., vibr. and rot. excitation, theory 8−22043

molecular rotational-vibrational energy transfer continued
diatomic molecules, rotational transitions in collisions, semiclassical theory 8−29843
diatomic molecules, vibr.-vibr. energy transfer probabilities 8−22009
dimethyl ether, optical saturation characts., using CO_2 laser radiation 8−30027
dissociative charge transfer collisions, vibr. enhancement 8−33597
electronic to vibrational energy transfer, vibr. state anal., review 8−37725
ethyl isocyanide, thermal isomerisation in presence of at. gases, vibr.-translational energy transfer 8−23924
ethylene, multiphoton absorption, luminesc. and dissoc. in laser pulse field 8−1040
ethylene glycol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
excited state vibrational energy transfer, for optoacoustic spectroscopy 8−37724
exothermic triatomic exchange reactions, dynamics, anal. theory 8−3322
exponential transition probilities for collision induced dissoc. and vibr.-rot. relax. 8−27749
fluoromethane, $^{13}CH_3F$ and $^{12}CH_3F$, vibr. energy transfer between ortho- and para-mols. *(Russian)* 8−29845
fluoromethane, in liq. O_2(Ar), vibr. energy relax. obs. 8−5208
fluoromethane+D(H)(O), reactions, selective vibr. excitation effects 8−35643
fluoromethane-d_0, -d_1, vibr. relax. in matrix, rot. effects, double reson. obs. 8−46375
fluoromethylene+NO→HF+CNO, vibr. energy distrib., lasing action in dichlorofluoromethane-O_2 8−48644
fluoromethylene+O_2→HF+CO_2, vibr. energy distrib., lasing action in dichlorofluoromethane-O_2 8−48644
fluorotrichloromethane, optical saturation characts., using CO_2 laser radiation 8−30027
gas, dilute, reacting, mass and momentum transport, DIPR model extension 8−35666
gas, molecular, kinetic coeffs. calc. from ultrasonic data 8−42703
inert gas+$CO(O_2)(N_2)$, state-to-state rates from press.-broadened linewidths, data reduction method 8−46430
intermolecular potentials, vibr. coupling behaviour 8−25668
intramolecular longit. relax. in mol. system with Rabi oscills., transient regime theory 8−46404
iodomethane, collisional rot.-line widths and shifts, microwave region 8−25619
ion+molecule, electronically elastic collisions, scaling law in sudden approx. 8−37723
IR band shapes, reson. relax. effects 8−13576
isothermal system with δ-function source of mols., vibr. relax. 8−1061
isotope separation, by selective laser-induced mol. vibr. excitation effect on reaction kinetics 8−33627
Kneser liquids, vibrational energy exchange probabilities 8−38780
laser amplifier, vibr. relax. effect on laser pulse energy characts. 8−17921
liquid, IR absorpt. lineshape, orientation density fluctuation effects 8−48171
liquid, IR spectra, calc. involving vibr. and reorientational relax. 8−48170
liquid, rate of relaxation of vibrational energy 8−17764
liquid vibrational modes, direct and indirect modes, reson. energy transfer, population decay 8−48162
liquids, molecular, vibr. dephasing and reson. energy transfer 8−18519
luminescence-vibrational relaxation interaction, master eqn. calcs., theory 8−42123
maser, three-level, collisional relax. rates between rot. states 8−22106
matrix isolated molecules, vibr. relax. 8−46425
methane, energy transfer, multi-dimens. harmonic oscillator model 8−42174
methanol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
methyl isocyanide, thermal isomerisation in presence of at. gases, vibr.-translational energy transfer 8−23924
molecular, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
nonspherical molecule, rot. and vibr. inelastic scatt., rot. IOS approx. calcs. 8−46433
photoelectron recoil effects in light atom mols., X-ray photoelectron vibr., rot. excitation 8−42129
polyatomic, vibr. relax. in monochromatic radn. field behind shock wave 8−42177
polyatomic molecule, dissoc., natural collision coords. 8−44373
polyatomic molecule, multiphoton excitation from many rot. states by IR laser pulse 8−21986
polyatomic molecule in solution, vibr. population relax. model 8−17756
radiationless relaxation processes, appl. to mol. vibs. in dense media *(German)* 8−1055
radiationless vibrational energy relax. processes and appl. to mol. vibrs. in dense media *(German)* 8−1057
relaxation of strongly excited mols. 8−1060
relaxation processes in fluoresc. excited by standing wave radn. field 8−29803
resonance fluoresc. meas., rot. ang. momentum distrib., polarisation and intensity, theory 8−33580
rotational band, line shape, collisional broadening, impact approx. 8−42134
rotational line width of vibr. bands, self- and foreign gas-broadening 8−33552
roto-vibrational molecular laser, optically pumped, rate eqn. model 8−37874
small molecule, IR laser induced collisional pumping 8−25630
small molecule IR laser induced collisional pumping 8−25629
spherical-top molecules, rot.-vibr. transition moments in excited states 8−25639
supersonic flow of inverted population gas flow round blunt bodies, amplification factor 8−5828
supersonic seeded molecular beam, vibr. relax. 8−17761
trichloroethane, CH_3-stretching modes, Raman spectra reson. energy transfer obs. 8−48162
trichloromethane, and -d_1, liq., vibr. relax., Raman spectra 8−19471
trifluoroformamide, electronically excited, vibr. relaxation, stochastic description 8−37715

molecular rotational-vibrational energy transfer continued
vibrational relax. in dense media, memory functions approach 8−37722
vibrational relax. in supersonic flow, meas. using high temp. spectropyrometric unit 8−9275
weakly bonded molecular complexes, intermol. transfer and relax. of vibr. energy *(German)* 8−1056
Ar+N_2, rot. inelastic collision, orientation depend., close coupling calcs. 8−9232
Ar+N_2, vibr. cross-section, exponential distorted wave and effective Hamiltonian 8−37709
Ar+N_2, vibr. excitation of N_2(C) and N_2(B), reaction rate and branching ratio determ. 8−25662
$Ar(^3P_{0,2})+N_2$, rate consts. and $N_2(C){:}N_2(B)$ branching ratio 8−5327
AsD_3, IR spectra, vibr. relax., rot. reorientation in solid phase 8−19463
AsH_3, IR spectra, vibr. relax., rot. reorientation in solid phase 8−19463
AsH_3, vibr. relax. in dense media, memory functions approach 8−37722
$BF_3+BF_3(D_2)$ (inert gas), US dispersion meas. 8−17758
Ba+trifluoromethyl iodide, BaI vibr. states bimodal distrib. 8−27743
$BaCl(C^2\Pi_{3/2}, \nu=0)+Ar$, intermultiplet energy transfer, laser induced fluoresc. obs. 8−9227
Br_2, dissociating flow in supersonic nozzles, atomic recomb. and vibr. relax. effects 8−42677
BrF, fluoresc. decay lifetimes and quenching cross-sections for excited $B^3\Pi(0^+)$ states 8−1030
$Br(4^2P_{1/2})+CO_2(COS)(CS_2)$, electronic to vibrational energy transfer rates 8−29839
C_2^-, matrix isolated, vibr. energy transfer, fluoresc. 8−46382
CH, interstellar, ground state inversion, collisional excitation 8−28503
CH^+, rot. excitation by slow electrons, calc. 8−5360
CO, electron impact, vibr. levels stepwise excitation 8−1095
CO, electron reson. scatt., ang. distrib., vibr. and rot. excitation, theory 8−22044
CO, solid and liq., vibr. relax. and vibr. diffusion rates, 66-79K 8−17757
CO-He-O_2-H_2O laser discharge, stability, influence of recombination and ion chem. 8−17915
CO+Ar(CO), rot. band, line shape, collisional broadening, impact approx. 8−42134
CO+H_2, vibr. deactivation, 250 to 2000K, Morse pot. calcs. 8−46428
CO+H^+, vibr. excitation, 5-90 eV, forward scatt. differential cross section 8−9228
CO+He, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
CO+Li^+, rot. excitation, ab initio CI pot. energy surface, classical mech. and coupled states calcs. 8−25665
CO+$NO(O_2)(D_2)$, (ν=1) relax., temp. depend. 8−17760
CO+O_2, vibr. deactivation of CO, 80-300K, laser fluoresc. study 8−25661
CO_2, electron impact, cross sections for rot. excitation 8−17809
CO_2 gasdynamic laser, gain prediction, comparison of vibr. modeis 8−29928
CO_2 laser, vibr. energy transfer by current modulation 8−1204
CO_2, nonequilib. expansion, retardation temps. ≤1200K, vibr. relax. and condensation influences 8−5777
CO_2-F_2-Ar mixture, vibr. relax. in shock wave, 4.3 μm radn. 8−1062
CO_2+Ar, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
CO_2+$CO(N_2)$, vibr. relax., optoacoustic obs. *(French)* 8−42178
CO_2+inert gas, vibr. and rot. energy transfer, quasiclassical trajectory study 8−33578
CO_2+Kr, vibr. energy transfer rate, anharmonicity, quasi-classical calc. 8−46431
CO_2+N_2, vibr. energy transfer, time-resolved laser induced fluorescence 8−29842
CO_2+propyl alcohols, collisional deactivation, of CO_2 (00^01), 303-514K 8−17759
$CO_2(00^01)+H_2(D_2)$, intramol. vibr.-vibr. transfer cross sections calc. 100-3000K 8−1053
chloromethane, collisional rot.-line widths and shifts, microwave region 8−25619
CsF, seeded in supersonic beam, vibr. relax. 8−37716
D_2, electric discharge, vibr. excitation spontaneous Raman scatt. obs. 8−5234
D_2+He, vibr. relax. times, 3D semiclassical theory 8−25667
DF, IR chemiluminesc. quenching, (V-V) and (V-T, R) energy transfer rates 8−20018
DF, IR chemiluminesc. quenching, (V-V) energy transfer rates 8−20019
F+H_2 nonadiabatic effects, scatt. theory, coupled-channel calcs. 8−22010
F+muonium (H)(D)(T), exothermic triatomic exchange reactions, dynamics, anal. theory 8−3322
F_2+He(Ar), vibr. relax. times, 3D semiclassical theory 8−25667
H+CO, scattering cross-sections, factorisation and fitting, IOS approx. 8−33575
H+$N_2(CO)(O_2)$, vibr. state distrib., charge exchange 150-2400 eV 8−42195
H^++H_2, rot. and vibr. excitation 8−33579
H_2, electric discharge, vibr. excitation, spontaneous Raman scatt. obs. 8−5234
H_2, interstellar, J=2 rot. level excitation rel. to departure from translational equilib. 8−8081
H_2 interstellar cooling, dissociation and IR emission in shocked clouds 8−41009
H_2, vibr. relax. in H_2-Ar mixtures, mechanism, computer simulation 8−46434
H_2+CO(CS)(OCS), rot. excitation, classical and quantum calcs. 8−1059
H_2+CO(CS)(OCS), scattering cross-sections, factorisation and fitting, IOS approx. 8−33575
H_2+H_2, rot. cross sections 8−37717
(H_2+H^+, H_2^++H) collinear system, electronically nonadiabatic effects 8−1063
H_2+HCD, vibr. excitation cross-sections, rot. averaging calcs. 8−9231
H_2+He, vibr. relax. times, 3D semiclassical theory 8−25667
HCN+HCN, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516

molecular rotational-vibrational energy transfer continued
HCN+He, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
HCl, electron bombard., rot. excitation, energy dependence of elastic and inelastic cross sections 8−37756
HCl, isotopic transfer laser, intercavity cold gas isotope filter 8−46590
HCl, vibr. excitation by electron scatt., virtual state interpretation 8−17808
HCl+Ar(He), rot. energy transfer, quasiclassical trajectory calcs. 8−42173
HCl+Ar(He), rot. excitation, classical and quantum calcs. 8−1059
HCl+He(Ar), press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
$HCl(\nu=1,2)+O(^3P_g)$, reaction and deactivation, laser-induced fluoresc. obs. 8−35669
HD^+, rot. excitation by slow electrons, calc. 8−5360
HD+HD, state-resolved rot. excitation differential cross sections, crossed pulsed beams techniques 8−17766
HD+He, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
HD+He, rot. excitation, classical trajectory study 8−25666
HF, electron bombard., rot. excitation, energy dependence of elastic and inelastic cross sections 8−37756
HF, IR chemiluminesc. quenching, (V-V) and (V-T, R) energy transfer rates 8−20018
HF, IR chemiluminesc. quenching, (V-V) energy transfer rates 8−20019
HF, IR laser induced collisional pumping 8−25629
HF, IR laser induced collisional pumping 8−25630
$HF(\nu_1,J_1)+HF(\nu_2,J_2)$ collisions, energy transfer, reaction rates 8−29844
H_2O, vibrational excitation by electron impact, threshold structs. 8−22038
$H_2{}^{18}O$, vibr. relax. rate consts., fluoresc. method determ. 8−17762
H_3O^+, rot. excitation by slow electrons, calc. 8−5360
$He+CO_2$, rot. and vibr. inelastic scatt., rot. IOS approx. calcs. 8−46433
He+CO(HCl), rot. excitation, classical and quantum calcs. 8−1059
$He+CO(HCl)(HCN)(N_2H^+)$, scattering cross-sections, factorisation and fitting, IOS approx. 8−33575
$He+H_2$, collisional dissoc., quasiclassical trajectory calcs. 8−42172
$He+H_2$, distorted wave integrals approx., analytic formulae 8−42175
$He+H_2$, vibr.-rot. relax., high temp., exponential distorted wave technique 8−37721
$He+H_2$ (CO_2), rot. inelastic, moments of final state distrib., direct method 8−33562
$He+H_2$ (O_2), rot. cross-section, exponential distorted wave and effective Hamiltonian 8−37709
$He+H_2$ rot. and vibr. distorted wave integrals, stationary pt. struct. 8−46436
He+HD collisions, single quantum rot. excitation by pulsed molecular beams 8−29840
$He+N_2(CO)(O_2)$, vibr. state distrib., charge exchange 150-2400 eV 8−42195
$He+O_2$, long lived collision complexes, exact classical and quantum mech. calcs. 8−33576
He^++H_2, dissoc. charge transfer, vibr. enhancement 8−33597
He_2, electronic and rot. energy relax., reactive collisions by isotope selective excitation 8−33541
$I\ (5^2P_{1/2})+HBr$, reactive and inelastic channels rate, temp. depend., AAS obs. 8−35657
I_2, excited by circ. polaris. light, mol. collisions, emission depolaris. 8−33577
ICl, IF, fluoresc. decay lifetimes and quenching cross-sections for excited $B^3\Pi(0^+)$ states 8−1030
$K+N_2(H_2)(O_2)$, excited atom quenching, semi-empirical model 8−1065
$K+NH_3$, rot. inelastic, time-of-flight spectra 8−5325
K_2, optically pumped, relax. in at. collisions 8−17765
$Li+N_2(H_2)(O_2)$, excited atom quenching, semi-empirical model 8−1065
$Li^++CO(N_2)$, differential cross-sections, classical trajectory calcs. 8−29841
Li^++H_2 8−9234
$Li_2(B^1\Pi_u)$+inert gas, rot. inelastic collision, classical trajectory calc. 8−1054
LiF, seeded in supersonic beam, vibr. relax. 8−37716
LiF, supersonic seeded molecular-beam, vibr. relax. 8−17761
LiH+Ar, rotationally inelastic cross-sections, state resolved, determ. 8−13577
N_2, afterglow plasma, interaction with glass, Cu, steel walls, calorimetric method obs. 8−14177
N_2, collision induced far IR absorption at high press. 8−5161
N_2, electron scatt. ground state vibr. levels population 8−1093
N_2 free jet expansion, rot. level population kinetics, electron-beam diagnostics 8−5776
N_2, gas with clusters, free expansion, upper rot. levels population *(Russian)* 8−33581
N_2, glow discharge, ionis. mechanism 8−13613
N_2, in CO_2-N_2-He laser, electron impact excitation, V-V resonant transfer 8−5452
N_2, nonequilibrium dissociation rates in electrical discharges, temp. depend. 8−33447
N_2-Ar plasma, coupled thermal-chem. relax., thermodynamic nonequilib. 8−34265
$N_2+Ar^*(^3P_{0,2})$, rot. and vibr. energy transfer, relative reaction rates 8−9233
$N_2+N_2(CO)$, in matrix, vibr. energy transfer and relax. 8−46426
N_3, moist, sound tube meas. of relaxation freq. 8−1058
NCO, $A^2\Sigma$ state, Fermi resonance and vibr. relax. in solid Ar 8−5212
NH_3, mol. alignment relax. rate, laser saturation reson. technique 8−25755
NH_3+H_2O, collision-induced energy transfer, IR-microwave double reson. obs. 8−42171
NH_3+NH_3, vibr. and rot. energy transfer, IR-microwave double reson. study 8−46432
NO excited state vibrational energy transfer, for optoacoustic spectroscopy 8−37724
NO, fundamental intensity and linewidth of IR absorpt. spectra, press. broadening 8−25530
$NO+O_3$, (001), laser enhanced reaction, temp. depend., reactive and nonreactive channels 8−48642

molecular rotational-vibrational energy transfer continued
$NO+O_3(001)$, laser-enhanced reaction, rates, temp. depend. 8−48675
$NO+O_3 \rightarrow NO_2{}^*$, mol. beam chemiluminesc., kinetic and internal energy depend. 8−31638
$N_2{}^*+SO_2$, quenching of vibr. excited N_2, photoionis. detect. technique 8−46388
$Na+N_2$, rot. excitation and fine struct.-changing collisions 8−42176
$Na+N_2(H_2)(O_2)$, excited atom quenching, semi-empirical model 8−1065
O_2, dissoc. induction times, high-temp., exact simple model numerical calcs. 8−9230
O_2, dissociation rates, nonequilib., vibr. populations in elec. discharges 8−46427
$(O_2)_2$, struct., energy transfer, high resolution electronic spectra 8−25550
$(O_2)_2$, struct., vibr. relax., local modes, isotope effects 8−25669
OCS, collisional rot.-line widths and shifts, microwave region 8−25619
OCS mixtures, rot. energy collisional transfer, M-depend., microwave double reson. 8−46435
$OCS+CO_2$, collisional line broadening of microwave spectra, semiclassical theory 8−29776
$OCS+CO_2(H_2)(N_2)(OCS)$, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
OH $(A^2\Sigma^+)+H_2(N_2)(Ar)$, collisionally induced population change rates, laser-induced fluoresc. obs. 8−5326
$OH+H(H_2)$, rot. excitation in interstellar medium 8−4306
SF_6 laser isotope separation, rot. and vibr. relax. in mixture 8−25634
SF_6, vibrational-translational relaxation, depend. on intensity of selective laser excitation *(Russian)* 8−9235
SF_6+NO+O_3, laser sensitised reaction, time-resolved $NO_2{}^*$ emission obs. 8−20017
$SO_2+H_2O(N_2)(SO_2)$, linewidths, intensities, isotope shifts, 91.5-95.5 GHz 8−42044
$SO_2+O(^3P)$, vibr. excited, collision induced intramol. deactivation 8−25670
SiO, nonmaser emission lines from expanding envelopes around evolved stars 8−28650

molecular rotational-vibrational states *see molecular rotation-vibration*

molecular spectra
see also macromolecular spectra; molecular fluorescence; molecular rotation; molecular spectral line breadth; molecular vibration; multiphoton spectra; optical double resonance; radiative corrections; spectra of inorganic molecules; spectra of organic molecules and substances
$^1\Sigma$ state, anomalous Zeeman effect, Doppler-free standing wave saturated resonance, book contrib. 8−9279
absorption, emission, linebreadths, EM radiation interaction with atoms and mols. 8−13448
adsorbed molecule, IR multiple refl. spectra recording via cuvette attached to UR-20 spectrophotometer 8−298
beams, monokinetic spectroscopy *(French)* 8−25751
book, summaries and reviews of recent work, fields of interest 8−21894
Born-Oppenheimer approx., IR absorption, circ. dichroism using vibronic gauge function 8−967
collision free triplets, spectrum, temporal evolution 8−33441
compressed gases, intermol. interactions, translation absorption spectra, temp. depend. 8−46419
diatomic radiative transitions, electronic-vibr. dipole moment, band strength 8−46400
electronic spectra, parity nonconservation effects *(Russian)* 8−13488
electronic spectra, vibr. struct. determ. by Franck-Condon method, book contrib. 8−21911
emission and absorption, RF and visible regions predictions from dressed-molecule theory 8−42124
fragmentary composition, determ. by IR, EPR and US mag. reson. spectra *(Russian)* 8−13624
Franck-Condon integral for bound-free transitions between harmonic and flat pots. 8−969
Fues potential, vibr.-rot. spectra, Schrodinger eqn. soln., pot. energy curves *(Spanish)* 8−36784
full quantum mechanical theory, mol. eigenstates generator coordinate method 8−21895
high-temperature molecules, matrix isolation spectra, review 8−46340
interstellar molecules, matrix isolation spectra, review 8−46340
IR lasers and laser techniques in mol. spectroscopy, book contrib. 8−8455
IR molecular absorption spectra, effect of rotational coupling on torsional bands 8−13497
least-squares parameters, rounding errors 8−158
matrix isolated molecules, vibr. relax. 8−46425
molecular, electronic spectra, projected-unrestricted Hartree-Fock theory 8−46313
molecular ions, gas phase, spectroscopic props, review 8−33501
molecule, intensities dipolaris. ratios, polarisability, matrix rotation, isotopic rules 8−5288
molecules, distortions of decay curves in delayed coincidence techniques 8−17620
N-level molecules, coherent dynamics, anal. solns. 8−22105
N-level molecules, coherent dynamics, numerical expts. 8−22104
polyatomic molecule, quasicontinuum, coherent and mode selective excitation by laser pulse 8−1032
polyatomic molecules, excited state spectra, vibronic coupling, nonadiabatic model 8−25509
quantum dynamics in effective system states basis, not in radiation field, perturbation theory 8−33499
Quasimolecule formation in heavy ion collisions *(Russian)* 8−33568
Raman excitation profiles and mol. spectra synthesis, vibronic and exciton-in-mol. theory 8−42076
Raman selection rules, spin degeneracy and vibronic states 8−987
RF field, modulated amplitude, transition probabilities oscills. *(French)* 8−42039
RF spectroscopy, interference effects *(French)* 8−42038
Rydberg spectra, resonance line shape 8−17720
scattering by EM field 8−954
spectroscopic constants, merging results of separate least-squares fits 8−5195
spherical top molecules, IR spectra, diagonal $F^{(4)}$ and $F^{(6)}$ coeffs., computer listing 8−17669
superheavy quasimolecules, electronic states, spectroscopy 8−37706
transition probability studies, review of recent advances 8−17655

molecular spectra continued
UPEAK spectral decomposition routine 8−32798
vibrational spectra calculations, mol. fragments effects *(Russian)* 8−5203

molecular spectral line breadth
absorption, emission, linebreadths, EM radiation interaction with atoms and mols. 8−13448
acetic acid-d_0, -d_1, -d_4, H bonding in solid, IR spectra, vibr. and librational modes 8−43843
acetonitrile, ν_2, ν_3 and $2\nu_3$ bands, vibr. relax., Raman spectra of liq. and dil. soln. 8−9154
acetylene, Q-branch of CARS, form and width alteration due to press. *(Russian)* 8−29795
alkali-inert gas system, mol. band profiles of induced dipole transitions 8−42135
anthracene, melt and dil. soln., UV spectra, line broadening and shift vibr. struct. 8−17684
bacteriochlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
benzene, reson. Raman cross sections, forbidden electronic transitions, depolaris. ratios 8−42075
benzene, vibr. relax. in soln., ν_1 C-H stretching band Raman spectra 8−25540
bromomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
carotenoids related to visual chromophore, electronic struct., band shape model 8−20142
chlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
chromophore aggregates, circular dichroism spectra, calc. involving band shape 8−46478
collision broadening, approx. trajectories calc. 8−46413
cyanomethane, collisional rot.-line widths and shifts, microwave region 8−25619
diatomic molecules, shifts and widths of predissoc. levels 8−5304
diatomic molecules, spectral line collisional broadening, numerical method 8−25622
diatomic polar molecules, in simple liquids, interactions, far IR absorpt. spectra 8−25527
dimers, bandshape prediction, incoherent exciton scatt. model 8−42132
ethylene glycol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
fluorescence spectra, synchronously excited, peak wavelength and intensity prediction 8−20082
heavy-ion collision, quasimolecular L X-rays, relativistic self-consistent correlation diagram 8−5247
indane, 271 nm spectrum, rot. band contour anal., puckering vibr. 8−1001
inert gas+$CO(O_2)(N_2)$, state-to-state rates from press.-broadened linewidths, data reduction method 8−46430
inorganic molecules, UV photoelectron spectroscopy, spectral assignment criteria, bonding 8−17717
iodomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
iodomethane, collisional rot.-line widths and shifts, microwave region 8−25619
IR and Raman band contours in soln., self-assoc. and complex form., book contrib. 8−21931
IR band shapes, reson. relax. effects 8−13576
IR molecular absorption spectra, effect of rotational coupling on torsional bands 8−13497
matrix isolated molecules, IR spectral line broadening, theory 8−46332
methane, 4350-10600 Å bands, intensity profile, vibr. assignments, rel. to major planets spectra 8−42084
methane, in major planets atms., Raman scatt. profiles 8−28571
methanol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
methylene, singlet-triplet splitting, ab initio calc. 8−5128
molecular, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
naphthalene, vap., Doppler free two-photon absorption spectra 8−5307
polyatomic molecules, vibr. spectrum, intermolecular interaction effects *(Russian)* 8−37621
porphin, free base, in n-octane crystal, S_1 from S_0 transition, freq. shift and dephasing temp. depend. 8−25584
porphyrin free base in n-octane, $S_1 \leftarrow S_0$ transition homogeneous linewidth, photochemical hole burning 8−7217
Raman excitation profiles and mol. spectra synthesis, vibronic and exciton-in-mol. theory 8−42076
Raman scattering, reson., coherent, lineshape, 3rd order nonlinear optical susceptibility 8−42378
resonance absorpt. line shape, coupling strength incoherence 8−17721
resonance line shape in Rydberg spectra 8−17720
RF mol. beam electric reson., interference effects *(French)* 8−42038
rotational band, line shape, collisional broadening, impact approx. 8−42134
rotational line width of vibr. bands, self- and foreign gas-broadening 8−33552
saturation spectroscopy, with delayed pulses, Lamb dip profiles 8−21221
solution, excess electron optical absorption spectrum model, band shape 8−33500
sultams, characteristic band in IR region, Raman obs. 8−29784
symmetric top mol., overlapping press. broadening, nonreson. microwave absorpt. line radii 8−17662
tetrafluoromethane, spectral shape of collision-induced scatt. 8−37687
s-tetrazine-benzene, mixed cryst., 2K, lifetime limited photochem. hole burning 8−9183
thioamides, characteristic pattern in IR and Raman spectra 8−29818
transient signals, saturation dips 8−18020
trichloromethane, and -d_1, liq., vibr. relax., Raman spectra 8−19471
two- and three-photon resonances, Doppler-free power broadening 8−5308
two-photon spectra, Doppler-free, occurrence of split spectra 8−292
CO, inner-valence ionisation, correl effects calcs. 8−9198
CO, microwave spectral line profiles, rotation effects in CRL 437 peculiar IR source 8−45426

molecular spectral line breadth continued
CO+Ar(CO), rot. band, line shape, collisional broadening, impact approx. 8−42134
CO+He, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
CO_2, lifetimes from collision induced absorption spectra, IR line broadening 8−33554
CO_2+Ar, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
chloromethane, collisional rot.-line widths and shifts, microwave region 8−25619
D_2, $G(3d)^1\Sigma_g^+$ and $g(3d)^3\Sigma_g^+$ singlet-triplet anticrossing 8−42138
H_2, lifetimes from collision induced absorption spectra, IR line broadening 8−33554
H_2-inert gas, bound complex form., anisotropic intermol. pot., IR spectra anal. 8−37634
HBr-Ar, IR fundamental region, line intensity, line breadth, tunable laser meas. 8−46328
$(HBr)_2$, intermol. distances, dipole moments, MINDO/3 and IR intensities and shifts calcs. 8−46335
HCN+HCN, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
HCN+He, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
HCl+He(Ar), press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
$(HCl)_2$, intermol. distances, dipole moments, MINDO/3 and IR intensities and shifts calcs. 8−46335
HD, Q-branch band shapes, motional narrowing and overlapping effects 8−29785
HD+He, press. broadening, rot. energy transfer, infinite order sudden approx. 8−22011
HNO_3, high resolution spectral meas. of 11.3 μm band, using tunable diode lasers 8−33504
HNO_3, spectral linewidth, broadened in air, O_2 and N_2 at 200 and 300K 8−46399
H_2O, IR line intenisties and widths, ν_2 rot.-vibr. band 8−9200
H_2O, spectral line shape changes in vapour with buffer gas *(Russian)* 8−46402
$H_2O(D_2O)$, VUV absorption spectra, Rydberg series, rot. line shapes, quantum defect 8−5244
N_2 inner-valence ionisation, correl effects calcs. 8−9198
N_2, liquid, Q-band position, width in cryogenic mixtures *(Russian)* 8−46401
NH_3, collisional broadening, vel. depend., IR optical saturable absorpt. technique, book contrib. 8−9201
NH_3, decay of saturation reson., IR ν_2 as Q(8,7) transition 8−25609
NH_3, linewidth parameter $\Delta\nu/p$ for the $J=13$, $K=13$ inversion line *(French)* 8−42131
NH(NF)(NCl), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
NO, fundamental intensity and linewidth of IR absorpt. spectra, press. broadening 8−25530
N_2O, IR absorpt. spectra, N_2-broadened lines of ν_3 band 8−5228
N_2O, IR combination band spectral emissivity, 1200, 1700, 1900K, shock tube obs. 8−5287
O_2, effective spin-spin parameter, ab initio calc. 8−9067
OCS, collisional rot.-line widths and shifts, microwave region 8−25619
OCS+CO_2, collisional line broadening of microwave spectra, semiclassical theory 8−29776
OCS+$CO_2(H_2)(N_2)$(OCS), collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
$OH(^2\Pi)$, rot and translational temps. in gas discharge 8−5243
PH(PF), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
S_2, effective spin-spin parameter, ab initio calc. 8−9067
SF_6, vibr. Raman spectrum, Q branches shapes 8−42077
SO_2, effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
$SO_2+H_2O(N_2)(SO_2)$, linewidths, intensities, isotope shifts, 91.5-95.5 GHz 8−42044
SeF_6, IR vibr. band contours, isotope substitution, force consts. 8−17670
SiC, Si K_α X-ray emission spectra chemical shifts, linewidths and intensities 8−13461
SiH_4, ν_4 fundamental, laser sideband direct freq. reading IR spectra, electro-optical, press. broadening 8−21920
Si_3N_4, Si K_α X-ray emission spectra chemical shifts, linewidths and intensities 8−13461
SiO_2, Si K_α X-ray emission spectra chemical shifts, linewidths and intensities 8−13461
Sn_2, matrix isolation Raman spectrum, overtone bands breadth 8−33515
XeF_6, UV absorpt. band shape 8−5289
$ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831

molecular structure (electronic) *see molecular electronic states*

molecular structure (geometrical) *see molecular configurations*

molecular vibration
see also Fermi resonance; molecular force constants; molecular rotational-vibrational energy transfer; molecular spectra; molecular vibration calculations; molecular vibration in solids; potential energy curves and surfaces of molecules; potential energy functions
-- 8−21926
acenaphthene in n-alkane matrices, Shpolskii spectra fluorescence 8−9190
acetylene, adsorbed on Ni (111), vibr. spectra from electron energy loss *(French)* 8−34696
acetylene, chemisorbed on W, IR vibration spectroscopy 8−14603
acetylene, IR spectra, rot. and vibr. struct. 8−21922
acetylene, Q-branches, high resolution pulsed CARS 8−17676
adsorbed molecules on metal surface, inelastic scatt. of electrons, model 8−34718
alanine-d_3, vibr. circ. dichroism, mechanism 8−33505
alkyl sulphides, C-S stretching vibrs. 8−25533
amplitudes, mean square, extreme value determ. appl. to 1,3-butadiene 8−25507
aniline, prereson. Raman effects, intensity enhancement mechanism 8−42069

molecular vibration continued
anisole and -d_3, Raman spectra, low freq. vibrs., torsional barrier 8−25543
anthracene, melt and dil. soln., UV spectra, line broadening and shift vibr. struct. 8−17684
atom-diatom van der Waals complex, Born-Oppenheimer separation of radial and ang. motion 8−29828
benzaldehyde, prereson. Raman effects, intensity enhancement mechanism 8−42069
benzaldehyde derivatives, Raman intensities obs., phenyl ring-carbonyl group conjugation 8−29792
benzaldehydes, in mixed cryst., T_1/T_2 interstate interactions, modulation polaris. phosphoresc. spectra, 4.2K 8−9185
benzene, chemisorbed on Ni(100) and (111), LEED and high resoln. EELS 8−6224
benzene, Jahn-Teller active states, vibronic struct., vibr. perturbation, spectral obs. 8−13440
benzene, normal vibr. anal. 8−13487
benzene($-d_6$), prereson. Raman effects, intensity enhancement mechanism 8−42069
benzene-^{13}C, liq., vibr. spectra, band assignments 8−13500
benzenes, trisubstituted, valence force fields, normal modes of planar vibrations *(French)* 8−37626
benzoic acid, dimer, cryst., IR and Raman spectra, vibr. assignments 8−31191
book, summaries and reviews of recent work, fields of interest 8−21894
Born-Oppenheimer approx., IR absorption, circ. dichroism using vibronic gauge function 8−967
Born-Oppenheimer approx., IR absorption, vibr. intensity using vibronic gauge function 8−966
bromanil and radical anion, Raman and IR freq. shifts 8−33516
1-bromo-2,3 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2,4 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2,5 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2,6 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
2-bromo-4-nitrotoluene, IR absorpt. spectra, vibr. assignments 8−42048
2-bromo-5-nitrotoluene, IR absorpt. spectra, vibr. assignments 8−42048
bromodifluoromethyl radical, IR matrix isolation spectrum, stretching fundamentals 8−27788
α-bromotoluene, liq., IR absorpt. spectrum 8−979
1,3-butadiene, molecular vibration, mean. square amplitude, extreme value determ. 8−25507
1-butanol, IR and Raman spectra, vibr., conformers 8−25532
t-butyl alcohol, struct. determ. from vibr. spectra, H-bonding and heat of mixing *(Russian)* 8−3368
C_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
carbon tetrafluoride, compressed gas, ν_1 vibr. Raman line 8−32884
cellobiose, vibr. spectrum, freq. calcs. *(Russian)* 8−21909
chemical reactions in mixture of mol. gases by cooling translational-rotational degrees of freedom, stimulation 8−7202
chloranil and radical anion, Raman and IR freq. shifts 8−33516
2-chloro-3-fluoro-1-propene, struct. and conformers, force field and vibr. amplitudes 8−25747
4-chloro-3-nitrotoluene, IR absorpt. spectra, vibr. assignments 8−42048
chloroethane-d_1, laser multiphoton dissoc., intramolecular isotope effect 8−17733
chloromethane-d_3, and isotopic forms, optically pumped mm laser transition assignments, 792 micron line 8−42328
2-chloropropane, conformation, vibr. spectrum, from simple harmonic force field 8−33494
circular dichroism, vibr. anharmonic effects 8−29769
complex molecules, reson. Raman spectra, vibr. scatt., review 8−37644
core electron ionis., vibronic coupling, symmetry breaking, vibr. struct. 8−5279
decanoic acid, mol. config. change in cryst., IR spectra, normal coord. anal. 8−33506
decyloxybenzoic acid, vibr. bands., IR dichroism, phase change effects *(Russian)* 8−15174
diatomic gas, vibr. nonequilib. radiation, master eqn. approxs. 8−33496
diatomic gas, vibr. nonequilib. radiation 8−33495
diatomic molecule, electron impact dissociation by vibrational excitation *(Russian)* 8−1096
diatomic molecule+solid surface, energy transfer, internal vibr. energy effects 8−35234
4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
dibromofluorobenzene, IR absorpt. spectra, vibr. assignments 8−17665
dibromomethane, IR spectra, local mode description for overtone spectra 8−42047
dichlorobromobenzenes, IR absorpt. spectra, vibr. assignments 8−17665
dichlorofluorobenzene, IR absorpt. spectra., vibr. assignments 8−17665
dichloromethane, IR spectra, local mode description for overtone spectra 8−42047
1,2-difluoroethane, gauche-trans conformers, IR and Raman spectra, vibr. 8−17667
1,1-difluoroethylene, optically pumped mm laser transition assignments 8−42328
difluoromethane, IR spectra, local mode description for overtone spectra 8−42047
dihalogenoacetylene radical cations, $C_2X_2^+$, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17679
diiodomethane, IR spectra, local mode description for overtone spectra 8−42047
dimethylallene, excited states, microwave spectrum and strong Coriolis coupling 8−9141
dimethylboric anhydride, IR and Raman spectra, vibr. and struct. 8−25531
trans-dimethyldiazene-1, 1, 1-d_3, IR and Raman spectra, vibr. assignments and pot. functions 8−33507

molecular vibration continued
trans-dimethyldiazene-d_0,d_6, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
3,3-dimethyloxetan, far IR spectra, ring puckering vibration 8−42058
dimethylphosphine, microwave spectra, internal rot. barrier 8−5205
dye solutions, mixed, energy transfer and conc. depolarisation of fluoresc. 8−25583
electronic spectra, vibr. struct. determ. by Franck-Condon method, book contrib. 8−21911
erythrosine dye, vibrational decay and fluoresc. in S_1 excited state 8−25605
ethane, force consts., vibr. stress and isotope effects 8−21897
ethyl alcohol, solution, struct. determ. from vibr. spectra, H-bonding and heat of mixing *(Russian)* 8−3368
ethylene, adsorbed on Ni (111), vibr. spectra from electron energy loss *(French)* 8−34696
ethylene glycol, IR spectra, ab initio calcs., vibr. anal., conformations of isotopic modifications 8−5210
fluoroacetylene, and -d_1, vibr. Zeeman effect, g-factors 8−46391
2-fluoroethanol-d_0,-d_1, IR spectra in Ar, N_2 and Ar-N_2 matrices, normal coordinate anal. 8−25538
fluoromethane, laser pumped, overtone fluoresc., intermode energy flow 8−37673
fluoromethane+D(H)(O), reactions, selective vibr. excitation effects 8−35643
fluoromethane-d_3, laser Stark spectra, ν_6 band, vibr.-rot. consts., dipole moment 8−5277
fluoromethanes, dipole moment derivatives and infrared intensities, transferable polar tensors 8−17668
2-fluoropyridine, IR and Raman spectra, vibr. assignments 8−25534
force field representations, vibr. stress, isotope effects and struct. of ethane 8−21897
formaldehyde, IR spectra, Coriolis-coupled ν_4, ν_6 and ν_3 fundamental bands 8−5227
formyl chloride, photoelectron spectrum, vibr. struct., ionis. pots., assignments 8−9195
gas in electric discharge, vibr. excited, sound propag. 8−18370
gas-solid surface sticking probabilities, internal mode depend. 8−6213
glycylglycines, isotope substituted, IR and Raman vibr. spectra 8−42051
halogenoacetylene radical cations, C_2HX^+, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17678
heat capacity and entropy, mol. without internal rot., MINDO/3 calc. 8−33450
hydrocarbons on Pt and Ni, C-H stretch vibration, broadened and softened, dehydrogenation 8−47666
indane, 271 nm spectrum, rot. band contour anal., puckering vibr. 8−1001
iodomethane-d_3, ν_2 band, laser Stark saturation spectra 8−42125
2- and 3-iodopyridine, IR and Raman spectra, vibr. assignments 8−25534
ion-molecule reactions, vibr. energy effects on kinetics, phase space model 8−11508
isotope separation, by selective laser-induced mol. vibr. excitation effect on reaction kinetics 8−33627
liquid phase band contours, data processing, band shape corrections 8−27215
M-C-O deformation modes, no. and symmetry determ., group theoretical method, for teaching 8−11
methane, 4350-10600 Å bands, intensity profile, vibr. assignments, rel. to major planets spectra 8−42084
methane, rotational anal. of $(\nu_3+\nu_4)$ combination bands *(French)* 8−21900
methyl anion, pyramidal inversion pot. and inversion barrier, electron correlation 8−22050
methyl chloride, far IR laser lines, vibr. isotopic shift value 8−42055
methyl cyanide, isotopically substituted species, IR spectra, vibr. freq. displacements, harmonic pot. function 8−42057
methylcyclohexane:styrene-d_0, -d_3, -d_5, d_8, fluorescence meas., 77K 8−25606
methyldisilylamine, and -d_3, vibr. assignment and barriers to internal rot., IR and Raman spectra 8−13496
methylene fluoride, ν_9 fundamental band, 9.4-μm CO_2 laser Stark spectroscopy 8−9191
3-methylpentane, C-H stretching diagonal local mode anharmonicity, intermol. perturbation 8−25524
N-methylthioacetamide(-d_1), reson. Raman spectra obs. and mechanism 8−17672
model of AB_2 mol., for teachers 8−32633
molecule, intensities dipolaris. ratios, polarisability, matrix rotation, isotopic rules 8−5288
monochlorobenzene, prereson. Raman effects, intensity enhancement mechanism 8−42069
monohalobenzenes, circularly polaris. Raman spectra, vibr. symmetries assignment 8−29787
nonlinear molecules, bending vibrs., correlated bender theory 8−37627
octamethylcyclotetrasilazane, gas, liq., cryst., CCl_4 soln. IR and Raman spectra, assignments, struct. *(French)* 8−29790
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
perdeuteropolyethylene, IR and Raman intensities by electro-optical parameters, single chain 8−1115
perfluoro-1,3-butadiene, vibr. spectra, struct. and barrier to planarity 8−9147
perylene, harmonic force fields, bond orders, normal coord. anal., mean amplitudes calcs. 8−25418
polyatomic molecule, selected fragment vibr. energy distrib. in dissoc. processes 8−1036
polyatomic molecules, vibr. spectra, theory *(Russian)* 8−13502
polyatomic molecules, vibr. spectrum, intermolecular interaction effects *(Russian)* 8−37621
polydimethysiloxane, conc. soln. in benzene, polarised Raman scattering 8−9286
polyethylene, IR and Raman intensities by electro-optical parameters, single chain 8−1115
pyrazine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
pyridine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
s-trans-3-pyridinecarbaldehyde, microwave spectrum, assignments 8−21912

molecular vibration continued
Raman selection rules, spin degeneracy and vibronic states 8−987
Raman spectra, reflection symmetry violation for crysts. and mols. 8−48184
resonances in vibrational struct. electron-molecule scatt. 8−17813
silacyclopentane, Raman spectra, pot. energy surface, barrier to interconversion 8−25541
spherical top molecules, IR spectra, diagonal $F^{(4)}$ and $F^{(6)}$ coeffs., computer listing 8−17669
tetrafluoromethane, ^{19}F chem. shielding, depend. on internal coords. 8−5249
tetramethylurea-d_0,-d_{12}, IR spectra, normal coord. anal. 8−978
s-tetrazine, visible absorpt. band assignment, vibr. anal. 8−994
thiophene, flash photolysis, new transient absorption spectrum, C_4H_3 radical, assignments 8−46354
1,2,3-timethoxybenzene, weak electronic transition, solid, and in rigid glass, UV assignments 8−17681
transition metal complex anions, ligand-bridged, binucl., reson. Raman spectra 8−42067
transition metal complexes, isothiocyanates with pyridine, far IR spectra, vibr. bands 8−25535
transition metal complexes, of 4-methylpyridine, IR and Raman spectra, vibr. anal. 8−25536
transition metal niobates, columbite struct., normal coord. anal. 8−964
trichloromethane, and -d_1, liq., vibr. relax., Raman spectra 8−19471
1,1,1-trimethoxyethane, mol. struct., electron diffr., vibr. spectra 8−37765
TTF-d_0, -d_4, IR and Raman spectra, vibr. assignments 8−23436
two-level system, in nonstationary field, fluctuation and relax. props. 8−33715
XY_2 nonlinear system, mol. dynamics calcs. 8−41975
XY_4, XY_3, mols., force field anal., parametric representation method 8−25503
$_2$, photoluminesc. spectrum, ^{31}P Fermi interaction, hyperfine struct. 8−33536
$Al+O_3 \rightarrow AlO+O_2$, chemiluminesc., $A^2\pi$-$X^2\Sigma^+$ transition obs. 8−31639
$AlCl_3$, matrix isolated, vibr. spectrum, struct., vibr. freqs. 8−46339
AlO, spectra, vibr. consts., pot. curves, Franck-Condon factors and r-centroids 8−42243
AsD_3, solid and liq., vibr. relax., Raman ν_1 band, 54, 160K 8−27198
BCl_2SH, BCl_2SD, Raman and IR spectra, barrier to internal rot. 8−5223
BF_3, ^{19}F chem. shielding, depend. on internal coords. 8−5249
BO_2, reson. fluoresc. assignment of vibr. and vibronic transitions 8−17663
Ba+trifluoromethyl iodide, BaI vibr. states bimodal distrib. 8−27743
BaF_2, force consts., mean amplitudes of vibr. 8−17647
BaI, visible spectra, 5200-5700 Å, vibr. consts. 8−25549
BaO, mm wave spectrum, spectroscopic consts. 8−37629
BrF_5, IR intensities, fundamental, overtone and combination band calcs. 8−29780
$BrO^+(X^3\Sigma^-)$, vibr. struct. of photoelectron spectrum 8−25612
1-bromo-1-chloro-1-fluoroethane(-2-d_1), IR and Raman spectra, vibr. assignments, normal coord. anal. 8−42053
C_2, reson. fluoresc. statistical equilib. calc., appl. to comets 8−1016
CF_2Br^+, CF_2Cl^+, IR spectra, matrix isolation study, C-F stretching fundamentals 8−37632
CN, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
CO, adsorbed on Ni, high press., low temp. Raman spectra 8−6219
CO, adsorbed on Ni (111) face, CO stretching vibr., high resolution electron loss spectroscopy 8−14605
CO, chemisorbed on Ni(111), vibr. spectra from electron energy loss spectra *(French)* 8−22951
CO, chemisorbed on Pt {111}, IR spectra, evidence for strong absorbate coupling interactions 8−14604
CO, chemisorbed on W, IR vibration spectroscopy 8−14603
CO, chemisorption on Pt (111) and Ni (100), (111), C-O bond lengths, electronic struct. 8−6210
CO, dipole moment expsn. determ. from vibr. intensities *(French)* 8−42240
CO, emission intensity, CS_2-O_2 flame, rate of population of CO vibr. levels 8−7186
CO isotopes in Ar matrix, vibr. energy accumulation 8−13485
CO liq. and CO-O_2 (N_2)(Ar) mixtures, polarised vibr. Raman scatt. lineshapes 8−27199
CO^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
$^{12}C^{16}O$, in Ar matrix, vibr. population time evolution temp. depend., master eqn. 8−9180
CO_2, 3.8 eV resonance, vibr. struct. in electron-molecule scatt. 8−17813
CO_2, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
CO_2, core electron ionis., vibronic coupling, symmetry breaking, O1s line vibr. struct. 8−5279
CO_2, reson. electron impact vibr. excitation, 3-5 eV 8−25726
$^{13}C^{16}O_2$, Q-branch spectrum of $(01^{1d}0$-$00^00)$ transition 8−42061
$CO_2{}^+(C^2\Sigma_g{}^+)$, formation and predissoc., photoelectron spectra 8−5300
COF_2, laser excited IR fluoresc. C=O and C-F stretching modes 8−21960
COS^+, photoionis. reson. study of $(^2\Pi)$ and $(^2\Sigma^+)$ states, vibr. freqs., ionis. pot. 8−29821
$CS_2{}^+$, photoionis. reson. study of $(^2\Pi)$ and $(^2\Sigma^+)$ states, vibr. freqs., ionis. pot. 8−29821
CaF_2, force consts., mean amplitudes of vibr. 8−17647
$CaNb_2O_6$, columbite struct., normal coord. anal. 8−964
$CdNb_2O_6$, columbite struct., normal coord. anal. 8−964
CeF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8−17650
Cl_2, resonance Raman spectrum, Q-branches of $^{35}Cl_2$ and $^{35}Cl^{37}Cl$ 8−25542
ClCF radical in solid Ar, emission and excitation spectra, vibr. anal. 8−9164
ClONO, form., reaction kinetics, IR spectra 8−35641
$Cl_3SiOSiCl_3$, normal vibs. and force field, calcs. using electron diffr. struct. determ. *(Russian)* 8−46317
Cu complex, glycylglycine, isotope substituted, IR and Raman vibr. spectra 8−42051
D_2, G, K double-minimum excited state, vibr. eigenvalues 8−33442
D_2, Q(2) line, absolute Raman freq. meas. using CW CARS 8−29794

molecular vibration continued
DCN, dipole moment, relative sign w.r.t. normal coords. 8−46457
DCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
DCl and $(DCl)_2$, matrix isolated Raman spectra 8−42063
D_2O, collective excitations in 10^8 cm^{-1} momentum range, neutron scatt. expt. 8−43087
D_2O, vac. UV absorption spectra, Rydberg series vibr. anal. 8−42093
$D_2{}^{16}O$, IR spectra, ν_2 band, rot. struct. 8−982
FCN, IR laser Stark spectra, C-F stretching mode, dipole moments, rot. consts. 8−1022
$FeBr_4{}^-$, circularly polarised Raman spectra, spin-orbit induced vibr. antisymmetry 8−5232
GeF_2, force consts., mean amplitudes of vibr. 8−17647
$GeO_4{}^{4-}$, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
Ge_3O_3, isotopically substituted, IR freq. and intensity patterns 8−21926
$H+ICl \rightarrow HCl+I$, IR chemiluminesc., product energy distrib. 8−23926
H_2, electron energy loss spectra, $B^2H_u{}^+$ state cross sections, Franck-Condon factors 8−13616
H_2, G, K double-minimum excited state, vibr. eigenvalues 8−33442
H_2, photoionisation cross-section, calc. for vibr. excited mol. 8−17732
H_2+Ar, Arrhenius dissoc. activation energy, vibr. depend., trajectory calc., 4500K 8−35662
$H_3{}^+$, photofragmentation vibr. energy levels and wavefunctions calcs. 8−42143
HCN, dipole moment, relative sign w.r.t. normal coords. 8−46457
HCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
HCN, laser plasma, microwave spectra of excited vibr. states 8−17656
$(HCN)_2$, IR spectra in Ar matrix, vibr. bands, H-bonds 8−29782
HCO, IR spectra of ν_2 fundamental, laser elec. reson. 8−5226
HCl and $(HCl)_2$, matrix isolated Raman spectra 8−42063
HD, dipole spectrum, influence of intracollisional interference 8−33492
HD, G, K double-minimum excited state, vibr. eigenvalues 8−33442
$H_2(D_2)(HD)$ chemisorbed on Ni (100), vibr. excitation and struct., electron energy loss spectra 8−47660
HF, fragmentation, enhanced vibr. excitation effect, mass spectra 8−20004
HF, IR absorption in Born-Oppenheimer approx., vibronic gauge function for vibr. intensity 8−966
HO_2 radical, near IR emission bands, vibr. and vibronic transitions 8−37633
H_2O, collective excitations in 10^8 cm^{-1} momentum range, neutron scatt. expt. 8−43087
H_2O, vac. UV absorption spectra, Rydberg series vibr. anal. 8−42093
H_2O, vibr. Raman scatt. signature in flames 8−25539
$H_3O^+(H_2O)_n$, H^+ motion energetics, ab initio calcs. 8−25413
$H_3O^+(H_2O)_n$, IR spectra, OH stretching vibrs. 8−25529
I_2, in CCl_4 and cyclohexane solns., higher vibr. levels, dephasing lifetimes, from reson. Raman spectrum 8−42068
IF_5, IR intensities, fundamental, overtone and combination band calcs. 8−29780
$IrCl_6{}^{2-}$, circularly polarised Raman spectra, spin-orbit induced vibr. antisymmetry 8−5232
$(IrCl_6)^{2-}$, electronic Raman spectra, spin-orbit components of ground state, vibr. 8−5231
$K+I_2(IBr)(Br_2)(ICl)(Cl_2)$, ion-pair form., bond stretching effect on cross sections 8−1064
$K_2[B_{12}D_{12}]$, in aqueous soln., laser Raman spectra 8−15158
$K_2[B_{12}H_{12}]$, in aqueous soln., laser Raman spectra 8−15158
KrF*, bound-free emission spectra, simulation 8−29806
LaF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8−17650
Li_2, far UV photoabsorpt. spectra, core-excited states and CI calcs. 8−37655
Li_3F_3, isotopically substituted, IR freq. and intensity patterns 8−21926
$Li^+NO_3{}^-$ ion pairs and hydrated ion pairs, MO calcs., matrix isolation data 8−46267
MgF_2, force consts., mean amplitudes of vibr. 8−17647
$MgNb_2O_6$, columbite struct., normal coord. anal. 8−964
N_2, 2.4 eV shape resonance, vibr. struct. in electron-molecule scatt. 8−17813
N_2 (C $^3\Pi_u$) vibr. levels radiative lifetime, transition moment internucl. distance depend. 8−1027
N_2 discharge, non-Boltzmann vibr. level populations, CARS determ. 8−5968
N_2, inner shell $(1s)^{-1}(\pi 2p)^1\Pi$ state, energy, vibr. struct., electron impact investig. 8−13611
N_2, liquid, Q-band position, width in cryogenic mixtures *(Russian)* 8−46401
N_2, microwave discharge at high press., vibr. excitation *(French)* 8−14239
N_2, Q-branches, high resolution pulsed CARS 8−17676
N_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
N_2, vibr. energy diffusion coeff., 900-2000K 8−26227
$N_2{}^-$, vibr. autodetaching states, from H^-+H_2, excitation and decay, Franck-Condon factors 8−33620
$N_2{}^+$, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
N_2-Ar mixture, picosecond dephasing of coherently excited vibrations 8−22172
NF_3, IR spectrum in liquid Ar, vibr. anal. 8−21927
NH_3, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
NH_3, and -d_n IR matrix isolation spectra, rotation and inversion 8−5218
NH_3, inversion-vibration interactions, pot. energy function calcs., isotope effects 8−33567
$^{15}NH_3$, nucl. spin-spin coupling consts. calc., vibr. averaging effects 8−33521
NH_3-CO_2 complex, matrix isolation IR spectrum, struct., ab initio SCF calcs. 8−5209
$NH_3{}^{\cdot+}+H_2O \rightarrow NH_4{}^++OH^{\cdot}$, statistical phase space theoretical anal., vibr. depend. cross section 8−15660
$NH_3{}^{\cdot+}+NH_3 \rightarrow NH_4{}^++NH_2{}^{\cdot}$, statistical phase space theoretical anal., vibr. depend. cross section 8−15660
$NH_4I(ND_4I)$.dioxane complexes, Raman spectra, vibrs., H-bonding 8−25544
$(NH_4)_2S_5$, Raman spectra, vibrs. and rot. isomers of Sn^{2-} (n=4-8) *(German)* 8−13504

molecular vibration continued

NO, and isotopic forms, $X^2\Pi$ state, IR obs., mol. consts. 8−42045
NO, electronic spectrum, press. induced config. demixing 8−42090
NO, IR spectra in O_2 matrix, vibr. freqs. 8−23936
$(NO)_2$, IR spectra in O_2 matrix, vibr. freqs. 8−23936
NO_2, Ne matrix isolated, 6K, $B \leftarrow X$ band system 8−993
NO_2, vibr. excited, from nitroalkane photodissoc., fluoresc. obs. 8−37693
$^{14}N^{16}O_2$, IR spectra, $2\nu_2+\nu_3$ and $\nu_1+\nu_2+\nu_3$ bands, vibr. and vibr.-rot. consts. 8−983
N_2O, IR absorpt. spectra, N_2-broadened lines of ν_3 band 8−5228
N_2O, IR spectrum in liquid Ar, vibr. anal. 8−21927
N_2O_4, IR spectra in O_2 matrix, vibr. freqs. 8−23936
N_2O_5, IR spectra in O_2 matrix, vibr. freqs. 8−23936
$(NaCl)_n$ (n=1-7) equilib. configs., total energy calcs., far IR spectra 8−29872
$NbCl_5$, mol. struct., vibr. assignments, barries to pseudorotation 8−29858
$O^-+CO \rightarrow CO_2^++e^-$, vibr. chemiluminesc. 8−3340
O_2, $A^3\Sigma_u^+$, $C^3\Delta_u$ and $C^1\Sigma_u^-$ states in van der Waals solids, electronic spectra, dynamics 8−1000
O_2, excited state geometries and energies, ab initio pot. energy surfaces 8−5151
O_2, Q-branches, high resolution pulsed CARS 8−17676
O_2, Raman spectra of fundamental vibr. band, rot. consts. 8−21932
O_2^+, IR spectra, rot. anal. of b $\Sigma_g^- a^4\pi_u$ first negative band 8−5219
O_2^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
$(O_2)_2$, van der Waals mol., WKB vibr. eigenvalues 8−33498
O_3, combination bands $(\nu_1+\nu_2)$ and $(\nu_2+\nu_3)$, anal. 8−9150
O_3, Huggins bands, vibr. anal. 8−42085
OH, $(A^2\Sigma^+)$, abnormal rot. following H_2O photodissoc., semiclassical calcs. 8−40069
^{16}O, $^{18}O_2$, vac. UV absorpt. spectra, band intensities and designations 8−5245
O_2^*, vibrationally excited, study by variable temp. photoelectron spectroscopy 8−21972
PCl, visible and near IR emission, $A^3\Pi \rightarrow X^3\Sigma^-$ and $b^1\Sigma^+ \rightarrow X^3\Sigma^-$ systems vibr. anal. 8−21938
Pb_2, in Ar matrix, excitation and emission spectra, vibr. freq. 8−13507
Rb_2, $X^1\Sigma_g^+$ state, Raman spectra, fluoresc., vibr. energy 8−46345
S_4Cl_2, Raman spectra, vibrs. and rot. isomers of S_n^{2-} (n=4-8) *(German)* 8−13504
SF_6, collisionless fluoresc., 16 μm, following laser pumping, vibr. quasicontinuum 8−42111
SF_6, dynamics of 10.4 μm absorption, vibr. bath model 8−17666
SF_6, ground state, mol. consts., ν_2 Raman band calcs. *(French)* 8−9156
SF_6, inhibition of homogeneous condensation by vibr. excitation, isotope separation appl. 8−37688
SF_6, isotopically selective collisionless laser induced dissoc. 8−1037
SF_6, mean amplitude of vibr., from electron diffr. study 8−29859
SF_6, ν_3 Q-branch, CO_2 laser pumped 8−21924
SF_6, spectroscopic consts. calc. from saturated absorption spectrum *(French)* 8−971
SF_6, vibr. Raman spectrum, Q branches shapes 8−42077
SF_6, vibrationally excited, collisionless intramolecular energy transfer 8−37663
SPF_3 vibr. spectrum, assignment using matrix isolation and isotope substitution *(German)* 8−13498
$S(SiD_3)_2$, Raman spectra of gaseous, liquid, solid phases, IR spectra of gaseous and solid phases 8−25547
$S(SiH_3)_2$, Raman spectra of gaseous, liquid, solid phases, IR spectra of gaseous and solid phases 8−25547
SbO_4^{3-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
SeF_6, IR vibr. band contours, isotope substitution, force consts. 8−17670
SeO, IR bands of 10296 and 10491 Å, rot. struct. 8−5224
SiF_4, ^{19}F chem. shielding, depend. on internal coords. 8−5249
SiH_4, IR spectra, ν_2 and ν_4 band anal. 8−9153
$^{28}SiH_4$, analysis of ν_4 band interacting with ν_2 band *(French)* 8−9152
Si_3O_3, isotopically substituted, IR freq. and intensity patterns 8−21926
Sn_2, matrix isolation Raman spectrum, overtone bands breadth 8−33515
SnI_3^-, vibr. intensities, forms and freqs. anal. SCF MO LCAO CNDO calcs. 8−9274
SnO_4^{4-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
SrF_2, force consts., mean amplitudes of vibr. 8−17647
SrO, mm wave spectrum, spectroscopic consts. 8−37629
$TaCl_5$, mol. struct., vibr. assignments, barries to pseudorotation 8−29858
TeO_4^{2-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
TiF_2, force consts., mean amplitudes of vibr. 8−17647
Tl_2Cl_2, mol consts., IR and Raman freqs. assignments 8−17648
Tl_2F_2, mol. consts., IR and Raman freqs. assignments 8−17648
XeF, B-X transition vibr. anal., flash photolysis UV absorpt. spectroscopy 8−42088
XeO_2F_2, mean amplitudes of vibr. and molar thermodynamic functions 8−17649
XeO_3F_2, mol. consts., general valence force field calcs. 8−21906
YF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8−17650
$ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831
$ZnNb_2O_6$, columbite struct., normal coord. anal. 8−964

molecular vibration calculations

AB_2 and AB_4 molecules Raman overtone and combination transition intensities, bond-polaris. approach 8−42034
acetic acid dimer, vibr. spectra at low temp., Witkowski-Marechal theory 8−46314
acetylene, vibr. freqs., MINDO/3 calcs. 8−13429
benzene, vibr. freqs., MINDO/3 calcs. 8−13429
benzene-d_3, gas phase Raman spectrum, E′ and E″ species, Coriolis consts. *(French)* 8−5235
cyclobutadiene(-d_1), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8−13429
diatomic long-range molecules, highly vibr. excited state 8−29768
diatomic molecule, vibrational wave function, anal. expressions of canonical functions *(French)* 8−21901
diatomic molecule, with ang.-depend. pot., vibr. matrix element calcs. *(French)* 8−13484

molecular vibration calculations continued

diatomic molecules, Franck-Condon factors for high J, Morse oscill. calcs. 8−37548
diatomic molecules, soluble potential 8−21996
dissociating molecule, vibr. spectra, nonradiative transitions *(Russian)* 8−21864
energy distribution in vibr. systems, coordinate choice 8−21903
ethane, vibr. freqs., MINDO/3 calcs. 8−13429
ethylene, vibr. freqs., MINDO/3 calcs. 8−13429
harmonic oscillator basis, arbitrary pot., matrix elements 8−5199
kinematic anharmonicity in exact and approx. coords., H_2O molecule example 8−17653
Lennard-Jones mol., WKB vibr. energy level calc. 8−9057
methane (-d_1,d_2,d_3,d_4) Raman electro-optical parameters, overlay least squares calcs. 8−42105
N-methylcarbamoyl chloride(-d_1), vibr. spectra, normal coord. anal. 8−33497
methylene, photoelectron spectra, singlet and triplet state calcs. 8−42127
MNDO calculations, vibr. freq. 8−25508
Morse oscillator, 1-D, semi-analytic solns. for wavefunction and energy 8−25502
multilevel system, band type, excitation dynamics in laser field *(Russian)* 8−21980
MXY type molecules, vibr. isotope effect 8−25506
partition function, upper and lower bounds, for mols. with double min. pots. 8−42032
polyatomic molecule, quasicontinuum, coherent and mode selective excitation by laser pulse 8−1032
polyatomic molecule, transform. of complete electron-nuclear Hamiltonian to intramolec. coords. 8−9054
polyatomic molecules, particle displacement momenta, quantum equilib. distrib. 8−32751
polyethylene(-d_4), vibr. freqs., MNDO semiempirical SCF calcs. 8−1114
2-pyridone, dimer, vibr. Hamiltonian for IR spectra of H bonding 8−37620
symmetry coordinate construction method, atomic orbital symm. of point group, M_4X_6 8−46312
tetrahedral molecules, thermodynamic isotope effect 8−20000
2-thiapyridone, dimer, vibr. Hamiltonian for IR spectra of H bonding 8−37620
triatomic molecules, vibr. energies, wavefunctions, ab initio calc. 8−17652
trigonal planar molecules, thermodynamic isotope effect 8−20000
trimethylantimony(V) dihalides, normal coord. anal., comparison of force fields 8−968
two linear harmonic oscillators, coupled by interaction pot., SCF calc. 8−37625
vibrational spectra calculations, mol. fragments effects *(Russian)* 8−5203
vibronic coupling, totally symmetric harmonic mode, exactly solvable model 8−21896
XY_3 pyramidal mols., intramol. forces, fundamental vibr. freqs., centrifugal distortion consts., PF_3 appl. 8−5202
BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
BX_3, (X=Br, Cl, F), ellipticity of symm. force field, force consts. 8−17646
CO_3, and isotopic forms, struct., normal coord. anal. 8−965
D_2, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
$FeBr_4^-$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
GeO, RKRV Franck-Condon factors and r-centroids, $(A^1\Pi\text{-}X^1\Sigma^+)$ transition, pot. energy curves 8−29817
H_2, HD, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
HCN, vibr. energies, wavefunctions, ab initio calc. 8−17652
HCN(DCN), photodissoc. dynamics, rot. (vibr.) energy disposal 8−48672
HCl, Poschl-Teller oscillator, matrix element of vibr. transitions 8−25510
HCl, vibr. state distrib., phase space sampling approach in statistical mech. 8−32753
$H_2(D_2)$, Compton profile, impulse approx., electron correl., vibr. and rot. effects 8−17585
HF, Poschl-Teller oscillator, matrix element of vibr. transitions 8−25510
H_2O, fundamental freq., local mode structure 8−29770
H_2O, kinematic anharmonicity in exact and approx. coords. 8−17653
$He+H_2^+ \rightarrow HeH^++H$, diatomics-in-mols. and spline fitted ab initio surface, vibr. effects 8−20010
I_2, $(B^3\pi_{0+u})$, dissoc. reaction, computer simulation 8−48639
$IrBr_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
$IrBr_6^{2-}$, Raman tensor patterns, vibr. reson. Raman scatt., group theoretical calcs. 8−986
$IrCl_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
Li_2, $A^1\Sigma_u^+\text{-}X^1\Sigma_g^+$ band system transition dipole moments and radiative lifetimes, model pot. calcs. 8−9160
N_2, vibr. populations of excited states under auroral conditions 8−42035
NO_2 and isotopic forms, total quartic potential function 8−13486
NO_2Cl, force fields calc. 8−42241
NO_2F, force fields calc. 8−42241
OCS, semiclassical energy levels calc., vibr. freqs. 8−46315
PF_3 pyramidal mols., intramol. forces, fundamental vibr. freqs., centrifugal distortion consts. 8−5202
SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
SO_4, and isotopic forms, struct., normal coord. anal. 8−965
S_2O, isotopes, force consts., mean amplitudes of vibr. 8−970
$(SiH_3)_2O$, vibr. spectra, coupling of large amplitude vibrs. 8−37619
SiS, Franck-Condon factors and r-centroids for $(D^1\Pi\text{-}X^1\Sigma^+)$ transition using R-K-R-V 8−5293

molecular vibration in solids

acetic acid-d_0, -d_1, -d_4, H bonding in solid, IR spectra, vibr. and librational modes 8−43843

molecular vibration in solids continued
- alkali borates, vitreous and cryst., vibr. spectra and struct. comparison 8−23470
- alkali halides, cryst., force consts., IR absorpt. freq., logarithmic pot. function calcs. 8−2832
- alkali metal hexachlorotellurates, $A_2(TeCl_6)$, (A=Cs, Rb, K), IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- π-allyls, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
- anthracene, phonon-assisted mobility due to intermol. vibrs. 8−6383
- anthracene crystal, stimulated emission and Raman scatt. 8−1303
- benzoic acid, dimer, cryst., IR and Raman spectra, vibr. assignments 8−31191
- 2-benzoyl-1,3,4-triphenyl-1-cyclopentanol, cryst., thermal vibr. of mols., rigid body anal. 8−38787
- bis(trifluoromethyl)peroxide, gas and solid, Raman, IR spectra, internal rot. barrier of CF_3 8−29789
- chloroacetanilides, NQR freqs., torsional vibr., temp. var. 8−2766
- chloroacetoacetanilides, NQR freqs., torsional vibr., temp. var. 8−2766
- chloromethoxyyaniline, NQR freqs., torsional vibr., temp. var. 8−2766
- chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
- coronene-TCNQ, solid complexes, spectra, stoichiometry 8−23435
- coupled molecular normal vibr. system, radiationless energy relax. *(German)* 8−35184
- cryst., vibr. spectrosc. *(French)* 8−6667
- crystals, vibr. spectra, approx. calc. method *(Russian)* 8−35148
- cyclobutadiene iron tricarbonyl, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
- p-dichlorobenzene, cryst., Raman spectra , intensity of low freq. line 8−2846
- 1,4-dihalonaphthalenes, binary solid solns. lattice stability, mol. motions 8−31182
- dimerized organic linear chain conductor, electron mol. vibr. coupling consts. 8−14686
- dipole-dipole interaction rel. to internal vibr. 8−47476
- energy transfer between coupled mol. vibrs. in dense media *(German)* 8−37719
- gas-solid surface sticking probabilities, internal mode depend. 8−6213
- glass:Eu^{3+}, vibronic spectra, impurity complex model 8−19516
- hexamethylbenzene, cryst., Raman spectra, intensity of low freq. line 8−2846
- ice, cryst. Ic and Ih phases, diffr. patterns and far IR spectra, isotope effects 8−6662
- ice, II and IX, deuterated forms, 10K, OD stretching bands interpretation 8−2836
- ice, IR absorpt., O-H stretching vibrs., orientation polaris. 8−31177
- ice, isotopic, I_h, single crystal Raman intensities, OH bond polarisability, librational modes 8−27208
- impure molecular crystals, ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
- impurity spectrum under Fermi reson. with compound tones 8−34583
- lithium formate monohydrate, temp. depend. Raman spectra, H bonds 8−6673
- matrix isolated molecules, vibr. relax. 8−46425
- methane, phase II, IR and Raman spectra of ν_3 and ν_4 modes 8−2834
- methane, solid phase II Raman spectrum, lattice vibr. and ν bands 8−19456
- 3-methylpentane, C-H stretching diagonal local mode anharmonicity, intermol. perturbation 8−25524
- nitrate salts, Raman spectra, thermally disordered energy states 8−35122
- NMR signal for quadrupole, chem. shift, dipole-dipole interactions, mol. solids, rigid-body vibr. effect 8−15056
- norbornadienes, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
- octamethylcyclotetrasilazane, gas, liq., cryst., CCl_4 soln. IR and Raman spectra, assignments, struct. *(French)* 8−29790
- one-dimensional crystal lattice, nonlinear interaction of ps light pulses with lattice vibrations 8−30032
- particle displacement momenta, quantum equilib. distrib. 8−32751
- perfluoro-1,3-butadiene, vibr. spectra, struct. and barrier to planarity 8−9147
- phenanthrene, cryst., Raman spectra, intensity of low freq. line 8−2846
- polyethylene single cryst., FT IR spectra, CH_2 rocking mode 8−2843
- polyethylene single cryst., FT IR spectra, CH_2 wagging mode 8−2842
- polymer, amorphous, translational motion and lattice vibr. obs. by Raman scatt., T_g phenomena 8−23469
- polystyrene, substituted, Raman, IR and neutron spectra of LF vibs. 8−2848
- radiationless vibr. phase relax. theory in dense media *(German)* 8−37720
- Raman and IR obs., review 8−43079
- Raman spectra, reflection symmetry violation for crysts. and mols. 8−48184
- silicate glass: Cr^{3+}, optical props., 88-273K, energy levels in crossing region 8−6709
- TCNQ salt, K-TCNQ, energy gap, electron-phonon interaction, IR spectrum 8−15167
- tetrabromoethylene, cryst., IR spectra in polarised light, cryst. struct. 8−27223
- tetrachloroethylene, cryst., IR spectra in polarised light, cryst. struct. 8−27223
- tetramethylammonium hexachlorotellurate, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- s-tetrazine-benzene, mixed cryst., 2K, lifetime limited photochem. hole burning 8−9183
- TGS, cryst., vibr. bands, ferroelec. and paraelec. phase H bonds *(Russian)* 8−15172
- transition metal hexafluorides, density of exciton states, two-particle and mixed cryst. spectra 8−2829
- triphenylphosphine compounds, $(C_6H_5)_3PM_xM'_{1-x}(CO)_5$, M,M'=Cr, Mo, W, mixed cryst., CO vibr. spectra, modal anal. 8−35128
- TTF-d_0, -d_4, IR and Raman spectra, vibr. assignments 8−23436
- two-phonon resonances, bound states absorpt. coeff. 8−47486
- two-phonon resonances, bound-states, general theory 8−47485
- β-Al_2O_3-Na_2O, low freq. Raman scatt. from NH_4^+ ions 8−43878
- Ar, solid, NH and ND impurities role of rotational and translational modes n vibr. relax. 8−10132
- AsD_3, solid and liq., vibr. relax., Raman ν_1 band, 54, 160K 8−27198

molecular vibration in solids continued
- As_2O_3-SO_3, polarised Raman and IR spectra, force field calc. *(French)* 8−6674
- Ba hexafluorometallates, $BaMF_6$, (M=Si,Ge,Sn,Ti), Raman spectra, at press. up to 25 kbar 8−6670
- $BaSO_4$, single cryst., SO_4^{2-} vibr. levels, cryst. field effects, laser Raman spectroscopy 8−43847
- $C(NH_2)_3Al(SO_4)_26H_2O$:Cr^{3+}, isotope effect, zero field splitting, vibr. coupling temp. depend. 8−6570
- CO, solid and liq., vibr. relax. and vibr. diffusion rates, 66-79K 8−17757
- $CaSO_4(.2H_2O)$, single cryst., SO_4^{2-} vibr. levels, cryst. field effects, laser Raman spectroscopy 8−43847
- $CoSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164
- CsH_2AsO_4, and deuterated isomorph., ferroelectric mode and molecular vibr. press. depend. 8−19424
- Cs_2SO_4, cryst., coord. and Raman intensity anal. 8−2831
- D_2O, isolated in glassy H_2O, IR spectrum 8−27207
- $Fe_2(CO)_9$, solid, Raman and IR spectra, vibr. exam. 8−27214
- $FeSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164
- p- H_2, solid, induced near IR absorption spectrum, freq. shift, intensity, up to 10 kbar 8−6658
- $(HCl)_2$, vibr. freqs. in inert gas matrix, force const., MINDO/3 calcs. 8−41952
- HDO molecules, stretching vibrs., freq. meas. in hydrates 8−29772
- HDO molecules in solid hydrates, D quadrupole coupling consts., O-H and O-D stretching freqs., H bond distances 8−29773
- I_2, lattice dynamics, internal and external modes 8−18719
- KCN-KCl mixed system, order-disorder transition, Raman spectra obs. 8−15113
- KH_2AsO_4, and deuterated isomorph, ferroelectric mode and molecular vibr. press. depend. 8−19424
- KIO_3, temp. depend. Raman spectra and phase transitions *(Russian)* 8−15171
- $K_5(UO_2)F_9$, optical spectra, vibr. freqs. calcs. *(Russian)* 8−31205
- $LiH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8−43853
- $MnSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164
- MoF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
- N_2, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
- α-N_2, solid, Raman spectra vibron bands, a priori calcs. 8−31181
- N_2+N_2(CO), in matrix, vibr. energy transfer and relax. 8−46426
- $(NH_4)_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- $NaBrO_3$, IR and Raman spectra, vibrs., dipolar coupling effect 8−43852
- $NaClO_3$, IR and Raman spectra, vibrs., dipolar coupling effect 8−43852
- $NaH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8−43853
- $NaMO_2$, Stark shift of visible absorpt. of NO_2^- 8−19499
- $Ni(NH_3)_6X_2$, (X=Cl, Br, I, ClO_4, BF_4) and d, far IR, Raman spectra, 80-300K 8−31190
- $NiSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164
- $(P,As)_2O_7^{4-}$, vibr. calc. by method of normal coordinates 8−22796
- $RbGa_3Br_{10}$, cryst., vibr. spectrosc. *(French)* 8−6667
- RbH_2AsO_4, and deuterated isomorph, ferroelectric mode and molecular vibr. press. depend. 8−19424
- ReF_6, cryst., Raman and absorpt. spectra, Jahn-Teller effect 8−6675
- Ru complexes, carbonyl hydrides, pre-reson. Raman spectra, Ru-Ru and Ru-C modes 8−43854
- $(SN)_x$, IR transmission spectrum assignment 8−15160
- S_4N_4, Raman scatt., press. and temp. depend., 0-10 kbar, 10-295K 8−15160
- SO_2, IR and Raman spectra, mol. and lattice vibrs. 8−19464
- SiO_2 vitreous, Raman spectrum, bound OH, Si-O stretch vibr. 8−19462
- Sn tetrahedral molecular solids, ^{119}Sn Mossbauer and Raman spectra 8−15070
- $SnCl_2.2H_2O$, protonic order-disorder transition, H-bond vibr. Raman spectra temp. depend. 8−23437
- Ti complex, $Ti_2Cl_8(CH_3NO_2)_2$, single cryst., struct., IR and Raman spectra, X-ray diffr. 8−43000
- $(TiCl_4.POCl_3)_2$, solid, IR and Raman spectra, vibr. assignments 8−43868
- $TlBrO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
- $TlClO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
- $TlIO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
- $TlSbF_6$, Raman spectra, at press. up to 25 kbar 8−6670
- $Tl_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- UF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
- WF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
- $ZnSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164

molecular vibrational energy transfer *see molecular rotational-vibrational energy transfer*

molecular vibrational relaxation *see molecular rotational-vibrational energy transfer*

molecular vibrational states *see molecular vibration*

molecular vibronic states
- acenaphthene, vibronic spectra, electronic-vibr. interactions 8−1021
- aniline, vibronic perturbations of UV spectrum 8−37654
- astaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- benzaldehydes, in mixed cryst., T_1/T_2 interstate interactions, modulation polaris. phosphoresc. spectra, 4.2K 8−9185
- benzene, reson. Raman cross sections, forbidden electronic transitions, depolaris. ratios 8−42075
- benzene soln., UV Raman scatt., forbidden states 8−9155
- biaryls, model, mol. vibronic circular dichroism 8−37665
- blue proteins, activation of electron transfer reactions 8−44446
- Born-Oppenheimer approx., IR absorption, circ. dichroism using vibronic gauge function 8−967

molecular vibronic states continued
Born-Oppenheimer approx., IR absorption, vibr. intensity using vibronic gauge function 8−966
chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
circular dichroism, vibrational vibronic interaction theory 8−46380
core electron ionis., vibronic coupling, symmetry breaking, vibr. struct. 8−5279
cytochrome c-Fe(CN)$_6$ electron transfer, verification of vibronically coupled electron tunnelling 8−48750
delayed fluorescence, quantum mech. model 8−29804
diatomic radiative transitions, electronic-vibr. dipole moment, band strength 8−46400
p-dibromobenzene, cryst. electronic and vibr. energy transfer and relax. 8−31229
p-difluorobenzene, $^1B_{2u}$-^1A_g transition, two-photon spectra 8−46408
dimerized organic linear chain conductor, electron mol. vibr. coupling consts. 8−14686
diphenylene sulphide, phosphoresc. vibronic struct., solvent heavy at. effect 8−17710
electron elastic scattering, vibronic effects 8−9249
ethylene, V←N transition origin determ. 8−13510
formaldehyde(-d$_2$), photolysis quantum yields, radical production, NO reactions, freq. depend. 8−44387
glyoxal, selected state photodissoc., vibronic effects, CO quantum yield, 1-10 torr 8−37691
α-(β-)heptacyclene, vibronic spectra, electronic-vibr. interactions 8−1021
N-heterocyclics, radiationless transitions, vibronic coupling effect 8−33543
intersystem crossing rates, triplet sublevel decay, vibronic coupling 8−5271
intramolecular longit. relax. in mol. system with Rabi oscills., transient regime theory 8−46404
laser techniques, vis. and UV, small mols., electronically excited states, book contrib. 8−9277
lutein, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
metalloporphyrin, vibronic coupling, Raman scatt. 8−21933
naphthalene, reson. Raman scatt. from non-totally symm. mode 8−37641
polyatomic molecules, energy levels, classification 8−9052
polyatomic molecules, excited state spectra, vibronic coupling, non-adiabatic model 8−25509
pyrazine, nπ* transitions, vibronic coupling 8−25501
pyrazine, PMDR due to single defect species, vibronic structs. 8−19535
pyrazine, reson. Raman spectra, vibronic theory of Raman intensity 8−37643
pyrimidine, and derivatives, intersystem crossing rates, triplet sublevel decay, vibronic coupling 8−5271
radiationless transitions, vibronic interactions 8−17705
Raman excitation profiles and mol. spectra synthesis, vibronic and exciton-in-mol. theory 8−42076
Raman selection rules, spin degeneracy and vibronic states 8−987
Renner-Teller effect, effective vibronic Hamiltonian 8−17651
resorufin, in PMMA, site selection spectra, hole burning and Stark effect 8−9159
11-cis-retinal, donor energy effects on triplet-sensitized isomerization 8−3353
TCNQ, metallic reflection band, vibronic struct. 8−19502
s-tetrazine-benzene, mixed cryst., 2K, lifetime limited photochem. hole burning 8−9183
1,2,3-timethoxybenzene, weak electronic transition, solid, and in rigid glass, UV assignments 8−17681
vibronic coupling, totally symmetric harmonic mode, exactly solvable model 8−21896
zeaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
BO$_2$, reson. fluoresc. assignment of vibr. and vibronic transitions 8−17663
(C$_2$H$_5$)$_2$Fe$^+$ complexes, vibrational electronic (Franck-Condon) Raman transitions 8−42070
CO$_2$, core electron ionis., vibronic coupling, symmetry breaking, O1s line vibr. struct. 8−5279
CS, near UV spectra, rot. anal. of $a^3\pi_r = X^1\Sigma^+$ transition 8−5242
Cs$_3$Cr$_2$Cl$_9$, optical absorpt., MCD, exchange interactions 8−10917
D$_2$, $^1\Sigma_g{}^+$ states, adiabatic calc. of vibronic states 8−5198
D$_2$, photoabsorpt. spectra, rovibronic interactions 8−992
D$_2$O, Rydberg states, visible spectra 8−9162
H$_2$, HD, $^1\Sigma_g{}^+$ states, adiabatic calc. of vibronic states 8−5198
H$_2$, photoabsorpt. spectra, rovibronic interactions 8−992
HCl, emission K spectra, vibronic and core hole effects, nonempirical orbital defreezing calc. 8−5200
HF, emission K spectra, vibronic and core hole effects, nonempirical orbital defreezing calc. 8−5200
HF, IR absorption in Born-Oppenheimer approx., vibronic gauge function for vibr. intensity 8−966
HO$_2$ radical, near IR emission bands, vibr. and vibronic transitions 8−37633
H$_2$O, Rydberg states, visible spectra 8−9162
I$_2$, energy levels near B-state dissoc. limit, two-photon spectra 8−9210
IrBr$_6{}^{2-}$, Raman tensor patterns, vibr. reson. Raman scatt., group theoretical calcs. 8−986
K$_2$, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
N$_2$, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
N$_2$ UV spectra, new band, $^3\pi_u$ state lower vibronic levels 8−17682
NO, doublet-quartet transitions, 5-7.4 eV, electron-impact spectroscopy, 5-80° 8−37754
NO$_2$, 7390 Å band, vibronic transition within ground state manifold 8−21919
N$_2$O$^+$, fluoresc. and dissociation lifetimes of vibr. excited states 8−42108
Na$_2$, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
(O$_2$)$_2$, struct., energy transfer, high resolution electronic spectra 8−25550
(O$_2$)$_2$, struct., vibr. relax., local modes, isotope effects 8−25669

molecular vibronic states continued
OPF$_3$, forbidden transitions, mol. beam elec. reson. obs. using avoided crossings 8−29775
ReF$_6$, cryst., Raman and absorpt. spectra, Jahn-Teller effect 8−6675

molecular weight
see also mass spectra; molecular weight determination
glycerides, high mol. wt. species prod. after contact with lunar grains 8−3333
paraffins, solid and liquid, diamagnetic susceptibility 8−14923
PMMA, laser initiated polymerisation kinetics, mol. wt. distrib. of resultant polymer 8−15673
polydimethyl siloxane solns., limiting viscosity no.-mol. wt. relations 8−18267
polyethylene, extended chain, prep. and study of separated single crystals 8−42924
polymer, end-to-end distribution function, for most probable molecular weight distribution 8−13635
polymer in mixed solvents, viscosity data as function of mol. wt. 8−18266
polymer solutions, viscosity data represented as function of mol. wt. 8−26716
polymerisation, laser initiated, mol. wt. distrib. 8−15673
polystyrene solution in benzene, thermodyn. interaction coeff. determ. 8−3367
Te rich ternary chalcogenides, glass transition temp. predictions 8−38823

molecular weight determination
see also mass spectra
arsenolite, As$_2$O$_3$, vapour mol. mass determ. using repulsion Knudsen cell 8−46464
ceruloplasmin, human, mol. wt. determ. by hydrodynamic methods and low-angle X-ray scatt. 8−15761
claudetite, As$_2$O$_3$, vapour mol. mass determ. using repulsion Knudsen cell 8−46464
laboratory system for mol. wt. determ. in microgram quantities 8−33634
macromolecules, mol. wt. meas., light transmission meas. 8−17828
plasmid molecular weight determ. from UV sensitivities 8−44458
repulsion Knudsen cell to determ. vapour mol. masses without condensation 8−46464
size exclusion chromatography in polymer characterisation 8−11580

molecule-molecule reactions
see also molecular rotational-vibrational energy transfer
amino acids, ^{15}N-labelled, nanomole isotopic assay by collision induced dissoc. MS 8−20095
bimolecular nonequilib. reaction, stability anal., Hinshelwood-Langmuir law 8−11517
chloromethyl methyl ether, on-column reaction GC determ. in ambient air 8−20093
differential scatt. cross sections from classical trajectories, Legendre moment method 8−3314
ethylene+cis-N$_2$H$_2$, chem. reaction, intermediate geom. calcs. 8−35655
exponential transition probilities for collision induced dissoc. and vibr.-rot. relax. 8−27749
N-heteroarenium cations B, resonant, nonradiative energy transfer *(German)* 8−25659
in-cage reactions controlled by mol. reorientation 8−44362
potential energy surfaces, qualitative, from linear comb. of fragment configs. 8−44349
stimulation of chemical reactions by cooling translational-rotational degrees of freedom 8−7202
triethylamine, gas (soln.), fluoresc. quenching by 'inert' perfluoromethylcyclohexane 8−46438
BH$_3$NH$_3$, complexation energies and interatomic distances, SCF and CEPA calcs. 8−25446
CS$_2$-O$_2$ flame, rate of population of CO vibr. levels, CO emission intensity 8−7186
ClNO+Cl$_2$O→ClONO+Cl, reaction kinetics, IR spectra 8−35641
Cu clusters, interaction with CO, Cu$_n$CO form., chemisorpt. bond 8−31631
HF+formyl fluoride, multiple site reactivity, ab initio GO supermol. calc. 8−11498
HNO$_2$+O$_3$ reaction kinetics under stratospheric conditions 8−11499
HO$_2$+NO, reaction kinetics meas. 8−31624
He$_2$(2$^3\Sigma_u{}^+$)+He$_2$(Ne), reaction rate consts. meas. in afterglow 8−7173
NO+O$_3$, (001), laser enhanced reaction, temp. depend., reactive and nonreactive channels 8−48642
NO+O$_3$(001), laser-enhanced reaction, rates, temp. depend. 8−48675
NO+O$_3$→NO$_2$*, mol. beam chemiluminesc., kinetic and internal energy depend. 8−31638
NO$_2$+HO$_2$, reaction rate consts. by laser mag. reson. 8−27748
NO$_2$*+CO→NO+CO$_2$, laser stimulated reaction, rate const. 8−40044
O$_3$+ethylene, dioxirane form., decomp. products, mass spectrometric obs. 8−11504
O$_3$+ethylene, dioxirane form., identification by microwave spectra 8−15659
O$_2$($^1\Delta_g$)+O$_2$, deactivation rate const. meas. 8−5262
POCl$_3$+N,N-dimethylformamide or N,N-dimethylbenzamide, reaction products 8−7199
SF$_6$+NO+O$_3$, laser sensitised reaction, time-resolved NO$_2$* emission obs. 8−20017
SiF$_4$+H$_2$, SiF$_x$H$_{4-x}$ heats of form., mass spectrometric determ. 8−7221
XeF*+XeF$_2$, lifetime and collisional quenching meas., XeF$_2$ photolysis 8−33545

molecule-surface impact
see also sputtering
diatomic molecule+solid surface, energy transfer, internal vibr. energy effects 8−35234
gas-solid energy transfer, internal vibr. energy effects 8−35234
recycling molecular beam reactor for study of reactive molecule-surface collisions 8−1109
scattering, appls., review 8−39653
scattering from cryst. surfaces in quantum regime, review 8−35244
scattering of atoms and mols. by solid surfaces, review 8−31291
Space Shuttle, expts. on mol. and atomic beam interactions with surfaces 8−35243
Pt, H$_2$+D$_2$ mol. beam exchange recation on stepped Pt surface, incidence angle depend. 8−31686
Si surface, N$_2{}^+$ bombardment, 500 eV chem. reactions, XPS and UPS 8−48265

molecule-surface impact continued
SiO surface, N_2^+ bombardment, 500 eV chem. reactions, XPS and UPS 8−48265
SiO_2 surface, N_2^+ bombardment, 500 eV chem. reactions, XPS and UPS 8−48265
molecules
see also excimers; hydrogen neutral molecules; macromolecules; mesic molecules; muonic molecules; quasimolecules
No entries
Mollier diagrams *see thermodynamic properties*
molten metals *see liquid metals*
molten polymers *see polymer melts*
molybdenum
see also nuclei with ......
adsorption of NH_3, and catalytic decomposition, field emission study 8−14596
AES and characteristic energy loss spectra, expt. and interpretation 8−27354
air contamination effect on compatibility with liquid Li in stainless steel vessels at 600°C 8−25285
annealing in stage I, dose depend. and radiation doping defects 8−47422
anodisation, oxide struct., electronic current, and const. current efficiency 8−15575
atom, isotope shift meas. 8−42010
atom, relative oscill. strengths in dissoc. $MoCl_5$ pulsed discharge 8−25479
atomic displacements and electronic struct. of (001) surface 8−30963
atomisation, for graphite furnace AAS, using graphite platform 8−32877
backscattering of H_1^+, H_2^+, H_3^+, 4-30 keV, O_2 effect 8−15268
blistering and surface roughening, room temp. ageing effects, Ar^+ ion bombardment 8−34550
chemisorption of CO, low energy SIMS and electron impact desorption expts. 8−38941
chromizing, formation of ordered solid soln. *(Russian)* 8−11402
compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
container for leucosapphire synthesis, recrystallisation 8−2151
corrosion by O_2 containing H_2O and gaseous NaCl, volatile products 8−27674
creep of single crystal 8−15478
CVD coating on W-Re wire covered with SiO_2 film, for neurological microelectrode 8−11752
damage profile resulting from Ni^{2+} and He^+ ion bombardment 8−10100
determination, in Mg alloy, emission spectrographic DC arc-powder technique 8−48713
dislocation a ⟨100⟩ stability, plastic deformation at high-press. 8−43030
dislocation interactions during parallel shear in (011) plane *(French)* 8−43029
edge dislocation interaction with interstitial atoms, influence on Peierls stress 8−34537
electric field gradient tensor, electronic contrib., nucl. acoustic reson. determ. 8−48059
electrode, disc, in KOH soln., anodic soln. kinetics *(Russian)* 8−11523
electron current density localisation and effect on damage prod. 8−22763
electropolishing soln., comp. and evaluation 8−15576
emissivity, integral hemispherical degree of blackness, 1200-3000K 8−43154
enthalpy and heat capacity, standard ref. material 8−18792
Fermi surface, homogeneous strain response 8−34753
field emitter, adsorption of Te on single cryst. faces 8−34714
field evaporation, search for high ionic charges 8−35269
filament, coated with thin Ni film, creep and recrystn. *(Russian)* 8−19822
film, on SiO_2/Si substrate, effect of heat treatment after deposition on internal stress 8−22973
film, work function, effects of O_2 sorption 8−19125
film on Si, silicide form. 8−43261
film on Si surface, $MoSi_2$ form. conditions *(French)* 8−43270
fission fragment bombardment, channelling effects *(Russian)* 8−38762
flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
fractographic peculiarities in ductile brittle transition 8−39910
friction, He environment 4.2-80K 8−48543
gamma-ray attenuation meas. using Ge(Li) detector 8−17539
grain boundary segregation obs. by atom imaging probe 8−21276
high temperature properties 8−44173
hydrogen embrittlement mechanisms, exam., effect on mech. props. 8−39891
hydrometallurgical plant effluent waters, Mo and W determ. by activation analysis with low-power neutron sources 8−7279
ion bombardment, damage profile, void size and density, TEM 8−47451
ion bombardment by Ni^{2+}, TEM study of damage depth distrib. 8−10101
ion irradiated, radiation-induced damage, microhardness and lattice consts. meas. 8−2170
ion plating, on ceramic substrate, and coating struct. 8−11132
ionic siliciding, diffusion layer prod. 8−23855
irradiated by H^+ and H_2^+ ion beams, grain ejection from surface 8−6819
K-edge photoabsorption spectra, linear APW calc. 8−43960
Knight shift and mag. suscept. temp. depend. 8−15043
Knight shift and mag. susceptibility, temp. depend. *(German)* 8−10791
liquid, thermophysical measurements, up to 4300K 8−43136
localized electronic states near ⟨100⟩ edge dislocation compared with perfect lattice 8−30888
mechanical properties, influence of temp. on singularities of deform. *(Russian)* 8−6970
neutron irradiated, influence on X-ray diffr. patterns *(Russian)* 8−22764
neutron irradiation induced length change, 40 to 450 degrees C 8−47433
oxidation, staged flow of O_2 interaction process, secondary ion emission obs. 8−11386
oxidation in flow conditions at 1000 to 6000K 8−11445
phonon dispersion, anomalous struct., tight-binding calcs. 8−10137

molybdenum continued
photoelectric cross sections of low energy photons 8−46309
photon emission from inert gas-surface impact 8−11059
plasma impurity, high-temp. ionis. equilib. and radiative cooling 8−42712
plasma impurity, in TFR Tokamak current plateau, effect of O_2 injection 8−22565
plasma impurity, radiation loss effects on Tokamak expts. 8−22465
point emitter, surface microrelief under explosive electron emission 8−2973
positron annihilation radiation angular correl., band struct. and Fermi surface study 8−6260
powder, struct. facators, time of flight neutron diffr. 8−47212
powder properties for plasma-sprayed coatings 8−48548
powder sintering, transition metal activators, 1000-1350°C, heterodiffusion model 8−44044
protective Si_3N_4 coating, RF reactive ion plating 8−3250
proton irradiated, annealed and rolled, void form. 8−22774
radiation-induced voids and dislocations, annealing, theory *(Russian)* 8−47418
sample chamber for ultrasonic vels. and elastic consts. meas., 4.2 to 300K *(German)* 8−46868
secondary recrystallisation grain structure, effect of conditions of annealing *(Russian)* 8−6945
sintered, thermal and elec. conds., 50-800°C, microstructure 8−43352
slip rosettes and dislocation struct. formed by microindentations 8−14349
sputtering, negative ion form., Cs overlayer effect 8−39645
sputtering yield at low energy for light-ions 8−19620
stopping power nucl., in ferromag. Gd, transient mag. field 8−34555
strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
strength, temp. depend. 8−3193
structural singularities of plastic deform. at localised flow stage, TEM obs. *(Russian)* 8−6968
sulphiding with H_2S 8−3078
superconducting film, T_c and residual resist., variation with coating thickness 8−47900
superconductivity and phonon softening, between electron bands and phonons 8−14859
surface, 10-30 keV H ion bombardment, energy refl. meas. 8−27359
surface, (001), surface CDW phase transitions 8−43455
surface, (110), surface densities of states for normal photoemission 8−35251
surface (100), emission and work function, K adsorption effects 8−11060
surface geometry and emission parameters, changes during directional mass transport 8−2344
surfaces (110) and (111), joint adsorption of Cs and O, and emission props. 8−2364
thermal expansion, 100-2000°C, as standard samples for dilatometry 8−26699
thermal expansion, 971-2153°C, vac.-melted MChVP, impurity effect 8−26700
Tokamak reactor ISSEC 8−41860
twin boundary and twinning dislocation struct., computer simulation 8−30644
UPS, angle-resolved, surface resonances on (100) face 8−2987
vacancy annealing stage after heavy ion implantation, Mossbauer meas. 8−39463
vapour press. above different crystallographic planes *(Russian)* 8−18762
wires, drawn and annealed, tensile fatigue and tensile strength under cyclic stress *(Japanese)* 8−15507
X-ray reflection intensities, charact. temps. and Debye-Waller factors, 100-370K 8−18731
X-ray spectra, $K\alpha_{1,2}$ $K\beta_{1,3}$ lines, using diffractional focusing 8−5988
Young's modulus and shear modulus, temp. depend. 8−27553
Mo, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Mo XLI, Mo XL, X-ray emission from vacuum-spark plasma 8−41991
Mo XXX, XXXI, XXXII, X-ray emission spectra, from laser produced plasma, line identification via HF calcs. 8−33459
Mo XXXII, electron impact excitation, transition probabilities, oscill. and collision strengths 8−25718
Mo^{12+}, VUV reson. lines, transition probabilities calcs. 8−41989
Mo^{13+}, energy levels for transition probabilities, oscillator strengths, rad. lifetimes 8−17589
Mo^{30+}, VUV reson. lines, transition probabilities calcs. 8−41989
Mo:N film, high T_c amorphous phase stabilisation by interstitial nitrogen 8−23622
Mo-Si junctions, metallurgical boundary props. and elec. resistivity 8−2568
Mo-SiO_2-Si, thermally stimulated ionic cond. 8−10565
MoS_2 intercalation compounds, reaction with alkali and alkali earth metals, band struct., superconductivity 8−26541
^{95}Mo, ^{97}Mo, quadrupole moments, hyperfine B factors, laser-Rf double reson. meas. 8−33452
^{99}Mo, airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
W-Mo-Co high-speed cutting steels, Co determ. 8−3416
YBe_{13}-Mo, solid state reaction, 1000 to 1400°C *(Russian)* 8−18845

molybdenum alloys
see also molybdenum compounds
Cr-Mo-V steel turbine rotor, fatigue tests 8−39912
fractography of deformed samples *(Russian)* 8−19889
fusion reactor material, long term radioactivity minimisation 8−772
Hastelloy B-2, decomposition of metal oxide films under electron bombardment 8−19928
Hastelloy C-276 and C-4 cold worked high alloy material, factors affecting H_2 embrittlement in H_2S environments 8−31502
Hastelloy N, air contamination effect on compatibility with liquid Li in stainless steel vessels at 600°C 8−25285
Hastelloy-X, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
Incaloy 623, cold worked, factors affecting embrittlement in H_2S 8−31502
Multimet, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
Rene 41, volatilisation of oxides during oxidation at 1200°C 8−23873

molybdenum alloys continued
steel, 30KhG and 30KhN, carbide formation, Mo alloying effects *(Russian)* 8-48402
steel, 30N9K4, effects of Mo, V, and N on grain growth, tempering, hardenability, strength and toughness 8-44202
steel, austenitic stainless, Cr-Ni-Mo-Mn, Mo, Mn and ageing effects 8-35413
steel, C-Mn-Cr-Mo (0.4, 0.8, 1.1, 0.25 wt.%) C, Ni, Mo, Cr addition effects on toughness of bainite 8-11327
steel, CC Cr-Mo (2.25, 1 wt.%) effect of heat treatment on tensile props. 8-23745
steel, Cr-Mo (2.25, 1 wt.%), annealed, heat treatment effect on tensile props. 8-11243
steel, Cr-Mo (2.25, 1 wt.%), creep-fatigue testing from thermal transient effects in CRBRP reactor 8-21660
steel, Cr-Mo (2.25, 1 wt.%), decarburization, carbide effects in high temp. Na *(Japanese)* 8-15403
steel, Cr-Mo (2.25, 1 wt.%), weld metal, high temp. crack growth, effect of tempering, prestrain and grain refinement 8-27622
steel, Cr-Mo (9,1 wt.%), austenitized in $\gamma+\delta$ phase field, secondary hardening and tempering 8-11247
steel, Cr-Mo (9, 1 wt.%) appl. of electron energy loss spectrometry to precipitate morphology 8-48414
steel, Cr-Mo (9, 1 wt.%) microstructural instability during creep, heat treatment effects 8-48472
steel, Cr-Mo-V, combined Cr-Mn addition effects on hardenability 8-7046
steel, Cr-Mo-V, creep, effect of microstruct., heat treatment, transform. temp. 8-11248
steel, Cr-Mo-V, creep fatigue interactions obs., strain controlled and load controlled tests 8-44214
steel, Cr-Mo-V, cyclic oxidation and crack growth during high strain fatigue 8-31586
steel, Cr-Mo-V, high-temp. cumulative damage for stage I crack growth 8-19883
steel, Cr-Mo-V alloy, crack growth during strain fatigue at 825K 8-39890
steel, Cr-Mo-V creep crack growth, relation between engineering and metallurgical factors 8-11321
steel, Cr-Ni-Mo-V-Nb (12,8,1,1.5,0.4 wt.%) Ce addition effects on strength and hardness *(Russian)* 8-15454
steel, CrMo, cast, fatigue tests under varying stress amplitude and varying temp., amplitude damage *(Japanese)* 8-27605
steel, CrMoNi, cantilever beam method to determ. J_{Icc} and J_{Iscc} *(Chinese)* 8-15488
steel, maraging, Ni-Co-Mo (18,10,5 wt.%) precipitation *(Japanese)* 8-15402
steel, maraging Ni-Co-Mo, precipitation, elec. resist. meas. *(Japanese)* 8-11228
steel, martensitic, Cr-Co-Ni-Mo, notch toughness, rel. to sensitivity to stress conc. 8-31532
steel, Mo and Mo-Cr, X-ray elastic consts. function of plastic strain *(German)* 8-31436
steel, Mo-V, creep rupture strength, rel. to microstruct. *(German)* 8-35467
steel, Ni-Cr-Mo increase of crack initiation time in delayed fracture by fatigue accumulation *(Japanese)* 8-11312
steel, NiCrMoV, stress corrosion cracking, cold work effects 8-11383
steel, stainless, ferritic, corrosion in formic acid at 70°C, effect of Mo additions 8-35551
steel Cr-Mo (2.25, 1 wt.%), duplex LMFBR steam generator tubing, US equipment for NDT 8-11469
superalloy, high temperature properties 8-44173
VM-1, thermal fatigue rel. to struct. change *(Russian)* 8-11302
VN-2M, vac.-melted, thermal expansion meas., 971-2153°C, impurity effect 8-26700
Co-Cr-Mo-Ni-Fe-Si-Mn-C, protective coatings by B diffusion, microstruct. and mech. props. 8-11427
Co-Gd-Mo, amorphous film, mag. props., temp. depend. 8-10734
Co-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8-15562
Cr-Mo (2.25, 1 wt.%) steel, T permeation rate at 400 to 500°C, rel. to LMFBR conditions 8-17319
$Cr_{1-x}Mo_xCo$, $x \leq 0.25$, antiferromag., nucl. mag. relax. 8-6590
Fe-Cr-Mo, grey cast, pearlitic, isothermal transform. of austenitic in bainitic range *(Rumanian)* 8-23698
Fe-Cr-Mo sintered, damping capacity and mech. props. 8-44161
Fe-Cr-Ni-Mn-Mo, liquid, N_2 solubility 8-44087
Fe-Cr-Ti-Mo ferritic alloy, annealed, cold rolled, fast reactor material, mech. props. 8-21646
Fe-Mo, damping capacity *(Japanese)* 8-11259
Fe-Mo (3 wt.%), substitutional solid soln. with cubic faced symmetry, Portevin-Le Chatelier effect *(French)* 8-23785
Fe-Mo (3at.%), internally nitrided, precipitate, morphology and chemistry 8-44128
Fe-Mo-C system, isothermal sections, 973 to 1273K, thermodynamic analysis 8-6895
Fe-Mo-Cr(Ni)(Mn)-C, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8-44085
Fe-Mo-(C)-(Ni), sintering 8-35333
Fe-Ni-Mo, ordered, low temp. $\alpha\to\gamma$ transform. *(Russian)* 8-19740
Fe-Ni-Mo, small angle X-ray scatt. study, pre-precipitation phenomenon obs. *(French)* 8-19757
$Fe_{78}Mo_2B_{20}$, amorphous ferromag., $T^{3/2}$ depend. of hyperfine field 8-39474
Gd-Co-Mo, sputter deposited amorphous alloy, substrate bias, magnetic anisotropy, annealing 8-48006
MO-B, B effects, rolled, segregation of implanted elements, Auger spectroscopy exam. *(Russian)* 8-35389
Mo alloy TsMb, mech. props., effect of gaseous H_2 *(Russian)* 8-31508
Mo-Ca, ion implanted, range distrib. of Ca^+ ions, work function and AES obs. 8-27365
Mo-Co-Al, phase diagram *(Russian)* 8-19722
Mo-Cu, electrical erosion resistance during electrospark machining 8-35531
Mo-Cu-Al, phase equilibrium *(Russian)* 8-15361
Mo-Fe, dil., Kondo effect of RKKY interaction 8-31052
Mo-N system, phase diagram of solid and liq., high and low press. 8-44083
Mo-Re, cold worked, strength 8-31426

molybdenum alloys continued
Mo-Re, integral hemispherical degree of blackness, 1200-3000K 8-43154
Mo-Re, solid soln., dislocation internal friction *(Russian)* 8-23748
Mo-Re (5 at.%), enhanced lattice sp. ht. due to LF reson. modes 8-14882
Mo-Rh, secondary electron emission and inelastic refl. coeffs. 8-15264
Mo-TiC(ZrC)(TiN), phase diagram *(Russian)* 8-27476
Mo-W, integral hemispherical degree of blackness, 1200-3000K 8-43154
Mo-W (50 wt.%), emissivity, 1200-3000K, effects of annealing and surface treatment 8-43154
Mo-Zr, nitride form. in N_2 atmos. *(Russian)* 8-19938
Mo-Zr-B-C, dil. alloy, struct. changes under prolonged high temp. annealing *(Russian)* 8-6944
Mo-Zr-Nb-C, polythermal sections *(Russian)* 8-15365
Mo_3Ge, RF sputtered, supercond. crit. temp. 8-14853
$Mo_{1-x}Re_xCo$, mag. state of Co impurity, NMR exam. 8-27100
$MoSi_2$, effect of Al on oxidation behaviour *(German)* 8-31587
$MoSi_2$, form in Mo layer on Si surface *(French)* 8-43270
Mo_3Si, Mo_5Si_3 and $MoSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8-15249
Mo_3Si, $MoSi_2$, form., Mo thin film on Si, He^+ backscattering, X-ray diffr. study 8-43261
Nb-Mo, optical props., 0.1-25 eV, band models 8-10892
Nb-Mo, superconductivity and phonon softening, between electron bands and phonons 8-14859
Nb-Mo alloys, phonon dispersion, anomalous struct., tight-binding calcs. 8-10137
Nb-Mo-Fe, dil., local moment formation 8-43562
$Nb_{80}Mo_{20}$, $Nb_{75}Mo_{25}$, supercond., phonon cond. below 1k 8-14881
Ni-Al-Cr-Mo-Ti-W-(Co) alloys EhI 826 and EhI 929, reverse elastic after effect under loading 8-39829
Ni-Al-Cr-Ti-W-Mo, US vibration applied during solidification, improved strength, corrosion resistance *(Russian)* 8-15382
Ni-Cr-Al-Ti-Mo, low temp. mech. behaviour, precipitation 8-39860
Ni-Cr-Co-Mo, long-term corrosion stability rel. to use in joint endoprostheses 8-36059
Ni-Cr-Co-Mo alloy MP35N alloys, cold worked, factors affecting embrittlement in H_2S environments 8-31502
Ni-Cr-Co-Mo-Al-Ti (10, 15, 3, 5.5, 4.5 wt.%), superalloy, exam. of creep and fracture behaviour 8-48464
Ni-Cr-Mo steel, corrosion and cavitation-erosion resist. *(Russian)* 8-11395
Ni-Cr-Mo-Fe-Mn, Kh12M23, intermetallic phases exam. *(Russian)* 8-39740
Ni-Cr-Ti-Co-W-Al-Mo alloys AF-115 and AF2 1DA, superalloy powder compacts, fatigue origins 8-48521
Ni-Fe-Mo-Cu (79, 16, 4.3, 0.7 wt.%) K-state formation, physical props. exam. 8-47761
Ni-Mo, oxidation effect on magnetic props. *(Russian)* 8-23868
Ni-Mo, solid soln., US deform., electron microscope exam. *(Russian)* 8-35447
Ni-Mo, solid soln., US effect on mech. props. *(Russian)* 8-23819
Ni-Mo, solubility of H_2, 500-1000°C *(Japanese)* 8-38845
Ni-Mo, weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8-31063
Ni-Mo melt, N_2 diffusion *(Russian)* 8-18812
Ni-Mo-Al and Ni-Mo-Al-V, high-resist., struct. transforms., TEM *(Russian)* 8-19762
Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8-15562
Ni_3-Mo, transport props. and magnetisation, effect of Mo alloying *(Russian)* 8-39095
Ni_4Mo alloy, high temp. oxidation, oxide layer growth, struct., mech. behaviour 8-44269
Ni_4Mo, statistically homogeneous ordering, computer-simulated field ion images 8-9991
Ti-Al-Cr-Mo-U, alloy VT22, phase composition and fatigue strength 8-3219
Ti-Al-Mo (31, 13 wt.%), transform. microstruct. 8-48394
Ti-Al-Mo-Sn-Si (4,4,2,0.5 wt.%), fracture toughness and crack propag. 8-39892
Ti-Al-Mo-V (8, 1, 1 wt. %), stress corrosion cracking and slow strain rate H_2 embrittlement 8-48569
Ti-Al-Mo-Zr alloy, VT9, decomp. kinetics of metastable β-phase, X-ray and mech. props. obs. *(Russian)* 8-48368
Ti-Al-Mo-Zr alloy VT9, Cu-Cr(Ni) coated, plastic deform. and diffusion annealing effect on props. *(Russian)* 8-35425
Ti-Al-Mo-(Cr), etching as a function of struct. *(Russian)* 8-15568
Ti-Al-V-Cr-Mo-Zr (3,8,6,4,4 wt.%), beta-C, microstruct. effect on mech. props. 8-27577
Ti-Al-Zr-Mo-Si (6,5,0.5,0.25 wt.%) fracture toughness and crack propag. 8-39892
Ti-B-Mo system, phase equilibria at 1400°C 8-35354
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8-39791
Ti-Mo, dilute, superconducting transition temp. and mag. susceptibility 8-47899
Ti-Mo, lattice parameter and Debye temp., comp. depend. *(Russian)* 8-47280
Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8-6975
Ti-Mo-V-Fe-Al (8823 wt.%), heavy section extrusion, fabrication and mech. props. 8-6985
Ti-Mo-Zr-Sn, alloy, βIII, struct. transform. in thermally affected zones after electron beam welding 8-23919
Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8-3153
U-Mo (1.5 wt.%) metallurgical study of forging *(French)* 8-21737
U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8-23729
U-Mo(Q^4)(Q^5), Q^4=quad, Q^5=quint, stress corrosion cracking in moist air, salt water, salted moist air 8-35562
Zr-Mo (3 wt.%), β-phase stability 8-39742
Zr-Mo-Al (3, 1 wt.%), β-phase stability 8-39742
Zr-Nb-Mo-Re, alloying effect on dislocation core struct., determ. by discrete lattice modelling 8-30618
Zr-Sn-Mo (6, 1 wt.%), creep and creep rupture 8-23778

molybdenum compounds
  see also molybdenum alloys
  alkali metal ternary sulphides, A_xMoS_2 and $A_xMo_3S_4$, cryst. struct. 8−42989
  chalcogenides, crit. mag. fields *(Russian)* 8−34936
  complex, $MoOCl_3.2Ph_2SO$, prep. and characterisation 8−30592
  dichalcogenide, valence band nature, elec. and mag. props. 8−39014
  molybdates, nonstoichiometric, IR spectra rel. to vacancy struct. *(French)* 8−43867
  precipitation, during evaporation of highly active nitrate solns. 8−37426
  ternary selenides, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
  ternary sulphides, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
  triphenylphosphine compounds, $(C_6H_5)_3PM_xM'_{1-x}(CO)_5$, M,M'=Cr, Mo, W, mixed cryst., CO vibr. spectra, modal anal. 8−35128
  $AgI-Ag_2O-MoO_3$, comparison of ionic conductivity between glassy and crystalline solid electrolytes 8−30786
  $Cu_{2-x}Mo_3S_4$, X-ray cryst. struct. exam., effect of Cu conc. variation 8−2071
  $Cu_xMo_6S_8$, sintered and sputtered, supercond. upper crit. field 8−23215
  $Er_xMo_6Se_8$, long-range antiferromag. order and supercond. coexistence 8−10715
  $H_{1.6}MoO_3$ bronzes, proton mobility 8−39426
  $KCl(Br):MoO_4^{2-}$, vibronic absorption spectra 8−10924
  $MgMo_2O_7$, cryst. struct. 8−18596
  $Mn_{8-y}Mo_{3+y}Si_8$, cryst. struct. *(French)* 8−38675
  Mo complex, ^{97}Mo and ^{95}Mo nuclear elec. quadrupole moment, nuclear quadrupole double reson. spectra 8−10802
  Mo complex, hexadimethylamino molybdenum, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
  Mo complex, μ-oxo bridged oxomolybdenum(V) dimers, conform. anal. by ang. overlap method, triplet ground states 8−5119
  Mo complex, $Na[Mo_2O_5(O_3(OH)C_6H_8(OH)_2)].2H_2O$, struct. determ. and refinement 8−2073
  Mo_2BC, planar intergrowth defects and nonstoichiometry 8−2145
  Mo_2C, synthesis by ion bombard. of Mo film 8−48357
  $Mo(CO)_6$, polarised absorption, field effects in condensed media 8−997
  $MoCl_5$, pulsed discharge dissoc., for Mo I oscill. strengths meas. 8−25479
  $Mo_2Cl_8^{3-}(Mo_2Cl_9^{3-})$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
  $MoCr_2O_6$, hydrothermal cryst. growth, 40 kbar, 873K, cryst. struct. *(French)* 8−35342
  MoF_5, prep., melting temp., vapour density, press., enthalpy of fusion, meas., assoc. 8−38813
  MoF_5, vapour, thermodynamic props. calc. 8−38826
  MoF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
  MoF_6-ZZ 8−27441
  Mo_3N, synthesis by ion bombard. of Mo film 8−48357
  $Mo_2(NH_2)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
  MoO_2-I_2, heterogeneous equilib., vapour transport and cryst. growth 8−27405
  MoO_3, electric quadrupole interaction, TDPAC meas. 8−39455
  MoO_3 film, electrochromism, X-ray electron spectra 8−48146
  MoO_3, film and cryst., long range potential centres 8−30920
  MoO_3, smoke particles, coalescence growth by gas-evaporation 8−47256
  MoO_3, thin cryst. obs. by convergent beam electron diffr. 8−38670
  $MoO_3-P_2O_5$, glass, DC cond. meas. high temp. range 8−6376
  $Mo_2(OH)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
  Mo_2OsB_2, cryst. chem. and struct. 8−42995
  MoS_2 (2H), elec. cond. press. depend. 8−43394
  MoS_2 film, adhesion to oxidised metal surfaces, XPS meas. 8−22972
  MoS_2, Pd epitaxial growth, epitaxial orientation variation *(French)* 8−43256
  MoS_2, RF sputtered, solid lubricant on mild steel, morphology 8−6239
  MoS_2, UPS meas. band struct. determ. 8−35250
  MoSCl, thermal expansion and thermal transform. 8−26696
  Mo_6Se_8, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
  $Mo_5SnGa_xS_6$ heat capacity from 2 to 25K 8−43518
  β-$MoTe_2$, metallic in-plane resistivity meas. indicate first-order phase transition 8−30903
  $MoTe_2$, thermal cond., rapid meas. method *(French)* 8−12689
  $Na_4Mo_{12}GeO_{40}(H_2O)_8$, X-ray diffr. cryst. struct. exam. 8−2075
  $Na_6Mo_5P_2O_{23}(H_2O)_{14}$, X-ray diffr. cryst. struct. determ., refinement 8−2074
  $PbMo_{5.1}S_6$, high supercond. T_c, soft mode behaviour 8−14855
  $PbMo_6S_6$, cold-worked core-wires, supercond. transition temp. and lattice instability 8−6469
  $Pb_xMo_6S_{8-y}$, phase relns., stoichiometry, T_c 8−15378
  $PbMo_6Se_8(S_8)$, anisotropy of H_{c2} 8−39274
  $SnMo_5S_6$, high supercond. T_c, soft mode behaviour 8−14855
  $SnMo_6S_8$, lattice softening, vibr. anisotropy 8−14428
  $SnMo_6Se_8$, anisotropy of H_{c2} 8−39274
  $TlR(MO_4)_2$, R=Eu, Dy, Er; M=Mo, W, luminesc. *(Russian)* 8−48229
  $V_{1-x-z}Fe_xMo_zO_2$, Mossbauer effect exam., Fe conc. and precise struct. characteristics 8−31141
  WO_3-MoO_3 film, amorphous, electrochromic optical absorpt., expt. results and model 8−27341
  $YbMo_6S_8$, supercond., low temp. thermal and mag. props. 8−14904

moments (electric) *see electric moments*

moments (magnetic) *see magnetic moments*

moments (molecules) *see molecular moments*

momentum
  see also angular momentum
  impact ball apparatus, teacher's demonstration 8−8195
  operator, in nonCartesian coords., for teaching 8−24620
  quantum momentum operator in curvilinear coordinates *(Russian)* 8−36862

monitoring
  see also patient monitoring; radiation monitoring
  atmospheric and Earth surface characteristics affecting tropospheric propagation of microwaves, satellite techniques 8−24353
  deep body temperature measurement in rodents, inexpensive telemetry system 8−24185
  dosimeter, remote-reading operational amplifier type, elec. constancy checking 8−3613
  Earth surface albedo change, LANDSAT monitoring 8−32104
  BL Lacertae, optical monitoring by three-colour photographic photometry 8−16525
  laser beam energy monitoring, photoacoustic detector, construction and calib. *(Czech)* 8−29156
  load cell monitor for liquid N meas. with Li drifted Ge detectors 8−29122
  Magnox reactors, remote corrosion monitoring, laser based instrument 8−41822
  ocean moorings, acoustic phase tracking techniques 8−30138
  outdoor noise monitoring microphone installation and calibration *(Japanese)* 8−42504
  p-n junction struct., X-ray topography visualisation during prep. *(Russian)* 8−26386
  piezoceramic radiators, defects visualisation using holographic interferometry *(Russian)* 8−1530
  plant and soil monitoring, from tethered balloon, multispectral radiometry 8−3958
  pollution, of coastal waters, Italian methods *(Italian)* 8−3828
  PWR acoustic monitoring instrumentation 8−17309
  radioisotope measuring convertor, parameter calc., thickness monitoring appl. *(Russian)* 8−25403
  regenerative fibre-optic transmission system supervisory line codes *(German)* 8−33884
  rotating machine in nuclear power plants, vibration monitor 8−13299
  salt concentration, monitored by one-chip conductivity meter 8−232
  sound quality, cinematography appl. 8−33961
  spectrometric channel control using blocks 8−866
  thermometer, multiple thermistor unit for use with data loggers 8−41303
  total ion monitoring method, for secondary ion intensity correction 8−12796
  X-ray tube thermal monitoring system, LOADIX, features 8−3658
  CO_2 laser control using Ge and InSb 8−1203
  OH, laser absorption spectrum, scanning technique, appl. to atmospheric monitoring 8−17664
  Ra for earthquake prediction *(Japanese)* 8−28181

monitoring, computerised *see computerised monitoring*

monitors *see monitoring*

monochromators
  atomic absorption two-wave and dispersionless spectrophotometric systems *(Russian)* 8−27862
  compact double, for atm. diffuse-direct UV ratios meas. 8−49144
  constant-deviation, defocusing compensation with concave diffr. grating 8−46792
  grating monochromators, servocontrolled and automated scanning system, using microcomputers. 8−33852
  grazing incidence monochromator for synchrotron radiation 8−38005
  grazing incidence spectromonochromator for XUV region 8−5572
  holographic grating monochromator for 5 to 1000 eV synchrotron radiation 8−18049
  luminescence measuring setup with GDM 1000 grating double monochromator for semicond. 8−21226
  MRD-2 based polychromator for plasma diagnostics 8−5924
  neutron double monochromator for diffraction studies 8−1957
  OTF measurement and image correction in spectroscopic system 8−37083
  photon counting, solar radiation UV limit meas. at Earth surface 8−49134
  prism Littrow monochromator, wavelength calibration 8−25950
  synchrotron radiation wavelength dispersion monochromator for fluorescence spectroscopy 8−296
  thermal neutron monochromators, Monte-Carlo simulation of mechanical velocity selectors 8−24886
  twinned neutron monochromator 8−840
  UM-2, garnet-ferrite film thickness meas. with interference attachment 8−3035
  vacuum UV 6 m, photoabsorpt. obs. in atm. gases 8−37969
  VM-2 vacuum monochromator for 400-7000 Å range 8−25971
  wavelength dispersion system for synchrotron radiation 8−296

monolayers
  see also adsorbed layers
  alkali metal on metals and semiconductors, negative ion prod. on Cs^+ sputtering 8−46204
  amino acid monolayers and ordered films on Cu, surface struct. LEED 8−38968
  arachidate monolayers, optical props. integrated optics meas. 8−35214
  bacteriochlorophyll monolayer quantum yield and image contrast in photoelectron microscopy 8−44453
  cell cycle and topography in nonsynchronised monolayers, autoradiography and time-lapse use for rigorous SEM obs. 8−24212
  cholesterol, adsorbed monolayer on aerosil, IR spectra 8−15753
  dense fluid monolayer, eqn. of state, appl. to alcohol monolayer on water 8−6195
  dye molecule monolayer displaced from metal surface, light refl., coupling with metal surface modes 8−48246
  gas, formation on solid surface as friction protection 8−47663
  lecithin, adsorbed monolayer on aerosil, IR spectra 8−15753
  lipid monolayer phase transitions, model 8−2338
  lipid monolayers and bilayers, phase transitions, model 8−44460
  localized monolayer adsorpt. of gas-mixtures on heterogeneous surfaces, stat. thermodyn. 8−2371
  magnetic, possibility of formation on nonmag. transition metal surface 8−15009
  manganese stearate, two-dimensional mag., prep. and characterisation 8−31097
  merocyanine dye monolayer on p-chloranil cryst. in sandwich cell, electrochromic detection of internal charges 8−11549
  mobile adsorption, 2-D hard disc model, perturbational method 8−38932
  permeation and evaporation resistance, hard disc fluid model 8−34678

monolayers continued
- phenol, adsorbed layer, inelastic electron tunnelling spectral lineshapes below 100 mK 8–31000
- phospholipid monolayers, polymorphism 8–40120
- PMMA, monolayers collapse mechanism, surface press. and ellipsometric obs. 8–43214
- poly-γ-methyl-L-glutamate, interfacial conformational modifications 8–2339
- stearic acid monolayers on HCl subsoln., surface diffusion by ^{14}C-tracer 8–34679
- STEM use for two-dimensional molecular assemblies construction 8–24201
- submonolayer films on metallic surface, struct. and props. review 8–38972
- surface tension and spreading press. for mobile and registered layers 8–38960
- surface tension meas. using filter paper Wilhelmy plates with insoluble monolayers 8–357
- valinomycin monolayers, struct., area and compressibility determ. 8–44461
- valinomycin-cholesterol (stearic acid) monolayers, struct., area and compressibility determ. 8–44461
- Ar, on graphite, neutron diffr. study 8–34705
- Cu on Ag (001), ultrathin film electronic states calc. 8–6318
- Cu, on Zn (0001), electronic struct., photoelectron spectra 8–39660
- Fe, epitaxy on Au, growth processes, ultra high vac. in situ electron microscopy 8–30842
- Ga, on W, field ion image qualities and work function 8–35272
- H, on Si (111) surface, electronic struct. 8–39182
- He film, from two to three dimens.,, review 8–47633
- ^{3}He, submonolayer on Grafoil, vacancy induced ferromag. 8–14536
- In, on W, field ion image qualities and work function 8–35272
- Kr monolayer on graphite, disregistry transition 8–30825
- Kr, on graphite, misfit dislocations and lattice parameters, model 8–34708
- La, on W (112) face, contact pot. difference, LEED and field-emission microscopy meas. *(Russian)* 8–14618
- N_2, on graphite, phonon dispersion curves for postulated four sublattice struct. 8–47667
- NO, first monolayer on MgBr cleavage face, triple point 8–6227
- Pd on Ag (001), ultrathin film electronic states calc. 8–6318
- Sn, on W, field ion image qualities and work function 8–35272
- Xe, on graphite, misfit dislocations and lattice parameters, model 8–34708

monolithic integrated circuits
- *see also bipolar integrated circuits; field effect integrated circuits; large scale integration*
- cascade CCD ultrasonic lens applications 8–22231
- linear, implantable CW Doppler US flowmeter appls., blood flow meas. 8–11749
- MWPC, high-flux fast readout system based on new monolithic integrated ccts. 8–37491
- radiation effects, conf., Williamsburg, USA (July, 1977) 8–26594
- ZnO/SOS monolithic SAW amplifier 8–6205

monomers *see molecules*

monomolecular films *see monolayers*

monomolecular layers *see monolayers*

Monte Carlo methods
- acetone-chloroform solution, Monte Carlo calcs. for interface struct. with directed intermol. forces *(Russian)* 8–1975
- adjoint Boltzmann eqn., stochastic models for Monte Carlo integration 8–21618
- adsorbate diffusion on single crystal surfaces, influence of lateral interactions 8–38953
- adsorption systems, Monte Carlo calcs., grand canonical ensemble, long-range corrections 8–30826
- alkali halides, anomalous sp. ht. Ising model and Monte Carlo calcs. 8–47989
- alkali metal, bulk properties, computer simulation 8–30729
- alloy, binary, conc., with short and long range order, computer simulation of diffusion 8–30778
- alloy, FCC, Monte Carlo simulation of surface segregation 8–31413
- alloy random, binary, diffusion correlation factors calc., comparison of matrix inversion, Monte Carlo and diffusion of probability techniques 8–30779
- anisotropic system, computer simulation, energy and specific heat temp. depend. 8–9947
- astrophysics, appl. of Monte Carlo calcs. to high-energy nuclear reactions cross sections 8–28505
- athermal model chains, pair distrib. function, Metropolitan Monte Carlo calcs. 8–17827
- atmospheric UV polarisation characteristics using Monte Carlo methods *(Russian)* 8–32224
- atomic clusters, free energy, compared to Becker-Doring and Lothe-Pound theory 8–22063
- atomic elastic scattering, laboratory differential cross section data anal. via Monte Carlo averaging 8–21997
- benzene-d_0, -d_6, intramol. vibr. energy relax. calcs. 8–33574
- binary collision model for plasma simulations, Monte Carlo method particle code 8–9824
- biological macromolecules, computer simulation of solvent struct. 8–40113
- brain O_2 transport, nonlinear simulation, hybrid computer implementation 8–40131
- chemical reaction kinetics, discrete simulation methods, appl. 8–48627
- classical one-component plasma, screening pot., lattice model 8–22453
- cluster statistics for random and Ising percolation 8–32766
- Compton scatter tissue densitometry, calc. of single and multiple scatter photon fluences 8–28048
- computer simulation of vacancy annealing kinetics, for deformed Au 8–47353
- configurational free energy of chains Monte Carlo approach 8–16742
- continuous slowing down theory params. in highly absorbing media 8–29559
- cosmic ray fast timing ang. distrib. meas., data anal. 8–49256
- cosmic ray muons angular distrib. underground 8–40786
- cosmic ray neutron detector, efficiency determ. by Monte Carlo method 8–21809
- Coulombic systems, restricted primitive model, Monte Carlo simulations, ergodic problems 8–36923

Monte Carlo methods continued
- crystal growth, computer simulation 8–26463
- crystal growth from vapour, simulation 8–31312
- CTR, model blanket expt., neutron spectra sensitivity analysis 8–29648
- deep-penetration radiation transport, event and point value in Monte Carlo importance sampling 8–8869
- diatomic gas, molecular dissociation, recombination reactions simulation 8–23934
- diffusion and evaporation on (100) surface of FCC crystal 8–30836
- dipolar lattice, 2-D, Monte-Carlo calc., lattice energy 8–14308
- dislocation motion through random array of point obstacles, thermally activated, computer simulation 8–30636
- displacement spike annealing, Mont Carlo method computer expteriments 8–30672
- dosimetry, isotropic and cloud source irrad. by monoenergetic neutrons and photons 8–24138
- Durham air shower array, Monte Carlo anal. of response 8–36460
- electron dosimetry below 50 MeV 8–7453
- electron dosimetry in tissue equiv. phantoms 8–7454
- EPMA correction procedure, Monte Carlo derivation of surface ionisation function 8–20119
- fallout gamma radiation, effectiveness of soil as shielding 8–5059
- FBR safety related slowing down problems 8–678
- ferroelectric, anomalous sp. ht. Ising model and Monte Carlo calcs. 8–47989
- films, thin, on substrate, thickness meas., electron probe anal. technique *(French)* 8–41276
- fission reactor fast systems with cylindrical geometry, Monte-Carlo method anal. 8–46132
- flow prediction, Monte Carlo and Bayesian probability techniques 8–30256
- fluid, hard sphere, nonspherical mols., dielectric const., Monte Carlo simulation 8–23385
- fluid, hard-core plus Yukawa tail pot., eqn. of state 8–26410
- fluid, of hard hetero/homonucl. diats., Monte-Carlo simulations 8–42873
- fluids, dipolar hard spheres, dielectric const., pair distrib. function, Monte Carlo study 8–6001
- fusion pellet-target system, optimum material and design for selativistic electron beam 8–17416
- gamma spectrometry, low-level, in vivo, optimum detector size and position 8–28075
- gas-liquid system, digital simulation 8–2341
- hard diatomic fluid mixtures, dense, orientational struct. 8–34415
- hard oblate spherocylinders, Monte Carlo virial coeffs. 8–26400
- hard sphere fluid, in contact with soft repulsive wall, struct. calcs. 8–1967
- hard sphere fluid, y(r) function, Monte Carlo calc. 8–18523
- hard-sphere solid, radial distrib. function, Monte Carlo calc. 8–6022
- heat conduction with convective boundary conditions 8–680
- Heisenberg ferromagnet, magnetisation calc. 8–23229
- Heisenberg magnet, two-dimensional classical, mag. props., Monte Carlo calc. 8–23231
- hot electron phenomena, calc., review 8–26870
- III-V semiconductors, quaternary and ternary, alloy scatt., high field transport 8–30929
- inert gas crystallites of 5, 6, 7, 8 atoms, metastable states, Monte Carlo method 8–22687
- interpretation using averaged continuum pot. 8–30683
- interstellar clouds, Oort model, Monte Carlo simulation 8–12331
- ion-surface impact, low energy light ions, anal. of interaction by Monte Carlo simulation 8–23570
- Ising antiferromagnet, BCC, crit. behaviour in mag. field, Monte Carlo calc. 8–31088
- Ising antiferromagnet, BCC, in mag. field, Monte Carlo calcs. 8–31032
- Ising antiferromagnet, phase boundary, crit. temp. field depend., Monte Carlo anal. 8–34995
- Ising model, dipolar antiferromag., phase transition at negative absolute temp. *(Russian)* 8–43594
- Ising model, Monte-Carlo method appl. to evaluation of Niemeijer-van Leeuwen cumulant expansion 8–16751
- Ising model, quenched two-dimensional single spin-flip kinetic, Monte Carlo simulation 8–34943
- Ising model spin glass, Monte Carlo calc. of mag. suscept. 8–31079
- Ising spin glass, vanishing of Edwards-Anderson parameter 8–43597
- light, polarized, radiative transfer eqns., adjoint Monte Carlo treatment 8–37799
- LMFBR, intermediate Na activation 8–4997
- luminescence band, deform. and shift, impurity centres, migration of excitations, math. modelling 8–48225
- magnetic transitions, in systems with competing interactions 8–14963
- magnetoresistance, in semiconductors and plasmas, density or conc. nonuniformity calcs. 8–47099
- Maier-Saupe model on square and triangle lattices, phase transitions 8–32771
- many-fermion system, Monte Carlo simulation 8–12644
- melting curve maximum phenomenon, computer simulation using two species soft core model 8–6146
- metal surface, near point-defect, annealing, diffusion theory and Monte Carlo anal. 8–47646
- methane, aq. soln., Monte Carlo simulation of isothermal-isobaric ensemble 8–30531
- methane, heavy cryst., Debye-Waller factor temp. depend. 8–47492
- microbeam analysis developments, application of Monte Carlo calc. method *(Japanese)* 8–3431
- microdosimetric distributions for small sites 8–3617
- minority carrier diffusion length determ. near p-n junction, SEM appl. *(French)* 8–43466
- molecular collisions, differential scatt. cross sections from classical trajectories, Legendre moment method 8–3314
- Monte Carlo shielding calcs., biased selection of particle flight directions as variance resolution technique 8–29653
- multigroup photon cross section technique 8–4570
- multiparticle prod. in quark-parton model, Monte Carlo method 8–41607
- natural gamma-ray dose rate distribs., effect of male-female body-size diff. 8–24139
- neutron capture probabilities for thick samples at resonance energies 8–46123

Monte Carlo methods continued
neutron detection, efficiency meas. using Monte Carlo simulator program 8−17045
neutron diffraction, multiple scatt. correction, Monte Carlo simulation 8−9913
neutron diffraction, pulsed source expts., optimized Monte Carlo simulation 8−9914
neutron elastic angular data, equal probability steps 8−668
neutron fictitious scatt. radiation transport model for deep penetration calcs. 8−29526
neutron field charact. calc., beyond Fe barrier, effect of scatt. indicatrix approx. and consts. representation 8−17272
neutron polarisation expts., multiple scatt. effects 8−13052
neutron transport, error prediction from track length estimator theory 8−29527
nonuniform neutron transport problems, estimation of perturbations in solving 8−17271
nosetip recession meas. using implanted radioactive sources, error analysis 8−16272
nuclear measurements, errors of parameters in least squares fitting procedure 8−16768
off-lattice polymer chains 8−5382
outgassing from surface, Monte Carlo method in one-dimens. 8−47001
particulate material, spectral reflectance, Monte Carlo model with asperity scatt. 8−37804
PBF reload core cell calc., failure of Wigner Seitz approx. 8−25264
percolation clusters, as teaching aid for Monte Carlo simulation and crit. exponents 8−12477
phase connectivity in two-phase microstruct., Monte Carlo calc. of topological and percolation props. 8−30765
phase space integral, n-particle, relativistic, Monte Carlo integration program 8−33001
photon scattering angles selection in MORSE, rejection technique 8−4571
photoproduction of lepton pairs in thick target, Monte Carlo simulation 8−21432
plane rotator model, two dimens., mag. equilib. props. 8−47990
plasma, O^++H charge exchange, Monte Carlo simulation 8−34260
polymer and fibre systems, entanglement density, statistical theory 8−5381
polymer chains, intramolecular cross-linking reactions, Monte Carlo calcs. *(Russian)* 8−31636
polymer lattice dynamics, relax. time Monte Carlo anal. 8−5380
polymer molecule, in soln., end-to-end distance relax., Monte Carlo simulation, model depend. 8−22061
polymers, simulation by self-avoiding nonintersecting random chains, conc. effect 8−12639
polytypes, Monte Carlo simulation 8−6024
powder specimens, oxidised and unoxidised layers, X-ray irradiated electron emission intensities, Monte Carlo calc. *(Russian)* 8−6825
press. by Monte Carlo computer simulation 8−4564
proton flux precipitating in equatorial ionosphere, estimation of energy release 8−32268
radiation transport, ang. biasing of collision process in multigroup calcs. 8−4975
radiative transfer, emission freqs. simulation from angle-dependent partial freq. redistribs. 8−32333
radiative transfer, freq. redistrib. in externally excited medium 8−20628
random flight theory, appl. to DNA length measurement 8−35799
random walks without self-intersection, distrib. function 8−8350
range distributions of energetic protons in Si, Monte Carlo computer simulation 8−22777
rarefied gas flow, intermolecular interaction, Boltzmann eqn., Monte Carlo simulation *(German)* 8−34165
reactive scattering, trajectory calcs., Monte Carlo sampling method for initial values 8−41147
reactivity calcs., Monte Carlo perturbation source method 8−37398
reflection nebulae, multiple scatt., Monte Carlo approach 8−12320
scanning Auger electron microscope, Monte Carlo calc. of spatial resolution 8−41383
scanning Auger electron microscopy, Monte Carlo calc. 8−19610
Schrodinger equation for molecular systems, comparison of Grimm Storer and Anderson techniques 8−46255
self-diffusion, correlated, via randomly migrating vacancies, in cubic crysts., computer simulation 8−2283
self-replicating macromolecules, Monte Carlo computer models 8−46473
simulation of quantum spin systems, two dimens. X-Y model 8−27011
SNR-300, coolant outlet duct design from neutron transport experiments *(German)* 8−29566
solid, Monte Carlo simulation of energy distrib. of transmitted or back-scatt. keV electrons 8−43057
Soller collimators, appl. to small angle neutron scatt., Monte-Carlo simulation 8−29701
spin glass, dipolar, anomalous sp. ht. Ising model and Monte Carlo calcs. 8−47989
spin glass, Ising, two-dimensional, Monte Carlo evidence for absence of phase transition 8−19260
spin glass behaviour in conc. binary mag. systems 8−2694
spin glasses, theory, review 8−2696
steel, ferritic, FeC form. kinetics, Monte-Carlo simulation *(German)* 8−39779
stereology, quadrat choice for geometrical struct. determ. of two-phase specimen 8−12793
stochastically macro-inhomogeneous medium, integral equation of mean radiation intensity *(Russian)* 8−5639
surface migration of small crystallites, Monte Carlo calc. with continuous time 8−26783
suspension, random behaviour simulation, interval of quiescence method 8−31708
thermal neutron monochromators, Monte-Carlo simulation of mechanical velocity selectors 8−24886
Tokamak fusion reactor, effects of blanket-shield penetration on performance 8−21765
transport simulation of fast electrons slowing down in thin Al slab *(French)* 8−26610
tropical cyclone statistical prediction models, Monte Carlo significance testing 8−44943
two-component ionic mixture, eqn. of state and phase separation in uniform background 8−21058

Monte Carlo methods continued
uniaxial Lifshitz point, Monte Carlo calcs. 8−39353
water, Monte Carlo simulation of isothermal-isobaric ensemble 8−30530
water, structure, theory based on quasi-component distrib. functions 8−38606
water slabs, fast neutron penetration spectra 8−29535
water/air mass stopping power ratios for megavolt. photon and electron beams 8−28082
X-Y model, two dimensional, Monte Carlo simulation and phenomenological theory of phase transition 8−6534
γ-ray families, multiparticle prod. above 10^{14} eV, Monte Carlo anal. 8−49257
$pp \to \pi X$, 23 GeV, Monte Carlo anal., parton Fermi motion 8−45977
$(\pi, X\gamma)$ reaction at 70 MeV on s-d shell nuclei 8−29504
$\pi^- p \to \varphi\varphi n$, 22.6 GeV/c, cross section meas. 8−37242
AgBr, molten, Monte Carlo computer simulation 8−26426
β-Al_2O_3-Na_2O, calculation of simultaneous ionic cond. and tracer diffusion 8−43178
CsCl(Br)(I), photoemission, electron-phonon interaction effects, Monte-Carlo calc. and expt. 8−11071
Fe^{n+}+$H(H_2)$, 50-1200 keV amu^{-1}, impact ionis. and electron capture cross-sections 8−42204
GaAs, $\Gamma_6{}^c$-$L_6{}^c$-$X_6{}^c$ cond. band ordering, velocity field characts., Monte Carlo calcs. 8−18957
Ge, hole diffusion 8−6372
$H+Br_2 \to HBr+Br$, HBr ang. momentum alignment, scatt. ang. depend. 8−3323
$H+H^+$, classical 3 body collision, cross section, energy transfer, computer calcs. 8−17783
He glow discharge, electron behaviour in cathode fall, Monte Carlo simulation 8−1941
n-InSb, high field electron diffusion, Monte-Carlo calc. 8−10455
N_2, O_2, O, electrons elastic scatt. cross sections, analytical representations 8−42213
NaI scintillation detectors, efficiency values Monte Carlo calc. method 8−13387
Ni_4Mo, statistically homogeneous ordering, computer-simulated field ion images 8−9991
$^{58}Ni+^{32}S$, 110, 132 MeV, fusion evaporation residues, Monte Carlo simulation 8−41799
Pb shield, effects of thickness and geometry var. on neutron spectra 8−33300
Si, feeding-in and blocking of 2 MeV protons, simple diffusion model 8−22782
W support film for high resoln. electron microscopy, phase contrast, computer modelling 8−1144
XeF_6, UV absorpt. band shape 8−5289

Moon
see also lunar seismology; lunar structure
ALSEP-quasar differential very long baseline interferometry, for lunar position meas. 8−45245
Aristarchus-Harbinger region, surface geology and history 8−20662
atmosphere and ionosphere in geomagnetic tail 8−28553
basaltic magmatism and bulk comp., major and heat-producing elements 8−7891
basaltic magmatism and bulk comp., siderophile and volatile elements 8−7892
basin-forming impacts, global seismic effects 8−12122
crescent first visibility prediction 8−24442
crustal tectonics, relation to internal evolution 8−12116
electrical conductivity, inverse theory appl. 8−12113
EM induction, modelling, solar wind parameters limitations 8−36415
expansion and gravit. constant changes, limits 8−28155
global tectonics, of Mercury and the Moon 8−12128
gravitational field, model based on Luna 10, 12, 14, 19 and 22 data 8−45249
gravitational potential harmonics, effects on Earth rot. axis precession angle 8−48953
gravity anomalies assoc. with large young craters 8−7889
impact craters, use of equivalency in estimation of historical size distrib. 8−45250
intercrater plains on Moon and Mercury, origin and relative ages 8−12117
interior melting, heat source, ^{26}Al from nearby supernova explosion 8−40849
interior structure, rel. to mag. field origin 8−12115
Jacobi integral constant, annual and monthly vars. 8−49301
large impact structures, numbers and isostasy rel. to average crustal viscosity 8−12120
laser lunar ranging, scientific progress, 1969-77 period 8−36476
magnetic anomalies, solar wind interaction 8−4125
magnetic field, primitive remanence model 8−12125
magnetic field anomalies, comparison with Earth 8−4122
magnetosphere, laboratory simulation 8−28550
Mercury and the Moon, conference, Houston, Texas (15-17 November 1976) 8−12126
meteorite impact and explosion craters 8−45296
meteorite impact ejecta, depend. of mass and energy lost on planetary escape vel. 8−45295
moment of inertia determ. improvement, proposed strategy 8−24477
moments of inertia, origin of differences 8−45247
morphology of fresh crater landforms, form. and modification 8−40847
Mosting A posn. determ., plate reduction *(French)* 8−20661
occultations, photoelec. obs., diffraction, stellar diameters and double stars 8−7866
occultations of ψ Virginis (SAO 139033) and χ^1 Orionis (SAO 077705), ang. dias. meas. 8−20825
occultations of Kepler's supernova remnant and Crab Nebula, struct. at 327 MHz 8−12339
occultations of stars, double and multiple stars obs. 8−4079
occultations of stars, new technique for photoelec. obs. of dark limb reappearances 8−4115
occultations of stars, summary of obs. 8−7982
optical characteristics, interpretation rel. to surface material props. 8−12130
orbital gamma-ray data rel. to large-scale lunar problems 8−12123
orbiter mission, NASA 1980 polar orbiter global survey study 8−4064
Orientale basin, comparison with Caloris basin on Mercury 8−12121

Moon continued
  origin and composition, information from Apollo and Luna projects *(French)* 8−40846
  permanent magnetic field, cratered-shell model 8−4124
  photography for amateur astronomers 8−45238
  positional photographic obs. at Pulkovo with long-focus horizontal telescope *(Russian)* 8−28533
  primaeval melting, by superheavy elements 8−24478
  rayed craters on Moon and Mercury, interpretation 8−12119
  secondary craters preservation states, comparison with Mercury 8−12118
  star occultations, 1965-71 events recorded at Poltava *(Russian)* 8−4083
  surface, interaction with exospheric atmosphere 8−49351
  surface albedo, soil and rock chem. comp. effects, solar wind darkening mechanism 8−28552
  surface chemistry, weighted-filter imaging technique appl. to X-ray fluoresc. data 8−12124
  surface colour differences, Tycho and Alpine valley areas 8−20663
  surface mass fractionation by solar wind sputtering 8−49350
  surface unit definition and characterization using remote sensing 8−28551
  thermal evolution, latitude effects 8−4126
  thermal history rel. to fission origin 8−24476
  tidal stresses rel. to moonquakes 8−40848
  topocentric aberration, reduction method for astrometric obs. 8−4081
  K distribution, implications of K solubility in Fe-S and silicate-K-(Fe-S) equilibria 8−11843

Moon structure *see lunar structure*

moonquakes *see lunar seismology*

Morin temperature
  see also weak ferromagnetism
  DyFeO$_3$:Al^{3+}, Morin transition, mag. vacancies effect *(Russian)* 8−27039

Morse potential
  see also intermolecular mechanics; kinetic theory
  anharmonic Morse oscillator, multiphoton excitation, quantum vs. classical treatment 8−5306
  atom+diatom, collision-induced dissoc., quantum mech. probability calcs. 8−25657
  cubic metal, elastic shear modulus, temp. depend. 8−10118
  diatomic molecule, with ang.-depend. pot., vibr. matrix element calcs. *(French)* 8−13484
  diatomic molecules, Franck-Condon factors for high J, Morse oscill. calcs. 8−37548
  molecular dissociation, collision-induced, Morse oscill. model 8−37710
  one-dimensional oscillator, excited rot. states, semi-analytic solns. 8−25502
  water, vap., rot.-vibr. levels, nonperturbative multimode model, 2 interacting Morse oscills. 8−9135
  weakly bonded molecular complexes, intermol. transfer and relax. of vibr. energy using Morse pot. *(German)* 8−1056
  $CO+H_2$, vibr. deactivation, 250 to 2000K, Morse pot. calcs. 8−46428
  Fe, BCC, shock wave simulation using Morse pot. 8−2196
  MgH, Morse and Lippincott pots., r-centroids, dissociation energy 8−13446
  N_2^-, vibr. autodetaching states, from H^-+H_2, excitation and decay, Franck-Condon factors 8−33620
  Pt, surface diffusion of single atoms of Pt, Ir and Au, FIM expts. and Morse potential calcs. 8−34717

m.o.s. devices *see metal-insulator-semiconductor devices*

m.o.s. integrated circuits *see field effect integrated circuits*

m.o.s. structures *see metal-insulator-semiconductor structures*

mosaic structure (microstructure)
  mica, defects effect on epitaxial film struct. 8−26794
  polyethylene terephthalate, differential scanning calorimetry of melting, mosaic block struct. of cryst. layers 8−26452
  CdS, epitaxial layers on (111) Ce, growth and defect struct. 8−18920

m.o.s.f.e.t *see insulated gate field effect transistors*

m.o.s.i.c. *see field effect integrated circuits*

Mossbauer effect
  alkali borate glasses, alkali cations role 8−39476
  bauxite, Fe-containing, Mossbauer analysis 8−44806
  BCC metal, heavy ion implanted, vacancy annealing stage, Mossbauer meas. 8−39463
  bimetal foil, magnetic-transforms., Mossbauer spectroscopy *(Russian)* 8−6607
  biological systems, very low temp., meas. using ^{3}He-^{4}He refrigerator 8−24909
  calibration constants in Mossbauer diffr. expts. 8−24906
  chromites, from India, struct. and comp. 8−44807
  coherence and interference 8−27123
  coherent γ-radiation generation, collective and stimulated processes *(Russian)* 8−9356
  critical scattering of Mossbauer radiation 8−15073
  cubic metals, impurity-host force-constant changes from Mossbauer data, review 8−48097
  depth selective Mossbauer effect spectroscopy empirical method of quantitative anal. using conversion electrons 8−20130
  diamond, implanted ^{129m}Xe, lattice location, combined Mossbauer and IPAC meas. 8−43733
  diffusion data obtained by NMR and Mossbauer expts., interpretation, mol. dynamics study 8−47567
  dispersion effects, in thick absorber, for arbitrary direction of propag. *(French)* 8−10806
  electric field gradient sign, possibility of obtaining from combined TDPAC and Mossbauer meas. 8−24907
  electric field gradient sign, possibility of obtaining from combined TDPAC and Mossbauer meas. 8−24908
  fast γ-ray detection systems for Mossbauer spectroscopy 8−25376
  ferrite, hexagonal, local lattice distortions, use of Mossbauer effect 8−43745
  ferrocene derivatives in smectic B phase liquid cryst. BBOA, ^{57}Fe Mossbauer study 8−27136
  ferromagnet, amorphous and crystalline, evaluation of complex Mossbauer spectra 8−43755
  ferromagnetic metallic glass, hyperfine field and spin wave excitations, $T^{3/2}$ depend. 8−10672

Mossbauer effect continued
  ferrous oxalate dihydrate, Mossbauer spectrum, hyperfine fields 8−39483
  fluorosilicate, Mossbauer polarimetry, double motion drive and effective thickness meas. 8−23379
  gamma resonance phase anal., background allowance using total resonance absorpt. filter 8−33363
  gamma-ray laser appl. *(German)* 8−1201
  glissile dislocations, prod. by impurity atoms, Debye-Waller factor calcs. 8−2214
  glycerol, supercooled liq., dynamical struct. factor, Mossbauer spectroscopy 8−27126
  gravitational red shift meas. using ^{67}Zn and ^{181}Ta 8−24905
  haemin, mag. interaction down to 0.03K 8−44450
  haemoglobin-haptoglobin deoxygenated complexes 8−24020
  hyperfine interactions at ultralow temps. 8−43742
  ilvaite, Fe temp. depend. oxidation states, electron hopping, Mossbauer spectra, X-ray diffr. obs. 8−2779
  in-beam implantation, method and appl. 8−25372
  integrating counting technique, appl. to ^{197}Au Mossbauer spectroscopy 8−25377
  interference parameters in γ-ray optics 8−19395
  intermediate valence materials, autocorrelation, line shapes, power spectrum due to occupancy variations 8−47742
  lattice isolation of impurities from hyperfine interaction and channelling results 8−43731
  Leoville meteorite, type III carbonaceous chondrite, ^{57}Fe Mossbauer spectroscopy 8−49404
  line intensity fluctuations accompanying coherent US modulation *(Russian)* 8−10815
  line profile, effect of diffusion in external force field *(Russian)* 8−19382
  magnetic critical phenomena, hyperfine expts., selective review 8−43722
  matrix isolation spectroscopy, Mossbauer effect appls. 8−46376
  mechanical press for Mossbauer spectroscopy at low temps. 8−21803
  metal isomer shift, pseudopot.-Born-Oppenheimer theory development 8−2775
  metallic fine particles, Mossbauer fraction, anharmonic lattice vibr. 8−47489
  mica, Mossbauer spectra of Fe 8−23380
  myoglobin-Fe^{3+} compounds, Mossbauer and suscept. expts. 8−24019
  NDT appl. 8−3295
  Ni$_2$SiO$_4$, reaction with Fe to produce Ni gamma resonance spectroscopy *(Russian)* 8−15332
  non-coherent resonant scattering in crystals *(Russian)* 8−15081
  optically active chiral molecules containing ^{57}Fe, optical activity analogy 8−27124
  perovskite, Re containing, new seignettomagnets and ferroelectrics 8−19425
  plastic crystal, Rayleigh scatt. of Mossbauer radiation 8−27125
  polarisation analysis of emission lines in presence of relax. 8−10813
  polyethylene, crystalline, Mossbauer anisotropic elastic scatt. fraction 8−6616
  rare earth tellurides, electron density distrib. from Mossbauer spectra 8−23374
  rare earth-transition metal intermetallics, struct. and props. review 8−10668
  red ochre, chem. anal. by Mossbauer spectroscopy, and superparamagnetism 8−20397
  relaxation spectra, breakdown of white noise approx. 8−27141
  resonance scattering of neutrons and γ-quanta, high recoil energies *(Russian)* 8−35075
  selective excitation method, basic considerations and appl. 8−25375
  semiconductors, radiation damage studies on implanted Te, Sb and Sn by Mossbauer spectroscopy 8−2176
  solid, radiation defect exam. by Mossbauer spectroscopy 8−31139
  in solid-state physics, overview *(French)* 8−2782
  spectrometer, piezoelec., with fast channel advance rates 8−24904
  spectrometer, velocity nonuniformity meas. 8−848
  spectrometer based on Motorola MEK 6800D1 microprocessor 8−37120
  spectrometer with 2-4 T electromagnet 8−847
  spectroscopy, new directions, workshop, Argonne, USA (1977) 8−24903
  spectroscopy, spherical electrostatic electron spectrometer 8−25378
  spin-spin relaxation complications in theory of Mossbauer spectra *(Russian)* 8−43757
  spinels, ligand field stabilisation evaluation using Mossbauer determ. cation distrib. 8−31126
  steel, austenite, γ and neutron irradiation, Mossbauer spectra anal. 8−692
  steel, C, Mossbauer effect exam. of effect of alloying elements 8−2781
  steel, corroded, Mossbauer effect anal. of corrosion products 8−19943
  steel, low C, low alloy, Mossbauer study of retain austenite 8−48434
  steel, stainless, US excitation for Mossbauer absorpt. line-width reduction 8−27148
  steel, structural changes after deformation and annealing, Mossbauer spectroscopic exam. *(Russian)* 8−35446
  stochastic theories for hyperfine spectra in presence of relax. 8−43743
  superparamagnetism, magnetisation vector diffusion coeff., anisotropy energy, vol. distrib. of particles by Mossbauer effect 8−48099
  superparamagnetism, Mossbauer effect study of relaxation of magnetisation vector 8−19402
  surface magnetisation, size effect 8−15008
  synchrotron radiation filtering for Mossbauer source production 8−25374
  thermal spike, effect in Mossbauer reson. obs. through Coulomb excitation 8−27132
  thickness dependence of absorption and scatt. line shapes 8−15079
  transition metal, change of charge radius for 2$^+$-0 transitions of ^{178}Hf, ^{182}W and ^{186}Os 8−25109
  transition metal based amorphous mag. alloys, elec. field gradient 8−39475
  transition metals, vol. corrected isomer shifts, effects in alloys 8−39470
  ultrasonic satellites of Mossbauer radiation calc. 8−27143
  yellow ochre, chem. anal. by Mossbauer spectroscopy 8−20397
  ^{159} Tb, 58 keV level, nuclear reson. fluorescence 8−33121
  Ag, contact charge density, press. depend., trends for Ag-Te 8−39077

Mossbauer effect continued
Ag, fine particles, Mossbauer fraction from Gaussian potential 8−47489
Ag-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Al, quenched-in lattice defects, Mossbauer anal. of associated ^{57}Co 8−39820
Al, self-interstitial interaction with solutes, resistivity meas. 8−47331
Al:Kr foil, ion implantation, low-temp. on-line Mossbauer meas. of ^{83m}Kr 8−35071
Al-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Al-Co, dil., electron and neutron irradiation, interstititall atom clustering at ^{57}Co impurity, Mossbauer meas. 8−30607
Al-Co, electron irradiated, self-interstitials trapped at Co impurities, Mossbauer line shape anal. 8−6615
Al-Co, electron irradiated, quadrupolar relaxation effect in Mossbauer effect 8−39459
Al-Cu-Sn (3.4, 0.28 wt.%), Mossbauer anal. of Sn behaviour during ageing 8−31431
Al-Er, dil., lattice location of ^{169}Er ions after implantation, Mossbauer effect of ^{169}Tm 8−39460
Al-Fe (0.02 at.%), rapidly quenched, ^{57}Fe Mossbauer spectrum associated with vacancy 8−23378
Au complex, paramag., ^{197}Au mag. and elec. hyperfine interactions 8−39471
Au, fine particles, Mossbauer fraction from Gaussian potential 8−47489
Au, matrix for Mossbauer effect on ^{119}Sn and ^{197}Au 8−15080
Au-Dy, dil., hyperfine interaction of Γ_8 quartet, Mossbauer expt. 8−43718
$BaFe_{12}O_{19}$, hexagonal ferrite, local lattice distortions, use of Mossbauer effect 8−43745
BaO-Fe_2O_3-B_2O_3 glass system, mag. struct., Mossbauer study 8−39485
Be-Au, dil., quadrupole interactions and lattice location, ^{197}Hg TDPAC and Mossbauer expts. 8−43726
$CaFeO_3$, charge disproportionation, Mossbauer obs. 8−2778
$CaFeO_3$, preparation, cryst. struct., mag. and elec. props. 8−44066
$Ca_xFe_{3-x}O_4$, Ca^{2+}, Mossbauer study 8−10814
Cd, contact charge density, press. depend., trends for Ag-Te 8−39077
$CdGeAs_2$, amorphous and cryst., short-range order, Mossbauer expts. 8−22648
CdNi ferrite, quadrupole interaction, cation distrib. influence 8−2776
$CeFe_2Si_2$, CeFeSi, absence of effective mag. field at Fe nuclei *(Russian)* 8−19397
CeO_2-$LaCrO_3$, and CeO_2-La_2O_3, quadrupole interactions and moments, ^{137}La Mossbauer obs. 8−27121
Co complex, $[^{57}Co(1,10\text{-phenanthroline})_3](ClO_4)_2.2H_2O$, time differential Mossbauer spectra, aftereffects 8−27131
$Co_2Mn_xFe_{1-x}M$, (M=Ga,Ge,Si,Sn), hyperfine fields of Fe impurities, Mossbauer effect meas. 8−31130
$Co_{2-x}Ni_xTiSn$, mag. ordering, ^{119}Sn Mossbauer spectroscopy and magnetisation meas. 8−43753
Co_2SiO_4, reaction with Fe to produce Co *(Russian)* 8−15332
^{57}Co source, quantum beats of recoil-free γ radiation 8−43748
$CrTiRO_5$, R=Pr,Nd,Sm,Eu,Gd,covalency contribs. 8−10808
$Cs_2NaYbCl_6$, freq. depend. of spin-spin relax. rate from Mossbauer spectroscopy 8−48095
$Cs_2NaYbCl_6$, Mossbauer relax. spectra, breakdown of white noise approx. 8−27141
Cu film, on Cu, Mossbauer emission spectra 8−19387
Cu, self-interstitial interaction with solutes, resistivity meas. 8−47331
Cu-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Cu-Fe, dil., local susceptibility, Mossbauer meas. 8−19400
Cu-Fe, implanted, Mossbauer effect meas. 8−31134
Cu-Fe, implanted, Mossbauer study, rel. to annealing temp. 8−31135
Cu-Zn(Ga)(Ge)(As), Mossbauer effect of Fe impurities 8−31131
$CuCr_2O_4$-$CuFe_2O_4$ (2 mol.%), Mossbauer expts., existence of Fe^{2+} 8−43721
$CuFeS_2$, electronic struct., Mossbauer expt. 8−27150
$Dy_2(Fe_{1-x}Co_x)_{17}$, ZZ 8−2780
$Dy_2(Fe_{1-x}Ni_x)_{17}$, hyperfine interactions obs. 8−6614
$Dy_{1-x}Ho_xNi_2$, cryst. field quenching of Dy^{3+} 4f shell, Mossbauer effect meas. 8−39480
$Dy_{1-x}Y_xAl_2$, cryst. field quenching of Dy^{3+} 4f shell, Mossbauer effect meas. 8−39480
ErH_3, Mossbauer spectra of Er^{3+}, gyromagnetic ratios and cryst. field parameters determ. 8−19388
Eu intermetallic compounds, hyperfine interactions, high press. Mossbuaer expts. 8−43714
Eu-salt solutions, frozen, Mossbauer parameters depend. on pH and halide conc., Eu(III) complexes form. 8−3330
Eu_xCa_{1-x}, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
$EuCl_2$, matrix isolated, Mossbauer effect, isomer shift and quadrupole splittings obs. 8−46377
$EuMg_2H_x$, Mossbauer effect exam. 8−48094
$EuNi_5H_x$, Mossbauer effect exam. 8−48094
EuO-RN solid soln., (R=Nd,Eu,Gd), ^{151} Mossbauer spectroscopy 8−6610
EuPd, mech. of H absorption, Mossbauer, mag. and X-ray diffr. meas. 8−38846
$EuRh_2$, mech. of H absorption, Mossbauer, mag. and X-ray diffr. meas. 8−38846
$Eu_xSr_{1-x}S$, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
$Eu_xSr_{1-x}SO_4$, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
Fe $(NO_3)_3.9H_2O$, spin-spin relax., Mossbauer effect studies, 4.2K 8−31128
Fe, cast, ferritic, Ce addition effect on impurity distrib. Mossbauer study *(Russian)* 8−18673
Fe complex, Fe (II) pseudo-tetragonal high-spin cpds., paramag. susceptibility amd Mossbauer quadrupole splitting 8−26834
Fe complex, $FeCl_3L_3$ type, L=ligand, Mossbauer study 8−2783
Fe complex, $Fe(5\text{-methylpyrazole})_4X_2$, X=Cl, Br, I, mag. susceptibility, mag. saturation; Mossbauer and ligand field spectra, single model interpretation 8−23064
Mossbauer effect continued
Fe complex, $Fe(\text{pyrazole})_4X_2$, X=Cl, Br, I, mag. susceptibility, mag. saturation; Mossbauer and ligand field spectra, single model interpretation 8−23064
Fe complex, halobis(morpholyldithiocarbamato)Fe(III), solvation effects, mag. susceptibility and Mossbauer spectra 8−27129
Fe complex, halobis(morpholydithiocarbamato)Fe(III), Mossbauer HFS spectra, mag. relax. and cooperative transitions 8−27130
Fe complex, tris-(4-morpholinecarbodithioate-S,S')Fe(III), and dichloromethane solvate, Mossbauer and EPR spectra, spin 3/2 state 8−9169
Fe complexes, mag. susceptibility, Mossbauer spectra 8−15071
Fe, corrosion and oxidation, new technique for simultaneous acquisition of Mossbauer spectra and microbalance data 8−44252
Fe, crit. fluctuations, Mossbauer obs. 8−43724
Fe film, antiferromagnetic ordering, Mossbauer spectroscopy 8−14990
Fe film, vacuum-evaporated contamination, conversion electron Mossbauer spectroscopic obs. 8−23985
α-Fe, laser irrad., Mossbauer effect and positron annihilation *(Russian)* 8−19390
Fe, microcrystal, Mossbauer Debye-Waller factor size and temp. depend. 8−15065
Fe, nitrided, X-ray and Mossbauer study of surface 8−48568
Fe, noncrystalline, mag. hyperfine data from Mossbauer spectra 8−39477
Fe powder, passivating oxide layer comp. 8−31558
Fe, segregation of ^{119m}Sn at grain boundaries, Mossbauer effect 8−15414
Fe, ultrathin film, mag. hyperfine field, temp. and thickness depend. 8−39478
Fe^{3+} compounds, Mossbauer spectra, temp. depend. of isomer shift *(Russian)* 8−39479
Fe:N, ion implanted foil, Mossbauer effect study, nitride form. 8−27149
Fe:Xe(Te) interaction of impurities with point defects, Mossbauer spectroscopy exam. 8−47414
Fe-Al (15 at.%), short range order form. kinetics *(Russian)* 8−3146
Fe-Co, equiatomic, atomic order, Mossbauer study *(French)* 8−27135
Fe-Co (25-35%), ordering, Cr addition effects, Mossbauer expts. *(Russian)* 8−19741
Fe-Co based alloys, redistrib. of elements, combined appl. of emission and absorption Mossbauer spectroscopy *(Russian)* 8−6031
Fe-Co-Cr, Cr effect on struct. of ordering, Mossbauer effect meas. 8−35407
Fe-Cr-Co, mag. alloys, Mossbauer spectra 8−19386
Fe-Eu, dil., hyperfine interaction of ^{153}Eu, Mossbauer effect meas. 8−43703
Fe-Mn, Mossbauer study near martensitic transform. temp. 8−3128
Fe-Mn (18.6 wt.%), HCP-FCC martensitic transform., Mossbauer effect meas. 8−44121
Fe-Mn base alloy, mag. preferred directions 8−39370
Fe-Mn-C alloy, martensitic transform. obs. *(Russian)* 8−6927
Fe-Ni, oxidation, Mossbauer spectroscopy, metallography, SEM and X-ray diffr. anal. 8−15577
Fe-Ni austenite, α→γ transform and stabilisation, Mossbauer and electron microscopy obs. *(Russian)* 8−23703
Fe-Ni-C alloy, martensitic transform. obs. *(Russian)* 8−6927
Fe-Ni-Cr, Invar alloy, ^{57}Fe effective field distrib., Mossbauer obs. *(Russian)* 8−19381
Fe-Ni-V alloy, ageing of martensite *(Russian)* 8−39808
Fe-P-C, amorphous, struct. and mag. props., Mossbauer, X-ray diffr. and elec. resist. meas. 8−2009
Fe-Pd alloy, mag. struct. determ., neutron scatt., Mossbauer and mag. meas. *(Russian)* 8−2648
Fe-Pt-Ir, ^{193}Ir and ^{57}Fe, hyperfine field, isomer shift 8−15072
Fe-Si, thin cryst., domain struct. behaviour during magnetisation *(Russian)* 8−2697
Fe-Si (3 wt.%) domain struct., tensile load effects *(Russian)* 8−47995
Fe-V alloys, Mossbauer study, hyperfine field effect on formation of local moments 8−27134
$Fe_{80}B_{20}$, amorphous ferromag., temp. depend. of hyperfine field distrib. 8−43756
Fe_3BO_6, canted mag. struct. near Neel point, Mossbauer meas. 8−35073
Fe_3BO_6, spin reorientation by mag. field, Mossbauer meas. 8−35074
$FeBr_2$, hyperfine interaction, ^{57}Fe Mossbauer expts., mag. transition obs. 8−43720
$^{57}FeBr_2$, matrix isolation Mossbauer spectra, isomer shift, quadrupole splitting 8−42104
$Fe(CN)_6$, Mossbauer isomer shift const., ab initio SCF calcs. 8−43751
$FeCO_3$, siderite, powder, Mossbauer spectra, acoustic-excitation-induced asymmetry of quadrupole splitting 8−27145
$^{57}FeCl_2$, matrix isolation Mossbauer spectra, isomer shift, quadrupole splitting 8−42104
Fe_2Cl_6, matrix isolated, Mossbauer effect, isomer shift and quadrupole splittings obs. 8−46377
$^{57}Fe_2Cl_6$, matrix isolation Mossbauer spectra, isomer shift, quadrupole splitting 8−42104
$FeCl_2.4H_2O$, polarisation effects in Mossbauer absorption in external mag. field 8−31137
$FeCo_2O_4$, spinel, cation distrib., Mossbauer spectra meas. 8−31127
$Fe_{0.5}Co_{2.5}O_4$, spinel, cation distrib., Mossbauer spectra meas. 8−31127
$Fe_{3-x}Cr_xO_4$, Mossbauer study above Verwey transition 8−43750
FeF_6, Mossbauer isomer shift const., ab initio SCF calcs. 8−43751
Fe_xGe_{1-x} amorphous film, low temp. conversion electron Mossbauer spectroscopy 8−48101
FeI_2, hyperfine interaction, ^{57}Fe Mossbauer expts., mag. transition obs. 8−43720
$Fe_{0.2}Mg_{1.9}Ti_{0.9}O_4$, Mossbauer parameters temp. depend. 8−23381
$Fe_{0.4}Mg_{1.8}Ti_{0.8}O_4$, Mossbauer parameters temp. depend. 8−23381
$Fe_{78}Mo_2B_{20}$, amorphous ferromag., $T^{3/2}$ depend. of hyperfine field 8−39474
$Fe_{65}Ni_{35}$, H-infused, internal mag. field determ., Mossbauer effect 8−23382
$Fe_{66}Ni_{31}Mn_3$, H-infused, internal mag. field determ., Mossbauer effect 8−23382
$Fe_{40}Ni_{40}P_{14}B_6$, glassy ferromag. 4.2-1000K 8−10812
$(Fe_xNi_{1-x})_{80}P_{14}B_6$, magnetic hyperfine interaction, Curie temps. 8−6617
α-Fe_2O_3, Bragg diffr. of 14.4 keV reson. γ-quanta in inclined mag. field *(Russian)* 8−2784

Mossbauer effect continued
Fe_2O_3, haematite, Morin transition, Mossbauer expt. using selective excitation method 8-25375
α-Fe_2O_3, Morin transition, Mossbauer spectra meas. 8-31071
γ-Fe_2O_3 small particles, hyperfine field below superparamag. blocking temp., Mossbauer obs. 8-19392
Fe_3O_4, electronic struct. and charge density oscills. near Verwey transition 8-27150
Fe_3O_4, Mossbauer spectra at 80K, Fe electronic states and hyperfine interactions *(Russian)* 8-43696
Fe_3O_4, relax effects, Mossbauer expt. using selective excitation method 8-25375
$Fe_3O_{4-x}F_x$ ($0\leqslant x\leqslant 0.25$), spectra 8-15075
β-FeOOH, colloidal suspension, ionic spin relax. theory for Mossbauer spectra 8-19384
FeO(OH), goethite, Mossbauer effect exam. of annealing effect on struct. 8-19396
$2Fe_2O_3.3H_2O$, bog Fe ore, Mossbauer effect exam. of annealing effect on struct. 8-19396
$Fe_{75}P_{15}C_{10}$ foils, amorphous, ferromag. domain orientation, Mossbauer study 8-15000
$Fe_2(SO_4)_3$, Mossbauer isomer shift in rhombohedral and monoclinic forms 8-6609
$FeSO_4.4H_2O$, Fe sites asymmetry parameter, mean square displacement, Mossbauer spectra 8-6608
Fe_3Sn_2, Mossbauer effect and magnetisation meas. 8-31132
$FeSn(OH)_6$, mag. props. 8-43574
$FeSnO(OH)_5$, mag. props. and cryst. struct. 8-43574
FeTe film, on amorphous substrates, Mossbauer obs. of struct. 8-27142
$FeTe_2$, Mossbauer spectroscopy and nonstoichiometry 8-31125
$FeTiO_3$, electronic struct., Mossbauer expt. 8-27150
$Fe_{3-x}Ti_xO_4$, Mossbauer study at low temp. 8-27133
$FeTiRO_5$, R=Pr,Nd,Sm,Eu,Gd,covalency contribs. 8-10808
$Fe_xV_{1-x}O_2$, mag. props. and Mossbauer spectra meas. 8-31136
$(Fe_xV_{1-x})V_2S_4$, and $(Fe_xV_{1-x})V_4S_8$, mag. props. 8-27034
$^{57}FeX_2$, (X=Cl,Br), matrix isolated, Mossbauer effect, isomer shift and quadrupole splittings obs. 8-46377
^{57}Fe, hyperfine fields in Xe matrix, Mossbauer spectroscopy, Hartree-Fock calcs. 8-43749
Ga_2Te_3, nuclear gamma resonance of ^{57}Fe, isomer shift scale construction *(Russian)* 8-35070
$Gd_xCe_{1-x}Ru_2$, magnetic ordering by ^{155}Gd Mossbauer spectroscopy 8-27139
$GdFe_2$, Mossbauer sample, X-ray diffr. obs. 8-22737
$Gd_2(Fe_{1-x}Co_x)_{17}$, ZZ 8-2780
$Gd_2(Fe_{1-x}Ni_x)_{17}$, hyperfine interactions obs. 8-6614
GdM_x, M=3d transition metal, hyperfine interactions 8-19401
Ge_2FeGa, and Fe_2CoGa, site preference and local environment effects, Mossbauer and NMR expts. 8-43710
^{73}Ge, 13.3 keV Mossbauer resonance, dispersive interference effects 8-25145
^{178}Hf, 2^+-0^+ transitions, mean square nuclear charge radius change, Mossbauer expt. 8-25109
$Hg_2{}^{129}I_2$, Mossbauer effect, bonding, quadrupole coupling const., comparison with $Hg^{129}I_2$ 8-2774
$HoCo_2$, easy direction of magnetisation, Mossbauer data, 4.2K 8-43584
In, contact charge density, press. depend., trends for Ag-Te 8-39077
In, recoilless fraction calc. of ^{57}Fe impurity atoms from mean-square displacements 8-2216
$(In_2SnTe)_x$-$(2InSb)_{1-x}$ system, semicond., Mossbauer absorption line of ^{119}Sn 8-27146
In_2Te_3, nuclear gamma resonance of ^{57}Fe, isomer shift scale construction *(Russian)* 8-35070
K_2FeF_5, one-dimens. antiferromag., single cryst. Mossbauer spectra 8-23376
$KFeS_2$, quadrupolar hyperfine anisotropy, Mossbauer spectra meas. 8-19393
$KM^{II}M^{III}F_6$ (M=1st row transition metal, Zn, or Mg), diavalent and trivalent ion distribs. obs. 8-2777
$LICr_{0.99}Fe_{0.01}O_2$, layer oxide, dimensionality of mag. interactions, Mossbauer study *(French)* 8-23377
$LaFeO_3$, electronic struct., super transfer effects, Mossbauer expt. 8-27150
^{137}La, possibility of obs. of Mossbauer effect 8-39457
LiF:Fe, dispersed ions, absorber Mossbauer spectra 8-15077
$LiTaO_3$, electric field gradients and isomer shift ^{181}Ta 8-39453
$Mn_xFe_{3-x}O_{4+\gamma}$, average directional order, cation valency and repartition on A- and B-sites *(French)* 8-39369
$(Mn_{1-x}Fe_x)_5SiC$, magnitude of quadrupole splittings, Mossbauer study 8-43747
MnSb, hyperfine interactions at ^{57}Fe and ^{119}Sn, Mossbauer spectroscopy 8-23375
$MnTiRO_5$, R=Pr,Nd,Sm,Eu,Gd,covalency contribs. 8-10808
MnZn ferrite, prep. and magnetic props. 8-19254
NH_4FeF_4, mag. and Mossbauer obs. *(French)* 8-19389
NaF:Fe, dispersed ions, absorber Mossbauer spectra 8-15077
Na_2O-SiO_2, disilicate glass reaction with Fe 8-11190
Na_2O-SiO_2, disilicate glass, Fe ion introduction 8-11191
$Na_2O.2Al_2O_3.5SiO_2{:}Fe^{3+}$, Mossbauer effect and magnetometric exam. 8-6613
$NaTaO_3$, electric field gradients and isomer shift ^{181}Ta 8-39453
$Na_2[Fe(CN)_5NO].2H_2O$, powder, Mossbauer spectra, acoustic-excitation-induced asymmetry of quadrupole splitting 8-27145
Nb_3Sn, proton and γ-irradiated, lattice dynamics from ^{119}Sn Mossbauer studies 8-39458
Nb_3Sn, proton irradiated, Mossbauer effect at 78K 8-19394
Ni:^{57}Fe, meas. near Curie temp. 8-10817
Ni_3Al, Mossbauer experiments on homogeneity 8-48395
$NiCr_2O_4$, ^{61}Ni Mossbauer effect studies of hyperfine interactions, mag. dipole and elec. quadrupole 8-43746
Ni_3Fe, long range order, X-ray anal. comparison 8-10810
Ni_3Fe, order-disorder transition 8-10811
$NiFe_{2-t}Al_tO_4$, cryst. and mag. props. 8-14940
$Ni_{1-x}Zn_xFe_2O_4$ spinel, low-temp. transitions and spin configurations, Mossbauer study 8-27144
Np intermetallics, NpM_2Si_2, (M=Cr, Mn, Fe, Co, Ni, Cu), Mossbauer and magnetization expts. 8-31138
^{237}Np, lineshape, dispersion amplitudes 8-25146

Mossbauer effect continued
Pb, recoilless fraction calc. of ^{57}Fe impurity atoms from mean-square displacements 8-2216
$PbFe_{(2/3}W_{1/3})O_3$-$Pb(Co_{1/2}W_{1/2})O_3$ solid soln., crystallographic, dielectric, magnetic props., Mossbauer spectra 8-43807
Pd, matrix for Mossbauer effect on ^{119}Sn and ^{197}Au 8-15080
Pd-Co, dil., relax. of oriented ^{57}Co nuclei, meas. using ^3He-^4He refrigerator 8-24909
Pd-Fe, highly dil., mag. behaviour, 0.06-300K, Mossbauer expt. 8-43711
$Pd_{1-x}Ag_{1-x}$-Au, dil., electron density at Au, Mossbauer reson. 8-39473
PdH_x-Au, dil., electron density at Au, Mossbauer reson. 8-39473
PdMnSb, hyperfine field at ^{125}Te, Mossbauer expts., compared with Jena-Geldart model 8-43707
Pt, matrix for Mossbauer effect on ^{119}Sn and ^{197}Au 8-15080
^{195}Pt, lineshape, dispersion amplitudes 8-25146
$RbFeS_2{}^+$, ^{57}Fe Mossbauer hyperfine interaction, covalency effects, point charge model 8-39484
Rh_2CoSn, ferromag., mag. hyperfine fields of ^{119}Sn, Mossbauer meas. 8-10816
Rh_2FeSn, ferromag., mag. hyperfine fields of ^{119}Sn, Mossbauer meas. 8-10816
Rh_2MnSn, mag. hyperfine fields at Rh and Sn sites, and their temp. depend. 8-43708
Rh_2MnSn, Rh_2NiSn, Heusler alloys, hyperfine mag. field at Sn 8-39482
Sb (III) compounds, orbital population anal. using ^{121}Sb Mossbauer data 8-21953
Sb, contact charge density, press. depend., trends for Ag-Te 8-39077
Si:^{57}Fe, electric quadrupole coupling at Fe nuclei 8-27137
SiC, α- and β-phases, isomer shift in Mossbauer spectra of implanted ^{129}I 8-15067
SmS, divalent and trivalent ion doped, electronic struct., Mossbauer spectroscopy 8-39022
Sn, α- and β-phases, isomer shift in Mossbauer spectra of implanted ^{129}I 8-15067
β-Sn, configuration of ^{57}Fe, Mossbauer effect measurements 8-47333
Sn, contact charge density, press. depend., trends for Ag-Te 8-39077
Sn in $SnSO_4$ anodised Al 8-35582
Sn, metallic thin film, oxidation mechanism, depth selective Mossbauer spectroscopy method 8-35549
Sn tetrahedral molecular solids, ^{119}Sn Mossbauer and Raman spectra 8-15070
$SnMo_6S_8$, lattice softening, vibr. anisotropy 8-14428
SnO_2, from rocks, quantitative determination by Mossbauer effect *(Rumanian)* 8-49178
SnO_2 layers, study using Mossbauer effect 8-31124
SnO_2, quantitative determ. by Mossbauer effect, using portable analyser 8-20131
SnX_2, (X=Br,Cl,F,I), matrix isolated, Mossbauer effect, isomer shift and quadrupole splittings obs. 8-46377
SnX_4, (X=Br,Cl,I), matrix isolated, Mossbauer effect, isomer shift and quadrupole splittings obs. 8-46377
$SrEu_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8-19383
$SrTb_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8-19383
Ta, surface layers, Mossbauer conversion electron studies 8-15068
$TaD_{0.06}$, D diffusion, 6.2 keV Mossbauer reson. of ^{181}Ta 8-39472
1T-$TaSe_2$, CDW obs. by ^{181}Ta Mossbauer effect 8-39469
^{181}Ta, 6.2 keV level, Mossbauer spectroscopy, source prep. 8-25373
Tc:^{51}Fe, dilute, quadrupole splitting and isomer shift 8-48096
Te compounds, X-ray photoemission, core level binding energy shifts rel. to Mossbauer isomer shifts 8-2984
Te, contact charge density, press. depend., trends for Ag-Te 8-39077
α-TeO_2, anisotropy of atomic vibrations, Mossbauer absorption spectra 8-27147
Ti-Al alloys, comp. depend. *(Russian)* 8-6611
αTi-Fe, plastically deformed, α→ω transform. 8-3095
TiO_2:Sb(Fe), Mossbauer effect exam. of impurities 8-31140
Tl, recoilless fraction calc. of ^{57}Fe impurity atoms from mean-square displacements 8-2216
Tm, and Tm cpds., Mossbauer expt. in ^3He-^4He dilution refrigerator 8-27127
$V_{1-x-z}Fe_xMo_zO_2$, Mossbauer effect exam., Fe conc. and precise struct. characteristics 8-31141
$V_{1-x}Fe_xO_{2-y}$, Mossbauer effect exam., Fe conc. and precise struct. characteristics 8-31141
V_3O_5, struct. and electronic aspects of cond. transition 8-15078
$V_{2-x}Sb_xO_4$, defect struct. exam. 8-18635
W, Mossbauer recoilless fractions, temp. depend. 8-15076
^{182}W, 2^+-0^+ transitions, mean square nuclear charge radius change, Mossbauer expt. 8-25109
^{182}W, lineshape, dispersion amplitudes 8-25146
^{182}W, reson. γ-quanta absorption and emission probabilities *(Russian)* 8-23383
Y-Fe, rapid diffusion, Mossbauer exam. 8-27138
$Y(Fe_{1-c}Al_c)_2$, mag. and Mossbauer study, local environment effects 8-27033
$Y(Fe_{0.022}Co_{0.978})_2$ mag. props., Mossbauer expts., 0.15-4.2K 8-43712
$Y_2(Fe_{1-x}Co_x)_{17}$, ZZ 8-2780
$Y_2(Fe_{1-x}Ni_x)_{17}$, hyperfine interactions obs. 8-6614
$YFeO_3$, induced spin reorientation near Neel point 8-19267
YH_3:Er, Mossbauer spectra of Er^{3+}, gyromagnetic ratios and cryst. field parameters determ. 8-19388
$YbFe_2$, Laves phase compounds, synthesis, mag. props., ^{57}Fe Mossbauer effect 8-10807
Zn, quadrupole interaction, ^{67}Zn Mossbauer expt. 8-27120
$ZnCO_3{:}Fe^{2+}$, electronic relaxation, Mossbauer effect 8-19385
$Zn_{1-x}Ge_xFe_2O_4$, spinel series, obs. by Mossbauer spectroscopy of electron hoppings 8-43754

Mossbauer spectra *see Mossbauer effect*

motion picture photography *see cinematography*

motors, hydraulic *see hydraulic motors*

Mott insulator *see localised electron states*

movements, atmospheric *see atmospheric movements*

moving-coil instruments
plasma indicator, construction, characts. *(German)* 8-8393

moving coil microphones *see microphones*

moving-magnet instruments
- portable instrument for determ. of axes of easy magnetis. of ferromag. single cryst. balls 8−8424

MS SCF calculations *see Xalpha calculations*

MS Xalpha calculations *see Xalpha calculations*

μ-mesons *see muons*

mud *see sediments*

muffin-tin potential
- A15 compounds, band theory, semiself-consistent band calcs. 8−2406
- atomic cluster total energy, diatomics-in-mol., LMTO calc. pot. curve, Lanczos eigenvalue method 8−9291
- cluster calculations, scattering theory 8−18940
- convergence properties of MS method 8−26803
- metal, Fermi surface, effect of nonlocal potential, phase shift parametrisation scheme 8−43289
- metal cluster, H site, SCF-Xα-MS calc. 8−47730
- nonsimple metals, calc. of elec. resist. and thermoelec. power 8−19019
- rare earths, liquid, resist. and thermoelec. power, t-matrix calc. 8−26840
- relativistic electron-phonon interaction, oscillating rigid muffin-tins 8−47713
- superconducting linear accelerator, comparison of short muffin tin structs. *(French)* 8−33330
- symmetry projection technique, for linear combination of muffin-tin orbitals method 8−2407
- thin crystals, surface state calc. 8−14778
- transition metal carbide, d-band effects in lattice dynamics contrib. to acoustic phonon freqs. 8−2207
- Al, energy bands, densities of states and X-ray spectra, superposed self-consistent pots. 8−39010
- Al-3d transition metal alloy, dil., electronic charge density around impurities 8−34799
- Be, spin susceptibility, electronic effective mass, spin density functional calcs. 8−43291
- Cu-3d transition metal alloy, dil., electronic charge density around impurities 8−34799
- EuO, band struct., linear combination of muffin-tin orbitals calcs. 8−2407
- Mg, spin susceptibility, electronic effective mass, spin density functional calcs. 8−43291
- Nb, electron-phonon contrib. to phonon linewidth determ. 8−10146
- Nb, electron-phonon spectral function and mass enhancement 8−26988
- Os, correlation effect of crystal pot., RAPW calcs. 8−6265
- Pd, liq., energy bands and electronic density of states, resistivity 8−34755
- $PdTe_2$, bandstructure, Fermi surface, LMTO method 8−6264
- Th, correlation effect of crystal pot., RAPW calcs. 8−6265
- UO_2^{2+}, relativistic X_α scatt. wave calcs. 8−46268
- V_3Ga, self-consistent APW band struct. calc. 8−47697

multichannel analysers *see pulse height analysers*

multidimensional systems
- complex multidimensional ball, equivalent projective unitary group of analytic transformations *(Japanese)* 8−12534
- Euer-Lagrange differential in fibred manifolds 8−45469
- instability of evolving systems, elastic stability theory and catastrophe theory approaches 8−44442

multigroup diffusion *see neutron diffusion*

multimeters
- combined multimeter/oscilloscope, type D4000, features *(German)* 8−16783
- digital, LD 130 IC 8−16817
- nonsinusoidal waveform measurement using analogue multimeters 8−16809
- test instrument survey *(German)* 8−8394
- volt-ohm meter, 2.5 digit LED display 8−21162

multiperipheral models
- baryonium mass spectrum in planar bootstrap model 8−25020
- clusters, search using rapidity gap method *(Russian)* 8−41517
- cosmic ray showers, ang. distrib. and multiplicity 8−36412
- cross section rise in high energy strong interactions, multipomeron exchange, Mandelstam diagrams 8−41516
- dual multiperipheral model planar bootstrap 8−4837
- dual resonance Pomeron, intermediate mass distribution 8−25026
- elastic scatt. amplitude phase connection with overlapping function *(Russian)* 8−41431
- Feynman-gas model for semi-inclusive processes, πp appl., multiperipheral model predictions *(Russian)* 8−435
- multiplicative processes, ρ^0 meson formation cross section, pion prod., multiperipheral cluster model *(Russian)* 8−17067
- particle correlations in multiperipheral resonance prod. model, broken SU_3 theory 8−45891
- pomeron current model for diffraction dissociation 8−4843
- rapidity in distrib. in inclusive reacts. *(Russian)* 8−41518
- s-channel helicity conservation multiparticle amplitudes 8−33004
- $K^-p \rightarrow \Lambda X$ or Λ(Pions) or $\Lambda p_{slow}X$, multiperipheral model with heavy clusters *(Russian)* 8−485
- pp, unitary impact-parameter model for multicluster prod. 8−33091
- π^-p, 40 GeV/c, dispersion of longit. rapidity distribs., multiperipheral cluster model anal. *(Russian)* 8−17063

multiphase flow
- *see also two-phase flow*
- Brownian motion in shear flow 8−5786
- fluidised bed, three-phase, bubble wake solids content 8−42660
- gas-liquid cocurrent flow through packed beds, radial effective thermal conductivity 8−1723
- multispecies gas flows, transport eqns. mathematical struct. 8−47084
- optical fibre sensors, appls. *(German)* 8−26215
- particle separation property of impactor stage with nonstationary flow *(German)* 8−18335
- particulate matter dynamics in industrial manufacturing processes, appl. of radiotracer techniques 8−41398
- petroleum-water-gas mixture, in inclined stratum, nonstationary filtration, including gravity 8−1729
- spheres, deformable contiguous, in incompressible inviscid fluid, hydrodynamics 8−1727

multiphonons *see phonons*

multiphoton spectra
- *see also two-photon spectra*
- anharmonic Morse oscillator, multiphoton excitation, quantum vs. classical treatment 8−5306
- atom, X-ray photoelec. effect in presence of laser radiation 8−37615
- biexcitons recombination, polariton effects 8−23033
- trans-butadiene, multiphoton transitions, multiphoton ionisation, thermal lensing spectroscopy 8−33559
- coherent four photon Rayleigh scattering *(Russian)* 8−48191
- ethylene, multiphoton absorption, luminesc. and dissoc. in laser pulse field 8−1040
- laser radiation, interaction with free atoms, review 8−13473
- molecular spectroscopy, IR laser cavity, Lamb dip and multiphoton techniques, book contrib. 8−9278
- multiple quantum transition in NMR, two-dimensional spectroscopy, selective detection 8−23353
- N-level system in strong monochromatic field 8−29923
- polyatomic molecule, quasicontinuum, coherent and mode selective excitation by laser pulse 8−1032
- pyrazine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
- pyridine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
- resonant multiphoton ionisation by pulsed excitation, Beers-Armstrong model 8−17645
- semiconductor with non-spherical bands, many-photon magneto-optical absorption 8−19451
- solid, intense field effects, multiphoton transition rate 8−10921
- three-photon resonance, Doppler, free power broadening 8−5308
- CO, $A^1\Pi \leftarrow X^1\Sigma^+$, (2-0) band, three photon excitation, fluoresc. obs. 8−13481
- Cs, reson. multiphoton ionisation by pulsed excitation, Beers-Armstrong model 8−17645
- H, one-, two- three- and four photon absorpt., truncated model semiclassical calcs. 8−17644
- He, three-photon transitions, dichromatic laser field 8−17643
- InAs, three-photon absorption, transition effects *(Russian)* 8−35147
- NH_3, three photon transitions in gases at microwave freqs. 8−9211
- Te, simultaneous absorpt. of three photons, selection rule, exciton peak on absorpt. edge 8−43303
- Xe, $^3P_1$ resonance state, three photon excitation, fluoresc. obs. 8−13481
- Xe, multiphoton ionisation spectrum, interatomic effects in multiphoton transitions 8−29764

multiple processor systems *see computer networks*

multiple scattering SCF-X-alpha calculations *see Xalpha calculations*

multiple stars
- *see also binary stars*
- ADS 7251, photographic obs. in 1962-73 period, orbital motion rel. to invisible satellites *(Russian)* 8−28726
- Aquila X-1, binary and triple star models for X-ray outbursts 8−20909
- α Aurigae (Capella) AB, angular diams. by two telescope interferometry 8−8055
- ξCancri, occultation by asteroid 15 Eunomia on 1978 January 19, further predictions 8−20714
- α Centauri triple system, evolution 8−45356
- 61 Cygni, detect. of three invisible companions to visual binary star 8−28730
- HD 165590, visual binary with spectroscopic binary component 8−32519
- 20 Leonis, possible eclipse obs. in triple system 8−12298
- δ Librae, evidence for third component unconvincing 8−49475
- lunar occultations, photoelec. obs. 8−4079
- lunar occultations, photoelectric obs. rel. to multiplicity 8−7982
- κ Pegasi, radial vel. meas., visual binary with spectroscopic binary component 8−32520
- solar-type stars, fraction having stellar or massive nonstellar companions 8−16463
- Stein 2051, orbital motion, evidence for triple system 8−4289
- triple systems, non-rotating, exact mean time of decay *(Russian)* 8−32523
- DL Virginis, eclipsing binary in triple system, UBV photometry 8−8050

multiplex transmission *see multiplexing*

multiplexers *see multiplexing equipment*

multiplexing
- *see also frequency division multiplexing; time division multiplexing*
- computer holograms, space multiplexing 8−17874
- emergency medical telemetry standard development and implementation 8−3635
- Fourier transform spectroscopy, multiplex advantage, conventions and values 8−32882
- Fourier transform spectroscopy, multiplex advantage 8−32883
- integrated optics for wavelength division multiplexing, review of recent developments 8−38079
- multicolour laser light time multiplexing using rotating mirror 8−17999
- single-fibre optical systems, efficient power combiner for multiplexing multiple sources 8−18039
- TV lecturing system using frame multiplexing technique 8−28887

multiplexing equipment
- 5 Gbit/s multiplexer, for optical fibre communication system 8−18044
- 140 Mb/s optical fibre transmission system 8−42436
- acoustooptical multiplexer/demultiplexer terminals, appl. to laser communication system, expt. results 8−25959
- linear multiplexer, 14-channel, resolution, efficiency, nuclear spectroscopy appl. 8−33400
- micro-optic duplexers for wavelength division two-way fibre optic transmission expt. 8−22194
- optical data link, single fibre, multimode electro-optic guiding 8−38065

multiplier phototubes *see photomultipliers*

multipliers, electron *see electron multipliers*

multipliers, frequency *see frequency multipliers*

multiplying circuits
- wattmeter, differential, analogue, adiabatic calorimeter and liquid chromatograph appl. *(Czech)* 8−23979

multiprocessing systems
see also parallel processing
distributed computer system for digitising machines for bubble chamber photographs 8–5110
multi-microprocessor auxiliary crate controller, data processing in CAMAC 8–46246
multi-microprocessor network, for sonar signal processing algorithms soln. 8–45044
multimicrocomputer system with dynamic variable hierarchy for real-time data acquisition 8–44654

multivariable control systems
nuclear reactor identification, test inputs review 8–41819

multivibrators
astable multivibrator freq. control for rapid cond meas. with electrolyte cond. probe 8–37029
capacitor tolerance measured using astable multivibrator 8–4628
magnetic core multivibrator, tensile stress measurement appl. 8–9615

muon absorption
bremsstrahlung cross-section corrections necessitated by target excitation 8–4931
bremsstrahlung in collisions with nonpointlike nuclei 8–8803

muon capture
see also muonic atoms; muonic molecules; radioactivity
A=6 to 14 nuclei, muon capture rate calcs. 8–33150
closure approximation, appl. to perturbation theory, muon capture and pion electroproduction 8–16680
Coulomb capture ratio of muons in oxides of medium and heavy elements 8–8777
exchange current corrections for muon partial capture rates 8–33152
nuclear semi-leptonic weak interactions 8–555
radiative μ capture on free p, low energy expansion of two current amplitudes 8–16946
weak interactions, conf., Bloomington, USA, (May, 1977) 8–414
^{12}C, EM and allowed weak transitions, improved impulse approx. treatment 8–41662
^{12}C, muon capture theory 8–553
$^{12}C(\mu^-,\nu_\mu\gamma)^{12}B$, impulse approx. calc., photon asymmetry and daughter nucleus polarisation 8–37315
^{40}Ca, neutron ang. distrib. following polarized muon capture, relativistic corrections 8–13063
^{40}Ca, nucl. effects in radiative muon capture 8–29428
H, ^{2}H, ^{3}H, muon capture theory 8–553
^{2}H, muon capture, kinematics and dynamics 8–33151
^{3}He, muon capture 8–37314
^{3}He, muon capture theory 8–553
$^{14}N+\mu^-\rightarrow{}^{14}C+\nu_\mu$, rate calcs. using elementary particle and macroscopic treatments 8–29429
$^{16}N(0^-)\rightleftharpoons{}^{16}O(0^+)\beta$-decay and μ-capture, mesonic exchange correction 8–41673
$^{16}O(\mu,\nu_\mu)^{16}N^*$, elementary particle treatment 8–8800
$^{16}O(\mu^-, \nu_\mu)^{16}N$, capture rate, A=16 ground and excited states 8–17105
Pd, circular polarisation of muonic X-rays, strange μ^- depolarisation 8–25758

muon decay
$\mu^+\rightarrow e^+\gamma$, upper limit for decay 8–25030
renormalisable theory of pure leptonic weak interaction with induced shadow states 8–37136
SU(6) exotic gauge model, lepton-quark symm., CP-violation and $\mu\rightarrow e\gamma$ decay 8–12875
SU(6) unified gauge model, mechanism of muon number nonconserving decay 8–12847
$\mu\rightarrow e^-e^-e^+$, muon number nonconservation 8–8542
$\mu\rightarrow e\gamma$, and other rare decays, in SU_6 superunified gauge theory 8–21408
$\mu\rightarrow e\gamma$, decay mode calc. in model with heavy neutral leptons 8–45898
$\mu\rightarrow e\gamma$, $\mu\rightarrow 3e$, lepton number nonconservation with scalar bosons 8–4798
$\mu\rightarrow e\gamma$, possible existence of third kind of neutrino *(Chinese)* 8–12896
$\mu\rightarrow e\gamma$, SU(2)×U(1) unified guage theory 8–8643
$\mu^-\rightarrow e^-e^-e^+$, decay rate calc. SU(2)×U(1) model 8–8641
$\mu^-\rightarrow e^-\nu^-\nu$ model, spiral props. of neutrinos *(Russian)* 8–25031
$\mu^+\rightarrow e^+\gamma$, upper limit on branching ratio 8–12897
$\mu^\pm\rightarrow e^\pm\gamma$, right-handed ν_μ anal. 8–41525

muon detection and measurement
CERN neutrino beam monitoring by μ flux in Fe shield meas., Si detectors 8–37523
EAS, single and muon pairs, 20-1000 GeV, showers of 10^4 to 10^7 particles 8–28473
EAS arrival direction distributions 8–28471
flux measuring system for neutrino spectrum reconstruction at IHEP accelerator 8–21817
MWPC, external muon identifiers at CERN 8–37488
MWPC, high-flux fast readout system based on new monolithic integrated ccts. 8–37491
proportional delay line chambers for Fermilab external muon identifiers 8–37489
Si, defect prod. by GeV muons, thermally stimulated current technique 8–5099

muon interactions *see lepton-hadron interactions; lepton-lepton interactions; muon-nucleon interactions; muon-nucleus reactions; photon-lepton interactions*

muon-nucleon interactions
see also muon-nucleon scattering
hadronic contributions to trimuon prod., quark+antiquark annihilation 8–41551
ionisation loss formula derivation using covariant method of equivalent photons 8–29337
meson electropod. in deep inelast. scatt. from polarised targets 8–25053
radiative μ capture on free p, low energy expansion of two current amplitudes 8–16946
scaling violation, two-component duality model, ν and μ interactions 8–8623
trimuon prod. from struct. at lepton vertex 8–8639
50-250 GeV EM corrections, *(Russian)* 8–25048
μn, heavy lepton prod., SU(3)×U(1) model 8–45900
μN deep inelast. scatt., inclusive ρ^0 prod. 8–37216

muon-nucleon interactions continued
$\mu N\rightarrow eN$, symmetry violation natural suppression, muon and electron lepton number nonconservation 8–8574
μp, polarised deep inelastic scatt., energy and y depend. of cross section asymm. 8–45926
μp deep inelastic scatt., charm effects, field theory anal. 8–21435

muon-nucleon scattering
see also muon-nucleon interactions
deep inelastic processes, scaling violations, asymptotic free field theory anal. 8–4863
gauge model of weak and electromag. interactions, polarised lepton scatt. 8–45901
μp, semi-inclusive scatt., quantum chromodynamic predictions 8–29324

muon-nucleus reactions
for inelastic muon-nucleus scattering, see "muon-nucleus scattering"
see also muon capture; muon-nucleon interactions
(μ,α), reaction probabilities on targets from ^{23}Na to ^{209}Bi 8–29451
$(\mu$,pxn), reaction probabilities on targets from ^{23}Na to ^{209}Bi 8–29451
$S(\mu^-, e^-)$, upper limit for muon-electron conversion 8–21547
^{238}U $(\mu^-$,f), fission product mass distrib., fission probability, radiochem. investigation 8–29514

muon-nucleus scattering
see also muon-nucleon scattering
Pb nuclei, multiple scatt. at sea level, Rainwater-Cooper theory, 230 MeV/c muons 8–7850
Pb nuclei, multiple scatt. at sea level, anomalous scatt. distrib. 8–7851

muon probes
diamond type crystals, polarization of μ^+ in muonium atom *(Russian)* 8–39492
electron gas, spin-polarised, self-consistent screening of positive muon 8–47714
metal, FCC, muon diffusion, theory 8–22883
metal, FCC and BCC, dipole interactions and trapping effects of positive muons 8–47342
metal, interstitial, quadrupole effect on dipolar field width 8–2457
metal, positive muon spin depolarisation, defect study 8–47314
muonium, existence of quadrupole moment *(Russian)* 8–31143
oxides, obs. of slow relax. of spin of negative muons *(Russian)* 8–48105
paramagnet free electron, muonic and hydrogenic Knight shifts 8–43759
quadrupole moment and relax. of muonium and mesoatom spins 8–19404
Al, μ^+ meson diffusion, impurities effect *(Russian)* 8–35077
Al, μ^+SR diffusion, temp. depend. 8–39490
Al, positive muon spin rotation meas. 8–10819
Co, ferromag., hyperfine fields at positive muons 8–43758
Co, ferromagnetic, temp. depend. of μ^+ hyperfine field 8–43761
Co host, dil. impurity hyperfine fields, comparison with models 8–14954
Co, local magnetic fields probed by μ^+ 8–48103
Co, magnetised to saturation, props., positive-muon study 8–6619
Cu, elec. field gradient due to interstitial positive muon 8–31142
Cu, muon spin rot., EFG, site of localisation 8–2785
Cu, μ^+SR diffusion, temp. depend. 8–39490
Cu, positive muon spin rotation meas. 8–10819
Dy, μSR in ferro- and antiferromag. phases, local fields 8–43763
Fe, ferromag., hyperfine fields at positive muons 8–43758
Fe host, dil. impurity hyperfine fields, comparison with models 8–14954
Fe, magnetised to saturation, props., positive-muon study 8–6619
α-Fe_2O_3, antiferromag., muon spin rotation meas. 8–48106
α-Fe_2O_3, muon spin rotation above and below Morin transition 8–43762
Gd, ferromag., hyperfine fields at positive muons 8–43758
Gd, ferromagnetic, temp. depend. of μ^+ hyperfine field 8–43761
Gd host, dil. impurity hyperfine fields, comparison with models 8–14954
Gd, local magnetic fields probed by μ^+ 8–48103
MnO-Al_2O_3-SiO_2 glass, spin freezing, muon spin depolarisation 8–39491
Nb, muon diffusion, μ^+SR meas. 8–39487
Nb, muon$^+$ depolarisation rate, anomalous temp. depend. 8–48104
Nb, spin polarised μ^+ meas., localisation and thermal diffusion 8–39489
Ni, ferromag., hyperfine fields at positive muons 8–43758
Ni, ferromagnetic, temp. depend. of μ^+ hyperfine field 8–43760
Ni host, dil. impurity hyperfine fields, comparison with models 8–14954
Ni, magnetised to saturation, props., positive-muon study 8–6619
Sb, muon precession freq., anomalous shift 8–39488
SiO_2, fine powder, interstitial vac. thermal muonium production 8–42250
Ta, muon diffusion, μ^+SR meas. 8–39487
Ta, μ^+SR diffusion, temp. depend. 8–39490
V, diffusion of positive muons 8–47601
V, muon diffusion, μ^+SR meas. 8–39487
V, μ^+SR diffusion, temp. depend. 8–39490

muon production
di-lepton events in BEBC narrow band beam neutrino expt. 8–41528
dimuon enhancement at 9.5 GeV, vector meson family with hidden 'beauty' *(Russian)* 8–33030
dimuon production rate from $\nu(\nu)$ N reactions in steel at 45-205 GeV 8–8646
Dreel-Yan processes, gluon corrections 8–8597
Drell Yan production of intermediate vector bosons, μ prod. in pp, $\bar{p}$p, $\pi^\pm$p reactions 8–29364
Drell-Yan model, hadroprod. of muon pairs 8–45872
Drell-Yan trigger, hadronic prod. of dilepton pairs and muons 8–37182
eight quark model, modified left-handed currents, ν reactions and e^+e^- annihilations 8–16982
four-muon prod. by neutrinos 8–29330
hadron interactions, neutral heavy lepton detection probability 8–8612
hadron-nucleus collisions, relation between low mass dimuon and meson prods., quark-antiquark interactions 8–41477
hadronic quantum numbers beyond charm as possible source of neutrino induced trimuons 8–12903
heavy lepton hypothesis of μ-e events 8–37195

muon production continued
  heavy leptons, weak gauge boson and neutrino trimuon prod. 8−4851
  heavy neutral leptons$\to$muon pairs, leptonic cascade decay 8−21407
  lepton+hadron collisions, hadronic contributions to trimuon prod., quark+antiquark annihilation 8−41551
  massive muon pair data, cf asymptotically free parton model 8−8605
  neutral current reactions, (V-A) model, mixing between ordinary and heavy leptons 8−41472
  neutrino scattering, trimuon event sources 8−25035
  parton model, asymptotically-free, $W^{\pm}$, Z^0, μ-pair prod. 8−12865
  prompt μ production in p-nucleus collisions, multiple prod. model based on lepton-hadron relation 8−29362
  proton interactions, beam dump expt. at CERN SPS 8−45979
  QCD calc. of three-jet processes in leptoprod. and hadronic μ-pair prod. 8−21338
  transverse momentum of massive muon pairs in QCD 8−45867
  trimuon events, heavy lepton prod. in ν interactions 8−41530
  trimuon events, probability of production by short lived source of neutrinos 8−37343
  trimuon prod. from struct. at lepton vertex 8−8639
  trimuon production by neutrinos and antineutrinos 8−37198
  e^+e^- inclusive prod., anomalous muon signal at 7.3 GeV, $n_{ch} \leq 2$, final state multiplicity, cross sections 8−41559
  $e^+e^- \to \mu^{\pm}$+charged particle(s), 3.8 GeV, anomalous μ prod., new particle pair prod. 8−8637
  $\mu^+\mu^-$ prod. from vector meson decay, k^0_1+Cu interaction 8−45951
  ν interactions, trimuon prod., heavy lepton cascade decay 8−25038
  $\nu(\bar{\nu})$ high-energy interactions, dimuon distrib. anal., quark-parton model 8−33056
  $\nu(\bar{\nu})$ interactions, heavy-lepton interpretation of multimuon events 8−33058
  $\nu(\bar{\nu})$ interactions, trimuon events obs. 8−12902
  $\nu(\bar{\nu})N$ interactions, 7.5-30 GeV, μ pair prod. 8−12904
  $\nu(\bar{\nu})+Fe \to \mu^-+\mu^-(\mu^++\mu^+)+X$, 200 GeV, momentum and ang. distribs. meas. 8−8648
  νN, μ^+ single prod. in inclusive interaction 8−45908
  νN, $\bar{\nu}N$ interactions muon prod., quark model anal. 8−4850
  νN single- and di-muon prod., colour excitation, weak interaction model anal. 8−45906
  $\nu_\mu N$, charm pair prod. in QCD, trimuon rate 8−45907
  $\nu_\mu N \to \mu^- e^+ X$ in Ne 8−29329
  $\bar{\nu}_\mu N \to \mu^+ e^- X$ in Ne 8−29329
  $p+nucleus \to \mu^+ + \mu^-$+anything, 400 GeV, high-mass dimuon continuum 8−37344
  $pN \to \mu^+\mu^-X$, determ. of parton sea 8−29304
  $\pi^+ \to \mu^+\nu_\mu$, at rest, μ^+ momentum meas. 8−45911
  πp, 16-GeV/c, dimuon production and obs. of low-mass continuum 8−37236
  Be+n, 300 GeV/c, $\mu^{\pm}\mu^{\mp}$ and $\mu^{\pm\mp}$ events, upper limit for charmed particle prod. 8−37245
  Cu+p, dimuon prod., struct. in Υ region near 9.5 GeV 8−17201
  $pp \to \mu$ pairs, 200, 300, 400 GeV, test of scaling hypothesis 8−4888
  Pt+p, dimuon prod., struct. in Υ region near 9.5 GeV 8−17201
muon scattering *see lepton-hadron scattering; lepton-lepton scattering; muon-nucleon scattering; muon-nucleus scattering; photon-lepton scattering*
muonic atoms
  Coulomb de-excitation of neutral exotic atoms, μ^-p and π^-p H atoms 8−25757
  muonium+F_2, exothermic triatomic exchange reactions, dynamics, anal. theory 8−3322
  review, significance of exotic atoms to particle physics 8−9282
  vacuum polarisation, $\alpha(Z\alpha)^3$ correction to energy level shifts 8−21366
  vacuum polarisation, test using heavy muonic atom X-ray meas. 8−29287
  μ number nonconservation 8−45806
  Ba 4-3 transitions QED valdity test precision meas. 8−33642
  Ca, muonic isotope shifts 8−33640
  ^{161}Dy, E0, E2 and E4 charge moment determ., using muonic atoms 8−21490
  H, metastable 2s state fraction at 150 and 600 Torr 8−13631
  H muonic formation in low press. targets 8−33639
  ^{4}He, nuclear polarisation corrections 8−22056
  $(^4He+\mu^-)^+$ muonic ion, $2S_{1/2}$-$2P_{1/2}$ energy transition meas. 8−33641
  ^{A}Os, A=186, 188, 190, 192, electromagnetic moments from muonic X-rays 8−12972
  ^{192}Os, dynamic hyperfine effect, model independ. anal. 8−22057
  Pb, 5-4 transition, QED valdity test precision meas. 8−33642
  Pd, circular polarisation of muonic K_α X-rays 8−9284
  Pd, circular polarisation of muonic X-rays, strange μ^- depolarisation 8−25758
  ^{105}Pd muonic X-rays, nuclear charge parameters, quadrupole moments 8−29377
  Se, circular polarisation of muonic K_α X-rays 8−9284
muonic molecules
  $dt\mu \to {}^4He+n+\mu^-$, 2 GeV energy release 8−17250
muonium
  bound-state solutions in relativistic two-body formalism 8−13443
  hyperfine quadratic shift in electric field, pressure dependence 8−13442
  muon precession freq. shift, temp. depend. *(Russian)* 8−13632
  polarization of μ^+ in muonium atom in diamond structured crystals *(Russian)* 8−39492
  production in fine SiO_2 powder vac. interstices of thermal muonium 8−42250
  quadrupole moment, effect on spin precession and relax. *(Russian)* 8−31143
  quadrupole moment and relax. of muonium and mesoatom spins 8−19404
  $\mu+F_2 \to \mu F+F$, isotope effects, quantum mech. and information theoretic calcs. 8−44360
  Ge, deep and shallow levels of muonium, electronic struct. 8−39051
  $Mu+F_2 \to MuF+F$, 300 to 400K in N_2 moderator, reaction rate determ., tunnelling 8−48682
  Si, deep and shallow levels of muonium, electronic struct. 8−39051
muons
  see also cosmic ray muons; muon probes
  anomalous mag. moment, eighth-order contribution calc. 8−29261
  anomalous mag. moment, sixth order, photon-photon contrib. 8−16958
  catalysis of hot fusion 8−743
muons continued
  electric dipole moment meas. of positive and negative muons, new upper limit 8−37209
  magnetic moment, weak correction in gauge models 8−16965
  mass, QED anal. 8−33011
  quantum electrodynamics review *(Hungarian)* 8−37159
  μe universality correction, rare decay mode calcs. 8−45898
  μe universality violation in renormalisation theory, neutral leptonic currents *(Russian)* 8−45837
muscovite *see mica*
music
  1/f noise, spectral density rel. to computer composition 8−38154
  keyboard fingering characteristics, CAI *(Japanese)* 8−28889
  melodies pragmatic anal., MACSIM neural network 8−7373
music, electronic *see electronic music*
musical acoustics
  1/f fluctuations *(Japanese)* 8−43448
  auditoria, eighth annual Fairey lecture 8−13859
  brass instruments, acoustic impedance meas. apparatus 8−1518
  outdoor environment, loudspeakers positioning for assisted reverberation effect 8−13825
  piano notes, anal. Fourier transform methods 8−26009
  reproduction in small rooms, acoustic theory *(Spanish)* 8−38155
  subjective preference tests for musical sound fields with single echo 8−31819
  tone system based on thirteen-step scale *(German)* 8−26008
  violin, sound prod. and transmission *(German)* 8−30135
musical instruments
  bass trombone, timbre and responsiveness, improvement 8−22232
  brass instruments, acoustic impedance meas. apparatus 8−1518
  keyed instruments, musical tone recognition trial using computer *(Japanese)* 8−28889
  piano, automatic tuning using freq. generator and deviation detector *(Japanese)* 8−33964
  piano, string coupling through bridge admittance 8−30134
  piano, string longitudinal vibrations and inharmonic sound box tone *(Japanese)* 8−13865
  violin, sound prod. and transmission *(German)* 8−30135
N-body problems
  see also celestial mechanics; many-body problems
  asteroidal three-body problem, long-periodic solns. *(Russian)* 8−49370
  axisymmetric rigid body, periodic motions in gravit. field of sphere 8−36446
  clusters of galaxies, dynamical evolution 8−12384
  dynamical systems evolution with time-varying gravity, theory 8−24459
  elastic rod central collisions soln. from impulse conservation *(German)* 8−22274
  electron gas, classical and quantal treatment involving integral eqns. 8−41228
  four fixed centres problem, new interpretations and appls. 8−28493
  four-body problems, rel. to Titius-Bode law and place for more than ten planets 8−40851
  fragmented celestial bodies, particles asymptotic distrib. 8−32326
  generalised problem of two fixed centres, appl. of motion of point in conservative force field 8−24456
  Hermite polynomials, zeros of combinations, n-body problems 8−45466
  Keplerian transition matrices for elliptical orbits 8−36442
  material test point, statistics of distant perturbs. 8−28494
  microscopic charge and current densities in terms of polarisation and magnetisation fields 8−8251
  multibody system equations of motion, computer-aided formulation *(German)* 8−39
  N-particle scattering, combinatorics 8−24693
  orbit-orbit resonances, appl. of spin-orbit theory to Titan-Hyperion case 8−24451
  periodic orbits families, proof of existence 8−24449
  periodic orbits of second generation and regions of stability, in restricted three-body problem 8−24453
  planar restricted (N+1)-body problem, periodic elliptic motions 8−40806
  planar three body problem, bifurcation points 8−24446
  plane circular three-body restricted problem, Hamilton-Jacobi eqn. integrability, separation of variables method *(Russian)* 8−36445
  plane problem of n fixed centres, soln. *(Russian)* 8−24448
  Poincare problem in celestial mechanics, soln. 8−28492
  post-Newtonian two- and n-body problems with electric charge in general relativity 8−8277
  post-post-Newtonian approximation, conditions for static balance 8−12619
  regularised numerical method based on Taylor-Steffensen power series *(Russian)* 8−49300
  restricted circular three-body problem, appl. of motion of point in conservative force field 8−24456
  restricted circular three-body problem, for space vehicles in vicinity of collinear libration point 8−4067
  restricted elliptical three-body problem, for space vehicle in vicinity of collinear libration point 8−4066
  restricted three body problem; transform. to generalized rot. and pulsating coord. system 8−49298
  restricted three body problem, new connection between families of periodic orbits 8−45204
  restricted three body problem, of new kind 8−45210
  restricted three-body problem, effect of larger primary oblateness on collinear libration points 8−40803
  restricted three-body problem, orbit generation for stable close encounter periodic solns. 8−28489
  restricted three-body problem, periodic solns. in Hill's relativistic problem 8−40804
  restricted three-body problem, perturbations of Lagrangian points 8−32327
  restricted three-body problem, second species periodic solns. with one near-Moon passage 8−45207
  rigid bodies, translational-rotational motion eqns. in osculating elements 8−28495
  S-matrix theory, n-body potentials in QED and quantum gravity 8−24969
  statistical results validity 8−12084

N-body problems continued
- three-body problem, colinear positions of relative equilibrium *(French)* 8−36443
- three-body problem, sufficient conditions for absence of collisions 8−24457
- three-body resonances in Uranus ring system, quantitative anal. of Dermott-Gold theory 8−4147
- triple systems, non-rotating, exact mean time of decay *(Russian)* 8−32523
- two-bodies, gravitational parameter inaccuracy consequences computation, for orbits in Earth's gravitational field 8−40460
- two-body problem, intermediate anomaly 8−45209
- two-body problem, orbits from Lenz vector, education 8−36763
- unrestricted 3-body problem, Laplace soln. instability *(Russian)* 8−4092
- Uranus ring system, two-body and three-body resons. involving tiny Miranda 8−4148
- Vlasov dynamics and fluctuations in 1/N limit of interacting classical particles 8−130

N/D method
- bound states in baryon-antibaryon systems, NN, $N\bar{N}$, dispersion method *(Russian)* 8−16933
- multichannel problem, coupled, soln. of form factor 8−29277
- Roy eqns., multiple solns., N/D method on finite interval 8−16949
- $K\bar{K}\to K\bar{K}$, dispersion model, matrix N/D method *(Russian)* 8−45954
- $\pi\pi\to K\bar{K}$, dispersion model, matrix N/D method *(Russian)* 8−45954
- $\pi\pi\to\pi\pi$, dispersion model, matrix N/D method *(Russian)* 8−45954

narrow band gap semiconductor materials *see narrow band gap semiconductors*

narrow band gap semiconductors
- degenerate, band to band radiative recombination *(Russian)* 8−35200
- electron-hole recombination via plasmon emission 8−39046
- film electron-beam microzone refining, in space 8−35325
- layered, electron-hole liquid exam. 8−18975
- plasma waves parametric amplification 8−43428
- TCNQ salts, complex, with aromatic donors, interchain coupling and disorder 8−6314
- TCNQ salts, complex, with symmetric and asymmetric donors, transport and mag. props. 8−6315
- Ag_2Te, low temp. thermal cond., thermoEMF 8−43423
- Cd_3As_2, sp. ht., thermodyn. props. 8−22863
- $Cd_xHg_{1-x}Te$, characts. of low temp. transport props. 8−39160
- n-InSb, Landau-level-electron lifetimes, saturation meas. of magnetoabsorption 8−48150
- InSb, parametric amplification of plasma waves 8−43428
- n-PbSe, pressure induced transition to gapless state 8−2533
- $Pb_{1-x}Sn_xSe$, gapless state and phonon spectrum *(Russian)* 8−30715
- n-$Pb_{0.82}Sn_{0.18}Te$, conduction band struct., determ. by Shubnikov-de Haas meas. 8−2504
- $Pb_{1-x}Sn_xTe$, energy band parameters from IR Faraday rotation 8−48154
- $Pb_{1-x}Sn_xTe$ film, Burstein-Moss effect, absorpt. and photocond. spectra 8−18961
- Pt complex, bis(1,2-benzoquinonedioximato)platinum(II), intrinsic elec. cond. 8−6377
- SnTe, carrier density depend. of soft TO-phonon, Raman scatt. meas. 8−6684
- SnTe, softening of TO phonon mode *(Japanese)* 8−2225

natural gas technology
- combustion, NO_x and SO_2 form., oxidizing agent excess depend., thermodynamic anal. 8−15677
- flowmeter for natural gas industry 8−30392
- liquefied natural gas spilled on water, spreading and evap. investig. 8−26748

natural resources
- *see also agriculture; dams; energy resources; mining; water supply*
- coal, future prospects *(Russian)* 8−32099
- depletion of natural resource, man's effect on environment 8−45455
- Earth resource surveying and interpretation 8−24391
- Earth Resources Observation System Data Center for Landsat data 8−36289
- energy and mineral resources rel. to plate tectonic research 8−7606
- gas, seismic bright spots in Gulf of Oman 8−32057
- geophysical equipment for Hungary, prospecting appl. 8−7787
- global problems and energy, nuclear power 8−45454
- groundwater, extraction potential in W.Uttar Pradesh 8−32130
- land-use/soil survey data processing for resource planning 8−7804
- mankind's future needs and aspirations in space, conf., Washington USA, 1976 Oct. 8−4078
- mineral resources of USSR, rel. to tectonics *(Russian)* 8−40536
- multiband photography for geomorphology, soils and land use study, feasibility 8−12025
- multispectral photography from space *(Russian)* 8−16197
- oil and gas in non-anticlinal traps, reflected wave seismic survey possibilities *(Russian)* 8−12013
- regional resource appraisal, statistical methods 8−28326
- remote sensing, study of Earth by astronauts *(Russian)* 8−40795
- remote sensing by artificial satellites *(Japanese)* 8−16211
- remote sensing by Skylab microwave radiometer 8−16273
- satellite remote sensing, issues 8−12022
- Volga River, spring floods long-range forecasts, study of effectiveness 8−3837
- water resources planning, use of multiattribute utility theory 8−11932
- water-bearing rock formations, evaluation via DC resistivity sounding method 8−40474
- Li resources, energy reserves of D-T fusion, recovery costs 8−46162

natural rubber *see rubber*

natural sciences applications of computing *see natural sciences computing*

natural sciences computing
- *see also astronomy computing; astrophysics computing; biology computing; chemistry computing; geophysics computing; medical computing; physics computing*
- mathematics, percentiles of standardised binormal distribution calc., FORTRAN subroutine 8−34

Navier-Stokes equations
- advection-diffusion equation, weighted-mean schemes for finite-difference approx. 8−34103
- axisymmetrical slow motion in half-space, linearised eqns. soln. 8−12572

Navier-Stokes equations continued
- bifurcating periodic solutions at LF 8−16657
- block iterative finite element algorithm 8−20971
- blood flow in heart, numerical anal. 8−15854
- blunt body problem in nonuniform flow fields 8−5748
- boundary layer stability, nonlinear effects 8−1636
- boundary-value problems, a priori estimates *(Russian)* 8−28957
- central difference algorithm for high mesh Reynolds nos. 8−46920
- Coanda effects, simulation of discontinuous diffusing flow 8−9622
- convection, three-dimensional, natural, in box 8−5743
- corner, three-dimens., Navier-Stokes eqn. soln., numerical code 8−30314
- curved jets, deflection due to impact of other jets *(German)* 8−26180
- cylinder, in viscous fluid impulsive translation, numerical computation method 8−5727
- cylinder array, 2-dimens. viscous laminar flow field, finite difference method 8−42585
- Czochralski crystal-pulling process, digital simulation of flow patterns 8−15304
- discrete velocity gas, kinetic theory, boundary conditions, comparison 8−30254
- domains with non-compact boundaries, soln. of boundary and initial-value problems *(Russian)* 8−30255
- driven polar cross section cavity, laminar incompressible recirc. flow 8−46988
- duct, curved, laminar incompressible viscous flow 8−46932
- film flow, meniscus shape theory, Navier Stokes eqn. 8−38270
- finite element anal. of nonlinear partial differential eqns., appl. to estuarine flow *(Japanese)* 8−8233
- fluid bodies, dynamics *(Russian)* 8−12093
- fluid dynamics expts. and problems *(French)* 8−9645
- free-shear plane stationary computer simulated turbulence struct., discretized Navier-Stokes eqns. 8−26111
- gas with rotational degrees of freedom, macroscopic description of motion *(Russian)* 8−46999
- incompressible Navier-Stokes eqns., soln. by efficient numerical method 8−9619
- inhomogeneous liquid, diffusion model, rel. to correctness of boundary value problems 8−30774
- laminar duct entrance flow, 2nd order numerical method 8−38407
- laminar flow in duct of strong curvature 8−13988
- laminar incompressible flow in straight polar ducts 8−22424
- laminar to turbulent boundary layer transitions, numerical simulation 8−38286
- linear, approx. soln. error estimates 8−38268
- miscible, viscous, incompressible fluids, oscillatory pressure gradients, anal. 8−38405
- modelling of viscous flow, over mobile base, Navier-Stokes eqns. 8−46921
- nonstationary boundary layer with self-induced press. 8−34164
- peristaltic flow, nonlinear, calc. and expt. 8−9718
- plane Poiseuille flow, instability caused by nonlinear, nonperiodic and three-dimensional disturbance 8−38291
- pulsatile flow in a tube, effects of suction and wall injection 8−38403
- rotating fluid dynamics, review *(French)* 8−30300
- stationary and periodic solutions, genericity w.r.t. boundary conditions *(French)* 8−28956
- Stokes series, computed extension, circular boundary flow 8−42583
- stream function-vorticity formulation incorporating no-slip conditions, variational principle 8−38267
- tornado vortex model, appl. to nuclear plant design 8−17444
- tubes flow with periodic step changes in diameter, numerical soln. 8−22423
- turbulence, amplitude eqn. anal. 8−5731
- turbulence, averaged Navier-Stokes eqns. closure, dynamical system approach 8−46941
- turbulence, comparison of models 8−46939
- turbulence, homogeneous, three-point method 8−13995
- turbulence, isotropic time-depend. 8−32682
- turbulence, Lorenz attractor struct. 8−46944
- turbulence, models, two-dimens., vortex and Fourier mode 8−46945
- turbulence, probabilistic nature, closure of Navier-Stokes eqn. 8−1643
- turbulence, Ruelle-Takens picture, bifurcations, semiflows and Navier-Stokes eqns. 8−46940
- turbulence dynamical systems approach, Navier-Stokes eqns. and strange attractor 8−46942
- turbulence seminar, theoretical descriptions 8−46938
- turbulent shear flow, computation, phenomenological theories 8−46955
- two-dimensional inviscid dynamics, low order model randomness 8−42582
- two-dimensional turbulence in square region, inviscid Navier-Stokes eqn. calcs. 8−16656
- two-phase laminar channel flow, vel. profile 8−9675
- unsteady flow analysis in duct with junction, FLIC method 8−18340
- unsteady viscous separated laminar flow, numerical modelling 8−46933
- velocity-pressure formulation, mixed-interpolation finite elements comparison 8−45486
- viscous fluid motion *(Ukrainian)* 8−1626
- viscous incompressible fluid, two-dimensional turbulence in bounded region 8−30270
- vortex flow, new exact solution 8−38340
- wetting of a vertical plate by a liquid, model 8−22319

navigation
- *see also inertial navigation; radar applications; radionavigation; sonar; tracking*
- depth sounding using airborne laser land profiler, chart production appl. 8−49173
- galactic inertial-coordinate frame rel. to celestial reference, for starship navigation 8−49346
- Pioneer 11 post-Jupiter trajectory midcourse manoeuvre sequence for Saturn targeting options 8−7857
- ships compass adjustment in fog using atmosphere polarised sunlight cct. 8−24831

nearly-free-electron approximation
- alloy, nearly-free-electron, random, charge transfer rel. to stability 8−6316
- atomic chemisorption on metal surface 8−14588
- Hartree-Fock formalism for solids, appl. to nearly free electron gas 8−30857

nearly-free-electron approximation continued
  metals, electromigration of weak scatt. impurity in Bloch electron gas 8−6183
  metals, SHG by surface polaritons, theory 8−9416
  Mg-Bi alloy, liq., far IR reflectivity rel. to possible transport processes 8−2827
  Zn, electromigration, electron wind force calc. 8−6183

nebulae
  see also galaxies; planetary nebulae
  AFGL 437, optical and IR obs., young star cluster embedded in nebulosity 8−4394
  AO 0235+164, nature of nebulosity assoc. with BL Lacertae object 8−28778
  Barnard 213 NW, rotation and vel. structure rel. to parent nebula 8−41007
  bipolar nebulae, study of general phenomenon 8−41026
  bipolar reflection nebulae, photoelec. polarization maps 8−28742
  Carina Nebula, interstellar λ4430 band obs. 8−32555
  η Carinae nebula, spectral obs. at 4 microns 8−4237
  η Carinae nebulosity, proper motion meas. in complex outer shell 8−28687
  Cassiopeia A, absolute radio spectrum 8−8090
  Cassiopeia A, image tube spectrograms 8−16485
  CL4, nearby nebula, spurious image in Kron electrographic camera 8−8101
  cometary nebula, remarkable structural change obs. 8−4333
  cometary nebula near NGC 7023, brightening, stellar object visual magnitudes 8−20882
  compact IR sources assoc. with H II regions and molecular clouds, polarimetry 8−41019
  control stars temperatures, determ. from forbidden O III lines 8−41015
  Crab, age and distance determ., student exercise 8−12520
  Crab, high energy X-ray spectrum, OSO-8 obs. 8−12315
  Crab, interplanetary scintillations of PSR 0531+21 at 74 MHz 8−36625
  Crab, interstellar medium characts., soft X-ray and radio obs. reconciliation 8−12328
  Crab, nature of EM field and radiating particles *(Russian)* 8−12351
  Crab, parametric plasma instabilities 8−45220
  Crab, photoelectric spectrophotometry of filaments, abundances 8−41006
  Crab, relativistic particles injection 8−36678
  Crab, remarkable spectra in outskirts of supernova remnant 8−36662
  Crab, search for 400 keV γ-ray line 8−12345
  Crab, search for gamma ray lines 8−8013
  Crab, search for thermal X-ray line emission 8−8095
  Crab, spectrograms of filaments, faint forbidden lines 8−45388
  Crab, X-ray polarization, precision meas. without pulsar contamination 8−41086
  Crab Nebula, flux density at 1.8 mm *(Russian)* 8−32558
  Crab Nebula, polarimetry with OSO-8 X-ray polarimeter 8−12426
  CRL 2688, bipolar nebula, search for OH emission 8−41016
  CRL 2688 (Egg Nebula), bipolar nebula, optical and IR polarimetry 8−36658
  CRL 2688 (Egg Nebula), bipolar refl. nebula, photoelec. polarization maps 8−28742
  Cygnus Loop, supernova remnant, high vel. gas obs. and filaments spectra *(Russian)* 8−41028
  dark clouds, NH_3 survey 8−49507
  dark nebulae and globules, star form. regions 8−12347
  dense clouds, kinematics and dynamics 8−32563
  dust cloud complex in Taurus, radio obs. of fragmentation and localised multiple vel. components 8−4308
  G206.9+2.3 (=PKS 0646+06), supernova remnant, optical identification 8−36660
  G291.0−0.1, supernova remnant, location in Tr 18 open cluster 8−20875
  galactic, obs. at 5 GHz 8−4327
  gas pressure and density *(Danish)* 8−4335
  Gum nebula, Balmer alpha photographic obs. and interpretations 8−24545
  Gum nebula, distance from photometry of stars in reflection nebulae 8−32449
  HD 44179 (Red Rectangle), bipolar nebula, IR polarimetry 8−36658
  Heile's Cloud 2 at SHF cyanohexatriyne detection 8−41018
  Herbig-Haro objects in Gum Nebula, spectrophotometry 8−36565
  IC 1318 b and c, H_2CO absorpt. 8−16484
  IC 2220, refl., surrounding red giant HD 65750, photometric obs. 8−36567
  IR sources in AFCRL catalogue, optical, IR and radio studies 8−4393
  K3-50, optical nebula, radio obs. of assoc. H II regions 8−16554
  Kleinmann-Low, lamellar grating obs. in 100-500 μm region 8−28743
  Kleinmann-Low, N_2HD detect. 8−20881
  Kleinmann-Low nebula, ^{12}CO line profile rel. to radially moving cloud model 8−20865
  Kleinmann-Low nebula, optically thin CO emission 8−4315
  L134 dark cloud, detect. of DNC at 152.6 GHz 8−4334
  Lynds 673 nebula, radiosource obs. at 3.5 and 4 mm *(Russian)* 8−32557
  M17, dusty H II region, stellar optical polarisation meas. 8−45379
  M1-78, emission nebula, 15.4 GHz struct. 8−41025
  M1-92, bipolar nebula, OH emission obs. 8−41016
  M3-99, bipolar nebula, search for OH emission 8−41016
  M42 (Orion Nebula), X-ray obs. by Astronomical Netherlands Satellite 8−28852
  M 1-92 (Minkowski's Footprint), bipolar refl. nebula, photoelec. polarization maps 8−28742
  Magellanic Clouds, spectrophotometry of nebulae suitable as standards 8−12350
  Merope reflection nebula, phase function of dust grains in UV 8−32553
  molecular cloud assoc. with NGC 7023, CO obs. at 2.7 mm wavelength 8−41008
  molecular clouds 8−32562
  R Monocerotis, bipolar nebula, optical and IR polarimetry 8−36658
  MSH 14−63, probable remnant of A.D. 185 supernova, X-ray emission obs. 8−45427
  Mz 3 (p-K 331−1°1), obs. of bipolar nebula, possible protoplanetary 8−45376

nebulae continued
  NGC 1333, detect. of DNC at 152.6 GHz 8−4334
  NGC 1499 (California Nebula), CO obs. along ionisation front 8−24537
  NGC 2237 (Rosette Nebula), H II region obs. in absorption at 12.6 and 25 MHz *(Russian)* 8−41024
  NGC 2264, detect. of DNC at 152.6 GHz 8−4334
  NGC 3603, H II region, interstellar λ4430 band obs. 8−32555
  NGC 6302, line profiles from ionised and neutral gas in peculiar nebula 8−12341
  NGC 6618, polarimetric obs. of nebula and neighbouring stars *(Russian)* 8−49491
  NGC 7000/IC 5070 (North American/Pelican) nebular complex, obscuration and excitation 8−36667
  NGC 7129, star form. process in mol. clouds 8−32542
  NGC 7822, bright-rimmed mol. cloud, CO obs., heat sources 8−36664
  NGC 7822 (W 1), supernova remnant, 2.8 and 6 cm wavelength obs. 8−4383
  ξ Ophiuchi cloud, Copernicus UV obs. of interstellar C_2 8−41022
  optical remnant of SN 1181 (3C 58), discovery 8−32546
  Orion, 2.1 μ H_2 emission, high spectral resolution obs. 8−20878
  Orion, ^{30}SiO detect. 8−8097
  Orion, contraction of star cluster-molecular cloud complex 8−12313
  Orion, H_2 emission from shock-heated region in molecular medium 8−4321
  Orion, H_2 IR line emission, shock model 8−8086
  Orion, IR polarisation, preferential extinction in Kleinmann-Low nebula 8−4311
  Orion, lamellar grating obs. in 100-500 μm region 8−28743
  Orion, large proper motions of nebular features and faint star 8−12349
  Orion, linear polarisation obs. 8−45392
  Orion, temp. gradients, obs. and model 8−8077
  Orion, vibrationally excited H_2 8−8076
  Orion H_2O masers, matter outflow in star formation last stages 8−8091
  Orion molecular cloud, 870 μm CO emission 8−12335
  Orion Molecular Cloud 1, cyanoacetylene emission obs. 8−4322
  Orion Nebula, C recomb. line mapping 8−20866
  Orion Nebula, far UV imagery 8−4326
  Orion Nebula, high resolution map at 33 μ 8−28757
  Orion Nebula, OH masers obs. 8−16493
  Orion region, survey of extremely red stars with Schmidt telescope *(Japanese)* 8−20833
  Parsamyan 21, bipolar nebula, search for OH emission 8−41016
  Pleiades reflection nebulosity, model for filamentary struct. 8−8082
  Puppis A supernova remnant, X-ray spectrum and struct. 8−20876
  reflection, multiple scatt., Monte Carlo approach 8−12320
  reflection, scatt. multiplicity 8−12323
  reflection, with embedded illuminating stars, multiple scatt. 8−12322
  reflection, with foreground stars, multiple scatt. 8−12321
  reflection nebula, optical colours, polarisation, composite and mixture of nebula grains 8−16502
  reflection nebulosity near 20 Tauri (Maia) in Pleiades 8−28734
  S106 and S235, aperture synthesis obs., star form. regions 8−36672
  S140 molecular cloud, energetics, mol. line data, temp., density, abundances 8−36650
  S206, galactic nebula, model for struct. 8−12326
  α Scorpii (Antares) nebula, spectrum 8−41014
  Sharpless 140, compact source, strong far IR emission obs. 8−36649
  SNR position rel. to location of Brahe's supernova from original obs. 8−12256
  star formation, radio obs. 8−32565
  star formation regions, IR obs. 8−32564
  stellar winds and neutral gas in diffuse nebulae 8−28758
  supernova remnants, acceleration of high-vel. clouds 8−20877
  supernova remnants in M33 detected by strong S II forbidden line emission 8−36665
  very-low-excitation compact nebulae in Magellanic Clouds, spectra 8−32556
  W44, supernova remnant, associated molecular cloud obs. 8−8079
  young SNRs, search for radio emission at 3.7 and 11 cm 8−40972
  CH_3^+ ion, radiative assoc. reactions in interstellar clouds 8−41021
  He^+ radio recombination lines, stimulated emission 8−8092
  N,O abundances in gaseous nebulae 8−8093

necking
  elastic-plastic circular plates, biaxially stretched, necking calcs. 8−5666
  metals, phys. model of process of loss of mechanical stability and neck formation *(Russian)* 8−6969
  plastic instability during tensile deform., numerical calc. 8−30203
  polycarbonate (BPA), thickness depend. of G_c for shear lip propag. from single crack propag. 8−11305
  polyethylene glass sphere filled, crack form5 and necking *(German)* 8−35452
  shaped charge jet stability 8−13919
  spherical powder sintering by surface diffusion, computer simulation 8−48344
  tensile instability in material with strain hardening and strain-rate hardening 8−23717
  tension test with neck triaxiality reduction 8−7159
  Al alloy, 6061-T6, thickness depend. of G_c for shear lip propag. from single crack propag. 8−11305
  Al-Zn-Mg, cavitation during superplastic deform. *(Japanese)* 8−15464
  Cu, cold-rolled, thickness depend. of G_c for shear lip propag. from single crack propag. 8−11305
  Cu-Al-Si-C (95, 2.8, 1.8, 0.4 wt.%) fracture characts. of superplastic single phase, exam. 8−48500
  Cu-SiO_2 alloy, fracture at elevated temp. 8−39896
  Fe, ductile fracture, fractographic characts. SEM exam. of fracture surface necking obs. 8−35506
  Fe-Mn (32.5 and 38.3 wt.%), steel sheet, exam. of form limit diagrams and damage 8−48461
  Fe-Ni-C (31, 0.1 wt.%), kinetics of deform. induced martensite, shock loading and grain refinement effects 8−15395
  Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8−6975

Neel temperature
  calcium copper acetate hexahydrate, $CaCu(CH_3COO)_4.6H_2O$ and $CaCu(CD_3COO)_4.6H_2O$, susceptibility meas. 8−2680
  copper benzoate, antiferromag. reson. below 1K, Neel temp. determ. 8−39407

Neel temperature continued
- Hubbard model, FCC, fourth order interaction effects 8−23235
- Ising model, dipolar antiferromag., negative absolute temp. crit. point determination *(Russian)* 8−43594
- itinerant electron antiferromagnetism, effect of mag. field 8−27013
- rare earth alloys, mag. phase diagram 8−10684
- TANOL, linear chain antiferromagnet, long-range order, magnetisation, PMR 8−23266
- $Ca_xFe_{3-x}O_4$, Ca^{2+}, Mossbauer study 8−10814
- $Ca_2Ti_{2-2x}Fe_{2x}O_{6-x}$, antiferromag. phases, Neel temp. variation, vacancy long-range order *(French)* 8−34979
- CeSb, mag. phase transitions, zero applied mag. field 8−31070
- $Co_3B_7O_{13}Cl$, polydomain ferroelec., magnetoelec. effect below Neel temp. 8−10745
- Cr, magnetic phase transition at Neel temp. 8−2681
- Cr_2O_3, EPR linewidth, near Neel temp. 8−23327
- Cr_2O_3, mag. phase boundaries near bicrit. and Neel points 8−34980
- $CuCl_2.2H_2O$, influence of high hydrostatic press. on intermediate state associated with spin flopping 8−35020
- $Cu(NH_3)_4SO_4.H_2O$, EPR around Neel temp. 8−39390
- Fe-Cr (70-92 at.%), coexistence of ferro- and antiferromagnetism *(Russian)* 8−47955
- $FeBO_3$, weak ferromag., mag. field influence on crit. behaviour of susceptibility 8−14942
- Fe_3BO_6, weak ferromagnetism and spin reorientation, antiferromag. reson. spectra 8−6580
- $Fe_3B_7O_{13}Br$, $Fe_3B_7O_{13}Cl$, polydomain ferroelec., magnetoelec. effect below Neel temp. 8−10745
- $FeCO_3$, mag. field drawn destruction of antiferromag. destruction, light depolarisation at mag. transform. *(Russian)* 8−23432
- $FeNb_2O_6$, magnetisation, 1.4-80K, antiferromag. ordering 8−10666
- $FeSn_2$, hyperfine mag. fields at ^{57}Fe, ^{119}Sn nuclei, under press. *(Russian)* 8−39486
- $(Fe_xV_{1-x})V_2S_4$, and $(Fe_xV_{1-x})V_4S_8$, mag. props. 8−27034
- Gd-Y (40 wt.%) alloy, magnetic phase transitions, elastic consts. meas. 8−14957
- HoAlGa, mag. props. and struct. 8−39302
- K_2NiF_4, 2D antiferromag., volume depend. of superexchange, US velocity meas. of T_n 8−19237
- Mn-Cu, mag. and cryst. struct., neutron and X-ray diffr. meas. *(Russian)* 8−22694
- MnF_2, antiferromagnetic phase stability limit near spin-flop boundary 8−10683
- MnF_2, specific heat, Heisenberg to Ising crossover near Neel temp. 8−47980
- $MnS_2(Se_2)(Te_2)$, mag. ordering, 2 cation, 2-anion indirect exchange interactions *(French)* 8−43566
- MnSe, mag. suscept., thermal expansion and elec. resist. meas. 8−34964
- Mo, single crystal, thermal expansion in magnetically ordered phases 8−2269
- NH_4FeF_4, mag. and Mossbauer obs. *(French)* 8−19389
- $NdVO_3$-$CaVO_3$ solid solns., mag. props. rel. to cryst. struct. 8−43571
- Np intermetallics, NpM_2Si_2, (M=Cr, Fe, Co, Ni, Cu), Mossbauer and magnetisation expts. 8−31138
- $PbFe(_{2/3}W_{1/3})O_3$-$Pb(Co_{1/2}W_{1/2})O_3$ solid soln., crystallographic, dielectric, magnetic props., Mossbauer spectra 8−43807
- $(SrCaR)_2(Cr_xGa_{1-x})O_4$, R=La or Sm, mag. 2-D oxide, phys. props. 8−47974
- $TbAg_{1-x}In_x$, mag. and transport props. 8−43572
- TbAlGa, mag. props. and struct. 8−39302
- UGeS(Se)(Te), mag. susceptibility, struct. in temp. range 4.2 to 300K 8−10667
- V_2O_3-M_2O_3, M=Ti, Cr, struct. and mag. props. 8−27041
- $YFeO_3$, induced spin reorientation near Neel point 8−19267
- $ZnCr_2Se_4$, screw spin struct., neutron diffr. exam. 8−27019

negative feedback *see feedback*

negative feedback control systems *see closed loop systems*

negative ions
- acetophenone, enolate anion, electron photodetachment cross-section resons. 8−5298
- aliphatic chlorocarbons, electron impact dissoc., $\lesssim$10 eV, negative ion prod. 8−5359
- $(\text{alkali atom})^+ + (\text{halogen atom})^-$, recombination 8−7192
- alkali metal anions, formation 8−5159
- atomic and molecular dynamic polarisability, many-centre short-radius model pots. 8−25735
- electron density, semi-statistical model 8−21850
- electron dissociative attachment of mol. plasma in crossed electric and mag. fields 8−5847
- formation on sputtering metals and semiconductors with Cs^+, alkali, metal monolayer effect 8−46204
- glycyl anion radical, in α-glycine cryst., struct., ESR obs. 8−33530
- halogens, negative ions, electron spin polarisation in photodetachment 8−25495
- Hartree-Fock-Roothan wavefunctions with 3d and 4d electrons 8−17569
- isoelectronic sequence, correlated and HF electron density differences 8−46275
- mass spectrometry, negative chemical ionis., ionis. techniques, review 8−325
- methyl anion, geometric struct., electron correlation effects, self-consistent electron pairs 8−22050
- mobility in electronegative gases, new expt. method 8−18372
- molecular, theoretical calcs., review 8−37552
- molecular ions, gas phase, spectroscopic props, review 8−33501
- naphthalene radical anion+TCNQ, electron transfer reactions, theory 8−15661
- negative ion formation, by sputtering, work function depend. 8−39645
- oxyanions, in nuclear waste materials, laser Raman spectrometric determ. 8−35743
- polar molecule-electron systems, variational method for bound state calc. 8−46261
- porphyrins, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
- positive column, density oscills. due to negative ions, metastable atom model 8−1799
- pseudo pot. model Hamiltonian, spin-orbit splitting, intercombination and relativistic orbital reorganisation 8−25424

negative ions continued
- tetrafluoroethylene radical anion, isotropic and anisotropic EPR spectra, conform. 8−13532
- Thomson scattering, collision-dominated, negative ions effect, ionospheric D-region appl. 8−45118
- transition metal tetrahalogeno anions, ligand field spectra, MO model 8−17654
- XY_4 square-planar type ions, force consts., bond polarizability 8−5201
- zinc etioporphyrin I anion radical, photoreduction obs. *(Russian)* 8−23958
- BF_3^-, geometric struct. of ground state, ab initio calc. 8−5130
- $B_nH_n^{2-}$, n=5-12, localised orbitals, bonding, PRDDO calcs. 8−13431
- $BeO(BeO^-)$, electron affinity and dipole moment, ab initio calc. 8−41938
- Br^-, nuclear quadrupole interaction , second-order Stark effect 8−21879
- Br^-+methane(fluoromethane), excitation functions, reactive scatt., eV region *(German)* 8−35677
- C^-, free-free transitions, continuous absorpt. estimation 8−9098
- $C^-+CO(Mg)(N_2)$, electron detachment cross-sections, 20-150 keV 8−25690
- C_2^-, matrix isolated, vibr. energy transfer, fluoresc. 8−46382
- CN^-, electron density distrib., SCF mol. orbitals calcs. 8−9058
- CO_2, supersonic jet, $(CO_2)_n^-$ cluster formation and electron attachment 8−5385
- CO_2, Trichel corona, negative ions 8−30503
- CO_2^-, complex symmetric stretch pot., from CO_2 reson. electron impact data 8−25726
- CO_3^-, form. by photodissociation and ion-mol. reactions in CO_2 and CO_2-O_2 mixtures 8−13558
- CO_3^-, O^- bond dissociation energy 8−7193
- CO_4^-, form. by photodissociation and ion-mol. reactions in CO_2 and CO_2-O_2 mixtures 8−13558
- 2-chlorothiophene, σ* anion radical, prod., ESR spectrum assignment 8−11539
- Cl^-, formation and destruction in ionospheric D-region 8−12049
- Cl^-, trace determ. by rate controlled coulometric titration 8−11576
- Cl^--ionic crystal-metal system, charge transfer mechanism 8−11527
- Cl^-+inert gas atom, electron detachment and inelastic processes 8−42208
- Cl^-+methane(fluoromethane), excitation functions, reactive scatt., eV region *(German)* 8−35677
- $Cl_2^-+HO_2$, reaction in pulse irrad. aq. soln. containing Fe^{2+} and Cl^- 8−20036
- ClF_2^-, ground and ionised states, Koopman's theorem and Mo relax. in ab initio calcs. 8−1035
- Cs, elastic electron scatt., 0.8-20 eV, Cs^- autoionis. state 8−5353
- Cs^-, multichannel photodetachment 8−42027
- $CsH^-CsH^+(CsH)$, ab initio ground-state pot. energy curves, electron affinities 8−41946
- D^-, equilib. yield in Sr vapour 8−17750
- D^- source using surface ionis., continuous beam prod. 8−9021
- $D_2O^-(^2A_1)$, obs. in K(Cs) ionis. collisions with D_2O, 100-200 eV 8−17770
- F^-+He, electron gas model, polarisation inclusion 8−37699
- $F^-+X_2^+\rightarrow[X_2F]^*$, 300K, 50 atm., recombination rates 8−46576
- $F^-+X^++X\rightarrow XF^*+X$, (X=inert gas), ionic recomb. 8−46574
- F_2^-, absorption coeffs., shape resonance in e-F_2 scatt. 8−17792
- $FeBr_4^-$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
- FeS_6^{10-}, electronic struct., SCF-Xα scatt. wave calcs., rel. to spectra of FeS, FeS_2 8−5138
- $Ga_3Br_{10}^-$, vibr. spectrosc., in alkali metal compound crysts. *(French)* 8−6667
- GeX_4, (X=Br,Cl), electron impact dissoc., low-energy reson. capture 8−9263
- H^-, $^1P_0$-reson., DC Stark effect calcs. 8−42000
- H^-, and isoelectronic sequence, correlated and HF electron density differences 8−46275
- H^-, in solar atmosphere, bound-free electron transitions, review 8−33563
- H^-, ion beam bunching with sawtooth voltage 8−4735
- H^-, photodetachment cross section, dynamic polarisability calc., sum rules, basis set depend. 8−17635
- H^-, photodetachment cross section, Feshbach and shape reson. elec. field depend. 8−37614
- H^- surface ion source, plasma parameters, diagnostics 8−9849
- H^-+Ar, electron detachment, 0.5 to 1.0 MeV 8−22021
- H^-+atom, electron loss high energy cross sections 8−13597
- H^-+Cs, fast atom collisions, charge exchange, equilib. fractions calcs. 8−33601
- $H^-+H_2(He)(Ar)$, electron detachment, Born cross sections, Pade approximants 8−17742
- $H^-+H_2(He)(Li)$, 50-150 keV, scatt. angle of neutral H 8−5340
- $H^-+\text{methane}\rightarrow\text{methane}+H^-$ force decomposition anal. along reaction coord. 8−27741
- $H^-+N_2\rightarrow N_2^-+H$, vibr. autodetaching states, excitation and decay 8−33620
- H_2^- resonant states, Feshbach projection-operator calc. 8−5153
- HC_2^-, ground state energy surface, ab initio SCF calc. 8−33446
- HCl^-, resonance states, CI calcs., pot. energy curves 8−29755
- HCl^-, resonance states, interpretation of low energy HCl-electron scatt. 8−17808
- H_2O^-, in γ-irrad. Y-type zeolite, alternative EPR triplet assignment to NO_3^{2-} 8−11534
- HPO_3^{2-}, in NaH_2PO_2-Na_2HPO_3, quantitative anal. by relative Raman intensities obs. *(Japanese)* 8−23991
- $H_2PO_2^-$, in NaH_2PO_2-Na_2HPO_3, quantitative anal. by relative Raman intensities obs. *(Japanese)* 8−23991
- $HPO_4^-(H_2PO_4)$ radicals + organic compounds, reaction rate consts. 8−15669
- He^-, existence in strong mag. field, binding energy, isoelectronic semicond. impurity trapping 8−9097
- He^-, ion source, K charge exchange vapour, Pelletron accelerator injector 8−5085
- He^-, purely L^2 method for calculating resonance widths 8−46283
- ^3He, normal and superfluid phase, negative ion motion 8−38900
- HgX_3^- (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788
- HgX_4^- (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788

negative ions continued
I^-+methane(fluoromethane), excitation functions, reactive scatt., eV region *(German)* 8−35677
$IrBr_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
$IrBr_6^{2-}$, Raman tensor patterns, vibr. reson. Raman scatt., group theoretical calcs. 8−986
$IrCl_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
K^-, multichannel photodetachment 8−42027
LaO_4^{5-}, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
Li H^-, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8−25436
LiF(LiF^-), electron affinity and dipole moment, ab initio calc. 8−41938
LiH, LiH^-, pot. energy curves, electron affinity, spectroscopic consts. 8−5129
LiH^-(LiH), ab initio ground-state pot. energy curves, electron affinities 8−41946
Mg^-, purely L^2 method for calculating resonance widths 8−46283
MgO(MgO^-), electron affinity and dipole moment, ab initio calc. 8−41938
$Mo_2Cl_8^{3-}$($Mo_2Cl_9^{3-}$), electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
N^-, continuous absorption coeffs., from elastic e-N scatt. data, target wavefunction effect 8−9128
N_2^-, resonances in N_2 electron impact excitation *(French)* 8−25723
N_2^-, vibr. autodetaching states, from H^-+H_2, excitation and decay, Franck-Condon factors 8−33620
NH_2^-, photodetachment energy, eqn. of motion method 8−5301
$NO^++X^- \rightarrow NO+X$ (X=Cl, Br, I), rate const. determ. in flames 8−48633
NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8−25518
NO_2^-, SCF and MC SCF CI calcs. 8−46280
NO_3^{2-}, in γ-irrad. Y-type zeolite, EPR triplet assignment, instead of H_2O^- 8−11534
$NO_3^++H_2O$, in aq. NH_4NO_3, H bonding, X-ray diffr. obs., 25°C 8−42881
NO_2(NO_2^-), ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
NO_3(NO_3^-), ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
$NaCl^-$, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8−25436
NaF(NaF^-), electron affinity and dipole moment, ab initio calc. 8−41938
NaH^-, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8−25436
NaH^-(NaH), ab initio ground-state pot. energy curves, electron affinities 8−41946
$Nb_2Cl_9^{3-}$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
O^-+CO(Mg)(N_2), electron detachment cross-sections, 20-150 keV 8−25690
$O^-+CO \rightarrow CO_2^++e^-$, vibr. chemiluminesc. 8−3340
$O^-+N_2 \rightarrow N_2O+e$, rate studies 8−40036
O_2, Trichel corona, negative ions 8−30503
O_2^-, generation in CdS aq. dispersion by photolysis, spin trapping detect. 8−11538
O_2^-, in aq. solns. of alkali halides, spectral props. *(Russian)* 8−6766
O_3^-, O^- bond dissociation energy 8−7193
$O_3+O^-(OH^-)(S^-)(SH^-)$, associative detachment, rate coeffs. 8−3325
O_3^-+molecule reactions, thermochemistry, electron affinity and rate consts. 8−40040
$O_3^-+X \rightarrow O^-+O_2+X$, X=He, Ar, CO_2, long-lived excited (or isomeric) state of O_3^- 8−5318
OH^- excitation, cause of laser Raman fluoresc. background at oxide surfaces 8−10875
OH^-+inert gas, collision-induced dissociation 8−29834
OH^-+methoxybenzene (o-cresol), gas phase reaction, 299-435 K, kinetics and mechanism 8−11515
OH^-+O_3, associative detachment, rate coeffs. 8−3325
$OsBr_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
PO_4^{2-} anion radicals + organic compounds, reaction rate consts. 8−15669
Pt complex, $PtCl_4^{2-}$, in chloride-sulphate soln., Pt electrodeposition, galvanostatic transients *(Russian)* 8−31655
$Re_3Cl_9^-$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
S containing small paramag. ions on MgO g-tensors and spin densities 8−46270
S^-+O_3, associative detachment, rate coeffs. 8−3325
S_n^{2-} (n=4-8), vibr. and rot. isomers, Raman spectra *(German)* 8−13504
SF_6^-+He, decomposition, SF_5^- form. 8−29833
SiF_3Cl^-, radical anion struct. and ESR spectrum 8−25571
SiX_4, (X=Br,Cl), electron impact dissoc., low-energy reson. capture 8−9263
SnI_3^-, vibr. intensities, forms and freqs. anal. SCF MO LCAO CNDO calcs. 8−9274
$Tc_2Cl_8^{3-}$ ion, visible spectra, electronic struct. 8−5240

negative resistance
No entries

negative resistance effects
see also Gunn effect
cetyl alcohol with dipoles, switching and negative resist. phenomenon, quantitative model 8−14769
n-channel MOSFET, Si inversion layer, negative differential resistance 8−30996
cholesterol film with dipoles, switching and negative resist. phenomenon, quantitative model 8−14769
current instability due to Bragg scatt., travelling dipole domains, fluctuations 8−26874
double injection p-i-n diodes, negative resistance characts. 8−30983
extrinsic semiconductors, negative magnetoresist., Hubbard model *(Russian)* 8−47816
history of hot electron physics 8−26869

negative resistance effects continued
MIM junction, tunnelling, tight-binding Green function calc., disorder effect 8−10577
semiconductor, hot electron current voltage curves, transverse mag. field, phonon heating 8−6384
semiconductor, hot electrons in quantizing mag. field and impact ionisation of impurities 8−6386
semiconductor, negative cyclotron resonance of hot carriers 8−2492
semiconductor plasma, with S-like negative resist. region, temp. plasmon oscills. 8−26898
semiconductor tunnelling and negative resistance phenomena, book 8−26947
semiconductor with deep traps, magnetodiode effect 8−6401
semiconductors with superlattice, absolute negative resist. *(Russian)* 8−34838
thin wire, negative longit. magnetoresist., kinetic theory 8−34821
Ag-CdTe-Ag struct., negative differential resist. 8−19161
Al-Al_2O_3 triple-barrier structure, negative resist. caused by resonant tunnelling 8−14819
Al-Al_2O_3-Au sandwich conduction props. 8−2580
Bi_2O_3, film, resist. and current controlled negative resist. 8−39238
C, glassy, negative magnetoresist. 8−23118
n-$CdCr_2Se_4$, current- and voltage-controlled negative resist. obs. 8−19041
$Fe_{1+x}V_{2-x}O_4$ spinels, prep. and characts. *(Korean)* 8−39119
GaAs, current controlled negative resist. at low temps. 8−39133
GaAs ion-irradiated layers switching conduction 8−34868
GaAs:Cr diode, high magnetosensitivity of negative resist. region 8−26946
GaAs:Cu(Cr) S-type diodes, thermal quenching of injection currents and current-voltage characts. 8−26942
GaP LED with S-shaped characteristic, negative resist. and red electroluminesc., expt. 8−48237
n-Ge:Au, negative photoconductivity 8−34863
InAs:Mn, NMR, magnetoresist., Hall effect and mag. susceptibility meas. 8−26888
p-InSb, negative piezomagnetoresist. and Hall effect meas., antiferromag. order form. 8−19061
InSb, reverse biased diode 8−19129
InSb:Ge, uniaxially compressed, anisotropy of elec. props. 8−19035
InSb:Mn, NMR, magnetoresist., Hall effect and mag. susceptibility meas. 8−26888
Li ferrite, transverse magnetoresistance, temp. depend. 8−19039
MgMn ferrite, transverse magnetoresistance, temp. depend. 8−19039
Si:Au p^+-i-n^+ diode, I-V characts., recomb. centre influence 8−19134
SmS, semicond., anomalously high magnetoresist., Hall coeff. and elec. resist. meas. 8−10479
TiO_2, polycryst. film, threshold switching 8−14771
Y-Y_2O_3-metal junction, electroforming and conduction 8−26969
ZnO, strong accumulation layers, negative magnetoresistance 8−6428

negative temperature coefficient thermistors *see thermistors*

nematic liquid crystals
acoustically induced birefringence 8−38126
p,p′-h-alkoxyazoxybenzene homologous compounds, DC Kerr constants 8−27185
p-n-alkoxybenzoic acid, homologs, principal mol. polarisabilities calc., refr. indices of nematic mesophase meas. 8−2004
p-alkoxybenzoic acids, proton spin lattice relax., mol. dynamics 8−34425
4-n-alkoxybenzylidene-4′-methylalkylanilines, chiral nematic cryst., mesorphic behaviour and binary systems 8−2000
alkoxylbenzoic acids, orientation in their nematic state 8−42903
4′-n-alkyl-4-cyanobiphenyls, dielec. dispersion 8−2798
4-n-alkyl-4-cyanobiphenyls, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
p-alkyl-p′-cyanocyclohexylcyclohexanes, thermotropic nematics with positive dielectric and negative diamag. anisotropy 8−34435
p-n-alkyl-p′-n-alkoxytolanes, hydrostatic pressure effects, phase transitions *(French)* 8−14448
4-n-alkylphenyl 2′-chloro-4′-(6-n-alkyl-2-naphthoyloxy)benzoates, synthesis and liq. cryst. props. 8−34433
(+)-4-n-alkylphenyl-4′-(4″-methylalkylbenzoyloxy)benzoates, optically active, synthesis and effect on liq. cryst. display props. 8−1997
anisotropic crystal interface, influence of second-order elasticity on local Frederiks transitions 8−1982
aromatic esters derived from naphthalene, liqs. cryst. props. 8−47235
p-azoxyanisole, depend. of phase transition temp. on thickness 8−26669
azoxybenzene, terminally substituted, elastic consts., varying mag. field and temp. 8−18540
azoxybenzenes, nematic, mag. susceptibility, orientational order parameter 8−34426
azoxybenzenes, nematic, refr. index, birefringence, internal field 8−34427
binary mixture, smectic phase form. 8−26670
biphenyl-p-ethylbenzoate, high press. mesomorphic and polymesomorphic transitions 8−18750
butoxybenzylidene-aminobenzonitrile, crystalline and liq. cryst. states, low freq. spectra 8−34437
CBOOA, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
CBOOA, mag. field depend. of laser light scatt., interf. rings 8−26434
CBOOA, nematic phase laser light scatt., mag. field depend., crit. deform. *(Japanese)* 8−2826
CBOOA, temp. depend. of apparent viscosity and density 8−18542
cell, with pretilt angle, electro-optical props. *(Japanese)* 8−43837
chiral substituted dibenzo|b,f|1,4-diazocines in nematic MBBA, helical twisting power 8−34431
cholesteryl myristate, density of smectic, cholesteric, blue, isotropic phases 8−42897
CPHB, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
4-cyano-4’-octyloxybiphenyl, nematic-smetic-A transition, optical birefr. temp. coeff. 8−47505
cyanobenzylidene octyloxyaniline, director bend mode behaviour near nematic to smectic-A phase transition 8−1985
cyanobiphenyl, surface tension, meas. near nematic-isotropic transition temp. 8−43219
cyclohexylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724

nematic liquid crystals continued
de Gennes model, for nematic to smectic-A transition, anisotropic crit. props. 8–43110
deuterated compounds, molecular order and conformation changes in phase transitions 8–47237
p,p′-di-n-butylazobenzene, high press. mesomorphic and polymesomorphic transitions 8–18750
dichroic dye in chiral nematic host, visible absorpt., pitch relationship 8–48193
dielectric properties, relaxation process characts. *(Russian)* 8–48116
dielectric relaxation, LF, Freedericksz transition technique meas. 8–1987
dielectric-flexoelectric deformations in one dimens. 8–38616
domain structure, stimulated rearrangement 8–26438
domains, of 2nd kind, form. with positive dielec. anisotropy *(Russian)* 8–18550
dynamic scattering, material flow due to external electric fields 8–18543
EBBA, crystallisation and melting of metastable solid crystalline phases 8–2240
EBBA-non-mesogenic binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8–30743
EHD instability, phase diagram, for nematic-cholesteric binary mixture 8–1980
EHD instability, temp. depend. 8–1998
enthalpy of fusion of nematogens 8–22645
EPR, spinning in tilted mag. field, lag angle 8–38615
EPR and NMR relax., first-rank tensor component effects 8–14275
Ericksen-Leslie continuum theory reformulation 8–30535
film, with two free surfaces, mol. orientation 8–47238
flexo-electric domains 8–43792
flexoelectric domains in thin layers *(Russian)* 8–18549
flexoelectric polar deformations and second order elasticity 8–1979
guest-host interaction properties 8–6007
haemoglobin, deoxygenated sickle cell, gels, liq. cryst. props. 8–3445
hard spherocylinder fluid, mol. dynamics simulation 8–5997
HBAB, temp. depend. of apparent viscosity and density 8–18542
HBT, mag. susceptibility and anisotropy, smectic, nematic, isotropic phases 8–18748
HBT, phase transitions, quenching effects, DSC, DTA, X-ray diffr. and microscopic obs. 8–22833
n-heptyl cyanobiphenyl, near IR dichroic spectrum, using unpolarised radiation 8–27201
4-heptyl-4′-cyanobiphenyl, liq. cryst., dielec. props. *(French)* 8–10820
4′-n-heptyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8–34434
heptyloxylbenzoic acid, isotropic phase, light scatt., ultrasonic vel. and absorpt. meas. 8–48189
HNBP, statistical mechanics, particle pots. and distrib. functions calcs. 8–2001
HOAOB, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8–42896
homeotropically oriented, effects of elliptically polarised shear flows, instability patterns obs. 8–14277
homogeneously aligned, positive dielec. anisotropy, Williams domains as mag. threshold effect 8–26435
incompatible nematogens, induced smectic mesomorphism 8–1983
internal field, dipole correlation factor 8–34428
IR modulator properties 8–25970
isotropic phase, light scatt., ultrasonic vel. and absorpt. meas. 8–48189
isotropic phases of nematogens, direct obs. of picosecond mol. reorientation 8–1991
isotropic-nematic liquid crystal phase transition, theory including mol. orientation correlation 8–47508
isotropic-nematic transition, model, mol. shape, vol. effects on orientational ordering 8–30741
light scattering centre dimensions, elec. field effect *(Russian)* 8–38619
low temperature nematic, binary mixture, spin-lattice relax., temp. depend. minima 8–26427
low tilt angle nematic alignment with frit sealing 8–38618
Marangoni effect in thin droplets 8–6009
MBBA, ^{13}C spin-lattice relax., Fourier-transform NMR, NOE 8–48064
MBBA, anisotropy of US attenuation 8–43070
MBBA, Brillouin scatt. in isotropic phase 8–2867
MBBA, dye activated, isotropic phase, induced Raman emission *(Russian)* 8–13766
MBBA, homotropic liq. cryst. growth 8–26439
MBBA, isotropic, depolarised Rayleigh doublet, de Gennes viscosity coeffs. 8–31207
MBBA, isotropic, obs. and anal. of depolarised Rayleigh doublet 8–35154
MBBA, isotropic phase, light scatt., ultrasonic vel. and absorpt. meas. 8–48189
MBBA, laser radiation transmitted near isotropic transition, spatial coherence 8–18003
MBBA, liq. cryst., light scatt. and birefr. 8–22646
MBBA, nematic, US attenuation anisotropy, temp. depend. 8–43071
MBBA, nematic phase, quasielastic and elastic 10 Å neutron scatt. 8–42904
MBBA, one dimens. dielectric-flexoelectric deformations 8–38616
MBBA, order parameters meas. by Raman scatt. 8–6011
MBBA, partially deuterated, D spin-lattice relax. 8–48070
MBBA, refr. index, high press. meas. 8–26428
MBBA, relaxation times for formation and break-up of Williams domains 8–34423
MBBA, secondary light scatt. in low frequency field, in dielectric state 8–48147
MBBA, statistical mechanics, particle pots. and distrib. functions calcs. 8–2001
MBBA, temp. depend. of apparent viscosity and density 8–18542
MBBA, temp. depend. of EHD instability 8–1998
MBBA film, optical study of second dynamic scatt. regime *(Italian)* 8–15146
MBBA film, visible interaction of low-intensity US waves 8–10126
MBBA-EBBA, homotropic liq. cryst. growth 8–26439
MBBA-EBBA mixture, behaviour in alternating elec. field 8–26440
MBBA-Ge interface, electrorefl., IR transmission and frustrated total internal refl. 8–19513
methyl iodide, and -d_1, dissolved in nematic phase, C-H bond orientation, ^{13}C NMR 8–46371

nematic liquid crystals continued
MHD effect, high resolution NMR *(Russian)* 8–15040
mixture, for low voltage dynamic scatt. display 8–27184
mixtures with optically active substances, stable inhomogeneities and permanent diffr. gratings 8–1988
molecular theory, orientation-averaged pair correlations 8–42905
momentum-shell recursion relations in $2+\varepsilon$ dimensions 8–6498
nematic to cholesteric transition, light induced *(Russian)* 8–14452
nematic-cholesteric mixture, helical pitch, depend. on composition 8–42899
nematic-isotropic transition, lattice model for hard core mols. with flexible tails 8–38818
nematic-isotropic transition, lattice model for hard core mols. with semiflexible tails 8–38819
nematic-isotropic transition, mean-field lattice model, meta- and unstable states 8–38817
nuclear spin relax., translational self-diffusion 8–43670
obliquely oriented, thermal convection *(French)* 8–22643
4-n-octyl-4′-cyanobiphenyl, smectic A and nematic liq. cryst., refr. indices and order parameters 8–22644
ordered nonsingular systems, topology appls. 8–10166
orientation on obliquely deposited SiO film 8–38987
orientational electrooptic effects, time characts. 8–27191
oriented, transient behaviour of field induced reorientation 8–30536
oscillatory convective instabilities, Dubois-Violette theory 8–9943
PAA, ^{14}N NQR freqs., double-reson. level crossing method 8–6602
PAA, ^{14}N NQR freqs., spectral assignments 8–6602
PAA, effect of mol. struct. on nematic liq. cryst., phase 8–42901
PAA, isotropic phase, light scatt., ultrasonic vel. and absorpt. meas. 8–48189
PAA, isotropic-nematic transition, appl. of integral eqn. for ang. distrib. function *(Russian)* 8–6147
PAA, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8–42896
PAA, methyl group rotation in solid and nematic phases, NMR obs. 8–6595
PAA, molecular theory, orientation-averaged pair correlations 8–42905
PAA, nematic liq. cryst., effect of magnetic field on US vel. and absorpt. 8–18707
PAA with deuterated methyls, nematic phase, quasieleastic neutron scatt. study of fast reorientations 8–14280
p-n-pentyl p-cyanobiphenyl, resolution of acoustic image detector 8–46871
4-n-pentyl-4′-cyanobiphenyl, nematic liq. cryst., refr. indices and order parameters 8–22644
4-n-pentyl-4′-cyanobiphenyl, refr. index, high press. meas. 8–26428
phase grating produced by shear flow induced instability 8–9945
4-phenyl n-pentyl ester, Nematel 105, nematogen, isotropic phase, Rayleigh scatt. and mol. reorientation 8–34429
phenylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8–45724
phenylpyrimidines, liq. crysts., synthesis and phys. props. 8–1995
polarisability anisotropy of nematic homologous series 8–38614
poly(ethyleneterephthalate)-p-hydroxybenzoic acid copolyester, liquid crystalline, X-ray scatt. obs. 8–9949
poly(n-dodecyl L-glutamate), thermotropic polymorphism, low-angle X-ray diffr. *(French)* 8–34601
poly (γ-benzyl-l-glutamate)-dioxane system, periodic struct. under elec. field 8–47234
pretilt angle, temp. depend. 8–26432
trans-p-n-propoxy-α-methyl-p′-cyanophenyl cinnamate, high press. mesomorphic and polymesomorphic transitions 8–18750
S-effect, growth and decay times 8–2824
Schiff base esters, mesomorphic behaviour 8–1993
secondary light scatt. in low frequency field, in dielectric state 8–48147
sound attenuation, near clear point, microscopic derivation 8–34605
space charge freezing, electro-optic effect meas. 8–34436
statistical mechanics, particle pots. and distrib. functions calcs. 8–2001
stilbene, depend. of phase transition temp. on thickness 8–26669
terephthal-bis-n-alkylaniline, homologous series, prep. and mesomorphic props. 8–26436
terephthalates, vibr. spectra, vol. struct. 8–18547
thermal parameters, transition temps. and latent heats 8–22832
trans-p-n-alkoxy-α-methyl p′-cyanophenyl cinnamates, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8–2790
twist viscosity, planar-model calc. 8–42893
twisted, phase transition like instability in static samples with surface induced tilted alignments 8–26667
twisted nematics, evidence for hexagonal phase 8–34602
two-dimensional fluid of overlapping ellipses, nematic ordering 8–34424
US field visualisation by nematic-cholesteric mixed cell 8–1524
US relaxation time, temp. depend. 8–18712
van der Waals theory, self-consistency requirements 8–18541
MBBA, nematic, anomalous spectra of current induced noise under high DC field 8–38617
4′-n-pentyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8–34434

neodymium
see also nuclei with ......
isotope separation, laser two-step photoionisation 8–46461
isotopic anomalies in Allende meteorite 8–32409
Isua supracrustal rocks, Sm-Nd isotopic investigations and implications for mantle evolution 8–36129
laser frequency conversion, resonant pumping of Tm^{3+}, Ho^{3+} activated YAG 8–17944
magnetic structure and crit. behaviour 8–47951
phosphate glass:Nd^{3+}, nonreson. interaction parameters, luminesc. kinetics obs. *(Russian)* 8–31246
thermal cond., 0.5-8K 8–34819
BeF_2-KF-CaF_2-AlF_3:Nd^{3+} glass, multiphonon relax., fluoresc. obs. 8–15219
$Bi_{12}SiO_{20}$:Nd, single cryst., photoluminesc. meas. *(Russian)* 8–23519
CaF_2-YF_3:Nd^{3+}, selective excitation of activator centres, time resolved luminesc. 8–15223
$Ca_5(PO_4)_3F$:Nd^{3+} site symmetries, EPR and spectral obs. 8–6571
$CaWO_4$:Nd^{3+}, thermal behaviour of shape and width of 9145 Å laser line 8–6755

neodymium continued
$LaCl_3:Nd^{3+}$ radiation upconversion, 1.06 to 0.873 μm 8−19530
$LaF_3:Nd^{3+}$, laser-excited fluoresc., self-adsorpt. 8−15210
Nd stoichiometric laser crysts., oscill. props., rate eqns. 8−22135
Nd XIV, UV spectra, 60-600 Å reson. lines 8−33455
Nd^+, spectral branching ratios and transition probabilities, solar abundance 8−9104
Nd^{3+}, $Eu^{3+} \rightarrow Nd^{3+}$ diffusion-limited energy transfer in Na borate glass 8−31238
Nd^{3+} in glass and cryst. hosts, fluoresc. branching ratios 8−29956
Nd^{3+}, intermediate coupling props., relativistic average of config. wave-functions applicability 8−17574
$Nd:BeF_2$ glass lasers for fusion expts. 8−46661
$Nd:CaY_3Mg_2Ge_3O_{12}$, CAMGAR low threshold CW room temp. laser operation at 0.941 μm 8−1234
$Nd:CeCl_3$, diode pumped miniature laser 8−9392
Nd:garnet, freq. axial mode shift, two-mirror resonator synchronisation, stabilisation *(Russian)* 8−22154
Nd:glass, 0.92 μ laser action at room temp. 8−1236
Nd:glass, fluorophosphate glass for fusion lasers 8−46660
Nd:glass, luminesc. greenhouse solar collector 8−13789
Nd:glass, luminesc. quantum yield meas., relative method *(Russian)* 8−35203
Nd:glass amplifier, large aperture, active mirror design 8−46659
Nd:glass disc amplifier design 8−46633
Nd:glass disc laser amplifier with immersion medium 8−1262
Nd:glass fibre optical quantum image amplifier 8−1261
Nd:glass laser, continuous dynamic freq. tuning of pulse radiation 8−29986
Nd:glass laser, mode locking characts. using polymethine dye No. 3955 in solid host 8−17989
Nd:Glass laser, sub ns periodically Q-switched 8−17995
Nd:glass laser, with nonlinear absorber, pulsed Q switching 8−9400
Nd:glass laser array, spatially coherent beam form., mode locking 8−29989
Nd:glass laser system, oscillators operating at 1.054 μm 8−46657
Nd:glass laser system, pulse shaping 8−46658
Nd:glass laser system for optical wave mixing expts. 8−5521
Nd:glass lasers, optimisation for 1-10 ns pulses operation 8−46651
Nd:glass lasers, performance, Nova system design 8−46652
$Nd:glass:CeO_2$, TiO_2, lasing action, stabilisation *(Russian)* 8−13715
Nd:glass-YAG composite medium master oscillator, 1.06 μm stable conversion into fourth harmonic 8−46724
Nd:YAG, diode pumped miniature laser 8−9392
Nd:YAG, high brightness 1 J freq. doubled laser 8−46615
Nd:YAG, single freq. laser with waveguide resonator 8−1277
Nd:YAG, single mode pulsed oscillator, control of temporal and spectral jitter 8−46629
Nd:YAG actively mode-locked laser, short pulse generation for laser fusion 8−9404
Nd:YAG fibre laser, self-contained LED-pumped single-crystal 8−1264
Nd:YAG laser, appl. in space communications 8−28483
Nd:YAG laser, conductively cooled pulsed design 8−46647
Nd:YAG laser, intense fourth harmonic generation, pulse periodic conditions 8−17972
Nd:YAG laser, mode self locking with combined Q-switching 8−1284
Nd:YAG laser, reduction of passive Q-switch output jitter 8−46648
Nd:YAG laser oscillator-amplifier coupled to Nd:glass amplifier, programmable electro-optical pulse form. *(German)* 8−33753
Nd:YAG laser stabilisation by T-shaped four-mirror resonator *(Russian)* 8−13730
$Nd^{3+}:Al_2O_3$-P_2O_5 glass, high Nd conc., spectroscopy and lasing obs. 8−46609
Nd^{3+}:glass, inhomogeneously broadened spectra, struct., selective laser excitation obs. *(Russian)* 8−35181
Nd^{3+}:glass, oscillator, narrow bandwidth ps. laser operation using Nd^{3+}:YAG as amplifier 8−37894
Nd^{3+}:glass laser, Q-switching by exploding PbS film 8−42361
Nd^{3+}:glass laser radiation, 6th and 10th VUV harmonics, cascade generation in Na-Ar and Cd vap. 8−42381
$Nd^{3+}:POCl_3$-$SnCl_4$ laser, relaxation oscillations with high power spikes obs. 8−42331
Nd^{3+}:YAG, CW laser, 1.05 to 1.44 μm tunability, performance 8−22142
Nd^{3+}:YAG laser, with intracavity SHG, amplitude- and phase-freq. characts. 8−25884
PbO-SiO_2 glasses, absorpt. spectra of Nd^{3+} ions and interpret. 8−27277
$YAG:Nd^{3+}$, Ce^{2+}, sensitisation, luminesc., absorpt. and emission spectra *(Russian)* 8−10982
$YAG:Nd^{3+}$, cryst. field parameters calc., exchange charge model 8−47747
$Y_3Al_5O_{12}:Nd^{3+}$, one-phonon satellites in luminesc. spectra, rel. to effective phonon density 8−6730
$Y_3Ga_5O_{12}:Nd^{3+}$, cryst. field parameters calc., exchange charge model 8−47747
$Y_3Sc_2Al_3O_{12}:Nd^{3+}$, cryst. field parameters calc., exchange charge model 8−47747
YVO_4:Nd, stimulated emission cross-sections at 1064 and 1342 nm 8−39575
$ZnS:Nd^{3+}$, spin-lattice relax. times meas. 8−19324

neodymium alloys
Ce-Nd, reversible mech. memory effect, α to γ transition *(Russian)* 8−15396
Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8−44146
Nd-Co alloys, NMR of ^{143}Nd and ^{145}Nd 8−19343
Nd-Dy(Y), elec. resist. temp. depend. 8−2462
Nd-Ga, heat of form. and soln., calorimetric meas. *(Russian)* 8−27806
Nd-Ga, phase diagram *(Russian)* 8−27478
$NdAg_2$, high temp. modification, thermal effects 8−38665
$NdAl_2$, mag. excitation spectrum, neutron inelastic scatt. 8−10673
$NdCo_5$, ferromag., thermomag. charact. in mag. field *(Russian)* 8−23273
NdCoAl, mag. props. 8−2659
$Nd_{0.25}La_{0.75}Mg$, cryst. field, neutron diffr. meas. 8−34810
$Nd_{0.2}La_{0.8}Zn$, cryst. field, neutron diffr. meas. 8−34810

neodymium alloys continued
$NdNi_5$, H_2 absorption, cell volumes and desorption pressures correlation 8−22860
Sr-Al-Nd phase diagrams *(Russian)* 8−27480

neodymium compounds
see also neodymium alloys
crystal field and Slater parameters and coordination 8−6771
neodymium ethyl sulphate, magnetothermodynamics, absolute temp. scale, mag. moment and magnetization , below 0.5K 8−34984
$BaNdMnO_4$, cryst. struct. determ. *(French)* 8−6042
$Ca_{0.5}Nd_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8−2260
HfO_2-Nd_2O_3 solid solns., prep., crystn. 8−42909
$K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8−2901
$K_3NdSi_6O_{15}$, cryst. struct. determ. 8−34493
$Li_3Nd_2(BO_3)_3$, cryst. struct., X-ray diffr. meas. 8−10028
$LiNdP_4O_{12}$, diode pumped miniature laser 8−9392
$LiNdP_4O_{12}$, glass clad, slab waveguide laser 8−46625
$LiNdP_4O_{12}$ laser, fluoresc. and oscill. characts. at 1.317 μm 8−5473
$NaNdP_4O_{12}$, diode pumped miniature laser 8−9392
$Na_2Nd_2Pb_6(PO_4)_6Cl_2$, laser material, flux growth *(French)* 8−35288
$NaNd(SO_4)_2$, cryst. struct. by X-ray diffr. *(French)* 8−42990
Nd, complex, Nd^{3+}-hexakis-antipyrine triiodide single crysts., polarised absorpt. spectra 8−10922
Nd^{3+} in $Nd(NO_3)_3$(tributylphosphate-d_{27})$_3$, soln. luminesc., stimulated emission *(Russian)* 8−33734
Nd-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
$NdCl_3$-$AlCl_3$ vapour complex, optical gain at 1.06 μm 8−33742
NdF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
$NdFeO_3$, mag. transition, NMR meas. 8−27036
$NdH_{2.70}$, low temp. phase transition, specific heat meas. 8−14665
$NdH_{2.82}$, high-pressure structural phase transforms. 8−10185
$Nd_xLa_{1-x}P_5O_{14}$, Nd^{3+} stoichiometric materials, luminesc., conc. quenching 8−27315
NdN, m.p. N_2 press. depend., Pirani-Alterthum meas. 8−43103
NdN-EuO solid soln., ^{151}Eu Mossbauer spectroscopy 8−6610
$Nd(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
$Nd_7(OH)_{18}Br_3$, hydrothermal phase equilib., cryst. struct. 8−35372
NdP_5O_{14}, diode pumped miniature laser 8−9392
NdP_5O_{14}, spectral line intensity anal. 8−43888
$Nd_{1-x}S$, grown-in defect exam. 8−43014
Nd_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
Nd_3S_4 chem. and mag. structures, neutron diffr. obs., ferromag. long-range order *(German)* 8−10654
$Nd_{1-x}Sr_xCoO_3$, electronic and mag. props., itinerant ferromagnetism obs. 8−10660
$Nd_2Ti_2O_7$, Nd_2TiO_5, paramag. props., mag. susceptibility meas. 1.6 to 70K 8−10649
$Nd_2Ti_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
$NdVO_3$-$CaVO_3$ solid solns., mag. props. rel. to cryst. struct. 8−43571
$Y_{1-x-c}Gd_xNd_cScO_3$, crystal, absorption, luminescence, stimulated emission spectra 8−15220
ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304
ZrO_2-Nd_2O_3 solid solns., prep., crystn. 8−42909
ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8−26663
ZrO_2-Y_2O_3-Nd_2O_3, spectral determ. of crystal stabilisation 8−27203

neon
see also nuclei with ......
=- 8−29932
adsorption on W, potential of He atom above field adsorbed He or Ne atoms 8−35267
adsorption on Xe-plated graphite, virial coeffs. 8−18904
afterglow, low press. discharge afterglow, dissoc. recombination, microwave diagnostics 8−9876
atom, $1s_5$, depopulation effects, dye laser fluoresc. obs. *(French)* 8−41996
atom, $2p_1$ level relax. and populations of $1s_2$ and $1s_4$ in afterglow 8−9111
atom, $2p^53p$ config., Lande factors, double reson. meas. *(French)* 8−9113
atom, Autler-Townes effect 8−41998
atom, core ionis., single orbital relax., LCAO MO SCF calcs. 8−29739
atom, elastic electron scatt., 10^2-10^3 eV, differential and total cross sections calc. 8−42215
atom, electron elastic cross sections, 0.04-1.5 eV 8−42214
atom, electron impact, near threshold UV-emitting level excitation 8−25711
atom, electron or photoionisation, electron shake-off, continuum states interaction 8−29766
atom, electron pulse radiolysis, 2p levels formation and decay kinetics 8−31665
atom, energy density functional, gradient corrections 8−25428
atom, energy exchange between scatt. and ejected electrons following $2s2p^63s(^1S)$ state autoionis. 8−46448
atom, exchange energies, Born-Oppenheimer exchange amplitude, Bonham series calcs. 8−29854
atom, ionisation potential, KLL Auger energies, SCF transition operator calcs. 8−41925
atom, metastable, photoionis. cross section calc. 8−33485
atom, metastable, photoionisation rel. to laser development 8−13476
atom, metastable and pseudo-metastable states destruction by electron impact *(French)* 8−9260
atom, metastable form. by electron impact *(French)* 8−33611
atom, near IR spectral lines, transition probabilities 8−13450
atom, nonlinear laser spectroscopy, inside Doppler line *(Russian)* 8−21231
atom, optical pumping of metastable $(2p^53s^3P_0)$ state 8−25486
atom, outer 1s, 2s and 2p electron loss cross sections by multicharged ions 8−42185
atom, photoelectron angular distribution β parameters, resonance parameters 8−21886
atom, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
atom, photoionisation, relativistic R-matrix theory 8−5184

neon continued
atom, photoionisation cross-sections, ground state inversion pot. method 8−33481
atom, polarisation transfer collision with Rb atom, NMR of Ne 8−33453
atom, positron scatt., positronium form. cross-section calcs. 8−9283
atom, positron scatt., total cross sections 8−22031
atom, positron scatt. and annihilation 8−33606
atom, second-order correl. energy calcs. 8−33436
atom, statistical model with piecewise exponentially decaying electron densities 8−13408
atom, vertical ionis. pot., many-body Rayleigh-Schrodinger perturbation theory 8−9063
atom, vertical valence ionis. pot., many-body Green's functions 8−22051
atom, X-ray spectrum, Kα satellite lines meas. by soft X-ray spectrometer 8−24911
atom+atom, excitation transfer between 2p levels 8−22006
atom, photoionisation, double-electron, many body perturbation approach 8−17634
atomic polarisabilities and shielding factors, coupled HF approx. 8−22048
diffusion in RbCl, isotope effects 8−18841
discharge, 4 MHz, electron energy distrib., probe diagnostics 8−38566
discharge, DC, ionis. wave wavelength, electron gas state depend. 8−1918
discharge, positive column, travelling strata dispersion 8−14232
discharge, pulsed, spectral characts. *(Russian)* 8−47201
discharge, radial distrib. of line intensities 8−18473
discharge, spectral line intensity radial distrib. 8−5930
discharge lamp, for AAS isotope anal. of B 8−20097
discharge transition, diffuse to contracted state, ionis. waves *(Russian)* 8−30511
electron beam excited states population, press. depend., fluoresc. obs. 8−17802
gas, thermal cond. meas. using Peltier effect 8−45615
glow discharge, ionisation waves, regular and irregular, correlation meas. 8−1917
HF discharge in inert gas, optical diagnostics, bremsstrahlung 8−9871
ionisation waves, state of electron gas 8−14124
ions, two vacancies in K shell, 2 electron 1 photon, and hypersatellite transition probabilities 8−46294
isoelectronic sequence, ionisation pot. values 8−5363
isoelectronic sequence, many-body photoionization calcs. 8−17631
Lamb-dip structure anal., linear and helicoidal polaris. 8−25852
laser imploded glass microbubble, compression, X-ray emission 8−18454
liquid, T_c, P_c, V_c, from eqn. of state 8−2228
luminescent discharge, loss mechanisms *(French)* 8−9877
mesic atom, X-ray radiation anisotropy, suppression coeffs. *(Russian)* 8−22058
methane+methane (He)(Ne)(Ar), dispersion forces 8−13565
permeation eccentricities of He, Ne, and D-T, from SiO_2-CaO-Na_2O glass microbubbles 8−47598
plasma, electron energy distrib., relax. process 8−30507
plasma, generated by 200 MeV protons, electron density and electron temp. 8−22568
plasma, ionisation waves, electron energy distrib. function 8−30421
plasma, temporal decay, electron distrib. function and macroscopic parameters relax. 8−18374
positive column, axial elec. field in transverse mag. field 8−18472
positive column, electron temp. depend. on transverse mag. field 8−1932
positive column, radial distrib. of excited atoms *(French)* 8−14237
positive column, with diffusion loss to wall, axial elec. field effects *(Japanese)* 8−47196
positive column in transverse mag. field, axial electric field 8−30506
pulsed amplified spontaneous emission source, statistics and spatial distrib. meas. 8−22102
solid, a priori calc. of n=1 valence exciton 8−10364
solid, Brillouin scatt. intensity, elastooptical coefficients 8−10907
solid and gaseous, excitons 8−23026
stopping powers of Z=10 to 18 ions, ^{22}Ne, using DSAM lifetime meas. 8−47456
X-ray emission, post-foil, Kalpha, correlation with empirical charge state distribs. 8−15252
Ar-Ne(Kr) systems, pot. parameters from binary diffusion coeffs. 8−37700
atom, correlation energy, many-body Rayleigh-Schrodinger perturbation theory calc. 8−894
CO_2^+, mobility in Ne gas 8−14125
Cs_2+He(Ne)(Ar)(Kr)(N_2)(CH_4), collision-induced dissoc., atom-mol.-exchange optical pumping 8−22008
F ions+Ne(Ar)(Kr) and C foil and slab, K shell X-ray spectra 8−17599
H+Ne^{2+}, ionization model for NGC 7027 planetary nebula 8−36671
H_2^++Ne, vibr. energy effects on kinetics, phase space model 8−11508
He-Ne, afterglow of low-press. glow discharge, recombination processes 8−26366
He-Ne, I_2 stabilised, freq. stability and reproducibility 8−13726
He-Ne, laser revived by running in He atm. 8−46614
He-Ne, pulsed atomic Ne laser, time and energy characts. in mag. field *(Russian)* 8−22108
He-Ne, ring laser, rapidly pumped, competition between opposite waves 8−17985
He-Ne, rotating ring laser, output characts. 8−29982
He-Ne, single mode laser, mode polarisation in transverse mag. fields 8−22107
He-Ne, stable laser with methane absorpt. cell, 7 Hz width 3.39 μm line emission 8−17974
He-Ne internal mirror lasers, polarisation in mag. field 8−17907
He-Ne laser, 0.63 μm emission intensity fluctuations, spectral correl. 8−1212
He-Ne laser, 3.39 μm, in-resonator losses, effects on power *(Russian)* 8−5455
He-Ne laser, double reson., RF mag. field strength and g-value depend. *(Japanese)* 8−9359
He-Ne laser, field distrib. and spatial coherence of superluminescence at 3.39 μ transition *(Russian)* 8−13682
He-Ne laser, freq. conversion in Na vapour *(Russian)* 8−33776
He-Ne laser, LG-56, radiation power stabilisation 8−17970

neon continued
He-Ne laser, laser system for 3.39 μm freq. synthesis 8−18001
He-Ne laser, methane stabilized, low noise laser tube characts. *(Japanese)* 8−25891
He-Ne laser, optical freq. standard, freq. stabilised by warm walled I_2 cell *(French)* 8−42343
He-Ne laser, optical heterodyning of spontaneous emission 8−29995
He-Ne laser, Original Equipment Manufacturer applics. 8−33765
He-Ne laser, population changes of Ne levels, laser action in intermediate IR 8−29933
He-Ne laser, power characteristics obs., with CH_4 cell, at λ=3.39 μ *(Russian)* 8−1207
He-Ne laser, spatial anisotropy induced by cascade laser transitions 8−29931
He-Ne laser, thermal effect of penetrating radiation *(Russian)* 8−22109
He-Ne laser, transition probabilities of Ne spectral lines at 352, 363, 345 and 543 nm 8−25851
He-Ne laser, two-mode ring laser power resons. 8−1211
He-Ne laser light polarisation in transverse mag. field, Zeeman effect *(Dutch)* 8−29997
He-Ne laser with $^{127}I_2$ saturable absorber, high contrast power reson. 8−29976
He-Ne lasers, stabilised by saturation absorpt. in I_2 8−1270
He-Ne lasers levels, modulation spectroscopy 8−46572
He-Ne lasing medium, evaluation of population changes of Ne levels 8−25855
He-Ne mixtures, spark channel formation 8−1936
He-Ne ring laser, Ne isotopic composition changes during prolonged discharge *(Russian)* 8−22110
He-Ne ring laser with nonlinear absorber, competition of orthogonally polarised modes 8−17984
He-Ne two mode ring laser for interferometry 8−1260
He-Ne waveguide lasers, props. and current-voltage characts. of discharges 8−1208
He-Ne-methane stabilised ring laser, freq. stability calcs. *(Russian)* 8−9401
He+Ne, scatt., orbiting reson. total cross-sections 8−5320
He+Ne collisions, MO calcs. for excitation processes 8−25676
He^++He, multicurve-crossing problem, numerical test of semiclassical approx. 8−13590
$He_2(^3\Sigma_u)$+Ne(Ar)(N_2)(CO)(C_2)(CH_4), excitation transfer reaction rates 8−5332
$He_2(2^3\Sigma_u^+)$+He_2(Ne), reaction rate consts. meas. in afterglow 8−7173
Li*+He(Ne)(Ar), thermal, high-Rydberg Li behaving as ion core 8−22004
N+Ne, electron excitation, multi-state impact parameter approx. 8−42200
N_2-Ne, positive column, electron vel. distrib. function *(German)* 8−1885
N_2-Ne glow discharge, energy balance, ionis. collisions *(German)* 8−34263
N_2-Ne glow discharge, kinetic eqn., transport coeff., collision freq., mean energy *(German)* 8−34261
N_2O^+, mobility in Ne gas 8−14125
Na-Ne, gas phase, absorption, D-line profiles, dye laser meas. *(French)* 8−42007
Na-Ne-Ar discharge low-press., instability 8−9868
Na+Ne, electron excitation, multi-state impact parameter approx. 8−42200
Na^++Ne collisions, Na KK vacancy prod. 8−17781
Ne I, $3d^1(3/2)_2$ level, absolute transition probabilities 8−13454
Ne I, isotopic components of spectral line, separation by numerical method 8−21227
Ne II forbidden line emission from galactic centre, Sagittarius A-west, IR obs. 8−36680
Ne II-VIII L-shell excit. by highly ionised heavy ion impact 8−1074
Ne^+, electron scatt., relativistic R-matrix calc., fine-struct. level transition cross sections 8−13604
Ne^{4+}, $2s2p^3$ terms, mean lives, from beam-foil spectra 8−37601
Ne^{6+}, Ne^{7+}, production and acceleration in cyclotron *(Japanese)* 8−5084
Ne^{7+}, 1s3s3p $^4p^0$ state, Hartree-Fock function, third-order energy 8−37569
Ne^{7+}, electron impact, continuum orbital approx., weak coupling theory 8−33417
Ne^{x+}, (x=1-8), electron loss and capture in He, N_2, Ne and Ar *(Russian)* 8−13600
Ne-Ar, mol. force const. from viscosity data, thermal cond. 8−33565
Ne-Cu laser, discharge processes, cathode sputtering 8−5463
Ne-E, anomalous meteoritic Ne component, thermonuclear origin, supernova models 8−45292
Ne-He mixture discharges, origin of dark spaces in plasma 8−9881
Ne-Hg RF discharge, atomic ionis. and excitation, spectral line intensities 8−26334
Ne-Kr, mol. force const. from viscosity data, thermal cond. 8−33565
Ne-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
Ne-N_2, charge transfer kinetics, weak H^+ beam effects 8−9243
Ne-N_2, N_2^+ $(B^2\Sigma_u^+)$ state excitation kinetics 8−9239
Ne-N_2 laser, energy pathways by proton excitation 8−5459
Ne-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
Ne^{n+}-Ne, K-shell vacancy prod. cross section, X-ray and Auger electron prod. fluoresc. yield 8−13582
Ne+Ar,(Kr), elastic scatt., Monte Carlo averaging of differential cross-section data 8−21997
Ne+Be^+(Mg^+), high energy, excitation cross section, impact radiation polaris., models comparison 8−1069
Ne+Ca, press. broadening, line shifts 8−5290
Ne+Ca*(Mg*), model pot. curves, including CI 8−42154
Ne+CsF, sudden, body-fixed and semiclassical approx. calcs. 8−42164
Ne+H, 20-500 eV, ion pair and free electron production, integral cross sections 8−46437
Ne+H^-, differential scatt. cross-sections, time of flight spectra 8−42161
Ne+H^+, ionisation, projectile energy depend., secondary electron energy distrib. 8−42211
Ne+H^+, K-shell capture cross-section 8−33602
Ne+ion, 100 keV, excited Ne 2s vacancy singlet/triplet population ratio, ion Z depend. 8−37733

- **neon** continued
  - $\mathrm{Ne+Li^+}$, relative level excitation, orbital ang. momentum quantum number depend. 8−25688
  - $\mathrm{Ne+Li(Li^+)(Na)(Na^+)}$, autoionising Ne levels excited in 5-10 keV collisions 8−22017
  - Ne+Na, press. broadening coeffs. of Na 3S-4D transition 8−25481
  - Ne+Ne, distorted frozen-orbital method for diabatic mol. orbitals 8−41936
  - $\mathrm{Ne+Ne^{m+}(N^{n+})}$, K-shell vacancy prod. cross-section, charge state depend. 8−17751
  - $\mathrm{Ne^-+Na^+(K^+)(Li^+)}$, electron gas model pots. and collision integrals *(French)* 8−42169
  - $\mathrm{Ne^++He}$, relative level excitation, orbital ang. momentum quantum number depend. 8−25688
  - $\mathrm{Ne^{2+}+He(Ne)(Ar)(Xe)(Kr)}$, cross sections for electron capture, 60 to 200 keV 8−46442
  - $\mathrm{Ne^{n+}+Ar(He)}$, slow ion and electron prod., VUV radiation 8−5321
  - $\mathrm{Ne^{n+}+N_2(O_2)(Ne)}$(methane), K-shell vacancy prod. cross-section, charge state depend. 8−17751
  - $\mathrm{Ne_2}$, total energy MS and LCAO Xα calcs., non-muffin-tin corrections, overbinding 8−46266
  - $\mathrm{Ne_2^+}$, near UV absorption spectra, config. interaction methods 8−17680
  - $\mathrm{Ne_3}$, 3-body interactions in binding, semiclassical approx. calcs. 8−21994
  - $\mathrm{Ne_3}$, 3-body nonadditive interaction, nodal struct. 8−1049
  - $\mathrm{^{20}Ne/^{36}Ar}$ ratio in chondrites, abundance pattern established in solar nebula 8−32424
  - $\mathrm{^{21}Ne^{n+}}$, $5/2^+$ state, hyperfine interactions and mag. moment of 0.350 MeV 8−17583
  - $\mathrm{Ne^*+He^* \rightarrow He+Ne^++e}$, Penning ionisation, merging beams obs. 8−33585
  - $\mathrm{Ne^*+X}$, ($\mathrm{X{=}Ar, Kr, Xe, H_2, CO, HCl, F_2Cl_2, NF_3, N_2F_4, N_2O}$), quenching rate const. for metastable $\mathrm{Ne(^3P_2)}$, flowing afterglow 8−46295
  - $\mathrm{O(^5S)+Ne(Ar)(Kr)(Xe)}$, total cross sections 8−42188
  - Si:Ne, amorphous, implanted, cond. change 8−23097
- **neon compounds**
  - NeF, low energy state pots. energy curves, fluores. and dipole moment 8−21991
  - $\mathrm{Ne_2F}$, energy surfaces, application of molecular electronic struct. theory 8−25452
  - $\mathrm{NeH_2^+}$, ab initio potential surfaces, frozen orbital approximation calcs. 8−41927
- **nephelometry** *see turbidimetry*
- **Neptune**
  - appulses of 12th and 13th magnitude stars (early 1978) 8−16347
  - atmosphere, Raman scatt. 8−28571
  - effective temperature, from IR photometry 8−32394
  - ionosphere, model, ionization by galactic cosmic rays and solar EUV radiation 8−4142
  - methane and ethane emission detect. 8−16344
  - rotation period from IR photometric light curves 8−40869
  - rotational period from spectral line tilts 8−20726
  - secular brightness increase, 1972-76 period 8−16346
  - spectrum in 5-20 micron range, obs. 8−32393
  - stellar occultation predictions, 1978-80 period 8−40868
  - Triton, IR photometry rel. to membership of new class of satellites 8−12146
- **neptunium**
  - *see also nuclei with ......*
  - $\mathrm{^{237}Np}$, neutron activation anal., determ. of small amounts in solns. containing U, Pu and fission prod. 8−21682
  - $\mathrm{^{237}Np}$, sorption on USA subsoils from differing weathering intensity areas 8−16014
  - $\mathrm{^{239}Np}$, airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
- **neptunium compounds**
  - $\mathrm{^{237}NpO_2}$ powder, oxalate based, prep. and charact. 8−11166
- **Nernst effect** *see thermomagnetic effects*
- **Nernst-Ettingshausen effect** *see thermomagnetic effects*
- **network analysis**
  - *see also circuit analysis computing; linear network analysis*
  - charge sensitive preamplifiers, signal and noise response 8−33404
- **network equalisers** *see equalisers*
- **network theory** *see circuit theory*
- **networks** *see networks (circuits)*
- **networks (circuits)**
  - *see also specific network and circuit headings e.g. communication networks, pulse circuits, oscillators*
  - current notation, positive and negative charges in electronic devices, for teachers 8−12494
  - multi-microprocessor network, for sonar signal processing algorithms soln. 8−45044
  - Q-spoiler, sensitivity calibration of marginal oscillators for ion cyclotron reson. spectroscopy 8−21177
  - transducer, temperature sensing, cct. and characts. *(Polish)* 8−29103
- **Neumann algebra** *see algebra*
- **neural nets**
  - *see also brain models*
  - adaptive analogue neural net dynamics, qualitative analysis *(Russian)* 8−27920
  - artificial, response characts. 8−40137
  - biocybernetic multilevel system, nervous regulation of internal organs *(Russian)* 8−48779
  - Caianiello type, self-control 8−20167
  - cat superior colliculus, characts. 8−31808
  - computational cerebellar cortex model, cat appl. 8−11629
  - computer reconstruction and display, three-dimensional 8−11624
  - digital neuron model *(Russian)* 8−27924
  - excitatory and inhibitory impulse sequence interactions in math. models of single neurons *(Japanese)* 8−27919
  - frequency response characteristics, interactive model implementation and simulation expt. 8−44487
  - Hebb nets of excitable elements 8−15820
  - hippocampus $\mathrm{CA_3}$ field model, phasic transition, transfer of spikes in statistical neurone ensembles 8−48781
  - Hodgkin-Huxley equations for nerve membrane elec. activity, crit. topological test 8−35826
- **neural nets** continued
  - inhibition simulation in electrochemiluminescence cell *(Russian)* 8−27925
  - locomotory rhythm generation with recurrent cyclic inhibition, leech 8−35832
  - lower leg reflex asynchronous control via spinal motor neutron pool 8−27935
  - maximum periodic sequence realisable by autonomous threshold element network 8−44489
  - membrane two-factor two-mode model 8−7330
  - model equations and envelope eqn. for neural populations 8−31798
  - music pattern recognition, MACSIM self-learning network 8−7373
  - myelinated nerve fibre steady-state/dynamic model, threshold comparison 8−27917
  - nerve axon, two-factor two-mode model, travelling waves *(Japanese)* 8−20173
  - nervous system perceptual mapping and bionic modelling *(Russian)* 8−27921
  - neuromathematical concepts of point process theory 8−27916
  - neuron model, response for density modulated Poisson pulse trains *(Japanese)* 8−35829
  - neuron model using stochastic syncoder 8−15822
  - neuronal interconnection meas., semiautomatic system design 8−44742
  - neurotransmitter dynamic balance, systems and control theoretic anal. 8−44495
  - nonlinear system Wiener anal. using Poisson-Charlier crosscorrelation 8−24055
  - olfactory pattern recognition modelling by adaptive spatial filter 8−24080
  - optic tectum model of various vertebrates *(Spanish)* 8−40144
  - pacemaker phase control 8−11631
  - random pulse generators 8−24189
  - retina, interactions between photoreceptors and horizontal cells 8−11648
  - retinal ganglion cells, cat, nonlinear analysis in freq. domain 8−48793
  - retinal neuronal network of photoreceptors and horizontal cells 8−3482
  - self-excited oscill. of neuronal circuit with recurrent inhibition and delay *(Japanese)* 8−20172
  - self-organising neural net coherent electrochemical emission model *(Russian)* 8−27879
  - spike transfer in statistical neuronal ensembles, neurone as nonlinear source of spikes 8−15819
  - state variable approach, voltage clamp membrane current description 8−35825
  - stochastic automaton models for interaction of excitatory and inhibitory impulse sequences in neurons 8−20168
  - three-layer random neural net with inhibitory connections, pattern separability 8−44498
  - toplogical properties of continuous neural networks with analogue neurons 8−48783
  - vestibular nuclei neurons in goldfish, model with ocular proprioception 8−40142
  - visual cortex afferent geometry and neuronal trigger features generation, primates 8−35842
  - visual path neuron simulation using analogue and digital electronic circuit *(Spanish)* 8−27942
- **neuristor networks** *see neural nets*
- **neuron models** *see neural nets*
- **neurophysiology**
  - *see also brain; neural nets*
  - action potential, molecular events and energy changes 8−44497
  - action potential clamp to probe effectiveness of space clamp in axons 8−40441
  - amacrine cells in Necturus retina, independ. γ-aminobutyric acid- and glycine-releasing neurons 8−35848
  - antennal flagellum mechanosensory hair response, lobster 8−27974
  - articulation development, possible nonlinear time varying control in feedback path 8−35870
  - artificial neural network response characts. 8−40137
  - auditory, neuron receptive fields, owl 8−44512
  - auditory nerve fibre information coding in goldfish 8−40184
  - auditory nerve oscillating summed action potential, spike pattern and synchronisation, insect 8−40181
  - auditory neural mechanism system properties 8−40200
  - auditory neuron, characts. of digital model 8−3516
  - auditory neuron response to pulsed microwave irrad. in cat, microwave hearing 8−40259
  - auditory neurons of frog mid-brain, discharge rate density function 8−20191
  - axon, squid giant, exponentiated exponential model g $\mathrm{Na^+}$ and $\mathrm{K^+}$ cond. changes 8−44493
  - axon, two-factor two-mode model, travelling waves *(Japanese)* 8−20173
  - axon conduction velocity modified by reinnervation of mammalian muscle 8−24062
  - axon membrane asymm. current, squid, freq. domain anal. 8−44494
  - axon membrane white noise, stimulation, strength-freq. relationship, squid 8−3466
  - axons, crit. slowing down near transition region from resting to time-ordered states, squid giant axon 8−44486
  - axoplasmic transport in mammalian nerve, role of $\mathrm{Ca^{2+}}$ 8−24052
  - biocybernetic multilevel system, nervous regulation of internal organs *(Russian)* 8−48779
  - brain evoked potentials, rel. to perception mechanisms 8−11627
  - brain waves limit cycle model 8−3464
  - bursting pacemaker neurons, $\mathrm{Ca^{2+}}$ effects modelling 8−44484
  - cat superior colliculus, neuronal network characts. 8−31808
  - catalytic reaction model, instability and spread of excitation waves, non-trivial modes 8−20161
  - cerebellar cortex and peripheral muscle, computational model 8−11629
  - cicada singing, neuronal generation 8−7328
  - cochlear encoding, reverse correlation technique 8−40183
  - cochlear micromechanics, mechanism for transforming mech. to neural tuning within cochlea 8−11666
  - cochlear nucleus neuron tonotopic organisation, evidence from masking of elec. by acoustic stimuli 8−44511
  - colour discrimination in domestic cat, neural basis 8−48800

neurophysiology continued
cutaneous system energy depend. in conditions of simultaneous, residual and reverse masking, humans 8−20196
dipteran giant visual interneurone response props., rel. to optomotor control 8−27940
dual input nonlinear system characterisation using impulse trains 8−31761
dystrophic muscle, neuromuscular transmission in abnormal fibres 8−27932
educational course, scientific method illustrated by paraphysical and neuroscience topics 8−24591
EEG, cat, computed unit-EEG correls. and laminar profiles of spindle waves 8−11625
EEG, pathological delta waves, cortical electromicrophysiology, cat 8−11626
electrical activity modulation by cholesterol, in Aplysia neurones 8−7329
electrochemical theory, steady and transient pots., in book, for teaching 8−8202
electrocutaneous stimulus magnitude sensation, effect of pulse height and width *(Japanese)* 8−31998
electrophrenic respirator, implantable, Hg battery powered, design, features *(Japanese)* 8−3675
electroreceptor-electric organ system, of elephant nose fish, electronic circuit simulation *(Japanese)* 8−40132
electroretinogram, frog, rod and cone generation of wavelets 8−48799
electrosensory afferent, dogfish, adaptation, neuron discharge regression anal. 8−35833
electrostimulation, stainless steel electrode corrosion control 8−7464
elliptical nerve and muscle fibres, physico-math. anal. 8−11639
EMG, fatigue characts. of human gastrocnemius and soleus muscles 8−20169
EMG spectra, effect of motor-unit firing time statistics 8−31804
endplate acetylcholine-induced channels and transmitter release, humans 8−24063
endplate channel lifetime and cond. alteration by permeant cations 8−3467
evoked potential multi-channel data acquisition system, microprocessor controlled 8−11750
excitable membrane K$^+$ conductance temp. dependence *(Japanese)* 8−24051
excitation detection by real-time detect. of small birefringence change *(Japanese)* 8−15938
extra-retinal photoreceptor model for Aplysia californica 8−44506
eye movement, gaze-evoked nystagmus, analogue model 8−27938
F-wave in normal man, effect of vibr. 8−20164
FitzHugh-Nagumo equations, perturbation anal. of slow periodic wave soln. 8−24060
Frolich's brain wave model, limit cycle collapse and travelling wave onset 8−48780
gait control, peroneal nerve stimulation sequence effect *(Croatian)* 8−44692
ganglion cell response to far violet light, macaque 8−11656
GT-2 gamma scanner, improvement 8−11719
hair cell, vertebrate, response to controlled mechanical stimuli 8−15852
haptic perception, cerebral lateralisation, interaction of responses to braille and music 8−7374
hearing, analogue of two-tone suppression in whole nerve responses 8−11671
hearing directionality in amphibia 8−40197
hearing model, cellular approach 8−44515
heart natural pacemaker, modelling as pulse-freq. modulator 8−40135
hippocampal perforant path, glutamate as transmitter 8−11635
Hodgkin-Huxley equations, volt. clamped, large amplitude periodic solns. 8−20166
Hodgkin-Huxley equations for nerve membrane elec. activity, crit. topological test 8−35826
homologous displacement resulting from simultaneously applied rostral-caudal tactile stimuli, physiological mechanism 8−20198
human motion bioelectric control transfer functions 8−27926
hybrid neural stimulator for chronic expts. 8−28124
insulin secretion neural control, math. model 8−31796
interspike time histograms for random input model 8−40134
laryngeal control for pitch change in Japanese word accentuation, neuromuscular model *(Japanese)* 8−40205
lateral geniculate nucleus selective atrophy assoc. with iris coloboma, cat 8−3471
lateral geniculate nucleus X-cell early development, kitten 8−27946
lateral reticular nucleus neurone activity on scratching 8−24054
limbic spindles, cerebral activity or artifact 8−48778
locomotor, activity circadian rhythm, cockroach, strong phase response curve 8−11630
locomotory rhythm generation with recurrent cyclic inhibition, leech 8−35832
lower leg reflex asynchronous control via spinal motor neutron pool 8−27935
membrane admittance, integral representation 8−15811
membrane permeability changes, fluctuation anal. 8−11636
membrane two-factor two-mode model 8−7330
metabolic synapse, comparison of effects of cyclic 3′,5′-AMP and 3′,5′-GMP 8−24058
microelectrode current and voltage clamp cct. for central nervous system neurons 8−24191
microwave irradiation of isolated rat heart after treatment with ANS blocking agents 8−40251
miniature endplate current decay, effects of extracellular Ca^{2+} and Mg^{2+} 8−24064
monoamine neutrotransmitters, du channel point, in raphe nuclei of rabbits, elec. stimulation effect *(Chinese)* 8−20170
motoneurone survival during normal cell death in chick embryo, effect of neuromuscular blockade 8−27933
motor control, muscle representation 8−24057
motor nerve conduction vel. and evoked pots. in peripheral nerve lesion localisation 8−31802
motor nerve impulse, conventional Ca^{2+} channel mediating asynchronous acetylcholine release 8−11638
motor neuron disease, mechanisms of spontaneous EMG activity 8−20162
motor unit action potential, influence of sustained contraction 8−31801

neurophysiology continued
motor unit dynamics, EMG Hoffmann-reflex and M responses, human 8−7331
motor unit recruitment order reversal by cutaneous stimulation during muscle contraction, man 8−40136
mu rhythm detect. from human scalp, functional topography 8−48777
muscle fibre end-plate current pot. depend., effect of phenylalkylamines, frog 8−31799
muscle fibre post-synaptic membrane, ionophore-mediated Ca influx effects 8−11637
muscle fibre resting pot. in cricket, influence of ions 8−24046
muscle training effect on single motor unit firing pattern 8−7327
muscleforce-freq. curve recording from humans, α excitability evaluation *(Japanese)* 8−3643
muslce mass potential, stochastic model, NMV activity *(Japanese)* 8−24056
myelinated axon impulse cond. simulation, sensitivity to nodal and internodal parameters 8−35831
myelinated nerve fibre steady-state/dynamic model, threshold comparison 8−27917
nerve cell communication and second messengers role 8−7337
nerve conduction velocity distribution based on compound nerve action pot. 8−40138
nerve impulse stability theory, Hodgkin-Huxley eqns. appl. 8−48782
nervous tissue damage parameters secondary to elec. stimulation 8−44491
neuromagnetic response latency of human visual cortex 8−40151
neuromathematical concepts of point process theory 8−27916
neuromuscular ectopic synapse, gating props. of acetylcholine receptor 8−27934
neuromuscular junction, frog, acetylcholine diffusion barrier 8−7334
neuromuscular junction transmitter release, effect of α-bungarotoxin 8−44496
neuromuscular junction transmitter release during repetitive stimulation, effect of Sr^{2+} and Ba^{2+} 8−3469
neuromuscular miniature endplate potential online acquisition microcomputer system 8−36015
neuromuscular synapse, frog, dual action of Er^{3+} on transmitter release 8−35834
neuromuscular transmission, locust, modulation by octopaminergic neurone 8−11632
neuron model, excitatory and inhibitory impulse sequence interactions in math. models *(Japanese)* 8−27919
neuron model, response for density modulated Poisson pulse trains *(Japanese)* 8−35829
neuron model using stochastic syncoder 8−15822
neuronal cell culture, laser microbeam microscope appl. *(German)* 8−3694
neurone depolarisation by purine and pyrimidine mononucleotides, in explanted amphibian sympathetic ganglia 8−11633
neurone susceptibility to changes in synaptic inflow, evaluation using stochastic model 8−24059
neurons, Aplysia, effects of NH$_4^+$ and HCO$_3$CO$_2$ on intracellular Cl$^-$ level 8−44485
neurosurgical cryoprobe, self-contained, with replaceable flask, features 8−7526
neurotransmitter dynamic balance, systems and control theoretic anal. 8−44495
nicotinic transmission, role of voltage-sensitive receptors 8−44492
non-stationary neural signals pattern trajectory anal. 8−36082
nonlinear system Wiener anal. using Poisson-Charlier crosscorrelation 8−24055
normal and anomalous intellectual activity classification, coherent quantum-wave brain model *(Russian)* 8−27922
olfactory cortex of guinea pig maintained in vitro, effects of cooling 8−3525
olfactory pattern recognition modelling by adaptive spatial filter 8−24080
optic tectum model of various vertebrates *(Spanish)* 8−40144
optic tectum movement detecting cell response to change of wavelength, pigeon 8−7348
otolith sensitivity assoc. with habituation to linear accels. capable of inducing motion sickness 8−44621
pacemaker phase control 8−11631
perception space, dimensionality of informational structs. 8−15817
percutaneous elec. stimulation of nervous system for pain relief 8−3668
photoreceptor synaptic activity in isolated frog retina, Co ion effects 8−48797
photoreceptors of nocturnal gecko, patency in outer segments 8−48796
pineal photoreceptors, evidence for vertebrate visual pigment with two physiologically active states 8−44504
polyelectrolyte membranes, persistent polarisation in aq. environment, neural model 8−48763
psychogalvanic reflex curve automatic anal. 8−7332
psychophysical laboratory unit organisation and meas. system for persons with impaired locomotor system *(Croatian)* 8−44667
pulmonary stretch receptor dynamic response, dog 8−20194
punctuate pressure sensitivity rel. to skin surface temp., cutaneous cross-model interactions 8−3527
quantal size rel. to abrupt changes in nerve terminal vol. 8−31805
Renshaw cells dynamic properties, freq. response characts. 8−3462
retina, carp, neuronal architecture of on and off pathways to ganglion cells 8−44502
retina, grey squirrel, bipolar and horizontal cells, Golgi morphology and receptor connections 8−48795
retina, turtle, modes of chromatic interactions 8−7347
retinal bipolar cells, struct. basis for on- and off-centre responses 8−44503
retinal class IV ganglion cell luminance and chrominance processing in frog 8−40148
retinal ganglion cell activity in ground squirrel under halothane anaesthesia 8−40147
retinal ganglion cell response to sinusoidal flicker, mudpuppy 8−48798
retinal ganglion cells, cat, nonlinear analysis in freq. domain 8−48793
retinal ganglion cells, rat, adaptation pools and excitation receptive fields 8−7356
retinal neuronal network, interactions between photoreceptors and horizontal cells 8−11648

neurophysiology continued
retinal neuronal network of photoreceptors and horizontal cells 8−3482
retinal single-photon impulse coding mechanisms *(Russian)* 8−27941
retino-tectal mapping using microprocessor controller 8−31995
rod/cone system interactions in goldfish retina 8−35853
saccadic and vergence eye movements, reciprocal innervation model 8−31811
saccadic eye movement controller considerations 8−27949
seizure discharge autorhythmicity, spike, discharge freq. regulation in focal epilepsy 8−40133
sekeletal muscle dynamics, isometric and isotonic contraction model 8−31807
self-excited oscill. of neuronal circuit with recurrent inhibition and delay *(Japanese)* 8−20172
semicircular canal afferent response system identification 8−27927
sensori-motor spatial development, analytical theory 8−44488
short latency potentials from neck and scalp following median nerve stimulation in man 8−31794
skeletal muscle rhythmic oscillation simulation and analysis 8−31806
slow motor nerve cond. meas. by blocking technique, computer simulation 8−36027
snail giant neurone neurotransmitter 8−15821
spatial frequency characts. of complex receptive fields 8−20175
spike processing instrument for signal detect., based on nonlinear filtering 8−40438
spike train sampling, implementation of French-Holden algorithm 8−40440
spinal neurones, mammalian, D-α-aminoadipate as selective antagonist. of amino acid-induced and synaptic excitation 8−20171
spontaneous activity of anterior semicircular canal units in anaesthetised pigeon, point process anal. 8−24079
squid giant axons, oscillatory subthreshold responses and pot. fluctuation obs. 8−27918
stochastic automaton models for interaction of excitatory and inhibitory impulse sequences in neurons 8−20168
striate cortex single cell response, effects of interacting visual patterns, cat 8−7346
sympathetic ganglia, possible mediation of slow excitatory postsynaptic pot. by cyclic GMP 8−27930
sympathetic ganglia, postsynaptic modulation of excitatory process by cyclic AMP 8−27931
synaptic action of pentylenetetrazole, selectivity for Cl cond. 8−7336
synaptic active zone functional unity, evidence from quantum and amplitude distribs. 8−3468
temporal stability of solitary impulse solns. of nerve eqn. 8−35830
tendon reflex stimulation threshold meas. device for man 8−7467
transmitter kinetics model anal. 8−3465
transmitter synthesis and uptake by isolated sympathetic neurones in microcultures 8−7333
tremor state motor unit discharge patterns *(Japanese)* 8−31803
unmyelinated nerve Na channels optimum density, analytic treatment 8−24061
vestibular nuclei neurons in goldfish, model with ocular proprioception 8−40142
visceral function voluntary control, electrophysiological concept 8−35827
vision, lateral inhibition as mechanism of movement detect., forward inhibition 8−20176
vision, magnification in striate cortex and retinal ganglion cell layer of owl monkey 8−40146
vision, relative motion extraction, model 8−48794
visual adaptation 8−15834
visual cortex, cat, selectivity for spatial freq. and bar width 8−40152
visual cortex afferent geometry and neuronal trigger features generation, primates 8−35842
visual cortex development, kitten, monocular astigmatism effects 8−7345
visual cortex development model, mammal 8−3483
visual cortex muscarinic acetylcholine receptor and acetylcholinesterase increase on exposure of dark-reared rats to light 8−24069
visual cortex receptive field spatial freq. characts. rel. to stimulus speed, cat 8−20174
visual cortical plasticity rel. to local perfusion of noradrenaline 8−35847
visual discrimination between small objects and large textured backgrounds 8−11652
visual nervous system, human, temporal props. 8−7353
visual non-spiking interneurone, spike response 8−11645
visual path neuron simulation using analogue and digital electronic circuit *(Spanish)* 8−27942
visual system, signal processing in brain *(German)* 8−48792
visual system of crustacean, polarisation sensitivity 8−7350
visual system spatial and temporal information separation model 8−40167
visual thalamus, mammalian, neuronal organisation 8−27948
visual-vestibular interactions, model of cerebellar influence 8−40156
visuomotor mechanisms of monkey parietal lobe, visual input 8−27943
volitionally activated low-threshold EDC motor units, firing rate response 8−20163
voltage clamp membrane current min. parameter description 8−35825
volume-conductor fields of isolated axon, linear filtering problem 8−3463
Ca-dependent depression of late outward current in snail neurons 8−7335
K channel ionic interactions, squid giant axon 8−3458
K current components in node of Ranvier membrane frog Rana ridibunda 8−31800
Na channels in nerve, evidence for two conductance states 8−11634
Na pump activation by external cations in squid axon, effect of ATP levels 8−35818

neutral currents
$\Delta S=0$ weak hadron neutral current, quark parton model, νN and e^+e^- interactions 8−12859
asymptotic freedom predictions for neutral and charged current neutrino interactions 8−8581
atoms, heavy, parity non-conservation, relativistic many-body perturbation theory 8−923
Bethe-Heitler pair prod., neutral currents 8−33022
couplings in neutrino-hadron interactions 8−24993

neutral currents continued
flavour conservation, natural, in neutral weak currents, symm. $SU_2\times U_1\times U_1'$ model 8−12858
flavour mixing in ambidextrous $SU(2)_l\times SU(2)_r\times U(1)$ gauge theory 8−12805
flavour-changing neutral-current process in gauge models and strong interactions 8−8541
gauge models of weak and EM interactions, neutral current constraints 8−45831
gauge theory predictions, obs., neutral currents props., struct. 8−12856
generalised $SU(2)\times U(1)$ gauge model, neutral currents anal. 8−45832
Glashow-Weinberg theorem, neutral currents 8−8582
hadronic neutral current struct. 8−24994
heavy lepton decay widths, first-order weak interaction theory 8−45899
heavy lepton model for rare μ and K decay modes 8−45898
inclusive strangeness changing neutral current interactions 8−8652
left-right symmetry for $SU_l(2)\times SU_r(2)\times U(1)$ gauge group 8−21375
left-right-symm. unified theory of quarks and leptons 8−41466
lepton pair photoproduction, neutral weak current consequences *(Russian)* 8−12899
mixing of states containing heavy quarks 8−422
muon number nonconservation effects in gauge theory with V+A currents and heavy neutron leptons 8−8573
natural flavour conservation in neutral weak interactions, SU(5) and SO(10) unified models 8−4817
neutral transitions, vector-like weak currents, parity violation *(Russian)* 8−24995
neutrino spiral properties using model of the μ decay *(Russian)* 8−25031
neutrino-nucleus scatt., neutral current struct. 8−8799
nuclear scattering of reactor antineutrinos, neutral current, integrated inelastic cross section 8−29452
nuclear semi-leptonic weak interactions 8−555
polarisation asymm. in charged-lepton-nucleon elastic scatt. 8−33071
quark charge origin 8−21373
scaling violations and neutral currents 8−41529
semileptonic neutral currents as higher order effects in Fermi-type charged current theory 8−41474
Sodium ammonium tartrate, L- and D-mol. energy difference, parity violation 8−25744
strange particle production by neutral currents, Gargamelle $\nu,\bar{\nu}$ reactions 8−37201
strangeness conservation in neutral currents, constraints on vector-like model 8−21374
$SU(2)_l\times SU(2)_r\times U(1)$ gauge theory, left-right symm., neutral current struct. 8−41420
$SU(2)\times U(1)$, gauge theory of weak interactions 8−21328
$SU(2)\times U(1)$ gauge model and parity violation in atoms 8−4775
$SU(2)\otimes U(1)$ gauge group theory tests from neutral current phenomena 8−24992
$SU(3)\times U(1)\times U(1)$ model, suppression of flavour changing neutral currents 8−21350
$SU(3)\times U(1)$ gauge models, generalised mixing and CP violation in hadron decays 8−41473
SU(6) model of weak interactions, neutral weak currents at high energy *(Russian)* 8−45836
supernovae, neutrino transport in collapsing stellar core model 8−8029
symmetry violation natural suppression, muon and electron lepton number nonconservation 8−8574
(V-A) model, mixing between ordinary and heavy leptons, neutral current reactions 8−41472
vectorlike model, parity violation 8−4823
VV+AA gauge model 8−29246
weak interaction theory, review 8−4822
weak neutral currents displayed in biological isomerism, L- and D-mol. reaction rates 8−415
β-decay, time reversal invariance and second class weak currents, review 8−37309
ed elastic scattering, neutral weak currents *(Russian)* 8−21434
e^+e^- annihilation channel, differential dispersive theory of ψ/J 8−45933
$e^+e^-\to F\bar{F}$, with polarised particles, weak asymmetries, unified gauge theory anal. 8−8636
e^+e^- inclusive annihilation, many-hadron final states 8−29339
$e^+e^-\to pX$, weak neutral current, polarisation effects, asymm. parameters *(Russian)* 8−459
eN, pion production, vector-like theories *(Russian)* 8−37221
$e^-N\to e^-N\pi$, electromag. and weak process from weak neutral current interaction *(Russian)* 8−45928
$\gamma N\to$lepton pairs, weak neutral currents anal. 8−8670
μe universality violation in renormalisation theory, neutral leptonic currents *(Russian)* 8−45837
NN polarised scatt., weak neutral current models 8−41562
ν, $\bar{\nu}$, inclusive neutral current interactions 8−25036
$\nu,\bar{\nu}$ experiments at Gargamelle, strange particle production by neutral currents 8−37200
$\nu(\bar{\nu})$ inclusive scattering, weak neutral currents with longitudinal cross sections, scaling 8−17007
$\nu(\bar{\nu})N$ scattering, modified GIM model, scaling violations, naive parton model 8−21414
$\nu(\bar{\nu})N\to\nu(\bar{\nu})+$hadrons, neutral to charged current cross section ratio 8−8651
$\nu(\bar{\nu})N\to\nu(\bar{\nu})\gamma N$, neutral currents, γ emission cross section *(Russian)* 8−17008
$\nu(\bar{\nu})N\to\nu(\bar{\nu})\gamma X$, hadron neutral current, parton model *(Russian)* 8−45910
$\nu(\bar{\nu})N\to\nu(\bar{\nu})\pi+X$, determ. of neutral current coupling consts. 8−8649
$\nu(\bar{\nu})d\to np\nu(\bar{\nu})$, weak neutral currents, (V, A) and (S,T,P) theories 8−12893
$\bar{\nu}_e d\to pn\bar{\nu}_e$, total cross-section calc. 8−41534
$\bar{\nu}e$ elastic scatt., spin correls., allowance for (S,T,P) interactions of neutral and charged currents 8−12901
νe scattering, weak lepton structure analysis, Weinberg-Salam model *(Russian)* 8−25039
$\nu_\mu e\to\nu_\mu e$, upper limit to cross-section determ. 8−33054
νN, μ^+ single prod. in inclusive interaction 8−45908
$\bar{\nu}N$, single π^0 or π^- prod., neutral current interactions 8−41527
$\bar{\nu}N$ interactions, semiinclusive π production, charge ratio, Gargamelle freon data anal., weak neutral current 8−12905
νN single- and di-muon prod. colour changing current 8−45906

neutral currents continued
νp, $\bar{\nu} p$ elastic scatt., tests of flavour-changing neutral currents 8−8653
$\nu p \to \nu$+vector meson + X, neutral currents, generalised VDM, Regge pole anal. 8−41532
$\nu p \to \nu p$ elastic neutral current interaction obs. 8−25037
$pp \to \mu^+\mu^- X$, neutral current effects, $SU_l(2) \times SU_r(2) \times U_{l+r}(1)$ theory 8−17060
π inclusive prod., sum rules, π bremsstrahlung 8−45811
$\pi^0 \to e^+e^-$, neutral-current anal. 8−8658
Bi, parity non-conserving optical rot., Weinberg-Salam relativistic central field theory vs. obs. 8−953
Bi, parity nonconserving optical rot. upper limit, obs. vs. Weinberg-Salam theory 8−952
^{18}F, 1.08 MeV γ transition, circular polarisation affected by neutral weak currents 8−41663
H, two-photon transitions, parity nonconservation effects *(Russian)* 8−21892

neutrino-electron interactions
see also neutrino-electron scattering
cosmological fluid, lepton era, transport coeffs., Weinberg-Salam model 8−32623
Weinberg-Salam model, transition amplitudes and probabilities for $\nu\nu$, $\bar{\nu}\nu$, $\bar{\nu}\bar{\nu}$, νe, $\nu\bar{e}$, $\bar{\nu}e$, and $\bar{\nu}\bar{e}$ scatt. 8−21415
$e\bar{e}\nu_e\bar{\nu}_e$, reactive mixture, bulk viscosity 8−45565

neutrino-electron scattering
see also neutrino-electron interactions
$\nu^- e^- \to \nu^- e^-$, reactor data anal., revised antineutrino spectrum 8−21417
extreme relativistic electron gas, scattered neutrino energy distrib. 8−45215
neutral current reactions, (V-A) model, mixing between ordinary and heavy leptons 8−41472
renormalisable theory of pure leptonic weak interaction with induced shadow states 8−37136
spin correls., allowance for (S,T,P) interactions of neutral and charged currents 8−12901
stellar core collapse, neutrino trapping 8−32437
supernovae, neutrino transport in collapsing stellar core model 8−8029
weak charge of electron, $SU_2 \times U_1$ theories, $\bar{\nu}_\mu e$ scatt., isospin 8−16974
weak lepton streams, structure analysis, Weinberg-Salam model *(Russian)* 8−25039
Weinberg-Salam model, transition amplitudes and probabilities for $\nu\nu$, $\bar{\nu}\nu$, $\bar{\nu}\bar{\nu}$, νe, $\nu\bar{e}$, $\bar{\nu}e$, and $\bar{\nu}\bar{e}$ scatt. 8−21415
($\bar{\nu}_e$, e), 1.5 to 4.5 MeV, axion search 8−45904
$\nu e^- \to \nu e^- \gamma$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
$\nu_\mu e \to \nu_\mu e$, upper limit to cross-section determ. 8−33054

neutrino interactions
see also neutrino-electron interactions; neutrino-neutrino interactions; neutrino-nucleon interactions; neutrino scattering
asymptotic freedom predictions for neutral and charged current neutrino interactions 8−8581
charm fragmentation, leading particle effects 8−8650
charmed baryon prod. by neutrinos, quark-model calc. 8−45909
diffractive meson prod. 8−21416
dimuon events, heavy lepton decay into massive ν with various spin 8−21412
four-muon prod. by neutrinos 8−29330
hadronic quantum numbers beyond charm as possible source of neutrino induced trimuons 8−12903
heavy lepton cascade decay 8−25038
heavy lepton prod. and cascade decay 8−33059
heavy leptons, weak gauge boson and neutrino trimuon prod. 8−4851
heavy-lepton interpretation of multimuon events 8−33058
Higgs boson, charged and trimuon events in neutrino reaction 8−21413
massive unstable neutrinos, cosmological implications cosmological implications of masses 8−45437
massive unstable neutrinos, cosmological implications of decay modes 8−45437
nuclear semi-leptonic weak interactions 8−555
parton anomalous statistics, deep inelastic ν scatt. *(Russian)* 8−29331
reaction rates and moments, from transform. to centre of mass system 8−45215
scaling violation, two-component duality model, ν and μ interactions 8−8623
scaling violations and neutral currents 8−41529
solar neutrino problem, fermion nonminimal gravit. coupling 8−29294
strange particle production by neutral currents, Gargamelle ν,$\bar{\nu}$ reactions 8−37201
strange particle production by neutral currents in Gargamelle ν and $\bar{\nu}$ expts. 8−37200
strangeness conservation in neutral currents, constraints on vector-like model 8−21374
total cross sections for ν_e and $\bar{\nu}_e$ bubble chamber interactions, neutrino oscills. and decay 8−41526
trimuon events, heavy lepton prod. in ν interactions 8−41530
trimuon events obs., $\nu(\bar{\nu})$ interactions 8−12902
VV+AA gauge model 8−29246
weak charmed-baryon resonance prod., neutrino inclusive interactions, scaling behaviour 8−8645
weak interaction model, neutrino-induced multilepton events 8−41533
weak interactions, conf., Bloomington, USA, (May, 1977) 8−414
weak production of charmed baryons by neutrinos, relativistic quark model 8−41496
weak selection rules, inclusive prod. of charmed particles and heavy leptons 8−8679
μe prod., heavy lepton decay anal. 8−33057
ν, $\bar{\nu}$, inclusive neutral current interactions 8−25036
$\bar{\nu}$ anomalies and right-handed currents 8−8654
$\bar{\nu}$ interactions, anomalous lepton prod., b-quarks 8−8613
$\bar{\nu}$ interactions, Λ, Σ^0, K^0 prod. 8−8647
$\nu(\bar{\nu})$ high-energy interactions, dimuon distrib. anal., quark-parton model 8−33056
$\nu(\bar{\nu})+Fe \to \mu^- + \mu^-(\mu^+ + \mu^+)+X$, 200 GeV, momentum and ang. distribs. meas. 8−8648
$\bar{\nu}_e + D \to \bar{\nu}_e + n + p$, axion search 8−45904
$\nu d \to \bar{\mu} p p_s$, 0.5-6 GeV, total and differential cross-section determ. 8−33055

neutrino-neutrino interactions
see also neutrino-neutrino scattering
cosmological fluid, lepton era, transport coeffs., Weinberg-Salam model 8−32623
Weinberg-Salam model, transition amplitudes and probabilities for $\nu\nu$, $\bar{\nu}\nu$, $\bar{\nu}\bar{\nu}$, νe, $\nu\bar{e}$, $\bar{\nu}e$, and $\bar{\nu}\bar{e}$ scatt. 8−21415

neutrino-neutrino scattering
see also neutrino-neutrino interactions
Weinberg-Salam model, transition amplitudes and probabilities for $\nu\nu$, $\bar{\nu}\nu$, $\bar{\nu}\bar{\nu}$, νe, $\nu\bar{e}$, $\bar{\nu}e$, and $\bar{\nu}\bar{e}$ scatt. 8−21415

neutrino-nucleon interactions
see also neutrino-nucleon scattering
$\Delta S=0$ weak hadron neutral current, quark parton model, νN and e^+e^- interactions 8−12859
cosmic neutrinos, detection and neutrino-nucleon interactions, 1-100 TeV 8−36413
di-lepton events in BEBC narrow band beam neutrino expt. 8−41528
dimuon production rate from $\nu(\nu)$ N reactions in steel at 45-205 GeV 8−8646
eight quark model, modified left-handed currents, ν reactions and e^+e^- annihilations 8−16982
hadronic contributions to trimuon prod., quark+antiquark annihilation 8−41551
inclusive strangeness changing neutral current interactions 8−8652
lepton-hadron relation, neutrino induced dimuon and trimuon events 8−25032
neutral current couplings in neutrino-hadron interactions 8−24993
neutral current reactions, (V-A) model, mixing between ordinary and heavy leptons 8−41472
quark model anal. 8−4850
straton model, $\Delta(1236)$ prod. by high energy neutrinos *(Chinese)* 8−12900
straton model of $1/2^+$ baryon semileptonic decays and high energy neutrino-nucleon reactions *(Chinese)* 8−12873
$SU(2) \otimes U(1)$ gauge group theory tests from neutral current phenomena 8−24992
trimuon prod. from struct. at lepton vertex 8−8639
trimuon production by neutrinos and antineutrinos 8−37198
μ^+ single prod. in inclusive interaction 8−45908
ν deep inelastic scatt., four flavour quark model, asymptotic freedom 8−45905
$\nu(\bar{\nu})N$ interactions, 7.5-30 GeV, μ pair prod. 8−12904
$\nu(\bar{\nu})N \to l^-(l^+)X$, differential cross section in scaling limit, sea quark contribution 8−37196
$\nu(\bar{\nu})N \to \nu(\bar{\nu})$+hadrons, neutral to charged current cross section ratio 8−8651
$\nu(\bar{\nu})N \to \nu(\bar{\nu})\gamma N$, neutral currents, γ emission cross section *(Russian)* 8−17008
$\nu(\bar{\nu})N \to \nu(\bar{\nu})\pi+X$, determ. of neutral current coupling consts. 8−8649
$\nu(\bar{\nu})d \to np\nu(\bar{\nu})$, weak neutral currents, (V, A) and (S,T,P) theories 8−12893
$\nu_\mu(\bar{\nu}_\mu)N$ charged current total cross sections, (V-A) interactions, nucleon struct. function scaling 8−25033
$\bar{\nu}_e d \to pn\bar{\nu}_e$, total cross-section calc. 8−41534
$\bar{\nu}N$, neutral weak currents at high energy, SU(6) quark vectorlike model *(Russian)* 8−45836
νN, $\bar{\nu}N$, y-distributions, nonscaling and longitudinal struct. function effects 8−33053
$\bar{\nu}N$, single π^0 or π^- prod., neutral current interactions 8−41527
$\bar{\nu}N$ interactions, semiinclusive π production, charge ratio, Gargamelle freon data anal., weak neutral current 8−12905
$\bar{\nu}n \to \mu^+ n \pi^-$, effects of second-class weak currents in $\Delta(1236)$ reson. region 8−8656
$\nu N \to \mu N \pi$, high energy behaviour, light cone commutators, PCAC calcs. 8−37199
νN single- and di-muon prod., colour excitation, weak interaction model anal. 8−45906
$\nu_\mu N$, charm pair prod. in QCD, trimuon rate 8−45907
$\nu_\mu N$, heavy lepton prod., $SU(3) \times U(1)$ model 8−45900
$\nu_\mu N \to \mu^+ e^- X$ in Ne 8−29329
νp, charged heavy lepton prod. and decay 8−8655
νp, $\bar{\nu} p$ elastic scatt., tests of flavour-changing neutral currents 8−8653
νp interactions, charmed meson prod., Regge pole model, cross sections 8−33052
$\nu p \to \mu^- p \pi^+$, effects of second-class weak currents in $\Delta(1236)$ reson. region 8−8656
$\bar{\nu} p \to \mu^+ \nu$, axial transition form factor determ. 8−8647
$\nu p \to \nu$+vector meson + X, neutral currents, generalised VDM, Regge pole anal. 8−41532
νp production of $\Delta(1236)$, multipole struct. of weak prod. by charged currents 8−29328
$\bar{\nu}_\mu p \to \mu^+ H^0$, props. of neutral hadronic system H^0 anal. 8−41531

neutrino-nucleon scattering
see also neutrino-nucleon interactions
neutral current reactions, (V-A) model, mixing between ordinary and heavy leptons 8−41472
trimuon event sources 8−25035
$\nu(\bar{\nu})N$ scattering, modified GIM model, scaling violations, naive parton model 8−21414
$\nu(\bar{\nu})N \to \nu(\bar{\nu})\gamma X$, hadron neutral current, parton model *(Russian)* 8−45910
$\nu p \to \nu p$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
$\nu p \to \nu p$ elastic neutral current interaction obs. 8−25037

neutrino-nucleus reactions
for inelastic neutrino-nucleus scattering, see "neutrino-nucleus scattering"
see also neutrino-nucleon interactions
detection and analysis of neutrino interactions in photoemulsion *(Russian)* 8−41900
multimuon events, QCD predictions for associated prod. of charm 8−25034
$\nu(\bar{\nu})d \to np\nu(\bar{\nu})$, weak neutral currents, (V, A) and (S,T,P) theories 8−12893
ν_μ+Ne$\to$L$^\pm$...., expt. limits on heavy lepton production 8−37197
^{37}Cl neutrino absorpt. cross-sections, rel. to Brookhaven expt. sensitivity to solar neutrinos, collapsing stars and cosmic neutrinos 8−4929

neutrino-nucleus scattering
see also neutrino-nucleon scattering
neutral current and nuclear scatt. of reactor antineutrinos, integrated inelastic cross section 8−29452

neutrino-nucleus scattering continued
- neutral current struct. 8−8799
- stellar collapse, neutrino radiation for black hole form. rel. to envelope outburst problem 8−45350

neutrino production
- beam channel characts., Protvino Inst. 8−37474
- cosmic ray ultrahigh-energy neutrinos, prod., fluxes and detect. 8−49264
- hot neutron star formation, neutrino radiation rel. to envelope outburst problem 8−45350
- muon flux measuring system for neutrino spectrum reconstruction at IHEP accelerator 8−21817
- neutrinos, beam focusing system, Protvino Inst. 8−37477
- proton beam dump expt. at CERN SPS, obs. of excess ν_e, $\bar{\nu}_e$ events 8−45978
- proton interactions, beam dump expt. at CERN SPS 8−45979
- stellar C-O cores, Urca neutrino loss rates 8−20813
- stellar collapse, gravit. radiation and total neutrino losses 8−45317
- $e^+e^- \to \nu\bar{\nu}$, in strong mag. fields, rate of energy loss 8−29326
- $\gamma e^- \to e^-\nu\bar{\nu}$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
- $\gamma\gamma \to \nu\bar{\nu}$, nonzero neutrino mass, early Universe process 8−21483
- $\mu \to e\gamma$, possible existence of third kind of neutrino *(Chinese)* 8−12896
- $\mu^- \to e^-\nu^-\nu$, model, spiral props. *(Russian)* 8−25031
- $\pi^+ \to \mu^+\nu_\mu$, at rest, μ^+ momentum meas. 8−45911
- Cu+p collisions, 400 GeV, prompt ν prod. 8−46061

neutrino scattering
- *see also neutrino-electron scattering; neutrino interactions; neutrino-neutrino scattering; neutrino-nucleon scattering*
- inclusive scattering, weak neutral currents with longitudinal cross sections, scaling 8−17007
- neutral leptonic currents, μe universality violation *(Russian)* 8−45837

neutrinos
- *see also cosmic ray neutrinos*
- CERN neutrino beam monitoring by μ flux in Fe shield meas., Si detectors 8−37523
- classical ν, gravitational interactions 8−45833
- collapsing Fe-O stars with masses of 2 $M_\odot$ and 10 $M_\odot$, neutrino effects 8−20815
- CP or T violation effects 8−21349
- Dirac eqn. for massless particles, number of quanta in neutrino field 8−4765
- Goldstone, mixing of weak and gravit. interactions, massive gravitino 8−8578
- Hagedorn's big-bang model, strongly degenerate heavy neutrino decay, free quark-baryon ratio 8−16589
- heavy lepton massive neutrinos in big bang model, mass and number 8−45444
- mass and Pontecorvo oscillations of neutrinos using chronon concept in electron theory 8−36879
- massive unstable neutrinos, cosmological implications 8−45437
- mixing angle between ordinary and heavy leptons in a (V-A) model, constraints 8−4846
- neutron stars, neutrinos and gravit. waves emission during form. 8−12266
- pair prod. in strong mag. field 8−407
- photon double helix struct., 2 intertwined neutrinos, polarisation, helicity props. 8−37255
- radiative decay lifetime limits 8−448
- relativistic Boltzmann eqn., series convergence 8−36949
- spiral properties using model of μ decay *(Russian)* 8−25031
- stellar collapsing core, shock struct. and neutrino radiation, rel. to supernova explosions 8−49427
- SU(2)×U(1) gauge theory, charged heavy lepton and neutrino 8−45794
- total cross sections for ν_e and $\bar{\nu}_e$ bubble chamber interactions, neutrino oscills. and decay 8−41526
- wave equations in conformal space, Dirac theory 8−21364
- $\mu^\pm \to e^\pm\gamma$, right-handed ν_μ anal. 8−41525
- $\bar{\nu}$, rest mass, upper limit refining using ^{3}H β-spectrum meas. 8−17144
- ν_μ mass limit in absence of muon-lepton-number conservation, unified gauge theories 8−21368
- ν_τ, heavy-lepton-associated neutrino, mass calc. 8−4849
- ν_τ spin, suppression of $\tau \to \nu_\tau\pi$ 8−21410

neutron absorption
- borosilicate glass, behaviour as control rod in commercial reactor 8−8918
- component reliability tests in thermal neutron environment 8−21787
- epithermal 1/V self-shielding of reactor poisons using Nordheim integral method 8−17306
- heavy water, effect of non-1/v absorbers on thermal neutron transport 8−29532
- HTGR spherical fuel assemblies, resonance integral meas. *(German)* 8−29568
- LMFBR, elimination of transuranium elements by neutron absorpt. 8−29628
- neutron escape probability from absorbing body 8−46125
- resonance absorpt. in RBMK-type grid 8−664
- tilted neutron flux distrib., effect of cylindrical absorbing channels 8−13189
- two-different-core system, neutron transit time meas. 8−37414
- ultracold neutrons on strong absorbers, absorpt. coeff. meas. 8−46127
- water, effect of non-1/v absorbers on thermal neutron transport 8−29532
- Al_2O_3-B_4C, behaviour as control rod in commercial reactor 8−8918
- B, borides, neutron absorbing props., reactor control system, appls., review, book contrib. 8−46154
- B_4C, absorber material for fast reactor control appl. 8−8919
- B_4C, behaviour as control rod in commercial reactor 8−8918
- B_4C, He release correlation during fast-neutron irradiation in fast reactor 8−8965
- B_4C, meas. of T retention of fast-neutron-irradiated absorber elements 8−8903
- B_4C-graphite, irradiation-induced dimens. changes, rel. to HTGR conditions 8−8905
- EuB_6, absorber material for fast reactor control appl. 8−8919
- EuB_6, synthesis and hot pressing fabrication for appl. to neutron absorbing core control material 8−8904
- Eu_2O_3, absorber material for fast reactor control appl. 8−8919
- Gd_2O_3-UO_2, behaviour as control rod in commercial reactor 8−8918

neutron absorption continued
- ^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8−46059
- Pb, reactivity worths of fixed neutron absorbers 8−21654
- U, reson. absorpt., effect of annular fuel elements 8−666
- UO_2, energy depend. Doppler factor meas. using lead slowing-down time spectrometer 8−17310

neutron activation analysis
- air pollution meas. in semi-arid zone 8−36317
- air samples in UK for 1957 to 1974 period, retrospective analysis 8−3942
- analysis code for automated reduction of gamma ray data 8−23978
- ancient Cu alloys, epithermal neutron activation anal. method 8−8490
- ancient pottery, characterisation by neutron activation anal., suitable element selection 8−8484
- ancient pottery, nondestructive neutron activation anal. 8−12802
- annihilation spectra, two-component, resolution using count ratio technique 8−44424
- atmospheric aerosol, Pt metals analysis 8−3989
- atmospheric aerosol, S.Pole, chem. comp. determ. by instrumental neutron activation analysis 8−3988
- atmospheric dust aerosols, activation analysis experience at Karlsruhe Nuclear Research Center 8−3941
- atmospheric particulate material, trace elements analysis by nucl. activation techniques 8−3991
- automobile exhaust pollutants, distrib. of Pb particulate 8−3943
- basalts, deep sea, trace element distrib. pattern, neutron activation anal., rel. to genesis 8−11879
- biological materials, resonance neutron activation analysis technique 8−3692
- biological samples, nondestructive proton and neutron activation analysis comparison 8−3691
- biological samples, Sn analysis at nanogram level by ^{121}Sn liq. scintillation counting 8−3693
- blood serum, neutron activation determ. of Zn, Se, Rb, and Fe concs. 8−20252
- bone, archaeological, characterisation 8−353
- bone, cow femur, mineral comp., neutron activation anal. 8−27859
- botanic reference materials, candidate standards, homogeneity testing, anal. methods 8−11594
- Canadian clay, neutron activation anal. 8−8487
- clinical in vivo total body anal., neutron uniformity 8−40315
- coal, quality monitoring, in elec. power generating plant, prompt neutron activation anal. 8−7302
- coal composition determination by ^{252}Cf neutrons, flux level corrections 8−7303
- coins, ancient Greek, neutron activation and at. absorpt. anal. 8−8489
- coins, Constantinian, use of ^{252}Cf source 8−350
- cost minimisation 8−48728
- crude oil, neutron activation anal. for determ. of V 8−20109
- determination program, computer ES 1030, algorithm SAND-II *(Russian)* 8−48723
- environmental, of Cs, Br and As, w.r.t. reliability 8−40106
- environmental samples, nondestructive analysis using low-energy photon spectrometry 8−3995
- geological samples, multielement anal. by sequential instrumental and radiochem. neutron activation 8−7798
- glass, ancient samples, trace element anal. by neutron activation, rel. to corrosion and devitrification 8−12801
- groundwater flow, investig., using In-EDTA tracer and neutron activation anal. 8−11921
- hydrometallurgical plant effluent waters, Mo and W determ. by activation analysis with low-power neutron sources 8−7279
- ice cores, from Jungfraujoch, impurity determ. by neutron activation anal. 8−11920
- imitation old scientific instrument, identification by neutron activation anal. 8−8491
- instrumental, automated rock analysis appl. 8−3769
- Isar River, Bavaria, trace elements distrib. in sediment, suspension and water samples by neutron activation analysis 8−3834
- Italian chondritic meteorites, Cu, Ir, Pt and Au content by destructive neutron activation anal. 8−12172
- liver matrix, bovine, determ. of bulk and trace elements 8−28050
- low dose concentration profiles in solids, determ. by (n,p) and (n,α) reactions 8−7283
- lunar samples, primary matter, neutron activation anal. 8−7890
- Mundrabilla, Fe meteorite, chem. obs. by neutron activation 8−12171
- muscle, trace element determ. by radiochem. neutron activation anal. 8−27869
- NIMROC reference materials, for neutron activation anal. 8−7288
- obsidian sources, chem. characterisation and hydration rates, W.Mexico 8−348
- optical waveguide materials, radioisotope methods and neutron activation anal. appls. 8−7286
- optimisation, computer-selected conditions 8−15740
- orchard leaf, multielement anal. by sequential instrumental and radiochem. neutron activation 8−7798
- Pacific marine aerosol, continental component identification by combined neutron activation and SEM with X-ray anal. 8−3990
- potsherds, Melian, instrumental neutron activation anal. 8−8485
- potsherds, S.W. African, neutron activation anal. of trace elements, characterisation 8−8486
- potsherds, Turkish, neutron activation anal. 8−8487
- pottery, sigillated, trace element archaeochem. using neutron activation anal. 8−8488
- power plant stack emissions, trace element analysis techniques 8−3938
- radioisotope identification and mass determination, using SAMPO programme with IDENT subroutine 8−48731
- rainwater, trace elements determ. by neutron activation analysis 8−3944
- rare earths, determ. in rocks, by neutron activation anal. 8−27870
- reactive metals, neutron activation analysis at 14 MeV for determ. of O_2 conc. 8−11602
- rock, assay-activation analysis, use of Au and Ag standards based on phenol formaldehyde resin 8−3419
- rocks, neutron activation analysis, accuracy 8−11589
- scalp hair as monitor of population exposure to environmental pollutants, nucl. activation analysis 8−3940
- sediments from Saronikos Gulf, Greece, trace elements analysis 8−3825

neutron activation analysis continued
- silicate rocks, multielement anal. by epithermal neutron activation, detector systems 8−20123
- silicate rocks and minerals, instrumental neutron activation anal. 8−20548
- Solvent Refined Coal process, trace element distrib. 8−3421
- stone artifacts, Japanese, trace elements, neutron activation anal., rel. to archaeological provenience 8−8492
- sunflower seeds, from Vojvodina, neutron activation anal. 8−20110
- Teflon, F content, determ. by instrumental neutron activation anal. 8−7262
- thermal neutron activation anal., current status in Japan *(Japanese)* 8−35754
- tissue biopsies, sampling, storage and anal., evaluation by neutron activation anal. 8−11595
- trace element standards, prod. by doping of SiO_2 matrix 8−7289
- trace elements, in carbonates, determ. by NAA 8−27858
- tree rings, trace element distribs. using neutron activation 8−3939
- Turkish clay, neutron activation anal. 8−8487
- water, Cr determ. by activation analysis after preconc. on activated C 8−3993
- water, mineral type, Na, Cl, I and S determ. by neutron activation and X-ray fluoresc. analyses 8−3428
- water, thermal neutron activation cross-section induced by 42 MeV bremsstrahlung 8−20112
- water, trace elements determination using routine neutron activation analysis 8−3992
- whole organs, sampling, storage and anal., evaluation by neutron activation anal. 8−11595
- As, determ. in beef extract, by NAA 8−27856
- Au ores, neutron activation and mathematical programming *(Rumanian)* 8−20565
- Ba, determ., in biological materials, by thermal NAA 8−27854
- Bi, mapping using ^{210}Po α-particle tracks 8−20129
- Br, determ. in silicate rocks by epithermal neutron activation anal. 8−35741
- Ca in vivo meas. by ^{37}Ar method, effect of recirculating breath collection systems on exhalation rate 8−40316
- Ca, total-body meas. by ^{37}Ar method 8−3589
- Cd, determ. in beef extract, by NAA 8−27856
- Cd levels in kidney and liver, facility for in vivo meas. by neutron capture prompt γ anal. 8−15885
- Cr, determ., in biological materials, by NAA 8−27855
- Cu, determ. in beef extract, by NAA 8−27856
- F, determ. by instrumental neutron activation anal. 8−7262
- Ge(Li) γ-ray spectrometer for neutron activation anal., modification and appl. of SPECTRA program 8−20107
- Hf, determ. in silicate rocks, meteorites and lunar samples by neutron activation 8−20547
- In-EDTA tracer, for groundwater flow investig., neutron activation anal. 8−11921
- Li, liq., solubility of Li_2O by neutron activation anal. 8−11601
- Nb, impurity conc. monitoring during single cryst. production 8−31337
- ^{237}Np, determ. of small amounts in solns. containing U, Pu and fission prod. 8−21682
- O, determ. in metals, neutron activation anal., sensitivity 8−15742
- Si, impurity determination, by neutron activation analysis 8−11586
- Si:B, impurity range distrib. determ. by $^{10}B(n,\alpha)^7Li$ reaction 8−11585
- Si:P implantation profiles, neutron activation anal. 8−7284
- SiO_2 film, on n-GaAs, Ga content after annealing at 730-940°C neutron activation anal. 8−43255
- Sn, determ. in beef extract, by NAA 8−27856
- U, prospecting at exploratory borehole, spatial depend. of delayed-neutron signals 8−7817
- Zn, determ. in beef extract, by NAA 8−27856
- Zr, determ. in silicate rocks, meteorites and lunar samples by neutron activation 8−20547

neutron angular distribution
- *see also neutron spectra*
- NN scatt. formalism 8−21463
- Ag(n,n′), 14.1 MeV, precompound processes 8−13093
- As(n,n′), 14.1 MeV, precompound processes 8−13093
- ^{40}Ca, neutron ang. distrib. following polarized muon capture, relativistic corrections 8−13063
- ^{252}Cf spontaneous fission, forward-backward anisotropy of prompt neutron emission 8−25254
- Cu(n,n′), 14.1 MeV, precompound processes 8−13093
- $^7Li(p,n)^7Be$, activation and ang. distrib. meas., absolute neutron yield determ. 8−17199
- Nb(n,n′), 14.1 MeV, precompound processes 8−13093
- $^{16}O(\gamma,n)^{15}O$, ang. distrib. asymmetry anal. 8−25172
- $^{181}Ta(n,n')^{181}Ta$, 9.1 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8−25198
- $^{181}Ta(p,n)^{181}W$, 10.2 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8−25198

neutron beam effects *see neutron effects*

neutron detection and measurement
- *see also dosimetry; neutron spectrometers*
- activation analysis, in vivo, total body, neutron uniformity 8−40315
- alpha recoil gas proportional counter 8−5089
- Bonner spheres, calibration using Sb-Be neutron source 8−33394
- cellulose nitrate film, neutron dosimeter 8−20280
- cellulose nitrate LR115, neutron personnel dosimetry at high energy accelerators 8−20284
- cosmic ray intensity, supermonitor 4-NM-64 with control of long term stability of meas. 8−21808
- cosmic ray neutron detector, efficiency determ. by Monte Carlo method 8−21809
- coumarin, aqueous solution, fast neutron irrad., dosimetry appl. 8−44613
- discriminator principle, slow neutron counting, scintillation-photomultiplier system 8−29717
- dosimeter, aq. coumarin soln. response to high LET radiation from $^{10}B(,n\alpha)^7Li$ reaction 8−24149
- dosimetric meas. using mica and pyrex, fission fragment track technique 8−13347
- dosimetry, comparison of single and multidetector systems *(Russian)* 8−33294
- dosimetry of n and γ from ^{252}Cf source with high emission, safety *(Czech)* 8−33296

neutron detection and measurement continued
- energy deposition measurement by thin film resistors 8−29719
- fast neutron spectrum unfolding code MATXUF 8−5091
- FBR neutron fields, spectral charact. *(Japanese)* 8−46222
- fission track method, physical state of fissionable material 8−41899
- fission counters of high sensitivity for use, in high gamma fields 8−8883
- fission reactor, reactivity determination, pulsed neutron source technique, ZR-4 reactor appl. *(Hungarian)* 8−21673
- fission reactor instrumentation, using self powered detectors, 10^{-12} to 10^{-6} A meter appl., with automatic drift compensation *(Czech)* 8−883
- flux, density measurements for reactor control *(German, English)* 8−17335
- free neutron lifetime measurement using wall and mag. traps of ultracold neutrons 8−5107
- gas counters of slow neutrons, edge effect 8−33384
- graphite radiation damage dosemeter, GAMIN, correlation data 8−29657
- Harwell type 95/0075 survey meter, calibration using Sb-Be neutron source 8−33394
- in-core movable neutron flux mapping computerised console development 8−13308
- K-emulsion film dosimeter 8−20290
- Kodak LR 115 cellulose nitrate films, fast neutron dosimetry 8−20279
- liquid scintillator containing O_2, selective activation detection of neutrons 8−25392
- local flux density of fast monochromatic neutrons, absolute determ. method 8−5106
- lyoluminescence dosimetry in photon and fast neutron beams, using mannose 8−15902
- Makrofol, neutron personnel dosimetry at high energy accelerators 8−20284
- Makrofol polycarbonate, electrochemical etching of neutron induced tracks, appl. to dosimetry 8−20282
- microprocessor controlled reactivity meter for real time monitoring of reactors 8−33263
- MWPC, pressurised, for neutron imaging, gas density, cathode biasing, effects on resolution 8−37518
- neutral particle background, effects in cosmic ray telescopes composed of Si solid state detectors 8−28472
- nuclear reactor, thermal neutron flux meas. method *(Rumanian)* 8−21670
- PBF, temp. sensitivity of Co self-powered neutron detectors under PWR conditions 8−33275
- personal dosimetry system, ^{237}Np neutron induced tracks in polycarbonate 8−31908
- personnel dosimeters based on film badges and TLDs, appl. *(Russian)* 8−20293
- portable neutron spectrometer/kerma-rate meter, design, performance 8−33361
- position sensitive neutron detector using (n,γ) on ^{157}Gd, ^{177}Hf foils, proportional chamber detection of conversion electrons 8−37517
- position sensitive proportional detector for thermal and epithermal neutrons 8−25390
- proton recoil data, frequency filtering 8−46240
- proton recoil proportional counters, fast monoenergetic neutron fluxes meas. procedure anal. 8−17478
- pulsed accelerator for neutron travel time meas. *(German)* 8−17475
- PWR, power monitoring, direct charge detectors appl. 8−17344
- PWR, Westinghouse, neutron flux mapping at low power 8−21703
- scintillating glasses, pulse decay time meas. at room temp. 8−46225
- scintillation counter efficiency, time of flight meas., Monte Carlo method appl. 8−17045
- Skylab, spacecraft-produced neutron fluxes meas. 8−28486
- small angle neutron scatt. with azimuthal symmetry 8−46212
- solid state nuclear track detectors, fast neutron dosimetry 8−20278
- solid state nuclear track detectors appl., brief review 8−33299
- solid state track detectors, neutron fluence meas., international intercomparison 8−20283
- solid-state nuclear track detectors, development and use for reactor phys. expts. 8−41886
- statistical regularization method for spectra establishment according to threshold detector readings, IBR-30 reactor appl. 8−37483
- thermal neutron distrib. in bone in paraffin phantom, irrad. with 14 MeV neutrons 8−3616
- thermal neutron polarisation anal. experiments, corrections for instrument component inefficiencies and sample multiple scatt. 8−29725
- tissue equiv. medium, simultaneous meas. of neutron and gamma ray spectra 8−5058
- TOF high efficiency detectors for high energy neutrons, subnanosec. time resolution 8−37481
- TREAT facility, pinhole imaging of test fuel element 8−21627
- (n,γ) thermal react. cross section meas. with liquid scintillation spectra 8−25382
- n-γ mixed field, dose distrib. meas. on phantoms, TLD, solid-state, photoluminesc. detectors *(Russian)* 8−33297
- B, liquid scintillation slow neutron detector with n-γ separation cct. 8−862
- $CaSO_4$:Tm composite TLD for γ-rays, X-rays, β-rays, and thermal neutrons 8−28076
- CdTe detector, thermal neutrons 8−17479
- CdTe, thermal neutron detection 8−17479
- Gd loaded large liquid scintillator, neutron radiative capture cross-section meas. 8−25380
- Ge(Li) diodes, teflon covered for fast neutron detection 8−25384
- ^3He fast detector with linear energy response 8−25393
- LiF TLD, use as thermal neutron detector 8−21821
- LiF TLD-700, Harshaw, effect of sample size and batch origin on thermal neutron sensitivity 8−40342
- Mn bath, for intermediate neutron meas., leakage determ. 8−37525
- NaI(Tl), pulse shape discrimination of high-energy neutrons and gamma rays 8−33395
- ^{227}Np damage track detectors, effects of subthreshold fission on neutron dose meas. 8−33375
- Pt self-powered detector, neutron sensitivity calc. 8−37449
- Si diode neutron detector for meas. near high-energy accelerator, photon and electron response 8−35963

neutron detection and measurement continued
^{64}Zn(n,p)^{64}Cu, evaluated cross section, neutron flux determ. by foil activation 8−25273
Zr, standard cylindrical calibration sample for long wavelength neutron scatt. meas., proposal 8−29722

neutron diffraction
see also neutron diffraction crystallography; neutron diffraction examination of materials
double monochromator for diffraction studies 8−1957
non-coherent resonant scattering in crystals *(Russian)* 8−15081
spinor wave function, 4π periodicity factor meas. using perfect neutron interferometer 8−45515
ultracold neutrons, diffraction and mirror reflection 8−13193

neutron diffraction crystallography
see also crystal atomic structure
anisotropic temperature factors, anharmonic motions 8−9902
charge density analysis techniques, appl. to s-triazine 8−38578
curved crystals, Laue geometry, theoretical calc. 8−14248
Debye solid, amorphous and disordered harmonic, struct. factors 8−9954
deformation density and valence density maps, errors, scale factor contrib. 8−38580
diffraction instruments, intercomparison, Commission on Neutron Diffraction work 8−18503
diffractometer, Multidetector LMT LC 400 CP *(French)* 8−42866
electron density analysis, exponent refinement, appl. to melamine 8−38579
extended growth defect characterisation, review 8−30649
extinction, wavelength depend., meas. for UO$_2$ 8−38588
inelastic neutron scatt. expts., book contrib. 8−1959
interferometry, principles, techniques and appls., book contrib. 8−42862
isotropic system, multiple scatt. correction, Monte Carlo simulation 8−9913
Laue case rocking curves, oscillatory struct. expt. determ., theoretical analysis 8−9899
Laue scatt. intensity oscills., neutron scatt. using inclination method 8−42867
liquid sample freezing with quartz wool 8−18502
polycrystal cold neutron incoherent inelastic scatt., computation of phonon spectrum 8−34572
pulsed source experiments, optimized Monte Carlo simulation 8−9914
reflection sets, unique, computer program for generation, for all space groups 8−18501
section topography, cryst. dislocation and planar defect images, book contrib. 8−42863
small angle scattering, suitability for alkali silicate glass struct. determ. 8−22663
spinel structure compounds, cation distrib., neutron diffr., determ., minimum errors 8−1958
twinned and clustered crystals, method and computer program for intensities meas. on four-circle diffractometer 8−14247
two crystal diffractometer, neutron spectrometer component, luminosity 8−21807

neutron diffraction examination of materials
see also neutron diffraction crystallography
acetonitrile, mol. pair-correl. function, X-ray and neutron diffr. 8−26420
acetylene, and deuterated derivative, adsorbed on Ag exchanged zeolite, inelastic neutron scatt. 8−6229
alkali halides:NH$_4^+$, inelastic neutron scatt. 8−14407
alkali silicate glass, suitability of small angle neutron scatt. for struct. determ. 8−22663
alloys, nearly and weakly ferromagnetic, mag. clusters, unpolarised neutron diffuse scatt. 8−39297
π-allyls, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
anthracene, lattice parameters press. depend., elastic consts. 8−38686
binary melts, short-range order, X-ray and neutron scatt. *(German)* 8−14272
t-butyl chloride, solid phases, mol. motion, cold neutron scatt obs. 8−26460
chiral molecular systems, differential scatt. of spin ±$^1/_2$ neutrons, theory 8−33622
chiral molecular systems, differential scatt. of spin ±$^1/_2$ neutrons, Condon oscillator model 8−33623
chloranil, neutron superlattice reflection, soft phonon and central peak scatt., phase transition 8−18732
chloroform-d, struct. of mol. in liq. 8−26422
copper formate tetrahydrate, short-range order, diffuse neutron scatt. 8−15124
cyclobutadiene iron tricarbonyl, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
cyclohexane, solid, neutron scatt. spectra using inverted geometry, white beam, t. of f. spectrometer 8−34395
cyclopentane, solid, neutron scatt. spectra using inverted geometry, white beam, t. of f. spectrometer 8−34395
cyclopropane, liq., mol. dynamics, self-diffusion, quasielastic neutron scatt. and NMR spin-echo meas. 8−10201
diamond, electron density, neutron diffraction powder data 8−38655
1,2-dichloroethane, orientationally disordered crystal., mol. orientation 8−34448
ethylene adsorbed on Ag exchanged zeolite, inelastic neutron scatt. 8−6229
ferromagnet, neutron crit. scatt., temp. shift of max. in second Born approx. 8−34963
gels, non-linear behaviour under strong deform. 8−7240
graphite, intercalation compound, C$_8$Rb, elastic and inelastic neutron scatt. 8−30597
graphite, neutron irrad., porosity changes, neutron small angle scatt. investig. 8−34544
heavy water, collective excitations in 10^8 cm^{-1} momentum range 8−43087
2,4-hexadiyne, solid, methyl group tunnelling and torsion, neutron scatt. 8−18560
hexafluorobenzene, liquid sample freezing with quartz wool 8−185a2
ice Ih, elastic neutron diffuse scatt., series expsn. calc. 8−2027
Invar, influence of magnetoelastic effects on lattice vibrs., neutron scatt. meas. 8−2722

neutron diffraction examination of materials continued
liquid, neutron incoherent scatt. functions, non-Gaussian corrections 8−42874
liquid structure, TOF pulsed neutron diffraction using electron linac, CCl$_4$ appl. 8−18504
magnetic scattering in critical region, differential cross section 8−39294
MBBA, nematic phase, quasielastic and elastic 10 Å neutron scatt. 8−42904
metal, atomic defect config. from X-ray and neutron scattering studies 8−47322
metallic actinide compounds, localised cryst. field states, neutron inelastic scatt. obs. 8−14697
metallic glasses, electronic structure, neutron scatt., elec. resist., Hall coeff., mag. susceptibility and XPS 8−23013
methane-d$_4$, solid phases I, II, acoustic phonon dispersion curve meas. by neutron inelastic scatt. 8−2212
micellar solns., small angle neutron diffr., micellar struct. *(French)* 8−11564
Mo Co$_2$, single crystal, polarised neutron diffraction, various temp. and applied fields 8−2650
molecular liquids, quasielastic scatt. anal. of scatt. law 8−9938
NaCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
naphthalene, lattice parameters, elastic consts., press. depend., neutron diffr. obs. 8−26558
naphthalene crystal, external phonon modes, inelastic incoherent neutron scatt. spectra and computer calc. 8−34577
naphthalene-d$_8$, phonon dispersion meas. and calc. 8−2211
naphthalene-d$_8$, struct. facators, time of flight neutron diffr. 8−47212
neopentane, mol. motion in cryst., liq. and plastic phases, neutron scatt. obs. 8−6021
nitrates of monovalent metals, molten, NO$_3^-$ ion struct., pulsed neutron diffr. obs. 8−22631
t-nitrobutane, phase, II, quasielastic neutron scatt. 8−26458
norbornadienes, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
PAA with deuterated methyls, nematic phase, quasieleastic neutron scatt. study of fast reorientations 8−14280
paramagnet, neutron polarisation, crit. scatt. above Curie pt. 8−43565
Pd$_3$Fe, ferromag. spin wave meas., inelastic scattering of polarised neutrons 8−2665
perovskite, Re containing, new seignettomagnets and ferroelectrics 8−19425
phospholipid bilayers, selectively deuterated, neutron diffr. study of mol. struct. 8−24036
pivalic acid, orientationally disordered crystal., mol. orientation 8−34448
polyethylene, molecular clustering in mixtures with polyethylene-d$_n$, small-angle neutron scatt. 8−26451
polyethylene, solid, heterogeneity investigation by small angle neutron scattering 8−14298
polyethylene oxide, molecular dynamics in conc. soln., quasi-elastic neutron scatt. meas. 8−29870
polymer, amorphous, bulk, structure models and exptl. methods, review 8−22671
polymer chain, neutron scatt. obs., review 8−14245
polymer dilute soln., neutron quasielastic scattering from freely jointed chains 8−18534
polymer solutions, cross-over, pair correlation function, small-angle neutron scatt. meas. 8−22626
polystyrene, substituted, Raman, IR and neutron spectra of LF vibs. 8−2848
pyridinium pentasilver hexaiodide, solid, incoherent neutron scatt. 8−2291
α-quartz and quartz glass, neutron irradiated struct., neutron diffr. meas. 8−22769
rare earth cobaltide, RCo$_2$, 'as cast', fibre texture 8−3117
rare earth orthovanadites, indirect exchange 8−34977
rare earth-Al$_2$, cubic Laves phases, prep. and phys. props. *(German)* 8−23075
resonance scattering of neutrons and γ-quanta, high recoil energies *(Russian)* 8−35075
sodium hydrogen oxalate monohydrate, crystal struct. 8−10032
sodium p-octylbenzenesulphonate ionic micellar solns., neutron diffr. meas. *(French)* 8−44409
solid, rotational tunnelling, neutron scatt. theory 8−18561
squaric acid, neutron diffr. mol. and crystal struct. determ. 8−26557
squaric acid, two-dimens., phase transition, elastic neutron scatt. 8−6155
structure factors from integrated intensities of neutron diffr. maxima, accuracy testing 8−47212
succinonitrile, orientationally disordered crystal., mol. orientation 8−34448
succinonitrile, plastic phase, mol. reorientation and rotational isomerization, anal. of elastic incoherent struct. factor 8−22674
superionic conductor, scattering of light and neutrons in diffusion model 8−26719
surface layer structure, rel. to neutron refl. on boundary *(Russian)* 8−1976
TBBA, low temp. phase, inelastic coherent neutron scatt. exam. 8−26429
tetraiodoethylene, disorder, neutron powder diffr. data refinement 8−34501
TGS, cryst., vibr. bands, ferroelec. and paraelec. phase H bonds *(Russian)* 8−15172
TGS, deuterated, paraelec. phase, D atom positions 8−14334
TMMC, one dimens. antiferromag., neutron scatt. exam. of impurity effects 8−43598
transition metal alloys, domain struct. of diffuse ω-phase formed in quenching, 1D model 8−27523
translation and rot. dynamics, microscopic Hamiltonian anal., inelastic neutron scatt. elastic consts. 8−38632
n-triacosane, chain axis cryst., quasi-elastic neutron scatt., plastic phase transform 8−6023
TTF-TCNQ, deuterated, compressibility under hydrostatic press., neutron diffr. meas. 8−2197
TTF-TCNQ, elastic scatt. 3D modulated lattice 8−10033
TTF-TCNQ, inelastic neutron scatt., re-examination 8−30721
TTF-TCNQ, inelastic scattering, Peierls transition exam. 8−10134

neutron diffraction examination of materials continued
- TTF-TCNQ, low temp. phase transitions, elastic neutron scatt. obs. 8−14464
- TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
- TTF-TCNQ Kohn anomalies, phonon dispersion curves 8−10133
- ultracold neutron scattering in films 8−9915
- uniaxial rotator in N-fold cosine pot., correlation functions, neutron incoherent scatt. law 8−9970
- water, collective excitations in 10^8 cm^{-1} momentum range 8−43087
- water, diffusive motions near 1°C 8−43156
- zeolites, type 13X, acetylene adsorption, inelastic neutron scatt. 8−14584
- Ag-Ge, liq. eutectic, struct. by neutron diffr. 8−18537
- AgI, single cryst. neutron diffr. meas., Ag distrib. determ. 8−10025
- Al, neutron irradiated, void surface props. determ., anisotropic small-angle neutron scatt. 8−10095
- $AlCl_3$ aqueous soln., quasi-elastic neutron scatt. study 8−26425
- β-$Al_2O_3.(NH_4)_2O$, neutron scatt. study of NH_4^+ motion 8−30785
- $Al_{10}V$, well defined local modes, inelastic neutron scatt. study 8−26648
- $Al_{10}V$-Ga, dil., well defined local modes inelastic neutron scatt. study 8−26648
- Ar, liquid, neutron incoherent scatt. functions, non-Gaussian corrections 8−42874
- Ar monolayer film adsorbed on graphite 8−34705
- Ar-HCl, liq. density fluctuations, far IR absorpt., neutron scatt. mol. dynamics calc. 8−19461
- As, Debye-Waller factors and thermal expansion 8−43089
- Au_4Mn, atomic short range order and pair interaction, neutron diffr. exam. 8−22695
- $Ba_2Bi^VBi^{III}O_6$, struct. determ. by powder neutron diffr. 8−34468
- $BaCl_2$, molten, struct. determ. by neutron diffr. 8−42883
- $Ba_2Sb^VBi^{III}O_6$, struct. determ. by powder neutron diffr. 8−34468
- $BaTiO_3$, polarisation reversal and surface neutralisation 8−27169
- $Ba[Pt(CN)_4Br_2]4.5H_2O$, single crystal neutron diffr. struct. exam. 8−2082
- Be_4TeO_7, cryst. growth by solid-state reaction and struct. *(German)* 8−18603
- Bi, Debye-Waller factors and thermal expansion 8−43089
- Bi_2Te_3, lattice vibrs. coherent inelastic neutron scatt. meas. 8−34576
- CeAl, mag. props. and mag. struct. 8−6517
- $CeAl_2$, mag. ordering, neutron diffr. meas. 8−6518
- $CeD_{2.12}$, phonon dispersion relations 8−30716
- CeSb, mag. phase transitions, zero applied mag. field 8−31070
- CeSb, mag. transition, effect of applied mag. field 8−43590
- $Ce_{0.74}Th_{0.26}$, mixed valence alloy, spin dynamics 8−10708
- Co, small-angle crit. neutron scatt. 8−31087
- Co-Ga, binary alloy, small-angle neutron scatt. from superparamag. behaviour 8−19217
- $CoCl_3$, interlayer force constants 8−14406
- $CoCl_2.6D_2O$, neutron diffr. study, cryst. and mag. struct. *(French)* 8−42946
- β-CrOOH, neutron diffr. exam., cryst. and magnetic struct. *(French)* 8−2654
- CrTe, mag. ordering under high-press., ferromag. transition, ESR and neutron diffr. *(French)* 8−31053
- $Cr_{1-x}V_xN$, solid soln., mag. struct. *(French)* 8−6519
- $CsCoCl_3$, mag. struct., neutron diffr. meas. 8−43563
- $CsH_3(SeO_3)_2$, paraelec. phase, struct. determ. by neutron diffr. 8−34472
- $CsMnBr_3$, quasi-one-dimens. antiferromagnet, inelastic neutron scatt. 8−14929
- Cs_2MnNiF_6, cation distrib. and mag. struct. *(French)* 8−14935
- $Cs_9(XeO_3Cl_2)_4Cl$, neutron and X-ray diffr. struct. determ., Xe-Cl bonding 8−30591
- $Cs_2[Cu(H_2O)_6](SO_4)_2$, Tutton's salts, stereochem., neutron struct. determ. 8−18609
- Cu-Mn, spin glass alloy, magnetic excitations, neutron scatt., diffuse mag. scatt. 8−10695
- Cu-Mn spin glass neutron diffr. expts. *(French)* 8−43593
- Cu-Ni (20-80 at.%), clustering, diffuse neutron scatt. study, conc., temp. depend., miscibility gap location 8−47529
- Cu-Ni alloys, mag. diffuse scatt. 8−14931
- CuCl, inelastic scattering, phonon dispersion curve determination at 4.2K 8−6132
- $CuCl_2.CuCl_2.2D_2O$, neutron scatt. aspherical effects, mag. form factor 8−27017
- $CuCl_2.2D_2O$, staggered magnetisation, neutron diffr. obs. 8−39296
- $CuFe_2S_3$, cubanite, spontaneous magnetisation, polarised neutron obs. *(French)* 8−23245
- $CuMn_2O_4$, crystallographic props. 8−14329
- t-cyanobutane, solid, uniaxial molecular reorientation, quasielastic neutron scatt. 8−42927
- $ErFe_3$, mag. struct. 8−2651
- $ErFe_4Al_8$, neutron diffr. exam., mag. struct. 8−10656
- $ErRh_4B_4$, reentrant supercond., mag ordering, neutron diffr. obs. 8−14879
- EuO, mag. form factor of Eu^{2+}, solid state effects 8−2653
- Fe, mag. anisotropy in crit. region, neutron polarisation-vector analysis 8−31065
- Fe, neutron critical scatt., above T_c, polaris. asymmetry 8−34994
- Fe, neutron critical scattering, temp. shift 8−38589
- Fe-Co (30-70 at.%), order-disorder transition, comp. depend., neutron diffr. expts. 8−15393
- γ-Fe-Ni-Cr, magnetic phase diagram *(Russian)* 8−39292
- Fe-Pd alloy, mag. struct. determ., neutron scatt., Mossbauer and mag. meas. *(Russian)* 8−2648
- Fe-Si (3%), spikn related contrast effect, visibility of 180° ferromag. domain walls 8−43612
- Fe-Si (3.5 wt.%), static neutron depolarisation meas. of ferromag. domain struct. 8−14978
- Fe-Si (4 wt.%), neutron crit. scatt., experimental anisotropy 8−38590
- Fe-Tb dilute alloy, amorphous, small angle mag. scatt. 8−27021
- Fe-V, conc. depend. of mag. moment distrib., polarised neutron diffr. meas. 8−19218
- $Fe_{0.7}Al_{0.3}$, local environment effects and magnetic clustering 8−10658
- $FeCl_2$, interlayer force constants 8−14406
- FeMn, dil., diffuse scatt. cross sections, polarized neutrons 8−43567
- $(Fe_{65}Ni_{35})_{75}P_{16}B_6Al_3$, amorphous ferromag., high temp. spin dynamics 8−47965

neutron diffraction examination of materials continued
- $Fe_{1-x}O$, wustite, vacancy and interstitial ion order, equilib. conditions, neutron diffr. obs. *(French)* 8−14336
- Fe_2O_3-P_2O_5 system, vitreous, struct. obs. using neutron scatt. 8−22667
- ε-FeOOH, synthesis, mag. struct. 8−34961
- Fe_2P, mag. struct., neutron diffr. study 8−23246
- $Fe_{75}P_{15}C_{10}$, amorphous, mag. excitations, inelastic neutron scatt. 8−10674
- β-FeTiD, neutron diffr. exam. of struct. 8−47282
- α-GaOOD, powder neutron diffr. cryst. struct. exam. 8−2081
- GdMg, canted mag. struct. in S-ion compound, neutron diffr. obs. 8−34962
- Ge crystal, Laue scatt. intensity oscills., neutron scatt. using inclination method 8−42867
- GeO_2, vitreous, neutron diffr. obs. using Harwell linac 8−22666
- H_2, adsorbed on Ni, inelastic neutron scatt. 8−18898
- H_2, dense gas, self-diffusion, quasielastic incoherent neutron scatt. obs. 8−22451
- H_2, solid, inelastic neutron scatt., theoretical analysis 8−34569
- $H_3PW_{12}O_{40}.21H_2O$, cryst. struct. 8−42977
- H_xTaS_2, nonstoichiometric, incoherent neutron spectra, X-ray diffr. 8−42998
- He, FCC, lattice dynamics at high press. 8−10255
- ^3He, liq., pressure cell for neutron scatt. 8−14246
- ^4He, HCP, Debye-Waller factor by inelastic neutron diffraction 8−43206
- ^4He, nonsuperfluid liq., neutron scatt. dynamic struct. factor, saturated vap. press. 8−42878
- ^4He, superfluid, neutron scatt. and thermodynamic quantities, need for more precise data 8−22916
- ^4He superfluid film, neutron scatt., surface effects 8−10251
- Hg, solid, phonon dispersion curves, neutron inelastic scatt. 8−14410
- $Hg_{3-\delta}AsF_6$, one-dimens. phonons and phase-ordering phase transition, neutron scatt. expts. 8−26644
- Ho, low field susceptibility and helical-ferromag. field induced phase transition 8−47975
- HoAlGa, mag. props. and struct. 8−39302
- $HoAlO_3$, 0.04K, antiferromag. ordering *(French)* 8−10653
- Ho_xTe, mag. ordering, neutron diffr. meas. 8−2649
- KBr, liquid inelastic neutron scatt. obs. from short wavelength charge fluctuations 8−47487
- KCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
- KCN, phase transition at 168K, neutron inelastic scatt. line shapes for phonons obs. 8−38840
- KCN, phonon freq. distrib., cubic and monoclinic phases 8−22800
- $KCl:CN^-$, phonon-internal mode hybridisation, neutron scatt. 8−2217
- $K_{10}(Fe_3O(SO_4)_6(H_2O)_3)_2.12H_2O$, mag. exchange interaction of trinucl. Fe^{3+} complex *(German)* 8−14947
- KH_2PO_4, tricrit. point, γ-ray and neutron diffr. 8−39516
- KH_2PO_4-type ferroelectrics, inelastic neutron scatt. theory 8−48122
- $K_2Mn_{1-x}Fe_xF_4$, tetracrit. line in x-H-T phase diagram, neutron scatt. exam. 8−47977
- $K_2Mn_{1-x}Fe_xF_4$, vs. transition temperature, phase diagram, critical lines crossing tetracritical point, discussion 8−39326
- $KNa[Pt(CN)_4].3H_2O$, neutron diffr. cryst. struct. exam., refinement by least squares 8−2079
- K_2O-TiO_2-SiO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667
- $K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, Kohn anomalies, phonon dispersion curve 8−10133
- $K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, lattice dynamics, neutron scatt. expts. 8−14412
- $K_2Pt(CN)_4Br_{0.3}.xH_2O$, dynamical props. near Peierls instability, neutron scatt. 8−14436
- $K_2Pt(CN)_4Cl_{0.3}(Br_{0.3}).3H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
- $K_{1.75}Pt(CN)_4.1.5H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
- $K_{0.33}WO_3$, hexagonal, phonon dispersion curves, neutron scatt. obs. 8−14411
- $K_2[M(H_2O)_6](YO_4)_2$, Tutton's salts, M=Cu, Ni, Zn, Y=S, Se stereochem., neutron struct. determ. 8−18609
- $K_2[Pt(CN)_4]X_{0.3}.3H_2O$, X=Br, Cl, X-ray and neutron diffr., 31K-room temp. 8−42964
- $La_2Mg_3(NO_3)_{12}.24H_2O$, neutron diffr. obs. 8−18598
- $LaMnO_3$, ferromag.-paramag. phase transition, neutron diffr., calorimetric investigs. 8−31072
- $LaMnO_3$, monoclinic and cubic perovskite struct., mag. props., neutron diffr. meas. 8−27022
- $LaNi_5H_x$ hydrogen storage system, $(0 \leqslant x \leqslant 6)$, neutron scatt. obs. of static and dynamic props. 8−14323
- $La_{1-y}Pr_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- $La_{1-y}Tb_yAg$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- $La_{1-y}Tb_yAl_2$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- $La_{1-y}Tb_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- Li-Na, liq., short-range order, neutron diffr. obs., near crit. composition 8−22639
- $LiFePO_4$, cryst. struct. by neutron diffr. 8−43003
- M-$LiTa_3O_8$, neutron diffr. obs. 8−18599
- Lu-rare earth, dil. alloy cryst. field determ. 8−10651
- Lu-rare field, dil. alloy, cryst. field parameter determ. 8−10650
- Ma-Cu (10 at.%), antiferromag. defect scatt., neutron polarisation anal. 8−2652
- Mg-Bi (30 at.%), molten, short range order and partial struct. factor, neutron and X-ray diffr. 8−9941
- Mg-Cd melts, atomic struct., short range order and melting *(German)* 8−14273
- $MgAl_2O_4$ spinel, low energy phonon obs. by inelastic neutron scatt. 8−43084
- γ-Mn-Cu, changes in cell dimensions at martensitic transform. 8−19750
- Mn-Cu, mag. and cryst. struct., neutron and X-ray diffr. meas. *(Russian)* 8−22694
- Mn-Cu alloys, stressed, diffuse neutron scatt. exam. 8−47950
- Mn-Pd (10 at.%), antiferromag. defect scatt., neutron polarisation anal. 8−2652

neutron diffraction examination of materials continued
$Mn_{1.11}Al_{0.89}$, crit. behaviour, neutron diffr. meas. 8−34982
$Mn_3Al_2Ge_3O_{12}$, garnet, mag. ordering, neutron diffr. patterns 8−19220
$Mn(Nb_{0.5}Ta_{0.5})_2O_6$, nonuniaxial spin-flop magnet, bicrit. lines, crossover 8−14973
MnSi, weak itinerant ferromag., mag. excitations, neutron scatt. obs. 8−34969
$Mn_5(Si_xGe_{1-x})_3$ solid solution, mag. ordering, magnetisation and neutron scatt. meas. 8−27023
$Mn_cZn_{1-c}F_2$, crit. neutron scatt. near percolation threshold 8−2693
Mo powder, struct. facators, time of flight neutron diffr. 8−47212
NH_4Cl, NH_4^+ dynamics in disordered states, neutron scatt. exam. 8−26459
$(NH_4)_2SnCl_6$, NH_4^+ ion rot. states, inelastic neutron scatt. obs. 8−30552
$(Na,K)NbO_3$ solid solns., struct. transitions, neutron powder diffr. 8−38649
Na, liq., inelastic thermal neutron scatt., interatomic pots. calc. 8−42891
$NaH_3(SeO_3)_2$, proton behaviour in H-bonding, neutron spectroscopy obs. *(German)* 8−22816
Na_2S, phonon dispersion curves, inelastic neutron scatt. obs. *(German)* 8−14414
Na_xVSe_2, synthesis and struct. determ. 8−26537
Nb, electron-phonon contrib. to phonon linewidth determ. 8−10146
$NbD_{0.04}$, neutron scatt. exam., press. depend. of superstruct. reflection 8−22696
NbO_2, structural phase transform., neutron scatt. obs. 8−14458
$Nb_{1-x}Sn_x$, sp. ht., supercond. T_c and martensitic transform. *(French)* 8−43508
Nd, magnetic structure and crit. behaviour 8−47951
$NdAl_2$, mag. excitation spectrum, neutron inelastic scatt. 8−10673
$Nd_{0.25}La_{0.75}Mg$, cryst. field, neutron diffr. meas. 8−34810
$Nd_{0.2}La_{0.8}Zn$, cryst. field, neutron diffr. meas. 8−34810
Nd_3S_4 chem. and mag. structures, neutron diffr. obs., ferromag. long-range order *(German)* 8−10654
Ni electrodeposit, mag. domain struct., neutron depolarisation 8−2716
Ni, liquid, neutron scatt. and atomic dynamics 8−22637
Ni, neutron depolarisation near Curie point *(German)* 8−14934
Ni, plastically deformed, dislocation struct., mag. small angle scatt. of neutrons *(German)* 8−22730
Ni_3Al, unpaired spin density distrib., polarised neutron diffr. 8−10659
$NiFe_{2-t}Al_tO_4$, cryst. and mag. props. 8−14940
$Ni(NH_3)_6X_2$, X=Cl,Br,I, rotational tunnelling by inelastic neutron scatt. 8−30553
$Ni_{1-x}Pt_x$, disordered phonon dispersion relations, neutron inelastic scatt. 8−43085
NiS_2, spin struct. and mag. props. 8−39300
Pb, liq., struct. factors 8−18538
PbF_2, inelastic neutron scatt. study of phonon dispersion relation 8−30712
α-$Pb(N_3)_2$, cryst. struct. determ. 8−10006
Pb_3O_4, cryst. struct., 5-240K, symm. change at 170K *(French)* 8−34618
$Pb_{1-x}Sn_xSe$, gapless state and phonon spectrum *(Russian)* 8−30715
$PdD_{0.63}$, inelastic neutron scatt. line shapes, Pd-D, D-D force consts. 8−47481
Pd_3Fe, spin wave dispersion, neutron inelastic scatt. meas. 8−14943
PrAl, annealed, mag. props. and mag. struct. 8−6517
$Pr_{0.25}La_{0.75}Mg$, cryst. field, neutron diffr. meas. 8−34810
$Pr_{0.25}La_{0.75}Zn$, cryst. field, neutron diffr. meas. 8−34810
PrSb, mag. excitations, press. depend., inelastic neutron scatt. meas. 8−10699
$PrSn_3$, inelastic neutron scatt. spectra, cryst. elec. field effects 8−43336
$PrVO_3$, neutron diffr. exam. of first order mag. transition 8−2685
Pt, mag. field induced conduction electron , polarisation, magnetisation density, and neut neutron mag. form factor 8−18945
$RbCaF_3$, 193K phase transition, crit. neutron scatt. obs. 8−10161
$RbD_3(SeO_3)_2$, phase transform., inelastic neutron scatt. study 8−39514
RbH_2PO_4, tetragonal phase disordered struct. 8−42980
$RbH_3(SeO_3)_2$, ferroelec., location of H atoms in cryst. struct., neutron diffr. meas. 8−2093
$RbH_3(SeO_3)_2$, low temp. struct., neutron diffr. 8−38669
$RbMnF_3$, Heisenberg antiferromagnet, spin diffusion below T_n 8−34968
$Rb_9(XeO_3Cl_2)_4Cl$, neutron and X-ray diffr. struct. determ., Xe-Cl bonding 8−30591
$Rb_2[Cu(H_2O)_6](SO_4)_2$, Tutton's salts, stereochem., neutron struct. determ. 8−18609
$(SN)_x$, acoustic phonons, inelastic neutron scatt. obs. 8−6136
$(SN)_x$, cryst. struct. by neutron diffr. 8−34488
Sb, Debye-Waller factors and thermal expansion 8−43089
Sc-rare earth, dil. alloy, cryst. field parameter determ. 8−10650
Sc-rare earth, dil. alloy, cryst. field determ. 8−10651
Si, curved crystals, comparison with theory, for Laue geometry 8−14248
Si, twinned, neutron diffr. topographic obs. 8−38727
SiO_2, amorphous, phonons, neutron, IR and Raman spectra calcs. 8−10150
$SnNbS_2$, intercalate, cryst. struct. determ. 8−26534
$SnTaS_2$ intercalate, cryst. struct. determ. 8−26534
$SrCl_2$, high temp. powder neutron diffr., transition to highly conducting phase 8−47586
$SrGa_2$, layered, dispersion of acoustic phonons, inelastic neutron scatt. 8−47484
$SrTiO_3$, central peak in spectrum of ferroelec. mode fluctuations and dielec. losses, 4.2K 8−19432
$SrTiO_3$, H_2 reduced, neutron scatt. study of structural phase transition, central-peak enhancement 8−30755
$SrZrO_3$, high temp. phases, struct. determ., soft mode transitions 8−42942
ε-TaN, cryst. struct. determ. by neutron diffr. exam. 8−26522
TbAlGa, mag. props. and struct. 8−39302
TbB_4, ferromag. ordering, neutron scatt. meas. 8−10655
$TbBe_{13}$, mag. struct., neutron diffr. meas., 4.2K 8−47953
TbD_2, sublattice magnetisation, cryst. elec. field effects 8−39295
$TbFe_4Al_8$, neutron diffr. exam., mag. struct. 8−10656
Tb_5Ge_4, mag. struct. and mag. transitions, neutron diffr. expts. 8−43564
$TbMg_3$, antiferromagnetic struct. 8−14930
$Tb(OH)_3$, neutron diffr. struct. exam. 8−2077

neutron diffraction examination of materials continued
Tb_xS, mag. ordering, neutron diffr. meas. 8−2649
Tb_xTe, mag. ordering, neutron diffr. meas. 8−2649
$Tb_xY_{3-x}Fe_5O_{12}$, spin-reorientation phase transitions, neutron depolarisation factor 8−27037
Ti alloys, domain struct. of diffuse ω-phase formed in quenching, 1D model 8−27523
TiN, phonon dispersion curves, soft-mode behaviour, inelastic neutron diffr. 8−43083
Ti_2Ni, determ. of H diffusion coeff., quasielastic neutron scatt. 8−30781
$TlMnCl_3$, weak ferromag. and mag. struct., temp. depend. 8−19219
TmSe, mixed-valent, field-depend. mag. phase transitions 8−10657
α-U, induced magnetisation density 8−47952
UAs and UPd_4, localised cryst. field states, neutron inelastic scatt. obs. 8−14697
$UO_{2\text{ and }2.11}$, temperature factor determ. by powder elastic neutron diffraction 8−10152
UO_2, extinction, wavelength depend. 8−38588
α-UOF_4, neutron diffraction study 8−14327
$UO_2(NH_2O)_2.3H_2O$, low temp. neutron anal X-ray diffr. exam. 8−2068
α-$UO_2(NH_2O)_2.4H_2O$, low temp. neutron diffr. exam. 8−26518
USb, short-range spin correlations, neutron study 8−39293
V, neutron multiple scatt. calcs., expt. verification using polarisation anal. technique 8−42865
V polycrystalline plate, struct. facators, time of flight neutron diffr. 8−47212
V, search for antiferromagnetism, neutron diffr. meas. *(Russian)* 8−6516
V-N system, phase formation *(Russian)* 8−39739
V_2O_3, lattice parameter anomalies at high temp. 8−47522
V_2O_5-TeO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667
V_3Si, lattice dynamics, inelastic coherent neutron scatt. 8−26645
Y-rare earth, dil. alloy, cryst. field parameter determ. 8−10650
Y-rare earth, dil. alloy, cryst. field determ. 8−10651
$Y(Fe_xAl_{1-x})_2$, mag. order in pseudobinary systems down to millikelvin temps. 8−19251
$Y_6(Fe_xMn_{1-x})_{23}$, mag. order in pseudobinary systems down to millikelvin temps. 8−19251
YIG, spinwave dispersion curves 8−19230
YS, soft-mode behaviour in phonon dispersion, inelastic neutron scatt. meas. 8−38807
$ZnCr_2Se_4$, screw spin struct., neutron diffr. exam. 8−27019
Zr alloys, domain struct. of diffuse ω-phase formed in quenching, 1D model 8−27523
$Zr(Fe_xCo_{1-x})_2$, mag. order in pseudobinary systems down to millikelvin temps. 8−19251
ZrNb, ω-phase, diffuse neutron scatt. meas. 8−14311

neutron diffusion
see also neutron flux; neutron transport theory
albedo on vacuum-liq. H_2 boundary for exponentially damped neutron flux, exptl. determ. 8−4977
benzene vapour, slow neutron scatt., effect of pressure total interaction cross section 8−17273
discontinuous variational approx., neutron diffusion and transport theory 8−46129
fast reactor, physical studies of large heterogeneous core concept 8−17307
fission reactor, one-group model, convergence acceleration in perturbation theory problems 8−37406
heterogeneous media, neutron drift 8−29528
HWR, multidimens. space time kinetics studies 8−29547
effective neutron isolation thickness values from reflector savings data 8−669
iterative soln. of transport eqn. 8−29534
monopole and dipole response coefficient theory comparison with expt. 8−13188
multigroup cross section calculation, self-shielding, subgroup method *(Rumanian)* 8−46140
multigroup diffusion theory, optimum boundary condition 8−41801
neutronics code, CONIFERS for reactors with channels 8−25281
non-multiplying homogeneous slab assembly, time depend. multigroup P1 eqn. soln. 8−17267
Pickering reactor, simulation of wire activation expts. with SORGHUM code 8−25310
plate lattice, diffusion coeff. anisotropy meas. 8−17268
plate lattice fast assembly, anisotropic diffusion, criticality correction estimation method 8−29523
PWR core, large, appl. of coarse-mesh finite difference eqns. for k_e and peak power factors 8−17305
simulated meltdown experiment, modified diffusion coeffs. for neutron streaming 8−33278
source importance factor in reactor kinetics, adiabatic approx. 8−46137
spatially depend. spectrum, expansion about local Maxwellian 8−29537
two-group diffusion calc. by spatial synthesis algorithm 8−13200
ultracold neutron diffusion along guide tube 8−33237
water assemblies, Cd, Sm, Gd, poisoned, absorption discontinuity effect 8−13191
water assemblies, neutron diffusion across absorpt. discontinuity 8−21620
water slabs, fast neutron penetration spectra 8−29535
water vapour, slow neutron scatt., effect of pressure total interaction cross section 8−17273

neutron economy *see neutron flux*

neutron effects
see also irradiation induced creep
amoeba, combined effects of thermal neutrons and agents which interact with DNA 8−20219
component reliability tests in thermal neutron environment 8−21787
creep testing ampoule for materials subject to reactor irradiation and dissociating coolant 8−3301
creep testing machine using torsion, in radiation zone of nuclear reactor 8−11480
CTR first wall spectrum effects on atom displacement and He prod. 8−46168
displacement spike annealing, Mont Carlo method computer expteriments 8−30672

neutron effects continued
fast neutron fluence meas. technique, uses neutron irrad. effect on light absorption of cellulose acetate 8−13345
fast reactor materials, fast neutron damage 8−10093
FCC metals, high dose neutron irrad. effects, 4.6K 8−34548
fusion neutron induced nuclear recoil emission probabilities 8−15256
fusion reactor alloy damage effects, simulation of likely neutron environment 8−8972
fusion reactor first-wall program, appl. ORR fission reactor for simulation of neutron environment 8−8973
graphite, fast neutron flux effect on irradiation damage 8−22768
graphite, irradiated ultimate tensile bending and compressive strength charact. 8−15479
graphite, isotropic nuclear, neutron irrad. behaviour 8−18683
graphite, neutron irrad., microporosity, elec. resist., length, struct. changes 8−43051
graphite, neutron irrad., porosity changes, neutron small angle scatt. investig. 8−34544
graphite, neutron-irradiated, EPR, rel. to electronic struct. *(Japanese)* 8−19326
graphite radiation damage dosemeter, GAMIN, correlation data 8−29657
Inconel 600, Neutron irradiation using HFIR for evaluation as fusion reactor material 8−13324
Inconel X750 springs, in-reactor stress relaxation 8−11256
inert gas release from irradiated solids 8−22767
insulators, neutron activated β-emitters, hyperfine interactions 8−39070
LMFBR core materials, effect of swelling and creep on performance 8−13261
LMFBR permanent reactor structures, design, irradiation effects 8−21623
metal, anelastic study of intrinsic point defects, irradiation effects 8−47323
metal, creep, point defects 8−48462
metal, FCC, investigation of stage-I_e interstitial nature by TEM 8−47329
metal, vacancy defect mobilities and binding energies obtained from annealing studies 8−47325
metal surface, 14.8 MeV neutrons, radionuclide product ejection range 8−15257
metals, swelling during pulsed irrad., model, void growth exam. 8−47436
momentum transfer and damage energy gradient effects on He permeability 8−10102
p^+-n diode under forward bias, effects of radiation-induced deep levels on admittance 8−23157
phase stability of sigma phase, irrad. effect 8−11200
point defect precipitation near grown-in dislocations during neutron irradiation 8−26600
quartz, comparison of different radiation effects 8−26596
α-quartz, Gruneisen constants for optical modes, neutron irrad. and press. effects *(Russian)* 8−22815
quartz, neutron irradiated, thermal spikes 8−38757
α-quartz, Raman spectral lines, radiation and temp.-induced changes in width and intensity 8−2859
α-quartz and quartz glass, neutron irradiated struct., neutron diffr. meas. 8−22769
radiation damage computer simulation system, WINERY 8−30675
radiation induced solute segregation, kinetic model, GEAR package of subroutines 8−30673
reactor materials, radiation-induced embrittlement and swelling due to void form, ASTM research 8−13231
silicone-clad silica low-loss fibre radiation response obs. 8−1397
solute segregation, under irradiation 8−48407
spermatogonial stem cell survival in mouse, split dose neutron and X-irrad. 8−28012
steel, austenite, γ and neutron irradiation, Mossbauer spectra anal. 8−692
steel, austenitic stainless, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
steel, austenitic stainless, type 316, D-T fusion neutron and Ni^{2+} ion damage 8−14388
steel, damage function for mech. props. 8−13228
steel, low alloy, radiation embrittlement, heat treatment effects 8−19893
steel, neutron irradiated 15KhMFA, H_2 induced delayed fracture *(Russian)* 8−35476
steel, stainless, Kh18N10T, long-term strength under in-pile irrad. conditions 8−6940
steel, stainless, neutron irrad., point defect cond. and void radius change, appl. of model for void growth 8−47436
steel, stainless, neutron irrad., solution-annealed and cold-worked, swelling 8−13229
steel, stainless, type 316, neutron irrad. damage simulation using HVEM, surface effect on void swelling 8−29572
steel, stainless, type 316, stress-free swelling at high neutron fluence, rel. to LMFBR core environment 8−13239
steel, stainless, type 316, struct. life anal. for fusion reactor first-wall appl. 8−13326
steel, stainless 304 and 308 and weld material, fatigue crack propag. in neutron irradiation 8−23815
steel, stainless 316, 20% cold worked, swelling increase due to inreactor temp. reduction 8−34547
steel, stainless 316, dislocation substruct. prod. by elev. temp. fatigue crack propag., TEM obs. 8−19863
steel, stainless 316, irradiated void swelling incubation period, stress effects 8−6105
steel, stainless 316, irradiation induced swelling, stress effects 8−34545
steel, type 316 stainless, Neutron irradiation using HFIR for evaluation as fusion reactor material 8−13324
superconductor, A-15, irrad. effects on supercond. transition temp. 8−6472
thermoluminescent dosimeter, neutron damage, displacement and ionis. fractions of fast neutron kerma 8−30669
Vicia faba bean root growth, effects of π^- and neutrons 8−28003
void growth, rel. to intrinsic point defect properties 8−47315
void size distribution during irradiation and annealing, time depend. computation 8−30674
void swelling, transition from gas bubbles 8−14383
void swelling simulation, effect of self ion injection 8−22772

neutron effects continued
Ag, cascade energy density effect on isochronal recovery 8−47431
AgCl, colloid bands induced by reactor irradiation at low temps. 8−26567
Al alloy, dil. 8−22766
Al, annealed and neutron irrad., exam. of positron lifetimes in voids and other defects 8−47426
Al, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
Al film, neutron irradiated, increase of elec. resist. 8−26973
Al, neutron irradiated, void surface props. determ., anisotropic small-angle neutron scatt. 8−10095
Al, rigidity modulus, neutron irrad. and quenched, point defects 8−27546
Al-Co, dil., electron and neutron irradiation, interstitital atom clustering at ^{57}Co impurity, Mossbauer meas. 8−30607
Al-Se-Ag switching element, neutron irradiated, role of Ag in switching effect and diffusion of Ag 8−19163
Al_2O_3, electron slowing-down flux spectrum, due to β-decay of neutron-activated ^{164}Dy 8−10108
B_4C, effect of fast neutron irradiation on struct. 8−26597
Be, neutron irradiated, annealed, tensile props. and swelling, effect of He bubbles 8−22765
Bi and Bi:Te, neutron radiation defects 8−47430
C, pyrolytic, fast neutron flux effect on irradiation damage 8−22768
C-C composite material, syntactic-foam type properties 8−44169
Cr, neutron irradiated at 24.5K, elec. resist. exam. of radiation damage *(French)* 8−30671
Cu, cascade energy density effect on isochronal recovery 8−47431
Cu, neutron irradiated, effect on internal friction 8−15445
Eu_2O_3, for controlling fast reactor, irrad. behaviour 8−37409
α-Fe, internal friction peaks from dislocation relax. in plastically deformed and/or neutron irrad. sample 8−48438
α-Fe, mag. aftereffect after neutron irrad. at 77K 8−2705
α-Fe, magnetic aftereffect correlations with internal friction after low temp. neutron irradiation 8−10733
α-Fe, magnetic aftereffect spectrum after low temp. neutron irradiation 8−10732
Fe, pure, neutron irrad. and H_2 absorption effects on mech. props. 8−34546
α-Fe, vacancy migration, annealing expt. study, irradiation induced defects 8−6956
Fe-C-Cu (0.21, 0.2 wt.%), neutron-irradiated, resolution of C atoms, internal friction meas. 8−31442
Fe-Co(Al), B_2 superlattices, point defect investigations 8−47357
Fe-Ni alloy, disordered, short-range order study by time-depend. PAC method 8−6618
Ge, doped, electron or neutron irradiated, vibrational absorption 8−6718
Ge, irradiation at about 6K, low temp. annealing of defect 8−2162
Ge, neutron irradiated, capture of positrons by radiation defects 8−38756
GeS_x, neutron irrad., thermal and elec. conductivity and heat capacity 8−2165
InAs, defect formation processes, effect on physical props. 8−2163
InAs, neutron bombarded, optical absorption, struct. defect form. and nuclear alloying *(Russian)* 8−31206
InP, defect formation processes, effect on physical props. 8−2163
InP_xAs_{1-x}, defect formation processes, effect on physical props. 8−2163
InSb, neutron bombarded, optical absorption, struct. defect form. and nuclear alloying *(Russian)* 8−31206
KCl, phonon scattering on small radius colloids 8−38798
LiF crystals, in pile irradiation, nucl. reactions 8−29463
LiO_2 sintered pellets, neutron irradiated, T release 8−5014
Li_2O, neutron irradiated, ESR of F^+, O^-, H^0 and colloidal Li centres 8−2737
MgO, defect centres, thermolum. examination 8−15235
Mo, neutron irradiated, influence on X-ray diffr. patterns *(Russian)* 8−22764
Mo, neutron irradiation induced length change, 40 to 450 degrees C 8−47433
Nb, fast neutron sputtering 8−15255
Nb, radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
NbC_x, reactor irrad. effects on elec. resist. and supercond. props. *(Russian)* 8−47895
Nb_3Sn, crit. current density, low dose fast neutron irrad. effect 8−14910
Nb_3Sn, fast neutron irradiation, effect on critical current density 8−19197
Ni, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
Ni, radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
Ni, void swelling caused by neutron and self-ion bombardment, 573 to 873K 8−14387
Ni:^{235}U (0.1 at.%), exam. of saturation defect conc. and elec. resistivity meas., for neutron irrad. at 7K 8−47435
Ni-Cr-Fe-Ti alloy KhN77TYuR, long-term strength under in-pile irrad. conditions 8−6940
Ni_3Mn, fission neutron disordering at 5K, exam. 8−47434
Pb superconducting junction, neutron irradiated, tunnel spectroscopy 8−10618
$Pb(Zr_{1-x}Ti_x)O_3$, electrical conductivity and I-V charact., neutron effects 8−47781
Pd, localised vacancies produced by thermal neutron capture recoil 8−26598
$Pd_{80}Si_{20}$, amorphous, structural changes by neutron irradiation, X-ray scatt. meas. 8−6104
Pt, point defect properties, damage curve anal. 8−47359
Pt, thermal and fission neutron produced defect configurations 8−47432
Pt_3Fe, collision cascades, neutron induced superparamagnetism *(Russian)* 8−2166
Si, floatzone, P doping by thermal-neutron irradiation 8−22750
Si, heavily disordered, fast neutron irrad., IR absorption following heat treatment 8−2448
Si, homogeneous epitaxial layers, production, appl. of neutron transmutation doping 8−38737
Si, irrad., displacement damage for monoenergetic neutrons 8−30670

neutron effects continued
Si, junction FET, annealing of neutron induced defects, transductance meas. 8−43052
Si, neutron damage, displacement and ionis. fractions of fast neutron kerma 8−30669
Si, neutron irradiated, characts. of defect form. 8−14382
n-Si, neutron irradiated, characts. of changes in mobility 8−39135
Si, neutron irradiated, resistivity and minority carrier lifetime, radial inhomogeneity *(Russian)* 8−26881
Si:As, neutron damage mechs. in IR detectors 8−30668
Si:In extrinsic detectors, compensation of residual B by neutron transmutation 8−281
Si:P, neutron irradiated, influence of growth defects on change in cond. 8−39117
Si:P, neutron transmutation doped, electron trap annealing, deep level transient spectra 8−14368
Si:P Czochralski crystal donor homogenisation by thermal neutron irradiation 8−6108
SiO_2, vitreous, fast neutron irrad. effect on struct., interstitials role 8−26599
SiO_2, vitreous, fast neutron irrad., low temp. US meas., two-level systems role 8−30703
SiO_2, vitreous, radiation behaviour of optical props. 8−21655
ThO_2 sintered pellets, ^{131}I release at low temps. 8−21650
U-Al (0.78 at.%), behaviour of metastable phases under neutron irrad., application of model 8−48408
UC, effect of porosity on fission-gas-induced swelling 8−8959
$UC+UC_2$, neutron irradiation, U_2C_3 deposition 8−33253
UO_2, high temp. irradiation, effect on microstruct. and unstable fission products 8−33250
UO_2, irradiation induced lattice defects 8−33251
UO_2, monocrystalline, fission gas release charact. during irradiation 8−4985
UO_2(Li) pellets, T release on heating after neutron irradiation 8−40071
V, neutron irradiated, void swelling, O_2 effect 8−6106
V, radiation hardening and plastic instability *(Russian)* 8−39842
V-Zr-C, radiation hardening and plastic instability *(Russian)* 8−39842
V_3Si, low fluence neutron irradiation, behaviour of supercond. transition temp. 8−43509
W, neutron irrad., at thermal energies, annealing exam. of recovery 8−47355
W, structural defect recovery after irradiation and cold work 8−47429
ZnS-O, single cryst., fast neutron irrad., optical props. 8−27331
Zr neutron irradiated, faulted loops 8−10094
α-Zr, point defect props., effect on irradiation behaviour of Zr alloys 8−30609
Zr-base alloy as reactor core material, microstruct., deform. and fracture 8−4988
Zr-Nb (2.5 wt.%), fuel cladding, anisotropy after creep and irradiaton 8−7001
Zr-Nb (2.5 wt.%) neutron effects on oxidation kinetics 8−690
Zr_3Al, ordered, notch sensitivity, neutron suppression 8−23779
ZrH_x, two-phase (δ+ε), homogenisation during neutron bombard. *(Russian)* 8−18684

neutron flux
activation analysis, in vivo, total body, neutron uniformity 8−40315
Bonner sphere spectrometer, least-squares technique for extracting neutron spectra 8−33366
BRUCE A Unit 1 reactor, flex distrib. meas. for various reactivity control configurations 8−25317
BWR, fast moderator feedback effects during severe press. transients 8−4990
BWR, void fraction profile determ. by neutron noise anal. 8−46150
chopper for neutron pulse propagation experiments 8−13362
deep-penetration transport calculations and neutron transport eqn. forms 8−8868
density measurements for reactor control *(German, English)* 8−17335
dosimetry, comparison of single and multidetector systems *(Russian)* 8−33294
explicit iterative technique for FX2 reactor analysis computer code 8−17302
fast neutron fluence meas. technique, uses neutron irrad. effect on light absorption of cellulose acetate 8−13345
fission foils of ^{235}U, ^{238}U, ^{237}Np used for neutron fluence meas. 8−13177
fission fragment track and activation detectors, neutron fluence and reactor core centre flux mapping 8−13346
fission reactor, automatic diagnosis of abnormal phenomena 8−17330
fission reactor, one-group model, convergence acceleration in perturbation theory problems 8−37406
fission reactor, reactivity determination, pulsed neutron source technique, ZR-4 reactor appl. *(Hungarian)* 8−21673
flux depression factors for scatt. and absorbing media 8−4976
flux interpolation for elastic down scatt. 8−29560
FPR neutron spectrum in presence of experimenter's tahle 8−21676
gravitational interaction *(Russian)* 8−36901
high-power reactor, conditions for nonuniform field production 8−37405
homogenized-cell diffusion parameters from transport codes 8−17300
HWR, multidimens. space time kinetics studies 8−29547
in-core movable neutron flux mapping computerised console development 8−13308
LMFBR, distrib. on core support grid plate 8−21675
LMFBR fuel pin bundle, wire-spaced, three-dimens. deflection modes 8−13301
local flux density of fast monochromatic neutrons, absolute determ. method 8−5106
LWR parameter sensitivity to uncertainties in thermal neutron data 8−29561
monoenergetic fast neutrons, international intercomparisons *(Japanese)* 8−29521
monopole and dipole response coefficient theory comparison with expt. 8−13188
Monte Carlo shielding calcs., biased selection of particle flight directions as variance resolution technique 8−29653
multi-group transport eqn., time-independ., soln. using spherical harmonics 8−37386
multidimensional neutron transport equation, spherical harmonics soln. by finite Fourier transform. 8−17269

neutron flux continued
multigroup neutron flux calcs. with MURLAB program 8−29541
nuclear reactor, thermal neutron flux meas. method *(Rumanian)* 8−21670
p-cell homogenization, transient flux effects, incorporation into 2-D iteration scheme 8−17301
plane geometry neutron transport theory, general anisotropic energy depend. scatt., phys. interpretation 8−4973
Princeton large Tokamak, obs. of electrodisintegration neutron prod. 8−5029
proton recoil proportional counters, fast monoenergetic neutron fluxes meas. procedure anal. 8−17478
PWR, Westinghouse, neutron flux mapping at low power 8−21703
radiotherapy betatron, 25 MeV, fast neutron component and patient dose 8−3592
reactor, core power and flux distribs., BITNOD large-mesh code appl. 8−17304
reactor, dice games to illustrate probability, teaching 8−12515
reactor core, effect of ENDF/B-IV cross sections on design parameters 8−13219
reactor lattice epithermal neutron spectra, spherical harmonics anal. 8−21619
shielding, in 3-D direct-coupled-ray method 8−21785
Skylab, spacecraft-produced neutron fluxes meas. 8−28486
spatially depend. spectrum, expansion about local Maxwellian 8−29537
stationary monoenergetic neutron transport equation for slabs, power series solns. comparison 8−13190
thermal neutron acceleration in medium with reson. excitation by EM wave *(Russian)* 8−37394
thermal neutron distrib. in bone in paraffin phantom, irrad. with 14 MeV neutrons 8−3616
threshold foil meas. of reactor neutron spectra, radiation damage appl. 8−29691
tilted neutron flux distrib., effect of cylindrical absorbing channels 8−13189
toroidal geometry effects in neutron transport eqn., discrete ordinate S_n method 8−13327
ultracold neutron gas obtained on pulsed reactor of IIN type 8−13194
ultracold neutrons, heating and anomalous confinement times *(Russian)* 8−33358
ultracold neutrons, transmission through moving pot. barrier 8−8867
water moderated reactor, local and global effects of gas bubbles 8−17328
ZPPR critical expts. for radial parfait heterogeneous reactor concept 8−13224
Mn bath, for intermediate neutron meas., leakage determ. 8−37525
^{24}Na(γ,n), 42 MeV, photoneutron flux determ. from induced activity meas. in water 8−20112
^{64}Zn(n,p)^{64}Cu, evaluated cross section, neutron flux determ. by foil activation 8−25273

neutron flux density *see neutron flux*

neutron interactions *see kaon-nucleon interactions; lepton-nucleon interactions; neutron-nucleus reactions; nucleon-nucleon interactions; photon-nucleon interactions; pion-nucleon interactions*

neutron moderation
see also neutron transport theory
absorption resonance controlled reactor *(Spanish)* 8−8872
energy deposition calc., role of adjoint Boltzmann eqn. 8−4974
Fourier-transformed neutron slowing-down kernel moments, MAGGIE code 8−29540
heterogeneous system with large spherical cavity, average velocities of neutron distrib. 8−29539
monopole and dipole response coefficient theory comparison with expt. 8−13188
neutron moderation, linear Boltzmann operator, in various geometries, contributions to spectral theory *(Rumanian)* 8−46128
spatially depend. spectrum, expansion about local Maxwellian 8−29537
thermal-neutron transfer from pulse source in moderator with large cylindrical cavity 8−37392

neutron-nucleus reactions
for inelastic neutron-nucleus scattering, see "neutron-nucleus scattering"
see also neutron radiative capture; nucleon-nucleon interactions
σ(^{239}Pu)/σ(^{235}U) meas., neutron energies 0.27-9.85 MeV 8−660
Breit-Wigner single-level formula for cross sections, multilevel correction 8−29441
cryonuclear physics for radioactive decay and neutron+nucleus reaction studies *(Dutch)* 8−29416
Csikai-Peto effect, reevaluated by statistical model calc. method 8−25180
evaluated nuclear data files in unresolved resonance region, data representation 8−29459
fission, neutron induced, double humped fission barrier concept 8−29443
fission product yields, tabulation 8−25253
fission products, neutron cross-sections data for ENDF/B-IV library 8−25290
fission products, transmutation by spallation and neutron reactions using linear accelerator 8−13268
high-energy reactions in astrophysics, comparison of methods for cross-sections calc. 8−28505
inclusive charged particle prod., A-depend. 8−33179
multigroup time-dependent delayed γ-spectra from fission and activation 8−13184
(n,2n) reaction, induced in fission neutron spectrum, effective threshold energies 8−25181
(n,α) reaction and α-decay of nuclear compound states *(Russian)* 8−29472
neutron resonance parameters, neutron energies 1-30 eV range, ^{245}Cm 8−17167
rare earth nuclei, (n,2n) cross sections analysis at 14.7 MeV 8−17194
D^0(1865) prod. from neutron interactions at 300 GeV/c 8−37244
γ-ray emission, neutron-induced interference in proton-induced anal. method 8−27868
(n,2n), 14 MeV, empirical formulae for cross sections 8−13103
(n,2n), 14.7 to 24.0 MeV, cross sections on ^{45}Sc, ^{59} Co, ^{89}Y, ^{93}Nb, ^{103}Rh, ^{169}Tm, ^{165}Lu, ^{181}Ta, ^{197}Au, ^{209}Bi 8−25192
(n,2n) reactions at 14.8 MeV, isomeric ratios in 107<A<143 mass range 8−13073
(n,α), 14 MeV, empirical formulae for cross sections 8−13103

neutron-nucleus reactions continued
(n,α) resonance neutron reactions, α-widths from statistical relationships, deviations 8−33173
(n,f), 3-5 MeV, cross section predictions 8−29513
(n,n$'\gamma$), excitation of low levels of ^{48}Ti, ^{56}Fe, ^{58}Ni, ^{92}Zr and ^{94}Zr isotopes, 1.57 to 2.8 MeV inelastic neutron scatt. *(Russian)* 8−41722
(n,p), 14 MeV, empirical formulae for cross sections 8−13103
(n,pπ^-), 100 to 300 GeV, coherent neutron dissociation on nuclei 8−29465
(n,pπ^-) reactions on nuclei, 8 to 24 GeV/c, coherent diffractive prod., cross sections 8−41711
t emission in fast neutron interactions with nuclei 8−29462
^{64}(n,α)^{61}Fe, 14.3 MeV, decay scheme for ^{61}Fe 8−46053
^{64}(n,p)^{64}Co, 14.3 MeV, decay scheme for ^{64}Co 8−46053
^{27}Al(n,d), 56.3 MeV, spectroscopic factors, ^{26}Mg levels 8−4935
^{27}Al(n,p)^{27}Mg, 12.9-15.9 MeV, reaction cross section meas. 8−37337
^{36}Ar(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
^{197}Au(n,2n)^{196}Au, cross-section ratio of isomeric states of ^{96}Au, spin-cut-off factor calc. 8−13096
^{10}B, four-body breakup induced by 18 MeV neutrons, double final state interaction 8−17192
^{10}B(n,α)^{7}Li, for neutron activation anal. of Si:B, range distrib., IBR-30 expts. 8−11585
^{11}B(n,α)^{8}Li, 14.4 MeV, spectra and ang. distribs., recoil nucl. transitions 8−17193
Ba, A=134-138, average neutron cross sections, statistical and optical model calcs. 8−29458
Be+n, 250 GeV/c, search for charm prod. 8−41712
Be+n, 300 GeV/c, $\mu^{\pm}\mu^{\mp}$ and $\mu^{\pm\mp}$ events, upper limit for charmed particle prod. 8−37245
^{209}Bi, reson. parameters for s and p-wave levels 8−37322
c+n in cellulose nitrate plastic detector, spallation products 8−17198
^{12}C, four-body breakup induced by 18 MeV neutrons, double final state interaction 8−17192
^{112}Cd(n,p)^{112}Ag, 13-17 MeV, cross section meas. by activation method 8−46057
Cf, neutron irradiation separation and α-spectra identification of ^{253}Es 8−17435
^{249}Cf(n,f), thermal., yields of isotopes of Nb, I and Cs, charge distrib. 8−41789
Cl isotopes, effect of isotopic abundance on kerma 8−29536
^{35}Cl(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
^{37}Cl(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
^{244}Cm, fast neutron cross-sections 8−21556
^{245}Cm(n,f), cross section, 0.01 to 35 eV 8−21612
^{245}Cm(n,f), thermal neutron fission, kinetic energy distribs. determ. 8−658
^{59}Co, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{59}Co+n, 8-31 MeV, spin-spin depend. of total cross section 8−17172
^{59}Co+n, calc. using pre-equil. statistical model code GNASH 8−4946
^{59}Co(n,2n), (n,np), (n,d), 16.2 to 21.8 MeV, γ-ray prod. cross sections 8−13080
^{63}Cu(n,2n)^{62}Cu, 12.9-15.9 MeV, reaction cross section meas. 8−37337
^{152g}Eu, neutron resonance obs. by time of flight spectroscopy, cf. ^{151}Eu and ^{153}Eu *(Russian)* 8−25120
Fe, and Fe:Na mixtures, neutron shielding benchmark expts. 8−29655
Fe, natural, neutron total cross section minima 8−37387
Fe+n, A=54, 56, 1-70 keV, total cross section, resonance parameters *(Russian)* 8−17210
^{56}Fe+n reactions in man, dose from 14.8 MeV 8−20275
^{56}Fe(n,p)^{56}Mn, 14.8 MeV, cross section determ. 8−37347
^{4}He+n, separable pot. fits to reson. parameters 8−8822
^{180}Hf(n,α), thermal cross-sections 8−4932
^{165}Ho+n, polarised projectile and target, spin depend. of total cross section *(Russian)* 8−17211
^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8−46059
^{6}Li(n,α), importance in in-pile irradiation of LiF crystals 8−29463
^{24}Mg(n,α)^{21}Ne, near 14 MeV, differential cross sections compared to compound-nucleus theoretical results 8−37350
^{25}Mg(n,α)^{22}Ne, near 14 MeV, differential cross sections compared to compound-nucleus theoretical results 8−37350
^{26}Mg(n,α)^{23}Ne, near 14 MeV, differential cross sections compared to compound-nucleus theoretical results 8−37350
^{55}Mn, neutron resonance spectroscopy, R-matrix anal. 8−21555
Mo+n, 1.6×10^{-3} to 10 eV, total cross section, raactor structural material 8−46052
(n,3n), 14.7 to 24.0 MeV, cross sections on ^{45}Sc, ^{59} Co, ^{89}Y, ^{93}Nb, ^{103}Rh, ^{169}Tm, ^{165}Lu, ^{181}Ta, ^{197}Au, ^{209}Bi 8−25192
N+n in cellulose nitrate plastic detector, spallation products 8−17198
^{14}N, four-body breakup induced by 18 MeV neutrons, double final state interaction 8−17192
^{15}N+n, continuum shell model calcs. of particle emission threshold effects, cross section, line shape of resonances 8−46014
Na, neutron cross sections, ENDF/B-IV assessment and evaluation 8−25291
^{143}Nd(n,α), thermal cross-sections 8−4932
^{143}Nd(n,α)^{140}Cd, thermal neutrons, partial cross-section 8−608
^{143}Nd(n,$\gamma\alpha$)^{140}Ce, thermal neutrons, partial cross-section 8−608
^{64}Ni(n,d)^{63}Co, 14.3 MeV, decay scheme for ^{63}Co 8−46053
^{237}Np(n,f), ave. no. of neutrons/fission meas. 8−41792
^{237}Np(nth, f), sub-barrier fission, fragment energy correl. meas. 8−21614
^{238}Np(n,f), subthreshold fission, fine struct. resonances anal. 8−652
O+n in cellulose nitrate plastic detector, spallation products 8−17198
^{16}O(n,2n)^{15}O, ^{15}O recoils, labelled mol. O_2 form. 8−3359
^{16}O(n,$\alpha\gamma$), 7-10.5 MeV gamma-ray prod. cross sections meas. 8−37338
^{16}O(n,n$'\gamma$), 7-10.5 MeV, gamma-ray prod. cross sections meas. 8−37338
^{16}O(n,p)^{16}N, meas. and calc. ^{16}N activity in water of nuclear powered ship 8−13192
^{16}O(n,p)^{16}N, neutron activation anal. of metals 8−15742
Pb target, inelastic screening and total nuclear cross-sections 8−8824
^{105}Pd(n,p)^{105}Rh, 13-17 MeV, cross section meas. by activation method 8−46057
^{141}Pr+n, spherical optical model anal., fast neutron differential elastic scatt. and total cross sections 8−46051
Pu, A=239, 241, fission probability, Γ_n/Γ ratio struct. 8−37382
Pu, multigroup time-dependent delayed γ-spectra from fission and activation 8−13184

neutron-nucleus reactions continued
^{239}Pu, infinite multiplication factors, neutron captures and fission, rel. to GCFR parameters 8−33245
^{239}Pu neutron data evaluation for ENDF/B-V 8−25288
^{239}Pu/^{235}U, (n,f) ratio meas. in range 1 keV-30 MeV 8−46118
^{239}Pu(n,f), cross sections for ^{252}Cf neutrons 8−25258
^{239}Pu(n,f), cross-section, 2, 24, 55, 144 keV neutron 8−17262
^{239}Pu(n,f), low energy, fission widths, channel characts. 8−29515
^{239}Pu(n,f), mass distribution of fragments *(Russian)* 8−29517
^{239}Pu(n,f), polarised thermal neutrons, parity nonconservation *(Russian)* 8−33232
^{240}Pu(n,f), 14.8 MeV, products from ^{66}Ni to ^{169}Er, mass distrib., total chain yields 8−25255
^{241}Pu, evaluation of neutron cross sections in region 10^{-5} eV to 15 MeV 8−17254
^{241}Pu, neutron capture and fission cross sections, 0.01 eV-30 keV 8−29512
^{241}Pu(n,f), thermal neutron fission, kinetic energy distribs. determ. 8−658
Pu(n,f), A=241, 243, subthreshold fission, fine struct. resonances anal. 8−652
^{45}Sc+n, total cross section, neutron resonances, thermal scatt. parameters 8−8821
Si, natural, neutron total cross section minima 8−37387
^{30}Si(n,β)^{31}P transmutation doping 8−6107
^{30}Si(n,β)^{31}P transmutation doping and electrical characterisation 8−10071
Si(n,α)Mg, A=28,29, 14.1 MeV, cross sections determ. 8−37348
^{181}Ta(n,total), 15 to 2030 eV resonances, time of flight spectroscopy 8−41716
Th, neutron total cross-section meas. near 24 keV 8−29456
^{232}Th, induced fission in natural systems, radiochem. obs. 8−4966
^{232}Th(n,f), 1.55-3 MeV, mass asymm., ang. anisotropy of fragments *(Russian)* 8−17265
^{232}Th(n,f), fission spectrum averaged cross section 8−17253
^{233}Th(n,f), 1.2-2.3 MeV, transition state effect on fragment KE *(Russian)* 8−661
U, Pu fission by thermal neutrons, HIAWATHA, fission-fragment recoil mass spectrometer 8−16892
^{232}U(n,f), reactor neutron fission, kinetic energy distribs. determ. 8−658
^{233}U cross sections, evaluation of ENDF/B-IV and Hansen-Roach cross sections 8−29550
^{233}U/^{235}U, (n,f) ratio meas. in range 1 keV-30 MeV 8−46118
^{234}U(n,f), cross section rel. to ^{235}U in 2-3 MeV region 8−21613
^{235}U, fission probability, Γ_n/Γ ratio struct. 8−37382
^{235}U(n,f), 0.3-12.5 MeV, fission cross-sections meas. 8−46117
^{235}U(n,f), ang. distrib. of fission fragments 8−37383
^{235}U(n,f), cross sections for ^{252}Cf neutrons 8−25258
^{235}U(n,f), cross-section, 2, 24, 55, 144 keV neutrons 8−17262
^{235}U(n,f), cross-section below 1 keV 8−4969
^{235}U(n,f), fission fragments with high KE, mass separation based on TOF spectra 8−46209
^{235}U(n,f), mass distribution of fragments *(Russian)* 8−29517
^{235}U(n,f), polarised thermal neutrons, parity nonconservation *(Russian)* 8−33232
^{235}U(n,f), subthreshold fission, fine struct. resonances anal. 8−652
^{235}U(n,f), thermal, discrete neutron emission probability 8−25257
^{235}U(n,f) cross section in range 0.2-8.2 MeV 8−654
^{235}U(n,f) up to 36 keV, statistical anal., cross sections, intermediate struct. 8−653
^{235}U(nth, f), above-the-barrier fission, fragment energy correl. meas. 8−21614
^{236}U(n,f), cross section rel. to ^{235}U in 2-3 MeV region 8−21613
^{238}U, infinite multiplication factors, neutron captures and fission, rel. to GFR parameters 8−33245
^{238}U+n, resolved resonance energies, 100 eV-170 keV 8−37339
^{238}U(n,f), 0.3-12.5 MeV, fission cross-sections meas. 8−46117
^{238}U(n,f), 1.5-7.7 MeV, mass yield curves 8−41788
^{51}V, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{89}Y, high resolution neutron total cross section meas., 27-240 keV 8−25193
^{64}Zn(n,p)^{64}Cu, evaluated cross section, neutron flux determ. by foil activation 8−25273

neutron-nucleus scattering
see also nucleon-nucleon scattering
Cross sections for gamma-ray production by 14-MeV neutrons 8−21552
elastic neutron and proton, cross sections, microscopic optical model pot. calcs. 8−593
microscopic optical model anal. of (n,n) and (p,p) cross sections 8−29434
resonance theory of potential scatt., phase shift parameters 8−16685
thermal neutron scatt., shell model formalism 8−13095
width fluctuation correction to reacts. involving continuum level excitations 8−46124
^{1}H(n,n)^{1}H at 16.9 MeV, analysing power meas. 8−4941
(n,n), elastic and inelastic scatt. on various isotopes, cross sections meas. and calcs. 8−13081
Ag(n,n$'$), 14.1 MeV, precompound processes 8−13093
As(n,n$'$), 14.1 MeV, precompound processes 8−13093
^{10}B(n,n), cross sections for neutrons of 4 to 8 MeV 8−21553
Ba, A=134-138, average neutron cross sections, statistical and optical model calcs. 8−29458
^{209}Bi coherent scattering of polarised thermal neutrons, parity violating effects 8−29461
^{209}Bi(n,n), 0.6 to 1.0 MeV, optical model params. 8−21557
^{12}C+n, resonances, appl. of unified model 8−29437
^{12}C(n,n), 8 to 14.5 MeV, differential elastic and inelastic cross-sections 8−29455
^{12}C(n,n), multichannel quasi-separable pot. approach 8−37320
^{40}Ca(n,n$'$), excitation of low-lying collective states 8−17205
^{111}Cd(n,n$'$)^{111m}Cd, 13-17 MeV, cross section meas. by activation method 8−46057
^{244}Cm, fast neutron cross-sections 8−21556
^{59}Co, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{59}Co, radiative transitions from unbound states obs. in neutron inelastic scatt. *(Russian)* 8−41664
^{59}Co(n,n$'$), 14.6 MeV, ToF spectra meas. *(Russian)* 8−41721
^{59}Co(n,n$'$), exciton neutron inelastic scatt. model *(Russian)* 8−33189

neutron-nucleus scattering continued
^{50}Cr(n,n)^{50}Cr, 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
^{52}Cr(n,n)^{52}Cr, 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
^{54}Cr(n,n)^{54}Cr, 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
^{133}Cs(n,n′γ), level scheme and deexcitation of excited ^{133}Cs levels 8−13004
Cu(n,n′), 14.1 MeV, precompound processes 8−13093
^{56}Fe, radiative transitions from unbound states obs. in neutron inelastic scatt. *(Russian)* 8−41664
^{56}Fe(n,n′), 14 MeV, γ competition in decay of unbound states 8−8811
^{56}Fe(n,n′γ), up to 14.6 MeV, radiation and neutron widths for highly excited levels *(Russian)* 8−605
^{2}H+n scattering, 14.4 MeV, parity nonconserving asymm. 8−21449
^{2}H(n,2n)p, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723
^{2}H(n,n), 8.05 MeV, elastic differential cross-section meas. by recoil technique 8−17207
^{2}H(n,n), elastic scatt., perturbation calcs., Faddeev eqns., Reid soft core pot. 8−33177
^{2}H(n,n)^{2}H, 12 MeV, polarised neutrons, analysing power meas. 8−33193
^{3}H(n,n)^{3}H, possible anomaly in backward elastic scatt. cross section near 14 MeV 8−13088
^{3}He(n,n), 8 to 17.1 MeV, cf. proton polarisation in ^{3}H(p,p) 8−25171
^{3}He(n,n), coherent scatt. length meas. by neutron interferometry 8−13098
^{4}He, multiple scatt. effects in fast neutron polarisation expts., Monte Carlo anal. 8−13052
H(n,p)n, 25.8, 50.9 MeV, differential cross-sections 8−600
In, A=113m, 115m, cross-section of inelastic neutron acceleration 8−17196
^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8−46059
^{55}Mn, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{23}Na(n,n′γ), 0.52-4.23 MeV, cross-sections, ang. distribs., mag. substate populations meas. 8−13100
^{23}Na(n,n′γ), cross-section near threshold 8−8808
^{93}Nb(n,n′), exciton neutron inelastic scatt. model *(Russian)* 8−33189
^{93}Nb(n,n′γ), 1.3-2.7 MeV, energy levels, decay scheme, de-excitation gammas 8−41710
^{93}Nb(n,n′γ), (n,γn′), 14.6 MeV, differential cross sections from nγ coincidence spectra anal. *(Russian)* 8−17209
^{93}Nb(n,n′γ), up to 14.6 MeV, radiation and neutron widths for highly excited levels *(Russian)* 8−605
Nb(n,n′), 14.1 MeV, precompound processes 8−13093
^{190}Os(n,n′)^{190m}Os, 13-17 MeV, cross section meas. by activation method 8−46057
^{208}Pb(n,n′), excitation of low-lying collective states 8−17205
^{208}Pb(n,n), (n,n′), 7-26 MeV, optical model anal. 8−37340
Pb(n,n), A=206,207,208 0.6 to 1.0 MeV, optical model params. 8−21557
^{141}Pr+n, spherical optical model anal., fast neutron differential elastic scatt. and total cross sections 8−46051
^{241}Pu, evaluation of neutron cross sections in region 10^{-5} eV to 15 MeV 8−17254
^{28}Si+n, isobaric analogue resonances from total and differential elastic cross sections 8−41715
Sm(n,n), (n,n′), (n,n′γ), A+148,150,2, E=2.47 MeV collective excitations obs. 8−33187
^{181}Ta(n,n′)^{181}Ta, 9.1 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8−25198
Te(n,n′), A=124-130, scattering cross sections and optical model 8−4944
^{238}U, neutron cross section integral meas., interactive graphic techniques 8−29457
^{238}U(n,n′), cross section param. from optical model anal. 8−21557
^{238}U(n,n), elastic and inelastic scatt. cross sections at 144 keV 8−21554
^{238}U(n,n)^{238}U, differential elastic and inelastic cross sections at 144 keV 8−4945
^{51}V, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{89}Y, high resolution neutron total cross section meas., 27-240 keV 8−25193
^{90}Zr, neutron reson. parameters below 300 keV 8−8805
^{91}Zr, high resolution neutron transmission and capture 8−8806

neutron polarisation
free neutron lifetime measurement using wall and mag. traps of ultracold neutrons 8−5107
multiple reflection effects on polarisation of nonmonochromatic beams *(Russian)* 8−41883
multiple scatt. effects in fast neutron polarisation expts., Monte Carlo anal. 8−13052
polarised powerful neutron beam, in vertical reactor channel 8−5082
thermal neutron polarisation anal. experiments, corrections for instrument component inefficiencies and sample multiple scatt. 8−29725
thermal neutrons, spin-flipping methods for polarised beams 8−25370
ultracold neutron polarisation 8−29681
NN scatt. formalism 8−21463
^{3}He(n,n), 8 to 17.1 MeV, cf. proton polarisation in ^{3}H(p,p) 8−25171
^{165}Ho+n, polarised projectile and target, spin depend. of total cross section *(Russian)* 8−17211
^{6}Li+n, polarised slow neutrons, spin depend. capture and scatt. 8−46059

neutron production
fusion reactor scheme, relativistic electron beam energy deposition, solid target 8−5894
plasma, in Alcator Tokamak high-density discharge, parameters for D_2, neutron emission 8−18438
plasma focus, nonthermal processes, neutron spectra 8−42804
thermonuclear neutron production of action of laser on conical target *(Russian)* 8−13320
$\pi^{-}p\rightarrow\pi^{0}n$ reaction for large transmitted momenta, 40 GeV/sec *(Russian)* 8−12934
^{197}Au+^{132}Xe, 7.5 MeV/amu ions, neutron multiplicities as func. of total energy loss 8−21606

neutron-proton interactions
see also neutron-proton scattering
charge exchange cross sections, Regge pole and cut behaviour of Fermilab. energies 8−441
$n+p\rightarrow p+n$, charge exchange, energy depend., possible explanation, Regge exchange 8−21465
nucleon, diffractive 19.2 GeV/c excit., 2- and 3-particle decays *(Russian)* 8−473
quark parton model, total cross sections 8−45859
statistical bootstrap model anal. of $N\bar{N}$ annihilations 8−37224
$\bar{n}p$, 1.44 GeV, comparison with empirical model 8−25060
$np\rightarrow d(\pi\pi)^{\circ}$, ABC effect, effective Hamiltonian formalism 8−17042
$np\rightarrow p\Delta_{33}{}^{0}$, 1.39 to 1.90 GeV/c, corrections to one pion exchange amplitudes 8−41560
$np\rightarrow pn$, energy depend. of np charge exchange, phenomenological anal. 8−25082
$\bar{n}p$ reactions in Gargamelle, charged and neutral pion prod. 8−462
p-nucleus interactions, 20 to 200 GeV/c relativistic particle angular distribs. *(Russian)* 8−46065
$p+Be\rightarrow\varphi+X$, 400 GeV/c, φ decay modes, OZI rule 8−599
$\bar{p}n$ interactions in flight, beam target reversed symm. 8−41566
$\bar{p}n$ strong interaction effects on antiprotonic atoms X-rays of light nuclei 8−29867
π prod. in pp, np, $\pi\bar{p}$ interactions, mass quantisation *(French)* 8−25059

neutron-proton scattering
see also neutron-proton interactions
analysing power meas. of np scatt. at 16.9 MeV 8−4941
differential cross-sections at 25.8 and 50.0 MeV 8−600
forward scatt. amplitude and charge exchange, 1.5-60 GeV/c 8−4867
spin dependent EM hadronic interference, pn and Λp elastic scatt. amplitudes 8−12923

neutron radiative capture
A=45 to 200, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
cancer therapy in mice, long range effects, dose effect 8−48877
cross section meas. using large Gd loaded liquid scintillator 8−25380
long neutron capture chains, abundances evaluation method 8−45216
M1 capture, correlations as evidence of semi-direct mechanism 8−8814
multigroup time-dependent delayed γ-spectra from fission and activation 8−13184
P-wave neutron capture, statistical model radiation widths for $75<A<130$ 8−33161
s-process, pulsed neutron flux effects 8−20812
s-process isotopes, nonthermal isomeric branching, importance of long-lived states 8−7983
spin assignments using polarised neutrons and oriented target nuclei 8−29724
stellar interiors, s-process during thermal pulses of He shell burning 8−28668
cross section, statistical theory anal., radiative strength functions, In, Ta, Au, Sm, Eu *(Russian)* 8−17212
(n,γ) thermal react. cross section meas. with liquid scintillation spectra 8−25382
^{107}Ag(n,γ)^{108}Ag, coincidence meas. of low-lying states of 215.38 keV 8−12975
^{197}Au(n,γ), cross section meas. using large Gd loaded liquid scintillator 8−25380
^{79}Br(n,γ), thermal, ^{80}Br level struct. determ. 8−41667
^{81}Br(n,γ), thermal, ^{82}Br level struct. determ. 8−41667
Cd(n,γ), facility for in vivo meas. of kidney and liver Cd 8−15885
^{140}Ce, 6.2-15.6 MeV, gamma-ray spectra, cross-section meas. 8−33176
^{35}Cl(n,γ)^{36}Cl, E1 and M1 radiative strength functions 8−4940
Cr, neutron capture cross sections intermed. energy region, method and exptl. facility 8−21637
^{a}Er,A=166,168,170, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
Fe, integral neutron capture cross sections in GCFR lattices 8−13246
Fe, neutron capture cross sections intermed. energy region, method and exptl. facility 8−21637
^{54}Fe neutron capture, asymmetric s-wave reson., background interf. 8−21563
^{56}Fe(n,γ), resonance state, partial radiation widths of high energy transitions 8−13104
^{a}Gd, A=156,158,160, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{1}H(n,γ)^{2}H, exchange current contribs. to parity violating elec. transitions 8−29383
^{2}H(n, γ), slow neutrons, mesic interaction current, isobaric resonance *(Italian)* 8−25179
^{165}Ho(n,γ), <2 keV, spin depend. of s-wave neutron strength function 8−21562
^{139}La(n, γ), 10-70 keV, gamma-ray transitions 8−17185
^{139}La(n, γ), 2.5-90 keV, s- and p-wave resons. 8−17186
^{175}Lu(n,γ), reson. spins, secondary γ-transition intensity 8−21512
^{176}Lu(n,γ), reson. spins secondary γ-transition intensity 8−21512
^{a}Nd, A=142,144,148,146,150, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{144}Nd(n,γ), 0.04 to 11 keV, reson. γ-ray anal. 8−8823
Ni, neutron capture cross sections intermed. energy region, method and exptl. facility 8−21637
Ni(n,γ), A=58, 60, resonance state, partial radiation widths of high energy transitions 8−13104
^{192}Os(n,γ)^{193}Os, ^{193}Os energy levels, neutron separation energy 8−41642
^{195}Pt(n,γ)^{196}Pt, low spin positive-parity states struct., O(6) limit of IBA model 8−33110
Pu, multigroup time-dependent delayed γ-spectra from fission and activation 8−13184
^{239}Pu, integral neutron capture cross sections in GCFR lattices 8−13246
^{241}Pu, evaluation of neutron cross sections in region 10^{-5} eV to 15 MeV 8−17254
^{241}Pu, neutron capture and fission cross sections, 0.01 eV-30 keV 8−29512
^{45}Sc(n, γ), 2.5-100 keV, s- and p-wave radiative widths 8−17187
^{a}Sm, A=144,148,150,152,154, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{117}Sn(n,γ)^{118}Sn, parity violation obs. 8−8820

neutron radiative capture continued
- ^{181}Ta(n,γ), 2-3 eV, γ-spectra, energy levels, J^{π} 8−602
- ^{99}Tc, neutron capture cross section meas. up to 80 keV 8−25197
- ^{232}Th(n,γ), cross-section from 2.6-800 keV 8−8807
- ^{234}U(n,γ)^{235}U, 5-49 MeV, low-spin states 8−512
- ^{238}U, meas. of Cd ratio of neutron capture rates in slightly ^{235}U enriched fuel, systematic errors 8−8901
- ^{238}U, neutron capture cross section representation, TRX-2 lattice param. sensitivity 8−25275
- ^{238}U(n,γ), cross section meas. using large Gd loaded liquid scintillator 8−25380
- ^{238}U(n,γ), thermal, ^{239}U vibr. states 8−41627
- ^{50}V, γ-ray spectrum from thermal neutron capture 8−21568
- ^{136}Xe(n_{th},γ)^{137}Xe, spectra meas., ^{137}Xe level and decay scheme 8−13102
- ^{89}Y, 6.2-15.6 MeV, gamma-ray spectra, cross-section meas. 8−33176
- ^{90}Zr(n,γ)^{91}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
- ^{91}Zr, high resolution neutron transmission and capture 8−8806
- ^{92}Zr(n,γ)^{93}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
- ^{94}Zr(n,γ)^{95}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
- ^{96}Zr(n,γ)^{97}Zr, thermal neutron reactions, γ-ray line obs. 8−17190

neutron radiography
- *see also nondestructive testing*
- autoradiography, visualisation of fissionable radionuclides in rat lung 8−28055
- conversion efficiency enhancement in neutron radiography 8−7444
- electron linear accelerator *(German)* 8−7150
- electronic piece parts reliability evaluation 8−31610
- fast neutron radiography for extended objects using Kodak CA 80-15 plastic detector 8−20267
- fast neutron radiography of extended biological and medical objects *(German)* 8−15880
- fast neutrons, prod. of shadowgraphs of fast events 8−41400
- graphite fibre reinforced epoxy resin, radiographic technique for resin content meas. 8−3286
- high-speed-motion neutron radiography system, modulation transfer functions 8−7158
- Kodak CA 80-15 plastic detector, fast neutron radiography for extended objects 8−20267
- polyurethane, void detection by neutron gauging 8−23910
- polyurethane foam, fast-neutron gauging for void detection 8−7157
- steel:B, brittle rupture, (n,α) radiography method *(Russian)* 8−48491
- thermal neutron radiography facility on IRT-2000 reactor 8−17286
- tomography investigation using research reactor 8−23915
- transient gas density meas. using neutron radiography 8−47076
- TREAT facility, pinhole imaging of test fuel element 8−21627
- void reconstruction in 2-D, using neutron transmission 8−22605
- Gd neutron radiographic amplifying screen sensitivity 8−7448
- H embrittlement in metals, assessment of techniques for local detection 8−3439

neutron reflection
- concrete, effect of azimuthal angle on fast neutron albedos 8−8866
- Soller collimators, appl. to small angle neutron scatt., Monte-Carlo simulation 8−29701
- ultracold neutron reflection from one-dimens. pot. barrier, reson. struct. *(Russian)* 8−37393
- ultracold neutrons, diffraction and mirror reflection 8−13193
- ultracold neutrons, transmission through moving pot. barrier 8−8867

neutron scattering *see kaon-nucleon scattering; lepton-nucleon scattering; neutron-nucleus scattering; nucleon-nucleon scattering; photon-nucleon scattering; pion-nucleon scattering*

neutron scattering (crystallography) *see neutron diffraction; neutron diffraction crystallography; neutron diffraction examination of materials*

neutron sources
- chopper for neutron pulse propagation experiments 8−13362
- CTR blanket design *(Japanese)* 8−46164
- dense plasma focus devices matching with fission reactors 8−37436
- fast neutron prod. cross sections at Louvain la Neuve isochronous cyclotron 8−29682
- JINR synchrophasotron, neutron prod. by deuteron stripping 8−33340
- low-power, use in activation determ. of Mo and W in hydrometallurgical plant effluent waters 8−7279
- neutron multiplier, criticality studies for ^{252}Cf source 8−25367
- polarised powerful neutron beam, in vertical reactor channel 8−5082
- polarising neutron guide using laminated mirror 8−9012
- pulsed neutron, from spallation target, Rutherford Laboratory 8−29208
- radiotherapy beams prod. by protons and deuterons on Be and Li, dosimetry 8−24141
- thermal, pulsed, from multiplying media, anal. and interpretation of experimental data *(Rumanian)* 8−46203
- thermal neutron standard field with Maxwellian distrib. using KUR heavy water facility 8−33342
- twinned neutron monochromator 8−840
- ultracold, neutron storage bottles, shortening of storage time, surface contamination 8−17461
- ultracold neutron diffusion along guide tube 8−33237
- ultracold neutron polarisation 8−29681
- ultracold neutron storage in mag. trap *(Russian)* 8−29538
- ultracold neutrons, heating and anomalous confinement times *(Russian)* 8−33358
- ultracold neutrons, upscattering detected as main reason for anomalous loss in storage expts. 8−46205
- π factories, use as neutron sources 8−21791
- Am-Be neutron probe, underestimation of radiation exposure by film badges 8−15900
- Be, neutron focus in synchrotron radiation *(Russian)* 8−33344
- Be+d, low-energy spectrum, rel. to neutron prod. for radiotherapy 8−40319
- Be(p,n), 26, 35 and 45 MeV protons, neutron beam dosimetry 8−28083
- Be(p,n), 26 MeV fast neutron therapy beam, dose meas. 8−28054
- ^{252}Cf for interstitial radiotherapy implantations, clinical study 8−11722
- ^{252}Cf, neutron activation anal. of Constantinian coins 8−350
- ^{252}Cf source with high emission, n and γ dosimetry, safety *(Czech)* 8−33296
- ^{252}Cf, use for brachytherapy 8−20272
- D+d, low-energy spectrum, rel. to neutron prod. for radiotherapy 8−40319

neutron sources continued
- ^{4}He, superfluid, purification technique from ^{3}He, for neutron source bottle 8−17823
- Li (p,n), 26, 35 and 45 MeV protons, neutron beam dosimetry 8−28083
- ^{7}Li(p,n)^{7}Be, activation and ang. distrib. meas., absolute neutron yield determ. 8−17199
- Li(d,n), neutron spectra from thick target bombardment for therapy 8−28049
- Li(p,n), neutron spectra from thick target bombardment, for therapy 8−28049
- ^{22}Ne(α,n)^{25}Mg neutron source effects in red giants and planetary nebulae 8−49430
- ^{228}Ra-Be (α,n) source, neutron spectrum calc. from angular distrib. and cross-section data 8−41882

neutron spectra
- *see also neutron spectrometers*
- 14.8 MeV neutrons, pulse-height spectrum prod. in NE-102A plastic scintillation counter 8−845
- ^{10}B(π^-,2n), stopped pion absorption 8−25243
- ^{12}C(π^-,2n), stopped pion absorption 8−25243
- ^{9}Be(π^-,2n), stopped pion absorption 8−25243
- atmosphere, secondary nucleon spectra, 2-component model *(Russian)* 8−41612
- background determ. in neutron transmission meas. with linac 8−17270
- concrete, effect of azimuthal angle on fast neutron albedos 8−8866
- CTR, model blanket expt., neutron spectra sensitivity analysis 8−29648
- differential neutron spectra estimation using foil activation data and IUNFLD code 8−29690
- dosimetry, comparison of single and multidetector systems *(Russian)* 8−33294
- energy transfer spectra, linear, in chemical nuclear reactor *(Russian)* 8−46130
- fast neutron spectrum unfolding code MATXUF 8−5091
- FBR neutron fields, spectral charact., expts. and calcs. *(Japanese)* 8−46222
- FPR neutron spectrum in presence of experimenter's tahle 8−21676
- fusion neutrons from beam driven toroidal plasma 8−5034
- GCFR, Pu fuelled, fission products and secondary gamma-ray spectra 8−676
- linear accelerator, 25 MV X-ray, Bonner spectrometer neutron meas. in intense photon field 8−24133
- liquid air, calc. of neutron and gamma-ray energy spectra 8−29529
- liquid N_2, calc. of neutron and gamma-ray energy spectra 8−29529
- NE213 organic scintillators, effect of light output efficiency of charged particles on unfolded neutron spectrum 8−29700
- plasma focus, nonthermal processes, neutron spectra 8−42804
- radiotherapy beams prod. by protons and deuterons on Be and Li, dosimetry 8−24141
- reactor lattice epithermal neutron spectra, spherical harmonics anal. 8−21619
- shielding effects of thickness and geometry on neutron spectra 8−33300
- statistical regularization method for spectra establishment according to threshold detector readings, IBR-30 reactor appl. 8−37483
- thermal neutron standard field with Maxwellian distrib. using KUR heavy water facility 8−33342
- threshold foil meas. of reactor neutron spectra, radiation damage appl. 8−29691
- Ag(n,n′), 14.1 MeV, precompound processes 8−13093
- As(n,n′), 14.1 MeV, precompound processes 8−13093
- ^{10}B(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
- Be+d, low-energy spectrum, rel. to neutron prod. for radiotherapy 8−40319
- ^{9}Be(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
- ^{209}Bi, reson. parameters for s and p-wave levels 8−37322
- ^{12}C(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
- ^{252}Cf, spontaneous fission neutron spectrum meas. using ^{6}Li spectrom. 8−17477
- ^{59}Co(n,n′), 14.6 MeV, ToF spectra meas. *(Russian)* 8−41721
- Cu(n,n′), 14.1 MeV, precompound processes 8−13093
- D+d, low-energy spectrum, rel. to neutron prod. for radiotherapy 8−40319
- ^{152g}Eu, neutron resonance obs. by time of flight spectroscopy, cf. ^{151}Eu and ^{153}Eu *(Russian)* 8−25120
- ^{254}Fm spontaneous fission, distrib. of mass, KE and neutron yield 8−17257
- Li(d,n), neutron spectra from thick target bombardment for therapy 8−28049
- Li(p,n), neutron spectra from thick target bombardment, for therapy 8−28049
- ^{14}N(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
- ^{93}Nb(n,n′γ), (n,γn′), 14.6 MeV, differential cross sections from nγ coincidence spectra anal. *(Russian)* 8−17209
- Nb(n,n′), 14.1 MeV, precompound processes 8−13093
- ^{237}Np(n,f), ave. no. of neutrons/fission meas. 8−41792
- ^{239}Pu(n,f), fission neutron spectra, TOF meas. 8−17476
- ^{228}Ra-Be (α,n) source, neutron spectrum calc. from angular distrib. and cross-section data 8−41882
- ^{181}Ta(n,n′)^{181}Ta, 9.1 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8−25198
- ^{181}Ta(p,n)^{181}W, 10.2 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8−25198
- ThO_2, spherical pile, neutron spectrum meas. and analysis 8−17311
- UO_2, energy depend. Doppler factor meas. using lead slowing-down time spectrometer 8−17310
- ^{233}U(n,f), fission neutron spectra, TOF meas. 8−17476
- ^{235}U(n,f), fission neutron spectra, TOF meas. 8−17476
- ^{235}U(n,f), thermal, discrete neutron emission probability 8−25257

neutron spectrometers
- alpha recoil gas proportional counter 8−5089
- Bonner spectrometer, spectral meas. in intense photon field of high-energy X-ray therapy machine 8−24133
- Bonner sphere spectrometer, least-squares technique for extracting neutron spectra 8−33366

neutron spectrometers continued
fast neutron spectrum unfolding code MATXUF 8−5091
gas counters of slow neutrons, edge effect 8−33384
NE213 organic scintillators, effect of light output efficiency of charged particles on unfolded neutron spectrum 8−29700
neutron and γ-ray spectra meas. on radial shielding model of KS-150 reactor *(Slovak)* 8−21624
neutron totally absorbing TOF spectrom. 8−850
plastic scintillation counter NE-102A, pulse-height spectrum prod. by 14.8 MeV 8−845
portable neutron spectrometer/kerma-rate meter, design, performance 8−33361
position sensitive detector, appl. to small angle neutron scatt. with azimuthal symmetry 8−46212
precision automatic angular-displacement control system 8−186
scintillating glasses, pulse decay time meas. at room temp. 8−46225
scintillation counter, NE 213, Munich pulse shape discrimination cct., low energy performance 8−46233
scintillation counter with pulse-height discrimination against γ-ray background, calibration and energy scale stabilisation 8−13378
scintillation liquid (NE 224) high-efficiency time-compensated neutron spectrom. 8−17468
Soller collimators, appl. to small angle neutron scatt., Monte-Carlo simulation 8−29701
time coder with variable channel width for time-of-flight expts. 8−33403
time of flight, pseudostatistical modulation method *(Russian)* 8−33360
TOF, control and data processing system 8−25385
two crystal diffractometer, neutron spectrometer component, luminosity 8−21807
B, liquid scintillation slow neutron detector with n-γ separation cct. 8−862
CdTe, thermal neutron detection 8−17479
Ge(Li) diodes, teflon covered for fast neutron detection 8−25384
^{3}He proportional counter for fast reactor neutron field spectral charact. *(Japanese)* 8−46222
NaI(Tl), pulse shape discrimination of high-energy neutrons and gamma rays 8−33395

neutron stars
see also pulsars
abnormal phase in dense neutron star matter 8−20849
accreting matter, nuclear γ-ray line emission 8−4403
accreting neutron stars, nuclear burning and X-ray bursts 8−36724
accretion environment, photon pair prod. in transrelativistic plasma 8−20632
binary X-ray systems, accretion flows 8−12432
CG 195+4 (Geminga) pulsating γ-ray source, neutron star models 8−4402
cold matter at super-nuclear densities including pion condensates 8−17128
compact X-ray sources, masses 8−12430
cooling and possible temp. determ. 8−40984
critical accretion flow of gas into compact stars, rel. to X-ray sources 8−20817
dense hadronic matter, in asymptotically free gauge theory, neutron stars eqn. of state 8−36627
disc accretion onto magnetised neutron star, fate of matter and ang. momentum 8−28715
elastic medium, gravit. and acoustic waves, relativistic eqns., neutron star appl. 8−24712
electrically conducting rot. sphere behaviour in time-independ. homogeneous external mag. field 8−49309
Fermi quantum crystals, melting curves low temp. anomalies 8−24757
force-free magnetic fields, existence in neutron star interiors 8−40983
force-free magnetic fields in degenerate stars, stability 8−49425
formation, hydrodynamics of stellar collapse 8−45318
formation, neutrinos and gravit. waves emission 8−12266
formation rate in galaxy, upper limit 8−49471
formation rate in stellar systems 8−28674
G127.1+0.5, optical counterpart of compact radio source assoc. with supernova remnant 8−16555
globular cluster X-ray source formation by collisions of compact and normal stars 8−28854
gravitational collapse of core of massive star, neutrino trapping 8−32437
gravitational wave, relfection from compact stars 8−49314
hadron plasma theory *(Russian)* 8−37148
HD 49798, strange composite sdO star, possible existence of collapsed companion 8−49435
Hercules X-1, mag. neutron star, cyclotron emission and beaming mechanisms 8−36726
HZ Herculis (Hercules X-1), hard X-ray spectrum, strong cyclotron line emission 8−41085
high density matter, relativisitc quantum many-body problem 8−4909
hot neutron star formation, neutrino radiation rel. to envelope outburst problem 8−45350
luminosity enhancement following X-ray bursts 8−32502
in M15, globular cluster, dynamical models with neutron stars 8−32536
magnetic, accretion flow, magnetospheric struct. and stability 8−4269
magnetic fields, effect of vacuum birefringence on X-ray emission polarisation 8−4408
MHD relativistic processes 8−12280
MXB 1730−335, comparison with dwarf novae rel. to neutron star model 8−12410
neutrino cooling in pion-condensed phase 8−45351
neutronization kinetics in superdense matter with frozen-in mag. field *(Russian)* 8−46019
Ni's theory of gravity for massive neutron stars 8−4273
nonrotating, integral eqns. for even parity perturbations 8−36628
pionization in superdense degenerate matter *(Russian)* 8−46020
potential drops above pulsar polar caps, nonneutral beam accel. 8−4267
pulsars and compact X-ray sources, gravit. redshifted γ-rays, neutron star mass constraints 8−4274
pulsating X-ray binaries, spindown by EM friction with stellar wind 8−12431
quark gas, nonAbelian gauge field theory 8−21341
radio pulsars, model *(Russian)* 8−40982

neutron stars continued
redshift determ. of X- and γ-ray lines rel. to strong principle of equivalence 8−40814
relativistic elasticity appl. to neutron stars 8−12267
relativistic superdense matter 8−12091
rotating magnetic, accretion flow inside magnetosphere rel. to rot. rate 8−8037
rotating stars, existence of ergoregions 8−24523
slow rotation in collapsed stars, effects of mass loss 8−49426
SMC X-1, VBLUW photometry, evidence for accretion disc 8−12409
solar companion star, neutron star in hyperbolic orbit 8−12198
spin down rel. to X-ray sources in binary stars *(Chinese)* 8−28857
stress tensor of cosmic and lab. type-II superconductors 8−6485
superconducting props. of π condensates 8−32993
superdense matter, hydrodynamic model, nonlinear pion+pion chiral Lagrangian, $e^+ + e^-$ and p+p collisions 8−32966
superdense matter eqn. of state, nuclear size correction to relativistic Thomas-Fermi model 8−29413
superdense neutron matter, relativistic theory and eqn. of state 8−45349
superfluid dynamics, rotating, lab. expts. 8−49469
supersonic accretion, radiative effects 8−40978
thermonuclear flashes, model for X-ray bursts 8−12417
upper mass limit, accounting for differential rotation 8−4272
weak interactions, conf., Bloomington, USA, (May, 1977) 8−414
X-ray burst sources, accreting compact objects models 8−12427
X-ray burst sources, neutron star accretion model 8−49566
X-ray burst sources in globular clusters, neutron stars hypothesis *(Russian)* 8−16480
X-ray bursting sources, time dependent accretion by magnetic neutron stars 8−4401
X-ray emission lines Zeeman splitting by mag. field 8−4275
X-ray pulsar as accreting neutron star in compact binary 8−49470
X-ray reflection from surfaces, appl. to Hercules X-1 8−28716
X-ray stars in globular clusters 8−20916
Yang-Mills gauge theory of gravity, gravit. field of spherically symm. matter distribs. 8−4773
zero-temperature degenerate stars with subnuclear densities, radial oscills. 8−12219
β-decay of π condensates as cooling mechanism 8−4271
$e^+e^- \rightarrow \nu\bar{\nu}$, in strong mag. fields, rate of energy loss 8−29326
$\nu(\bar{\nu})$ emission from supernovae, form. and cooling of neutron stars 8−8038
ν transport in π condensed matter 8−4270

neutron transport theory
see also neutron diffusion; neutron moderation
anisotropy of scatt. and fission 8−8865
bound neutrons in matter, transmission coeff. *(Russian)* 8−13199
buckling approximation inclusion in finite element calcs. 8−17276
C_n method, appl. to cylindrical geom. 8−29533
C_n method of transport eqn. soln., appl. to plane geom. 8−29524
capture probabilities for thick samples at resonance energies 8−46123
Chandresekhar's H-equations in multigroup neutron transport, iterative solns. 8−37389
Chandresekhar's operator valued H-function, analytic continuation 8−37388
conjugate gradient solution to discrete ordinates equation 8−21622
continuous slowing down theory params. in highly absorbing media 8−29559
data covariance estimation methods for sensitivity-based data assessment 8−13400
deep-penetration radiation transport, event and point value in Monte Carlo importance sampling 8−8869
deep-penetration transport calculations and neutron transport eqn. forms 8−8868
discontinuous variational approx., neutron diffusion and transport theory 8−46129
discrete angle finite element formulation of radiation transport 8−13197
double P_l eqns. for sphere, series soln. 8−13187
explicit iterative technique for FX2 reactor analysis computer code 8−17302
field charact. calc., beyond Fe barrier, effect of scatt. indicatrix approx. and consts. representation 8−17272
finite element methods for radiation transport calcs. 8−13196
fission reactor, coupled cores, neutron transit time determ. by noise anal. method 8−37413
flux depression factors for scatt. and absorbing media 8−4976
flux interpolation for elastic down scatt. 8−29560
fusion reactor neutronics simulation using low energy neutron source 8−5030
heavy water, effect of non-1/v absorbers on thermal neutron transport 8−29532
heterogeneous fuel pin cells, nodal method in 2-D calcs. 8−21631
homogenized-cell diffusion parameters from transport codes 8−17300
importance concept in Markov processes, generalised neutron physics method 8−4471
inhomogeneous medium with cavity, transport operator spectrum *(Chinese)* 8−16756
iterative methods, restrained acceleration 8−29530
laser fusion blanket, neutronics and photonics 8−5025
liquid air, calc. of neutron and gamma-ray energy spectra 8−29529
liquid N_2, calc. of neutron and gamma-ray energy spectra 8−29529
LMFBR, heterogeneous core design, neutron and γ-transport effects 8−8893
LWR anal., CASMO fast transport theory assembly depletion code 8−25278
LWR parameter sensitivity to uncertainties in thermal neutron data 8−29561
matrix methods for radiation transport 8−13198
medium of const. cross section, neutron slowing down and transport 8−33235
Milne-problem for isotropic scatt. with backward leak 8−8870
monoenergetic neutron systems, quadratically anisotropic scatt., influence on decay const., transport eqn. eigenvalues 8−46122
Monte Carlo deep penetration calcs., appl. of fictitious scatt. transport model 8−29526
Monte Carlo elastic angular data, equal probability steps 8−668
Monte Carlo error prediction from track length estimator theory 8−29527

neutron transport theory continued
Monte Carlo method, new approach to adjoint Boltzmann eqn. 8−21618
Monte Carlo shielding calcs., biased selection of particle flight directions as variance resolution technique 8−29653
multi-group transport eqn., time-independ., soln. using spherical harmonics 8−37386
multi-group two-dimensional eqn., cylindrical geometry, finite element method appl. 8−29522
multidimensional, transverse leakage approx. 8−29531
multidimensional neutron transport equation, spherical harmonics soln. by finite Fourier transform. 8−17269
multidimensional reactor dynamics equation, fast factorization and exponential transform. procedures 8−17303
multigroup albedo eqns. for cylindrical rod 8−667
multigroup cross section calculation, self-shielding, subgroup method *(Rumanian)* 8−46140
multigroup formalism for evaluation of continuous slowing down theory params. 8−37391
multigroup Monte Carlo calcs. 8−4570
multigroup neutron flux calcs. with MURLAB program 8−29541
multiplication factors, temp. depend., reactor fuel lattices, comparative evaluation HTGR, HTLTR 8−29557
multiregion problems in plane geometry, half range orthogonality relations 8−21621
multiregion problems in plane geometry 8−17274
neutron escape probability from absorbing body 8−46125
neutron moderation, linear Boltzmann operator, in various geometries, contributions to spectral theory *(Rumanian)* 8−46128
non-multiplying homogeneous slab assembly, time depend. multigroup P1 eqn. soln. 8−17267
nonuniform transport problems, estimation of perturbation in solving by Monte Carlo methods 8−17271
N.S. Mutsu, primary shield, mock-up experiments, analysis 8−21782
N.S. Mutsu, radiation streaming, repair plan 8−21781
numerical methods, recent work at LASL 8−13195
p-cell homogenization, transient flux effects, incorporation into 2-D iteration scheme 8−17301
PBF reload core cell calc., failure of Wigner Seitz approx. 8−25264
PBHTR, space-shielding cross sections 8−25274
plane geometry, general anisotropic energy depend. scatt., phys. interpretation 8−4973
pulsed neutron source on multiplying media, anal. and interpretation of experimental data *(Rumanian)* 8−46203
PWR, shielding against neutron and gamma streaming, computational methods 8−21783
radiation shielding, cross section sensitivity analysis 8−21778
radiation streaming, shield design problems 8−21780
reactor noise theory, adjoint space applic. 8−13202
reactor shielding, current status and future prospects 8−25328
reactor shielding methods, development in USA 8−21776
shielding, in 3-D direct-coupled-ray method 8−21785
slab geom., subcriticality and supercriticality of energy depend. transport 8−33236
SNR-300, coolant outlet duct design from neutron transport experiments *(German)* 8−29566
spherical geom., semi-analytic soln. to transport eqn. 8−37390
stationary monoenergetic neutron transport equation for slabs, power series solns. comparison 8−13190
thermal neutron acceleration in medium with reson. excitation by EM wave *(Russian)* 8−37394
thermal neutron monochromators, Monte-Carlo simulation of mechanical velocity selectors 8−24886
thermal-neutron transfer from pulse source in moderator with large cylindrical cavity 8−37392
time dependent, multigroup equation solutions 8−29542
Tokamak, 2-D neutronics model for major penetrations 8−5027
Tokamak, expt. power reactor, neutronic and photonic calcs., blanket and shield design 8−29644
Tokamak divertor slot design to enhance mag. shielding 8−5028
toroidal geometry, computational method 8−22538
toroidal geometry effects in neutron transport eqn., discrete ordinate S_n method 8−13327
track length estimator, efficiency for reaction rate estimation 8−46126
transport acceleration methods, generalised rebalance 8−29525
transport effects on nodal coupling parameters 8−29558
two-dimens. kinetic calc. by finite-element anal. 8−665
two-group problems with anisotropic scatt., closed-form solns. 8−4569
two-media Milne problem in two-group neutron transport theory 8−17275
void reconstruction in 2-D, using neutron transmission 8−22605
water, effect of non-1/v absorbers on thermal neutron transport 8−29532
width fluctuation correction to reacts. involving continuum level excitations 8−46124
Wiener-Hopf factors of L_1 matrices 8−8871
ZPPR critical expts. for radial parfait heterogeneous reactor concept 8−13224
Cl isotopes, effect of isotopic abundance on kerma 8−29536
^{16}N activity in water of powered ship 8−13192
^{238}U, meas. of Cd ratio of neutron capture rates in slightly ^{235}U enriched fuel, systematic errors 8−8901

neutrons
see also cosmic ray neutrons; delayed neutrons
magnetic moment meas. 8−8719
proton-neutron mass difference, higher intermediate hadronic states 8−45920
scaling behaviour of struct. functions in parton model 8−16988
spinor wave function, 4π-periodicity factor using perfect cryst. interferometer 8−45515
ultracold, coherent inelastic scatt. by trap walls 8−5086
ultracold, damping of quasistationary wave functions, in traps 8−9013
ultracold neutron storage in mag. trap *(Russian)* 8−29538

Newtonian fluids *see fluids*

nickel
see also nuclei with ......
absorption spectrum anomalies, 2-3 eV, optical anisotropy *(French)* 8−43893
adsorbed CO on (111) face, CO stretching vibr., high resolution electron loss spectroscopy 8−14605

nickel continued
adsorption and decomposition of formic acid, obs. using combined SIMS-FDS-AES system 8−40076
adsorption of acetylene on (111) surface, chemisorbed O_2 effects, CH formation 8−18902
adsorption of CO, binding and energy level shifts, NiCO and Ni_2CO electronic struct. 8−34882
adsorption of CO, high press., low temp. Raman spectra 8−6219
adsorption of CO on (001), orbital energy spectrum 8−2369
adsorption of CO on polycryst., SIMS 8−14585
adsorption of ethylene and acetylene, vibr. spectra from electron energy loss *(French)* 8−34696
adsorption of H_2, inelastic neutron scatt. 8−18898
adsorption of H, extended Huckel theory 8−10286
adsorption of O, electronic struct. and UPS 8−15281
air contamination effect on compatibility with liquid Li in stainless steel vessels at 600°C 8−25285
angle resolved photoemission spectra 8−43986
anisotropy energy in (100) plane, temp. dependence 8−2674
annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
anodic oxidation in neutral electrolyte, ellipsometric obs. 8−27673
atom, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
atom, ionisation potential, term value, correlation energy by vertical anal. 8−41964
atom, pseudopotential calculations, parameter fitting scheme appls. 8−41928
atom, reson. X-ray Raman scattering, IR divergence of Compton effect 8−21873
attenuated total reflection minima, correlation with surface polariton modes, computational study 8−31265
Auger emission clean and gas-adsorbed surfaces, ang. distribs. 8−39636
band electron momentum distributions calc. 8−18950
blistering by $^4He^+$ bombardment temp. depend. 8−43967
carburized single crystal sheets, lattice strain during interstitial diffusion *(Japanese)* 8−10220
catalyst, polycryst. ribbon, methane formation, CO hydrogenation kinetics 8−40078
chemisorption, of CO, CNDO calcs. *(German)* 8−29751
chemisorption of benzene on (100) and (111) faces, LEED and high resoln. electron energy loss spectra 8−6224
chemisorption of CO, C-O bond lengths, electronic struct. 8−6210
chemisorption of CO, catalytic activity, SCF-$X\alpha$-SW calcs. 8−15711
chemisorption of CO, N_2, NO, semiempirical calcs. 8−14611
chemisorption of CO, vibr. spectra from electron energy loss spectra *(French)* 8−22951
chemisorption of CO on surface (100), c(2×2) struct., dynamical LEED expts. 8−34710
chemisorption of CO on surfaces (100)p(2×2)O and (100)c(2×2)O, LEED and energy loss spectra 8−2375
chemisorption of cyclohexane and ethylene, C-H stretch vibration, broadened and softened, dehydrogenation 8−47666
chemisorption of H_2, periodic surface model calc. 8−30822
chemisorption of $H_2(D_2)(HD)$, vibr. excitation and struct., electron energy loss spectra 8−47660
chemisorption of H and O, (001) surface, localised orbital approach 8−14587
chemisorption of hydrocarbons, C 2s levels, initial state shift 8−34703
chemisorption of O(S), geometry of overlayers 8−2373
chemisorption of O(S)(Se)(Te), orbital energy spectrum of chemisorbed electrons 8−2542
chemisorption of S and CO, surface struct. from ang. resolved UPS 8−31303
chemisorption of S-containing alkanes on clean Ni 8−14595
cluster approach to single H atom in single crystal 8−47334
coated Mo and W filaments, creep and recrystn. *(Russian)* 8−19822
coating, electron beam evaporated, ductility and struct. 8−11439
cold swaged, unidirectional recrystallisation over range of temp. gradients *(Japanese)* 8−48424
compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
corrosion in molten Na_2SO_4 at 1173K, E-pO^{2-} diagram 8−44247
creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
critical exponent β for hyperfine fields, PAD techniques 8−19403
Czochralski grown single crystal, crystal perfection 8−47252
Debye-Waller factor temp. parameter 8−30725
defect symmetry, time differential PAC meas. 8−15069
deformed, coercivity and remanence anisotropy 8−31093
deformed, magnetic susceptibility anisotropic changes 8−27025
desorption of N and O, from Ni on SiO_2 200 to 400K *(German)* 8−30835
diffusion in Ag, resistometric technique 8−38880
diffusion of H in H_2 quenched sample, elec. resist. recovery 8−2299
diffusion of Si, ion radiation effect on redistrib. 8−34551
dilute impurity hyperfine fields, comparison with model 8−14954
dislocation struct. formed by C diffusion in single crystals, electron microscope obs. *(Japanese)* 8−10053
Dorn relationship for creep prediction, introduction of force factor *(Russian)* 8−18185
ductile, electrolytic, densification of particulate materials, general law 8−19692
dynamic rearrangement of atomics in large cluster using Frohlich-Raimes method 8−30586
dynamical spin susceptibility, noninteracting spin band model 8−31059
electrodeposit, mag. domain struct., neutron depolarisation 8−2716
electrodeposited monocrystals, struct., effect of stress applied during electrodeposition 8−26777
electrodeposition from alkaline citric electrolytes, cathodic processes *(Russian)* 8−48338
electrolytic and carbonyl grades, sintered sheet material, stopping power and pore size relationship 8−19693
electron beam irradiated, influence of created pulsed press. on struct. and props. *(Russian)* 8−34539
electroplated layers, internal friction and ΔG effect, rel. to bath comp. and annealing 8−19296
electroplating method for high-temp. stress meas., applications *(Japanese)* 8−15617
electroplating method for high-temp. stress meas., fundamentals *(Japanese)* 8−15616

nickel continued
electrospark machining, spreading and form. of surface layer, in solid-alloy-liquid-metal systems, kinetics *(Russian)* 8−27668
exploding wire, plasma prod., X-ray diagnostics 8−5909
ferromagnetic, de Haas-van Alphen effect, press. effects *(Russian)* 8−2413
ferromagnetic, exchange splitting, angle-resolved photoemission meas. 8−43985
ferromagnetic, Fermi surface and band struct. 8−6267
ferromagnetic, hyperfine fields at positive muons 8−43758
ferromagnetic, hyperfine mag. fields at ^{67}Ge, TDPAC meas. 8−43701
ferromagnetic, temp. depend. of μ^+ hyperfine field 8−43760
ferromagnetic resonance, linewidth, single crystal 8−2744
ferronickel, thermoelec. determ. of Ni content 8−40096
film, adsorbed H_2(CO), ferromag. reson. exam. 8−15028
film, CO adsorption effect on galvanomagnetic and magnetic props. 8−43490
film, evaporated, galvanomag. and mag. props., thickness depend. 8−23181
film, evaporated, galvanomag. and mag. props. 8−23180
film, evaporated on cold substrate, temp. depend. of elec. resist. 8−19166
film, on (001) Ag, FCC and BCC metal-on-metal epitaxy, geometric factors, electron microscopy 8−22980
film, polycryst., singularities of recrystallisation *(Russian)* 8−2382
film, polycrystalline, resist., conduction electrons and s-d exchange interaction 8−19021
film, surface magnetisation, electric field effect 8−14991
film, surface properties and photoelectron spin polarisation 8−14782
film and foil corrosion and water adsorption 8−7099
film on W (110), field ion microscope exam. 8−34731
foil, oxidation to produced NiO for elec. cond. meas. at 1000°C 8−10451
foils, hydrogenated, thermoelec. and Hall effect 8−43364
Frank loops, growth kinetics and 'preference factor' during electron irradiation 8−22723
grain boundary diffusion in γ-Fe *(Japanese)* 8−18837
grain boundary ledge density, effect on flow stress 8−48465
growth direction orientation effect on impurity distrib. 8−47261
heavy ion irradiated, dendritic void growth 8−14386
heavy ions with energy 0.4-0.9 MeV/A, stripping by C foils, straggling, foil behaviour 8−33351
hyperfine interactions on implanted ^{12}B, crit. behaviour near T_c 8−43663
immiscible picritic liquids, Ni partitioning 8−32069
internal friction near Curie temperature 8−44163
ions, two vacancies in K shell, 2 electron 1 photon, and hypersatellite transition probabilities 8−46294
irradiation-induced creep, mechanism for large transient strains 8−14391
irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
lattice dynamics, phonon dispersion curves, θ-T curves 8−26642
lattice isolation of impurities from hyperfine interaction and channelling results 8−43731
layer, vol. composition of sharp filamentary textures, elec. cond. meas. *(German)* 8−22978
liquid, neutron scatt. and atomic dynamics 8−22637
liquid, O_2 diffusivity, meas. by EMF method 8−14494
liquid, viscosity, up to 2100K, vibr. method 8−38866
magnetic anisotropy, effective const., magnetoelastic contrib. 8−14951
magnetic anisotropy, $X_{2\text{spin down}}$ hole pocket in Fermi surface 8−39314
magnetic domain walls, oblique, obs. by X-ray topography 8−6540
magnetic internal friction peak bifurcation in rot. mag. field *(Russian)* 8−39380
magnetic properties of single-domain powders after plastic deform. *(Russian)* 8−6554
magnetically ordered state, softening with varying mag. field *(Russian)* 8−35017
magnetisation and relative vol. temp. depend. near Curie point *(Russian)* 8−14962
magnetised mono- and polycryst., activation vol. var. during low temp. deform. *(Russian)* 8−3178
magnetised to saturation, props., positive-muon study 8−6619
magneto-optic Kerr effect at (100) platelet surface 8−15151
magneto-optical near UV reflection-spectra, meridional and polar intensity effects *(Russian)* 8−39572
magneto-volume effects calc., rel. to itinerant electron model 8−43621
magnetocrystalline anisotropy energy, temp. and magnetisation depend. 8−6525
magnetostriction, lattice parameter changes, direct X-ray obs. 8−15001
mean excitation energy based alpha particle stopping power meas. 8−30678
melt, diffusion of N_2 *(Russian)* 8−18812
metal cluster, adsorption of CO, mol. orbital calc. 8−18895
molten, migration into WC-Ni hard alloys sintered, with uneven binder metal distrib. 8−35336
neutron depolarisation near Curie point *(German)* 8−14934
nickeliferous limonites, pressure leaching for Ni extraction, using H_2SO_4 8−39717
nuclear material, neutron capture cross sections in intermed. energy region, method and exptl. facility 8−21637
order-disorder transitions on (111) surface, LEED observation 8−47668
oxidation, diffusion enthalpy and entropy 8−7084
oxidation, staged flow of O_2 interaction process, secondary ion emission obs. 8−11386
oxidation of (110) surface, initial stage kinetics, RHEED and X-ray emission 8−15588
oxidation rate transition, at Curie temp. 8−27685
oxide covered, tensile deform. in high vac., particle and photon emission 8−39672
oxide dispersion strengthened materials, effect of prior creep at 1365K on room temp. tensile props. 8−39857
passivation, film form., stability and breakdown 8−19937
β-phase form., H enriched, at surface and grain boundaries during H_2 absorption *(Russian)* 8−31410
phase layer growth during aluminide coating 8−27682
photoemission, angle-resolved, from clean surface 8−15294
plastically deformed, dislocation struct., mag. small angle scatt. of neutrons *(German)* 8−22730
plated Fe single crystal, deformed at 77K, surface obs. 8−19916

nickel continued
point defect-dislocation loop interaction, effect on dislocation loop growth kinetics 8−47415
point defects and planar defects, computer simulation 8−43013
polarised, precession meas. on nucl. excited C-, O- and F-ions recoiling 8−37285
polishing for optical appl. 8−5587
polycrystal, mech. behaviour in microplastic strain region *(Russian)* 8−39838
positron annihilation, Doppler broadened lineshapes, prevacancy lattice expansion 8−27349
positron capture by dislocations, vacancies, rel. to temp. *(German)* 8−30606
positron trapping, defect specific temp. depend. 8−47336
positron trapping by vacancies using ^{19}Ne source 8−47341
powder, atomisation of melt, charact. of metal powder 8−19688
powder, light scatt., close particle packing 8−1161
powder, spark erosion prep. 8−27452
production from reduction of $(Ni_{1-x}Mg_x)_2SiO_2$ *(Russian)* 8−44043
proton stopping power meas. at 100 keV, using ion induced X-ray emission 8−48725
pseudodiffusion of Ni in single crystal Si during RF sputtering 8−2396
quadrupole interaction of vacancy associated with Te impurity, β-γ TDPAC meas. 8−43730
quenched vacancies, effect of oxidation *(French)* 8−27686
quenching experiments 8−48432
radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
Raney nickel, use as hydrogen electrode *(French)* 8−27766
range and range straggling of heavy radioactive ions 8−22776
range of Ni^+ ions in Cu, increase due to ion bombardment induced crystalline reorientation 8−26611
resonant photoemission exam. 8−27371
seawater, predominance-area diags. and equilib. ratios for Co and Ni inorganic forms 8−3819
secondary electron emission coeffs. for multiply charged ion bombard. 8−11051
self ion bombardment, dislocation loop growth and void swelling 8−6110
self-diffusion in NiO, 700-1400°C, rel. to oxidation mechanism 8−27681
self-ion irradiated, defect clusters, annealing 8−18687
self-ion irradiated, He effect on void form. 8−6112
sheared crystal, magnetocrystalline anisotropy torque meas. 8−24830
shock loaded, work hardening and press. depend. of dislocation arrangement and density 8−48429
shock loaded, work softening 8−27537
solubility of H_2, 500 to 1000°C *(Japanese)* 8−38845
sound attenuation anomaly near mag. transition temp. 8−15004
spin polarised low energy electron scatt., elastic and magnon-inelastic 8−34970
spin polarised tunnelling expts. 8−39372
spontaneous magnetisation data up to 0.98 T_c, reanalysis 8−47959
sputtering in inert atm., with uncooled cathode, oxidation of metallic coatings, X-ray diffr. obs. 8−3041
stacking fault energy and delamination wear, single phase FCC 8−3239
structural singularities of plastic deform. at localised flow stage, TEM obs. *(Russian)* 8−6968
sulphidation in H_2S-H_2 mixtures, 450-600°C 8−3257
surface, (001), p(2×2) and c(2×2) O superstructure, angle resolved photoemission from adsorbate 8−23585
surface, (100), (111) clean and H_2S S-adsorbed, ang. distrib. of Auger electron emission *(Japanese)* 8−43963
surface, (100), core levels in adsorbed Cs, electron binding energies 8−18896
surface, clean and S saturated, directional UV photoemission 8−15295
surface, electron spin polarisation, effect of H_2 adsorption, electron capture spectroscopy 8−14933
surface, spin distribution of electrons, electron capture spectroscopy 8−14932
surface, transformed into hydride and decomposed, dislocation density and dislocation profile depth, positron annihilation and X-ray estimation 8−38711
surface (001), clean and S-covered, angular resolved Auger emission, expt. results and predictions from simple model 8−39635
surface (101), light emission by scattered 195 keV He^+ ions after focusing and channelling interactions 8−35240
surface coverage by CO, backscatt. coeff. from ^{14}C radiation 8−30824
surface phonons due to O_2 adsorption on (100) surface 8−2359
tarnishing in air, 23-200°C, relative humidities from ambient to 95% 8−19940
thermal emissivities and diffusivities, expt. transient technique and theory for foils 8−43353
thermal expansion, 300-1000K, and power law consts. near Curie temp. 8−38858
thermal softening, influence of alternating mag. field *(Russian)* 8−23312
thin plate, Young's modulus meas. by composite vibrator method *(Japanese)* 8−11463
UPS, angle-resolved, in modified LEED system 8−15293
US attenuation and magnetisation, mag. field depend., for single cryst. *(Russian)* 8−6559
US deform., electron microscope exam. *(Russian)* 8−35447
vacancy micropore form. during bombardment by 300 keV Ni ions 8−2172
vapour press. above different crystallographic planes *(Russian)* 8−18762
void swelling caused by neutron and self-ion bombardment, 573 to 873K 8−14387
X-ray emission spectra, L_1 and L_η 8−39631
Young's modulus and shear modulus, temp. depend. 8−27553
ZZ 8−26809
Al_2O_3:Ni, γ-irrad., thermoluminesc. 8−2925
Al_2O_3:Ni, heat transfer at low temp. 8−38888
C fibre, Ni coated, high-temp. compatibility 8−19829
Cu-Ni evaporated thin film couple interdiffusion obs. 8−43187
Fe-Ni-C (19.5, 0.73 wt.%), banded struct. formed by deform., TEM and optical obs. 8−39869
GaAs:Ni, behaviour of Ni impurity in $3d^8$ state, optical absorption and photocond. meas. 8−47737

nickel continued
GaAs:Ni^{3+}, EPR assessment of 3d^7 transition metal impurity state 8−48031
GaAs:Ni^{3+}, mag. and optical props. 8−10763
GaP:Ni, Ni contaminant, detection through IR photoluminescence 8−15212
GaP:Ni^{3+}, EPR assessment of 3d^7 transition metal impurity state 8−48031
Ge:Ni compensated, hot electron recomb. anisotropy 8−39125
Ge-Au-Ni trilayer film, interdiffusion obs., on annealing 8−2308
Ge-Au-Ni trilayered film, annealing, interdiffusion 8−22902
InP:Ni^{3+}, EPR assessment of 3d^7 transition metal impurity state 8−48031
KMgF$_3$:Ni^{2+} high energy absorption spectra interpretation 8−6716
α-LiIO$_3$:Ni^{2+}, absorption spectra, impurity environments 8−27275
MgF$_2$:Ni, growth by vertical gradient freeze method, in self-sealing graphite crucibles 8−31334
MgO:Ni^{2+}, elastic interaction of mag. centres, EPR line width meas. 8−19315
Mo, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Ni (VIII), semiempirical investigation of spectra 8−33434
Ni, (100)p(2×2)O and (100)c(2×2)O surfaces, struct. and vibrs. of adsorbed CO 8−2375
Ni, dispersed catalyst on Al$_2$O$_3$ and SiO$_2$, epitaxial and textural effects, ferromag. reson. 8−23963
Ni II, oscillator strengths, near UV lines, wall-stabilized arc meas. 8−42003
Ni, tubular sample, basic EM theory 8−43620
Ni XXVII, He-like ion, oscillator strengths of transitions between low-lying S and P states 8−13470
Ni^{2+} dopant in CaF$_2$, CdF$_2$, BaF$_2$ 8−27265
Ni:^{235}U (0.1 at.%), exam. of saturation defect conc. and elec. resistivity meas., for neutron irrad. at 7K 8−47435
Ni:^{57}Fe, Mossbauer meas. near Curie temp. 8−10817
Ni:C, bulk-to-surface precip. and surface diffusion of C, AES data interpretation 8−34713
Ni/NiO, relative chemical potential of oxygen *(German)* 8−31642
Ni-Al$_2$O$_3$ composite film, selectively absorbing, optical props. 8−6798
Ni-Cu interface, diffusion coeff. using method of nets 8−22903
Ni-H, implanted film, resistivity and TDPAC meas. 8−39229
Ni-H interaction, 0.75 Å$\leqslant$R$\leqslant$5 Å, NiH form. effect of inner orbitals *(German)* 8−29752
Ni-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
Ni-NiO-Ni, integrated MOM junctions, characts. at DC and optical freqs. 8−41349
Ni-Si surface barrier struct., surface electronic states, annealing effects *(Russian)* 8−6441
Ni+Fe, two electron one-photon X-ray transitions, Dirac-Fock calcs. 8−17600
Ni+Ni, 39 MeV, X-ray emission spectra, nonLorentzian shape of atomic line tail 8−21872
Ni+Ni^{x+}, K X-rays, two-electron-one-photon excitation 8−13589
^{61}Ni, 3d^{9}4p ^{3}D$_2$ level, hyperfine struct., level crossing obs. *(French)* 8−41997
Si:Ni deep impurity levels, electron capture probabilities rel. to temp. 8−2523
Si:Ni p$^+$n and n$^+$p diodes, thermally stimulated capacitance obs. of Ni acceptor levels 8−19137
Si-Ni Schottky barriers, thermionic field emission at room temp. 8−6445
Si-Ni Schottky diode, type II localised interface states, Si surface prep. effects 8−39210
SrO:Ni, EPR of Ni$^+$, two-stage increase in symmetry, reorientation of cryst. field axes 8−27085
W-Ni point contact diode detectors at 10.6 μm, mech. and props. 8−24861
ZnO:Ni^{2+} tetrahedral ion config. interaction and crystal field spectra intensity 8−43335
ZnS-CdS:Tm,Ni, recomb. centre interaction, luminesc. quenching 8−10946
ZnSiF$_6$.6H$_2$O:Ni^{2+}, cryst. field, uniaxial compression method *(Russian)* 8−35027
ZnSiF$_6$.6H$_2$O:Ni^{2+}, spin-lattice relax. at press. up to 6.5 kbar 8−48033

nickel alloys
see also Elinvar; Invar; nickel compounds; Permalloy
Alnico, domain struct., variation under influence of heat treatment *(Russian)* 8−23292
Alnico 5 and 8, spinodally decomposed magnetic alloy, magnetic flux temp. coeff. *(Japanese)* 8−35006
Alnico alloy, C addition effects on struct. and mag. props. 8−23835
Alnico alloys, effect of Ce addition on mag. props. 8−2699
alumel, B versus H measurement from 25 to 180°C 8−23297
austenitic alloys, corrosion performance in automobile exhaust environments 8−7091
Bi-Ni base alloys, heterogeneous, supercond., magnetisation meas. *(French)* 8−6477
boride coatings on Ni alloy, thermal stability, exam. of coating 8−44271
creep, corrosion, and fatigue testing for appl. in nucl. process heat system 8−13237
CVD Al coating, transport agent comparison 8−11429
cyclic creep of heat resistant alloys *(Russian)* 8−19845
directionally solidified Mar M200, Hf additions, effect of vol.% γ' on creep rupture 8−27526
electrolytic deep etching 8−31604
Fe$_{40}$Ni$_{40}$P$_{14}$B$_6$, amorphous, tape wound core, fluctuations of driving field 8−10726
ferromagnetic, hyperfine fields of 4d and 5d impurities 8−31133
Hastelloy B-2, decomposition of metal oxide films under electron bombardment 8−19928
Hastelloy C-276 and C-4 cold worked high alloy material, factors affecting H$_2$ embrittlement in H$_2$S environments 8−31502
Hastelloy N, air contamination effect on compatibility with liquid Li in stainless steel vessels at 600°C 8−25285
Hastelloy-X, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
Haynes alloy 188, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895

nickel alloys continued
heat resistant, determ. of sub-ppm levels of Ag by graphite furnace atomic absorption spectrometry 8−48730
heat resistant alloys, atomic absorption spectrometry with heated graphite atomizer, Bi and Pb trace quantities 8−15749
heat resistant charact. extrapolation by temp.-time methods, creep data 8−15477
hot hardness and oxidation resistance meas. 8−31588
Incaloy 623, cold worked, factors affecting embrittlement in H$_2$S 8−31502
Incaloy IN 738, dispersion hardened superalloy 8−11156
INCO 901, fatigue crack propag. theory 8−5692
Incoloy, evaluation for use in nuclear process heat appl. 8−13234
Incoloy 903, H$_2$ permeation and diffusion 8−26730
Incoloy MA956E, mechanical alloying for high temp. appl. 8−44046
Inconel, chloride corrosion in hot acidic media 8−35552
Inconel, compact ductile fracture toughness specimens, load line displacement measurement method at elev. temps. 8−27700
Inconel 600, Neutron irradiation using HFIR for evaluation as fusion reactor material 8−13324
Inconel 718, H$_2$ permeation and diffusion 8−26730
Inconel 750, volatilisation of oxides during oxidation at 1200°C 8−23873
Inconel alloys for VHTR heat exchangers, material criteria and selection 8−13232
Inconel MA754, mechanical alloying for high temp. appl. 8−44046
Inconel X750 springs, in-reactor stress relaxation 8−11256
Multimet, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
Ni$_3$Al-Ni$_3$Nb eutectic alloy, aluminide coating microstruct. exam. 8−15593
Ni-Cr alloy Kh20N80, sintered sheet material, stopping power and pore size relationship 8−19693
Ni-Fe atomic and mag. ordering, cluster variation calc. *(Russian)* 8−15391
Ni-Zn ferrites, mag. param. 8−35005
Nichrome, volatilisation of oxides during oxidation at 1200°C 8−23873
Nichrome wire, porous, strength charact. 8−6997
Nimanic 80A, inhomogeneity effect of cyclin strain on crack initiation 8−48532
Nimonic PE16, oxidation in Ar-H$_2$O-H$_2$ atmosphere 8−35584
Numonic 80A, grain boundary crack diffusional growth, high temp. rupture possibility 8−47471
rare earth intermetallics, R$_{0.2}$La$_{0.8}$Ni$_5$, H$_2$ storage appl., desorption isotherms dependence on d-bandfilling 8−18912
Rene 41, volatilisation of oxides during oxidation at 1200°C 8−23873
steel, 18% Ni maraging, fatigue strength, effect of soln. treatment and inclusions 8−23805
steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
steel, austenitic, Cr-Ni (18, 11 wt.%), creep rupture *(German)* 8−11297
steel, austenitic stainless, bulk and grain boundary diffusion of Fe, Cr, Ni, effect of Si content 8−38875
steel, austenitic stainless, Cr-Ni-Mo-Mn, Mo, Mn and ageing effects 8−35413
steel, C-Mn-Cr-Mo (0.4, 0.8, 1.1, 0.25 wt.%) C, Ni, Mo, Cr addition effects on toughness of bainite 8−11327
steel, CC Cr-Ni, rock-like fracture *(Chinese)* 8−31497
steel, Cr-Ni, martensite defect identification by positron annihilation 8−39867
steel, Cr-Ni-Mo-V-Nb (12,8,1,1.5;0.4 wt.%) Ce addition effects on strength and hardness *(Russian)* 8−15454
steel, CrMoNi, cantilever beam method to determ. J$_{Icc}$ and J$_{Iscc}$ *(Chinese)* 8−15488
steel, Fe-Cr-Ni (17.20, 7.34 wt.%), transform.-induced plasticity 8−23774
steel, high Ni (19 wt.%), thermal stabilisation of austenite 8−15397
steel, maraging, Ni, stress corrosion cracking 8−35563
steel, maraging, Ni-Co-Mo (18,10,5 wt.%) precipitation *(Japanese)* 8−15402
steel, maraging Ni-Co-Mo, precipitation, elec. resist. meas. *(Japanese)* 8−11228
steel, martensitic, Cr-Co-Ni-Mo, notch toughness, rel. to sensitivity to stress conc. 8−31532
steel, martensitic, Cr-Ni, grain refining and phase transforms. effect on plasticity *(Russian)* 8−39837
steel, Ni (5 wt.%), corrosion fatigue 8−27683
steel, Ni-Cr, long-time exposure to N$_2$O$_4$, effect on mech. props. *(Russian)* 8−48573
steel, Ni-Cr-Mo increase of crack initiation time in delayed fracture by fatigue accumulation *(Japanese)* 8−11312
steel, Ni-Mn (16, 2 wt.%), 40N16G2, single crystal, stabilisation and destabilisation mechanisms *(Russian)* 8−23732
steel, NiCrMoV, stress corrosion cracking, cold work effects 8−11383
steel austenitic Cr-Ni-Be, cellular precipitation *(Japanese)* 8−11229
STEM microanalytical techniques comparison for precip. comp. determ. 8−35790
superalloy, cast, microstruct. and microanalysis 8−35393
superalloy, coated with Ni-Co-Cr-Al-Y, fatigue cracking in coating 8−11438
superalloy, IN-738, microstruct. changes during isochronal heat treatment, 773-1467K 8−27531
superalloy, preparation for instrumented anal., HF induction melting, casting 8−48607
superalloy, transient liq. phase diffusion bonding and mechanism *(Japanese)* 8−2279
superalloy powder, thinning technique for microstruct. obs. using analytical electron microscopy 8−48587
superalloys, corrosion by O$_2$ containing H$_2$O and gaseous NaCl, volatile products 8−27674
Ticonal, domain struct., variation under influence of heat treatment *(Russian)* 8−23292
Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
Udimet 700, creep crack growth 8−48517
US vibration during crystallisation, effect on mech. props. *(Russian)* 8−19827
β′-NiAl, Ni rich, electron diffr. pattern anomalies, rel. to martensitic transform. and short range ordering 8−6926

nickel alloys continued
Al-Al$_3$Ni, aligned, eutectic alloy, mech. behaviour at high strain rates 8−39855
Al-Al$_3$Ni, eutectic composite, directionally solidified, thermal cycling induced distortion 8−39899
Al-Al$_3$Ni directionally solidified eutectic, microstructural degradation in temp. gradient 8−3145
Al-bronze, input energy, hysteresis, and fracture in low cycle buckling fatigue, superelastic range 8−31527
Al-bronze, single crystal rod, energy dissipation, deformed by cyclic buckling in superelastic range 8−31479
Al-Ni, ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
Al-Ni, liquid alloys, thermodynamic charact. calc. *(Russian)* 8−27475
Al-Ni eutectic, mechanism of lamellar spacing adjustment 8−31395
Al$_3$Ni-Al two-phase matrix, Al electrolytic etching in AlCl$_3$ molten salts 8−3280
Au-Cu-Ni, phase precipitation on domain boundaries, effect of Ni *(Russian)* 8−39777
Au-Ni solid soln., creep 8−15475
Au-Ni-O surface, quantitative Auger analysis using relative sensitivity factors 8−7295
Au-SnNi-Au ohmic contacts on n-GaAs 8−35319
CC Ni$_3$Al, refractory transition metal alloying effects on ht. capacity 8−26691
Ce(Cu,Ni)$_2$, pseudobinary phases, struct. and mag. props. rel. to Ce valence 8−6032
Co-Cr-Mo-Ni-Fe-Si-Mn-C, protective coatings by B diffusion, microstruct. and mech. props. 8−11427
Co-Cr-Ni-W-TaC (15.7, 9.5, 3, 12.77 wt.%) alloy Co50B3W, temperature cycling effect on rupture strength 8−39898
Co-Cr-Nr-TaC eutectic alloys, fatigue, microstructure effects 8−23803
Co-Fe-Ni semihard magnetic alloy, directional distrib. of magnetisation changes connected with Barkhausen effect 8−14985
Co-Ni, dil., effective mag. field at ^{59}Co, impurity conc. depend., spin echo expts. 8−48080
Co-Ni, magnetic anisotropy induced by magnetic and stress annealing 8−35010
Co-Ni, magnetocrystalline anisotropy consts. meas., 77-700K 8−43582
Co-Ni-Cr-Ta-C (10, 10, 14, 1 wt.%), aligned eutectic, directionally solidified, fatigue crack propag. 8−27624
(Co-Ni)-Cr$_{23}$C$_6$ eutectic alloy, directionally soldified, microstruct. and crystallography 8−48390
Co$_{2-x}$(Ni,Fe)$_x$TiSn, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8−43654
Co$_{0.65}$Ni$_{0.35}$, precursory phonon obs. of FCC to HCP transition 8−43082
Co$_{1-x}$Ni$_x$Si, IR refl. spectra in plasma refl. region 8−27233
Co$_{2-x}$Ni$_x$TiSn, mag. ordering, ^{119}Sn Mossbauer spectroscopy and magnetisation meas. 8−43753
Cr-Ni, Ar ion bombard., O$_2$ flooded, secondary ion yield as function of original conc. *(French)* 8−39643
Cr-Ni alloy NK40, thermal fatigue life *(Japanese)* 8−19880
Cu-Al-Ni, hypereutectic, martensitic transform., effect of β_1-phase decomposition *(Russian)* 8−23705
Cu-Al-Ni alloys, deformed, fine struct. of martensite *(Russian)* 8−6923
Cu-Al-Ni-Fe-Mn, cast Ni-Al bronze, fracture metallography 8−27597
Cu-Be-Ni-Ti-Mg (2, 0.3, 0.2, 0.02 to 0.4 wt.%), multiple step ageing *(Russian)* 8−19786
Cu-Mn-Ni, thin film, vacuum deposited, struct., elec. cond. *(Russian)* 8−19668
Cu-Ni, coating on Ti alloy VT9, plastic deform. and diffusion annealing effect on props. *(Russian)* 8−35425
Cu-Ni, critical concentration for ferromagnetism 8−14969
Cu-Ni, dil., dislocation damping, 95-297K, at high strain amplitudes 8−39824
Cu-Ni, dil. alloy, optical reflectivity meas. virtual bound state model analysis 8−2873
Cu-Ni, in 0.1 M NaCl, electric pot. and pH meas., crevice corrosion 8−31564
Cu-Ni, microconductors, cast, struct. and physical props. exam 8−44232
Cu-Ni, surface segregation, comparison of low-energy ion-scatt. results with theory 8−38923
Cu-Ni (10 at.%), struct. changes during deform. *(Russian)* 8−19818
Cu-Ni (10 wt.%), supercooled melt, dendrite growth morphology *(Japanese)* 8−11216
Cu-Ni (20-80 at.%), clustering, diffuse neutron scatt. study, conc., temp. depend., miscibility gap location 8−47529
Cu-Ni (50 wt.%), preferential sputtering, thickness and in-depth comp. profile of altered layer, AES 8−39649
Cu-Ni (70 at.%), mech. behaviour in microplastic strain region *(Russian)* 8−39838
Cu-Ni alloy, sputtered altered layers, in-depth profile, model 8−19613
Cu-Ni alloys, density of states determ. by continued fraction method 8−47690
Cu-Ni alloys, magnetic diffuse neutron scatt. 8−14931
Cu-Ni film, (001), in situ oxidation, TEM obs. 8−23874
Cu-Ni film, struct. and mag. order effects on electron transport props. 8−6460
Cu-Ni films, thickness depend. of Curie temp., resist. meas. 8−6545
Cu-Ni tubing, viscoplastic bending 8−35464
Cu-Ni-Cr, microstruct. behaviour and mechanical hardening 8−47281
Cu-Ni-Cr (28, 2.8 wt.%), spinodal alloy, microstruct. and tensile props. 8−39858
Cu-Ni-Fe, synergistic effect of Ni and Fe on sea water corrosion 8−35561
Cu-Ni-Fe alloys superparamag. early stages of decomp. *(Russian)* 8−6890
Cu-Ni-Mn (20,20wt.%), structural transform., X-ray and hardness study *(French)* 8−39760
Cu-Ni-O, liquid alloy, thermodynamic study by EME method *(Japanese)* 8−15367
Cu-Ni-Sn, thermal decomposition after prior cold work 8−15427
Cu-Ni-W melt, solubility of W, primary solidification 8−19726
Cu-Ni-Zn alloy, at 775 degrees C, diffusional and thermodynamic interactions 8−38883
Cu-Ni-Zn·alloy, FCC, cold-worked, microstruct., X-ray obs. 8−3143
Cu-Ni; preferential sputtering, Auger meas. 8−27358
β-(CuNi)Zn, cross slip 8−26576

nickel alloys continued
Dy$_2$(Fe$_{1-x}$Ni$_x$)$_{17}$, Mossbauer spectra, hyperfine field interactions 8−6614
Dy$_{1-x}$Ho$_x$Ni$_2$, cryst. field quenching of Dy^{3+} 4f shell, Mossbauer effect meas. 8−39480
DyNi$_3$, amorphous, resist. meas., 1.2-290K 8−19015
Er$_2$(Co$_{1-x}$Ni$_x$)$_{17}$, mag. anisotropy and intersublattice exchange interactions 8−31066
EuNi$_5$H$_x$, Mossbauer effect exam. 8−48094
(Fe, Ni, Co)-Si-B, amorphous, compositional effect on struct. changes, after heating up to 700°C, exam. *(Japanese)* 8−48433
Fe, cast-Mg, 8−44149
Fe, cast-Ni, 8−44086
Fe-Co-Ni-Al-Zr magnetically hard alloys, reduction *(Russian)* 8−43614
Fe-Cr-Ni, appl. of computational techniques for treatment of thermodynamic data, phase diagram calc. 8−10172
Fe-Cr-Ni, stable and metastable, thermal expansion, 4.2-290K *(Russian)* 8−47537
Fe-Cr-Ni (18, 14 wt.%), single strain induced γ to α′ cryst. transform. *(Japanese)* 8−11221
α+β-Fe-Cr-Ni (23.19, 4.91 wt.%), orientation relationship between austenite and lath martensite 8−39775
Fe-Cr-Ni (25, 20 wt.%), single crystal, stress corrosion cracking 8−35553
α+γFe-Cr-Ni alloy, stress-induced α′-martensite occurrence 8−23704
Fe-Cr-Ni alloys, linear expansion, 4.2-300K rel. to antiferromag. rearrangement 8−43146
Fe-Cr-Ni liquid alloy, N$_2$ soln. and TiN precipitation 8−6931
Fe-Cr-Ni-Mn-Mo, liquid, N$_2$ solubility 8−44087
Fe-Cr-Ni-Ti-Al, superalloy, Ti, Ni, Al, H$_2$ variations effect on mech. props. 8−3188
Fe-Cr-Ni(Ni-Mn)-C, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8−44085
Fe-Mo-Ni-C, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8−44085
Fe-Ni, Ar ion bombard., O$_2$ flooded, secondary ion yield as function of original conc. *(French)* 8−39643
Fe-Ni, atomic valence states, ferromag. props. *(Ukrainian)* 8−2656
Fe-Ni, austenite formed from martensite during annealing in (α+γ) region, crystallographic study 8−19782
Fe-Ni, austenitic, precipitation of AlN *(French)* 8−23711
Fe-Ni, crystallization texture, rolling, effect of impurities 8−15425
Fe-Ni, effect of alloying additions on magnetoelastic effects 8−43624
Fe-Ni, FCC, elastic props. and stability near martensitic transform. temp. *(Russian)* 8−6921
Fe-Ni, influence of hydrogen press. on temp. of martensitic transform. *(Russian)* 8−27514
Fe-Ni, liquid diffusion of H$_2$ *(German)* 8−14487
Fe-Ni, mechanisms of EM generation and detection of US Lamb waves 8−39382
Fe-Ni, ordered, low temp. α→γ transform. *(Russian)* 8−19740
Fe-Ni, oxidation, Mossbauer spectroscopy, metallography, SEM and X-ray diffr. anal. 8−15577
Fe-Ni, recrystallisation under laser irradiation *(Russian)* 8−35396
Fe-Ni, segregation of inhomogeneities during crystallisation *(Russian)* 8−27521
Fe-Ni, shape memory effect *(Russian)* 8−38771
Fe-Ni, strain energy controlled shape of cryst. forming due to martensite transform. or decomposition 8−38648
Fe-Ni, strain hardening and rate-sensitivity, effect on ductile-brittle transition temp. 8−39900
Fe-Ni, surface comp. obs. by AES 8−10266
Fe-Ni (18 wt.%), martensitic transform., external stress effect *(French)* 8−23707
Fe-Ni (23-35 at.%), cooled below 70K in mag. field, uniaxial anisotropy *(Russian)* 8−19244
Fe-Ni (3 wt.%), embrittled, microanalysis of grain boundary segregation using STEM 8−35633
Fe-Ni (32 wt.%), electrohydraulic effect and struct. changes *(Russian)* 8−23783
Fe-Ni (50 to 94 wt.%), FCC, form. and migration energy of vacancies, induced magnetic anisotropy *(French)* 8−2110
Fe-Ni (9.21 wt.%), oxidation in CO$_2$ at 700-1000°C 8−44265
Fe-Ni alloy, cellular-dendrite struct., effect of temp. gradient and crystallisation rate on morphological singularities *(Russian)* 8−3115
Fe-Ni alloy, disordered, short-range order study by time-depend. PAC method 8−6618
Fe-Ni alloy, solid solution, vibr. analogue of Bain deform. and morphology of martensite in 8−2224
Fe-Ni alloy, X-ray microanalysis in scanning transmission electron microscope, limitations 8−20122
Fe-Ni alloys, reverse martensite start temp., heating rate effects *(Russian)* 8−6924
Fe-Ni alloys, thermal props., let. review *(Russian)* 8−18805
Fe-Ni austenite, α→γ transform and stabilisation, Mossbauer and electron microscopy obs. *(Russian)* 8−23703
Fe-Ni base alloy, precracked specimen, K_{Ihcc} threshold value under const. load at high temp. *(Chinese)* 8−31499
Fe-Ni based metallic glasses, hydrostatic press. effect on mag. props. 8−19300
Fe-Ni evaporated films with perpendicular anisotropy, magnetoresistance obs. 8−2585
Fe-Ni films, scatt. of homogeneous spin waves by anisomeric oriented plane, ferromag. reson. 8−19336
Fe-Ni solid soln., thermodynamic study 8−6904
Fe-Ni surface alloy formed by ion implantation, anodic polarisation 8−48562
Fe-Ni-Al-Co-Cu-Ti, 38 to 40 wt.% Co, 8 to 8.5 wt.% Ti, alloy YuNDKT tempering and thermomagnetic treatments 8−3154
Fe-Ni-Al(Ti)(Nb)(V), cryogenic toughness, strength, rel. to reactive metal addition 8−39885
Fe-Ni-C, cast, spheroidal graphite, metallography of solidification 8−19737
γ-Fe-Ni-C, electromigration of C, effect of Ni addition 8−6184
Fe-Ni-C, FCC, effect of two gamma states on C activity 8−6897
Fe-Ni-C, martensitic, mech. charact., effect of ageing and tempering *(Slovak)* 8−19791
Fe-Ni-C, martensitic, mech. and fracture charact., effect of starting austenite heterogeneity *(Slovak)* 8−19792

nickel alloys continued
Fe-Ni-C, martensitic, modulation of local C atom cumulation during ageing *(Slovak)* 8−19790
Fe-Ni-C, martensitic transform., Mossbauer obs. *(Russian)* 8−6927
Fe-Ni-C, Redlich-Kister eqns., activity coeffs., phase equilib. 8−23664
Fe-Ni-C (10, 0.6 wt.%), effect of austenite yield strength on martensitic transformation 8−39772
Fe-Ni-C (19 to 30, 0.04 to 0.8 wt.%) alloys, transformation of martensite in austenite, optical and electron microscopic exam. *(Russian)* 8−35382
Fe-Ni-C (21, 0.6 wt.%), stress assited and strain induced martensite morphologies 8−3187
Fe-Ni-C (31, 0.1 wt.%), kinetics of deform. induced martensite, shock loading and grain refinement effects 8−15395
Fe-Ni-C austenite, metastable, influence of prior deform. on yield stress 8−15461
Fe-Ni-Co, diffusion controlled phase growth 8−30782
Fe-Ni-Co base alloys, composition changes during electron radiation melting *(Russian)* 8−19718
Fe-Ni-Co film, electron-nucl. mag. reson. 8−35063
Fe-Ni-Cr, at. distrib. effect on mag. props. *(Russian)* 8−2657
γ-Fe-Ni-Cr, magnetic phase diagram *(Russian)* 8−39292
Fe-Ni-Cr alloy, cast, etching methods for determ. of primary struct. 8−23888
Fe-Ni-Cr alloy 800, minor alloying element effect on creep, ageing microstruct. 8−27572
Fe-Ni-Cr alloy electrodeposition from sulphate electrolyte with cystine and Na citrate additives *(Russian)* 8−48336
Fe-Ni-Cr austenitic alloy, homogeneous and dispersion strengthened, internal stresses and high temp. creep 8−19841
Fe-Ni-Cr corrosion protective coating on steel 8−48572
Fe-Ni-Cr vapour deposited film metastable phase formation *(German)* 8−38984
Fe-Ni-Cr-C, ferritic, P segregation to free surface, 723 to 823K, AES 8−48411
Fe-Ni-Cr-C, martensitic transform. effect of austenite prestrain above M_d temp. 8−15398
Fe-Ni-Cr-P-B, Metglas 2826A, TEM of shear bands 8−48483
Fe-Ni-Cr-Ti-Al, ausaging alloy, cellular precipitate indentification *(Chinese)* 8−11225
Fe-Ni-Ge, liquid alloy, H_2 thermodynamic interaction, solubility *(Russian)* 8−11202
Fe-Ni-Mn, BCC, mag. state of Mn, NMR and saturation magnetisation meas. 8−39442
Fe-Ni-Mn melt, thermodynamic dissolution of O_2 *(Russian)* 8−27473
Fe-Ni-Mo, small angle X-ray scatt. study, pre-precipitation phenomenon obs. *(French)* 8−19757
Fe-Ni-Mo-C, sintering 8−35333
Fe-Ni-Mo(Ti)(Si), ordered, low temp. $\alpha \to \gamma$ transform. *(Russian)* 8−19740
Fe-Ni-Pt system, ordered phase fields of equilibrium diagram 8−48373
Fe-Ni-Ti, ageing mechanism, neutron diffr. expts. *(Russian)* 8−48403
Fe-Ni-Ti alloys, high pressure effect on martensite crystal nucleation and growth *(Russian)* 8−39769
Fe-Ni-Ti martensitic alloy, γ′ particle effect on crystallisation struct. *(Russian)* 8−44129
Fe-Ni-V, effect of low temp. ageing on props. during high temp. ageing *(Russian)* 8−39811
Fe-Ni-V alloy, ageing of martensite *(Russian)* 8−39808
Fe-Ni-V-(CO) alloy, lattice parameter variation during ageing *(Russian)* 8−39812
$(Fe-Co-Ni)_{78}Si_8B_{14}$, amorphous, low coercivity and zero magnetostriction 8−23299
$Fe_{40}Ni_{40}B_{20}$, amorphous ferromag., resist. and galvanomagnetic props., rel. to magnetisation 8−14712
$Fe_{40}Ni_{40}B_{20}$ glass, phase transform. during isochronal annealing 8−14451
$(Fe_{1-x}Ni_x)_2P$, mag. props. 8−23248
$(Fe_{0.04}Ni_{0.96})_{80}P_{10}B_{10}$, amorphous, mictomagnetic to ferromag. transition 8−34981
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous, domain struct. 8−10719
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous tape wound cores, mag. props. *(German)* 8−10727
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous, mag. props. 8−10728
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous alloy, structural relaxation kinetics, X-ray diffr. exam. 8−38627
$Fe_{40}Ni_{40}P_{14}B_6$ glass, low temp. heat capacity meas., electronic, phonon contributions exam. 8−10689
$Fe_{40}Ni_{40}P_{14}B_6$ glass, crystn. kinetics, DSC expts. 8−26444
$Fe_{40}Ni_{40}P_{14}B_6$, glassy, mag. props. and hyperfine interactions, Mossbauer obs., 4.2-1000K 8−10812
$Fe_{40}Ni_{40}P_{14}B_6$, high-field suscept. and spin wave spectrum 8−10662
$Fe_{40}Ni_{40}P_{14}B_6$, induced anisotropy energy and saturation magnetisation temp. depend., torque magnetometer meas. 8−10680
$Fe_{40}Ni_{40}P_{14}B_6$, irradiation swelling 8−30682
$Fe_{40}Ni_{40}P_{14}B_6$, metallic glass, acoustic emission generated during viscous flow 8−39853
$Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, magnetising processes 8−10725
$Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, acoustic emission during viscous flow 8−42915
$Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, stability, crystallisation, ductility meas. 8−47246
$(Fe_xNi_{1-x})_{80}P_{14}B_6$, Mossbauer spectroscopy, mag. hyperfine interaction, Curie temps. 8−6617
$(Fe_{65}Ni_{35})_{75}P_{16}B_6Al_3$, amorphous ferromag., high temp. spin dynamics 8−47965
$(Fe_xNi_{1-x})_{0.75}P_{0.16}B_{0.06}Al_{0.03}$, metallic glass, thermal expansion 8−43151
$Fe_{29}Ni_{49}P_{14}B_6Si_2$ glass, crystn. kinetics, DSC expts. 8−26444
$Fe_{72}Ni_8P_{13}C_7$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
$Fe_{3-x}Ni_xSi$, limits of solubility, mag. props. and electron conc. 8−10670
$Gd_2(Fe_{1-x}Ni_x)_{17}$, Mossbauer spectra, hyperfine field interactions 8−6614
$GdNi_2H_4$, effect of absorbed H_2 on struct. and mag. behaviour 8−2682
$GdNi_2H_4$, effect of H_2 absorption on struct. and mag. behaviour 8−10685
$Hf_3Ni_2Si_3$, struct., lattice consts., space group, X-ray Weissenberg camera data 8−47284

nickel alloys continued
$HoNi_3$, amorphous, resist. meas., 1.2-290K 8−19015
$LaNi_5$, absorption of H_2, kinetics, diffusion consts. 8−14508
$LaNi_5$, activated, slow step for H_2 absorpt. (desorpt.) 8−18894
$LaNi_5$, H_2 storage appl. 8−18785
$LaNi_5$, self restoring of active surface, photoemission, mag. susceptibility study 8−48280
$LaNi_4Cu$, H_2 absorption, cell volumes and desorption pressures correlation 8−22860
$LaNi_5H_{6.6}$, $LaNi_5H_{6.2}$, H diffusion NMR spectra *(Russian)* 8−2287
$LaNi_5H_x$ hydrogen storage system, $(0 \leq x \leq 6)$, neutron scatt. obs. of static and dynamic props. 8−14323
$LaNi_4M$, M=transition metal, H_2 storage appl., desorption isotherms dependence on d-bandfilling 8−18912
Mn-Ni, shape memory effect 8−35386
Mn-Ni, single cryst. or polycryst., elastic anomalies at antiferromag. transition 8−14972
$Mn_xNi_{1-x}Sb$, spin glass state and synthesis in high temp. and press. atmospheres 8−23277
Nb-Nb-Al-(Cr), γ/γ′-δ type eutectic, fatigue, effect of composition and microstruct. 8−48520
Nb-Ni, amorphous, synthesis by vapour quenching, and struct. 8−11111
Nb-Ni metallic glass, temp. depend. of resistivity 8−47759
$NdNi_5$, H_2 absorption, cell volumes and desorption pressures correlation 8−22860
$(Ni,Co)_3Ge$, Co effect on temp. depend. of yield stress 8−31487
$Ni_{75}Si_8B_{17}$, amorphous alloy, crystallisation study *(Japanese)* 8−9959
Ni based superalloys 713C and Mar-M200, Si effect on oxidation, hot corrosion and mech. behaviour 8−39950
Ni Ga, defect struct. 8−30608
Ni/Ni_3Al-Ni_3Nb eutectic, directionally solidified, plastic deformation *(Russian)* 8−39843
Ni-3d metal, ferromag., spin polarised tunnelling expts. 8−39372
Ni-A-Ti (6,1 wt.%), γ′ phase precip., deform. effects *(Russian)* 8−48404
Ni-Al, solid soln. and solid soln. hardened, stead state creep 8−27578
Ni-Al, ZZ 8−26809
Ni-Al (14 at.%), two stage ageing effect on spatial distrib. of γ′-phase particles *(Russian)* 8−39805
β_2-Ni-Al (47.6 to 60.5 at.% Ni), elastic stiffnesses −196 to 400°C 8−27556
Ni-Al (6.05 wt.%), prediction and meas. of precipitate number density 8−19756
Ni-Al (6.3 at.%), influence of localised order on thermo-EMF and Hall-EMF *(Russian)* 8−6951
Ni-Al (6.35 wt.%) foil, radiation-induced precipitate redistrib. 8−30681
Ni-Al (6.35 wt.%) precipitate coarsening, redistribution and renucleation during ion irradiation 8−23709
Ni-Al base ageing alloys, single cryst., deform. and hardening 8−23716
Ni-Al bronze, fracture resistance of tubes 8−19867
$Ni-Al_2O_3$ alloy, electron beam evaporated, struct. and mech. props. 8−11114
Ni-Al-Cr CO alloy, IN 100 protective Ni-Al coating, Ti content influence on oxidation behaviour *(French)* 8−3258
Ni-Al-Cr-Mo-Ti-W-(Co) alloys EhI 826 and EhI 929, reverse elastic after effect under loading 8−39829
Ni-Al-Cr-Ti-W-Mo, US vibration applied during solidification, improved strength, corrosion resistance *(Russian)* 8−15382
Ni-Al-Si, β-phase stability *(Russian)* 8−39738
Ni-Al-Ti protective coating, on Ni-Al alloy IN 100, Ti content influence, oxidation behaviour *(French)* 8−3258
Ni-As, dil., temp. depend. of hyperfine field, TDPAD meas. 8−43700
Ni-B (3 at.%), columnar alloys, metallographic obs. of eutectic struct. *(Russian)* 8−27469
Ni-B-Cr, composite, wear resistant coating on steel 45 8−11420
Ni-base alloy, screening studies for evaluation for nucl. process heat system 8−13236
Ni-base wear resistant dispersion hardened electrolytic coating, annealed and sintered 8−35593
Ni-Be bronze, Fe and Si alloying addition effect on phase composition *(Russian)* 8−15360
Ni-Co, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
Ni-Co film, spin-wave reson. exam. 8−2746
Ni-Co plate, surface anisotropy from ferromagnetic reson. 8−48049
β-Ni-Co-Al, martensitic transform., metallographic, X-ray diffr., and elec. resist. obs. *(Russian)* 8−19748
Ni-Co-Cr alloys IN 738, Pt plated, aluminization 8−31583
Ni-Co-Cr-Al-Y coating, electron beam deposited, for Ni-base superalloy, fatigue crack initiation and propag. 8−11438
Ni-Cr, corrosion resistance of dental casting alloys 8−31561
Ni-Cr, ordering by nucleation and growth and by spinodal decomposition *(French)* 8−27471
Ni-Cr, solubility of H_2, 500 to 1000°C *(Japanese)* 8−38845
Ni-Cr (Mo), solid soln., US deform., electron microscope exam. *(Russian)* 8−35447
Ni-Cr (Mo)(W) melts, N_2 diffusion *(Russian)* 8−18812
Ni-Cr (20 wt.%), oxidation, O_2 press. effects *(Japanese)* 8−15578
Ni-Cr (33 at.%), US deform. effect on short range order form. *(Russian)* 8−39839
Ni-Cr alloy, cast, etching methods for determ. of primary struct. 8−23888
Ni-Cr alloy, dispersion-hardened, prod. by mech. alloying 8−15345
Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8−35496
Ni-Cr alloy EhI617, thermocyclic treatment effect on struct. and thermal fatigue resistance 8−7045
Ni-Cr alloy KhN70VMTYu, heat resistant, explosive loading effect on struct. and mech. props. *(Russian)* 8−39787
Ni-Cr alloys, crystallisation anomalies *(Russian)* 8−19719
Ni-Cr-Al, hot corrosion resist. of Na_2SO_4 cooled specimens 8−44264
Ni-Cr-Al, oxidation, NaCl vapour effects on microstruct. 8−44274
Ni-Cr-Al aluminised coating, diffusion paths for formation and degradation of oxidation resistant coatings 8−11431
Ni-Cr-Al-Cr-Hf-Zr-C, directionally solidified eutectic with (Hf,Zr)C reinforcement, precipitation, and thermal cycling 8−44057
Ni-Cr-Al-Ti-Mo, low temp. mech. behaviour, precipitation 8−39860

nickel alloys continued
Ni-Cr-Al-W-Ti alloy MA 6000E, mechanical alloying for high temp. appl. 8−44046
Ni-Cr-Co, Nimocast alloy 738, γ'' precipitate morphology and creep rupture, thermal stress crack effect 8−11318
Ni-Cr-Co-Mo, long-term corrosion stability rel. to use in joint endoprostheses 8−36059
Ni-Cr-Co-Mo alloy MP35N alloys, cold worked, factors affecting embrittlement in H_2S environments 8−31502
Ni-Cr-Co-Mo-Al-Ti (10, 15, 3, 5.5, 4.5 wt.%), superalloy, exam. of creep and fracture behaviour 8−48464
Ni-Cr-Fe, Nimonic-75, electroless siliconization 8−27679
Ni-Cr-Fe-Ti alloy KhN77TYuR, long-term strength under in-pile irrad. conditions 8−6940
Ni-Cr-Mo steel, corrosion and cavitation-erosion resist. *(Russian)* 8−11395
Ni-Cr-Mo-Fe-Mn, Kh12M23, intermetallic phases exam. *(Russian)* 8−39740
Ni-Cr-ThO_2 (20, 2 wt.%), dispersion hardened, model for high temp. deform. based on struct. obs. 8−19809
Ni-Cr-Ti-Al/Au-Ni brazed joint, high temp., AE under elev. temp. and loading *(German)* 8−31597
Ni-Cr-Ti-Co-W-Al-Mo alloys AF-115 and AF2 1DA, superalloy powder compacts, fatigue origins 8−48521
Ni-Cr-(Al), oxide dispersion strengthened materials, effect of prior creep at 1365K on room temp. tensile props. 8−39857
Ni-Cr(Mo), oxidation effect on magnetic props. *(Russian)* 8−23868
Ni-Cr(Mo), solid soln., US effect on mech. props. *(Russian)* 8−23819
Ni-Cu, hydrogenated, Curie point, cluster magnetism 8−14960
Ni-Cu, spin fluctuations effect on temp. depend. of elec. resistivity 8−47776
Ni-Cu, surface composition, AES 8−14558
Ni-Cu, W fibre reinforced, liquid phase sintering under press. 8−19695
Ni-Cu alloy, optical absorpt. meas. 8−19518
Ni-Cu semiconducting cast ingots, effect of EM stirring on struct. *(Russian)* 8−6915
Ni-Cu-Al(Si), spinodal decomposition, morphology of microstructure, elastic strain energy anisotropy effect 8−15354
Ni-Cu-Si, Si effect on structural changes during ageing, TEM and X-ray obs. 8−15438
Ni-Fe alloy, oxidation, diffusion enthalpy and entropy 8−7084
Ni-Fe alloys, pulse permeability and loss in toroidal core pulse current transformers 8−43615
Ni-Fe film, domain struct., uniaxial stress effects 8−10740
Ni-Fe oxidised film, extraordinary viscous wall motion at extreme vel. 8−14997
Ni-Fe soft magnetic alloys, developments and components *(Hungarian)* 8−48000
Ni-Fe-Co films, nonmagnetostrictive, magnetoresistance effects 8−35013
Ni-Fe-Co films, saw tooth magnetic domains investigated 8−14994
Ni-Fe-Cr alloy, PE 16, coercivity of picture frame cryst. 8−14988
Ni-Fe-Cr PE 16, Bloch wall motion, thermally activated 8−43610
Ni-Fe-Mn alloy, NMR signals due to Mn atoms with antiparallel moments 8−27113
Ni-Fe-Mo-Cu (79, 16, 4.3, 0.7 wt.%) K-state formation, physical props. exam. 8−47761
Ni-Fe-Nb, hardperm alloy, effect of sheet thickness and heat treatment on magnetic props. *(Japanese)* 8−31095
Ni-Ga, ZZ 8−26809
Ni-Ge, liq. alloy, thermodynamic activity, mass spectrometric determ. *(German)* 8−20052
Ni-Ge, ZZ 8−26809
Ni-Ge (2 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
Ni-Ge alloys, liq., integrated emissivity, electric resistivity 8−43155
Ni-H, implanted film, resistivity and TDPAC meas. 8−39229
Ni-H system, cluster calc. of electronic struct. of interstitial H 8−43326
Ni-In, dil., symmetry of lattice defect, DPAC meas. 8−43729
Ni-In, dil., uncorrelated radiation damage, TDPAC meas. 8−43343
Ni-Mn, ordering by nucleation and growth and by spinodal decomposition *(French)* 8−27471
Ni-Mn (5%), magnetisation curve reduction 8−31096
Ni-Mn alloy, NMR signals due to Mn atoms with antiparallel moments 8−27113
Ni-Mn base polynary alloys, magnetic and elect. props. *(Japanese)* 8−15551
Ni-Mo, solubility of H_2, 500-1000°C *(Japanese)* 8−38845
Ni-Mo-Al and Ni-Mo-Al-V, high-resist., struct. transforms., TEM *(Russian)* 8−19762
Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Ni-Nb_2O_5, fibrous composite, aligned in situ growth by preferential internal oxidation 8−6879
Ni-Nb-Al (21,2.5 wt.%), eutectic aligned alloy, mech. behaviour at high strain rates 8−39855
Ni-Nb-Cr-Al, directionally solidified eutectic superalloy, high temp. oxidation resistant coatings 8−39937
Ni-P, amorphous, reversible effects of temp. on struct. 8−34442
Ni-P, molten alloy, struct., X-ray scatt. 8−22640
Ni-P alloy, electrodeposited, heat induced struct. changes *(Japanese)* 8−15433
Ni-P amorphous alloy prep. by ion implantation 8−22748
Ni-P amorphous thin films, crack networks of voids 8−2399
Ni-P metal metalloid glass forming alloys, gram atomic volumes 8−38628
Ni-Pt alloys, mag. props. under hydrostatic press. 8−6556
Ni-Pu, dil., effective mag. fields, temp. depend. *(Russian)* 8−43587
Ni-Si, ion beam irradiation induced Ni_3Si surface film segregation 8−38761
Ni-Si,ZZ 8−26809
Ni-Si melt, ultra acoustic study *(Russian)* 8−15613
Ni-Si solid soln., radiation, induced precipitation dose rate effects 8−6936
Ni-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513
Ni-Ta, dil., crit. behaviour, ^{181}Ta PAC expt. 8−43723
Ni-Ta, dil., crit. behaviour of local magnetization, PAC and magnetisation meas. 8−48098

nickel alloys continued
Ni-ThO_2(HfO_2) dispersion hardened alloys, recrystallisation during annealing, O_2 partical press. effects *(Russian)* 8−3140
Ni-Ti, with shape memory effect, working medium in heat engine *(Russian)* 8−48449
Ni-Ti (0-1.5 at.%), elec. cond., mag. phase transition, 300-750K 8−2678
Ni-Ti (12 wt.%), dil. alloys, transform. early stages 8−3096
Ni-Ti (60 at.%) alloy, high stress effects on struct. and props. *(Russian)* 8−19838
Ni-Ti (8 and 10 wt.%) alloy, aged, precipitation behaviour at 550 to 950°C, X-ray and electron microscopy exam. 8−39785
Ni-Ti alloy, struct. and props., self-propagating high temp. synthesis *(Russian)* 8−26492
Ni-Ti-Co, Co effect on martensitic transform. temp. and low temp. props. *(Korean)* 8−11224
Ni-V, ferromag. reson. meas., anisotropy consts. determ. 8−39410
Ni-V(Mo)(Ru)(Cr), weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8−31063
Ni-W-B, superalloy, M_5B_3 type boride 8−44131
Ni-W-Co-Cr, superalloy MAR 200, with Hf, cellular composite prod. by isothermal dendrite ripening 8−44150
γ-Ni-Zn, inversion antiphase domains, formation and stabilisation, electron conc. effect 8−14363
Ni-Zn liquid alloys, Zn activity obs., 1100 to 1300K 8−40072
Ni-Zn melt, Zn activity determ. *(German)* 8−19715
Ni_x Cu_{1-x} paramag., coherent pot. approx. for nonoverlapping muffin tin potentials 8−2451
$Ni_3(Al,W)$, yield stress, orientation depend. 8−39830
β'-NiAl, density of states, XPS meas. 8−48284
NiAl-Cr, eutectic, directionally solidified, temp. behaviour of misfit dislocations *(German)* 8−3119
NiAl-V join, phase relations and eutectic directional solidification 8−31396
$Ni_{1-x}Al$ solid solution, vacancy ordering exam. by electron diffr. after annealing 8−3123
Ni_3Al and $Ni_3(Al, Ti)$, S segregation to grain boundaries 8−48410
Ni_3Al, Mossbauer experiments on homogeneity 8−48395
Ni_3Al, overshooting while testing in tension 8−44189
Ni_3Al, unpaired spin density distrib., polarised neutron diffr. 8−10659
γ'-Ni_3Al-Fe (10 at.%) alloy, steady-state creep 8−15460
Ni_3Al-Ni_3Nb eutectic alloy, ^{63}Ni diffusion rate rel. to struct. defects *(Russian)* 8−2288
$Ni_{100-x}B_x$, rapidly quenched, mag. moment, temp. and comp. depend. 8−47957
$Ni_{1-x}Cu_x$ (x=0.03, 0.16, 0.24), photoemission study, surface, bulk electronic struct. 8−48281
NiFe alloy, ion-beam sputtering, excitation efficiency of atoms 8−19623
$Ni_{1-x}Fe_x$, short range order exam. allowing for formation of structural domains *(Russian)* 8−6888
Ni_3Fe alloy, step-like deformation *(Russian)* 8−27559
Ni_3Fe, compression induced mag. anisotropy and superlattice dislocations, annealing effect 8−31067
Ni_3Fe, Debye temp. determ. from elastic consts. and X-ray meas., effect of configurational order 8−30727
Ni_3Fe, Mossbauer spectra, long range order 8−10810
Ni_3Fe, Mossbauer spectra, order-disorder transition 8−10811
Ni_3Fe, ordered and disordered states, strain hardening characts., temp. depend., multiple slip case *(Russian)* 8−15421
Ni_3Fe, transport props. and magnetisation, effect of alloying with Cr, Mo, W or Cu *(Russian)* 8−39095
$Ni_{40}Fe_{40}B_{20}$ glass alloy, rapidly quenched, explosive welding to A516-70 steel and to itself 8−39954
NiGa, point defects, lattice parameter determ. 8−38695
NiH_x, electronic band struct. and interatomic bond 8−43295
Ni_3Mn, antiphase domain struct. *(Russian)* 8−39814
Ni_3Mn, at. ordering during annealing, mag. field effect 8−15394
Ni_3Mn, fission neutron disordering at 5K, exam. 8−47434
$Ni_{1+x}MnSb$, mag. hyperfine field on ^{111}Cd, TDPAC obs. 8−43709
NiMnSn, Heusler alloy, hyperfine field at ^{111}Cd, TDPAC meas. 8−43705
Ni_2MnSn alloy, ionic spin distribution and RKKY interactions 8−27028
$Ni_2MnSn(In)(Sb)$, Heusler alloy, hyperfine field at ^{111}Cd, TDPAC meas. 8−43705
Ni_4Mo alloy, high temp. oxidation, oxide layer growth, struct., mech. behaviour 8−44269
Ni_4Mo, statistically homogeneous ordering, computer-simulated field ion images 8−9991
$Ni_{60}Nb_{40}$, stability, crystallisation, ductility meas. 8−47246
$Ni_{80}P_{14}B_6$ glass, low temp. heat capacity meas., electronic, phonon contributions exam. 8−10689
$Ni_{1-x}Pt_x$, disordered phonon dispersion relations, neutron inelastic scatt. 8−43085
$NiSi_2$, layer, on Si, ion implantation damage, channelling obs. 8−30676
NiTi, reversible martensitic transformations 8−27516
Ni_3V, dissociation of $^1/_2\langle 112\rangle$ perfect dislocations and nature of slip dislocations 8−43022
Ni_3V, stacking faults, twinning deform., electron microscopy obs. 8−6070
$(Ni_{1-y}Y_y)_3Al_{1-x}Sc_x(Ti)_x$, quarternary gamma prime ($L1_2$) pseudobinary props. revealed by ionicity modified pair model 8−19725
$NpNi_2Si_2$, Mossbauer and magnetisation expts. 8−31138
Pd-Ni, Auger sensitivity factors 8−43964
Pd-Ni, dil. paramag. alloy, local moments, rel. to nearly mag. impurities in nonmag. host 8−2647
Pd-Ni, melt, struct. and physical-chemical props., thermodynamic props. *(Russian)* 8−18536
Pd-Ni, onset of ferromagnetism 8−23270
Pd-Ni, thermopower and crit. conc., spin fluctuation system 8−30909
Pd-Ni-P metallic glass, energy loss spectra and Auger spectra 8−23563
$Pd_{48}Ni_{32}P_{20}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
$Pt_{45}Ni_{30}P_{25}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
Rh_2NiSn, Heusler alloys, hyperfine mag. field at Sn 8−39482
Si-Ni, liquid alloys, thermodynamic charact. calc. *(Russian)* 8−27475
$SmCo_{2.5}Ni_{2.5}$, mag. after effect *(Russian)* 8−6544
Sn-Ni, electroplated, passive layer, ESCA study 8−23867
Sn-Ni electrodeposit, contact resist. corrosion effect 8−47847

nickel alloys continued
Sn-Ni electrodeposit, metastable, transform. kinetics, X-ray and SEM meas. 8−38979
Sn-Ni electrodeposits, metastable, transform. kinetics 8−43262
Sn-Ni equiatomic electrodeposited alloy, surface comp. 8−47649
Sn-Ni metastable equiatomic alloy, sputter deposition 8−3043
Ta-Ni film, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
Ta(C,N)-Ni-HfC(HfN)(Mo_2C)(VC), sintering, prod. of hard metals 8−11155
TaC-NiC, powder for plasma arc spray coating appl. 8−15591
$ThNi_{5-x}Mn_x$, struct. and magnetisation exam., temp. depend. 8−2662
Ti-Ni, hysteresis-free 'memory' effects 8−35385
Ti-Ni (51 at.%), martensitic transformation, thermoelastic, hysteresis, exothermic and endothermic effects *(Russian)* 8−19749
Ti-Ni-Cu (44.5, 10 wt%), opposing stress effect on shape memory and martensitic reversion 8−44185
Ti-Ni-Cu system, phase relations at 800 and 870°C 8−27481
TiC-Ni-Co-Cr, sintered, mech. props. effect of processing factors 8−11159
Ti_2Ni, determ. of H diffusion coeff., quasielastic neutron scatt. 8−30781
W fibre reinforced Ni-Cr (20 wt.%), hot pressing kinetics 8−35334
W-Cu-Ni, electrical contact material, comparison of Ni and Co effects *(Korean)* 8−10539
W-Ni, liquid phase sintering, microstruct. meas. 8−44054
WC-Ni detonation sprayed coating, wear resistant 8−35594
WC-Ni hard alloys, sintered, with uneven binder metal distrib., molten Ni migration 8−35336
Y-Ni, liquid alloys, enthalpy struct. *(Russian)* 8−27474
$Y_2(Fe_{1-x}Ni_x)_{17}$, Mossbauer spectra, hyperfine field interactions 8−6614
YNi_5, solubility of H_2 *(Russian)* 8−15356
Y_3Ni_2, crystal struct., tetragonal type 8−14309
$YbNi_2Ge_2$, intermediate valence cpd., mag. susceptibility expts., 4.2-280K 8−39288
Zr-Ni, energy spectra of valence electrons *(Ukrainian)* 8−6814
Zr-Ni alloys, energy spectra, X-ray emission obs. *(Russian)* 8−19604

nickel compounds
see also nickel alloys
$[Ni(NH_3)_6](ClO_4)_2$, X-ray powder diffr. exam. of enantiomorphic transitions 8−2054
CdNi ferrite, quadrupole interaction, cation distrib. influence 8−2776
Fe-Ni-Cr-S-O compounds, occurrence in Allende chondrite *(French)* 8−32411
$(Fe_{1-x}Ni_x)_3P$, cryst. struct. and mag. props. 8−19222
Fe_3O_4-Cr_2O_3-Ni_2O mixture, reduction by gases heated by electric arc discharge *(Russian)* 8−15704
InSb-NiSb, 8 mm band noise generation *(Russian)* 8−39175
InSb-NiSb two-phase system, photomag. effect, orientational depend., 90-300K *(Russian)* 8−2524
InSb-NiSb two-phase system, electron scatt. mechanism *(Russian)* 8−6373
$(NH_4)_2Ni(SeO_4)_2.6H_2O:Mn^{2+}$, EPR spectra, spin quenching 8−2732
$Na_2NiTi_7O_{16}$ bronze, synthesis in $NaBO_2$, growth conditions *(French)* 8−43998
Ni complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Ni complex, $[Ni(OCH_3)$ (acac) $(CH_3OH)]_4$, sp. ht., 0.4-285K, methyl group internal rotation 8−47531
Ni complex, $[Ni(en)_2Cl]_2Cl_2$, heat capacity, X-ray diffraction and mag. meas., phase transition 8−47515
Ni complex, bis(L-isoleucinato)NiII dihydrate, struct. 8−18604
Ni complex, hexa(pyridine-N-oxide)$(ClO_4)_2$, field-induced mag. ordering in S=1 singlet ground-state 8−23288
Ni complex, hexamethylphosphorotriamide Ni (II), paramagnetic, pulsed NMR, substitution reaction *(French)* 8−10793
Ni complex, linear chain type, synthesis 8−6047
Ni complex, Ni-hexamethylenetetramine, reflectance spectra 8−31218
Ni complex, $Ni(NH_3)_6(ClO_4)_2$, high-press. phase, EPR meas. 8−38842
Ni complex, S_4N_4 with $NiCl_2$, mass and IR spectra, config. 8−13494
Ni complex, tetrathiotetracene nickel bis-(ethylene-1,2-dithiolene) quasi-one-dimensional cond., cryst., mag. and elec. props. 8−10424
Ni complexes of N,N,N′,N′-tetramethylethylenediamine, cryst. struct. 8−34467
Ni/NiO, relative chemical potential of oxygen *(German)* 8−31642
Ni-NiO-Ni, integrated MOM junctions, characts. at DC and optical freqs. 8−41349
Ni-P-Al_2O_3 (SiC), composite deposit electrodeposition *(Russian)* 8−35326
Ni-W-O system, phase relations in dioxide-trioxide region, 1373K 8−11212
Ni-Zn ferrite, elastic moduli temp. and composition depend. 8−26617
Ni-Zn ferrites, comp., lattice imperfections, sintering 8−3080
Ni-Zn ferrites, hot-pressed, key props. 8−15348
$NiAl_2O_4$, entropy of form. determ. using solid electrolyte twin thermocell 8−27812
$Ni_3B_7O_{13}I$, shear modulus anomalous temp. depend. 8−43061
$NiBr_2$, ^1Eg spin-forbidden transition, temp. depend. and magnetoabsorpt. 8−48151
$NiBr_2.6H_2O$, antiferromag. ordering and paramag. behaviour 8−14941
$NiCO_3$, impurity in $SrCO_3$ dissoc. 8−27425
$Ni(CO)_4$, bonding, IR intensity anal. 8−25526
$Ni(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
$NiCl_2$, aq. soln., diffusion and struct. 8−14488
$NiCl_2$, aq. soln., partial struct. factors in long wavelength limit 8−47231
$Ni(ClO_4)_2$ $6H_2O$, sp. ht. between 2 and 17K 8−47532
$NiCr_2O_4$, ^{61}Ni Mossbauer effect studies of hyperfine interactions, mag. dipole and elec. quadrupole 8−43746
$NiCr_2O_4$, cooperative Jahn-Teller phase transition, channelling obs. 8−38839
NiF_2, tetragonal to orthorhombic transition at high press., possible mag. ordering 8−18765
$NiF_6{}^{4-}$, electronic excitation energy calc., correl. energy correction 8−17576
$NiFe_{2-t}Al_tO_4$, cryst. 2nd mag. props. 8−14940
$NiFe_{2-x}Al_xO_4$, cation distrib. calc. from equilib. conditions 8−22701
$NiFe_{2-x}Mn_xO_4$, cell dimens. determ. 8−26526
$NiFe_2O_4$, core line X-ray photoelectron spectra 8−7263
$NiFe_2O_4$, LPE growth, film quality, mag. meas. 8−11136

nickel compounds continued
$NiFe_2O_4$, single cryst. prep. by chem. transport 8−23589
$NiFe_2O_4$, solid state formation, exam. of kinetics for formation at 700 to 1400 degrees C 8−48648
$NiFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
$Ni_xFe_{3-x}O_4$, solubility in high-temp. aqueous soln., appl. to PWR 8−4987
$NiGe_x$, Ni X-ray emission spectra *(Russian)* 8−21942
NiH, pot. energy curves, Hartree-Fock and valence bond methods 8−41958
NiH_2, pot. energy curves, Hartree-Fock and valence bond methods 8−41958
NiH_x, electronic band struct. and interatomic bond 8−43295
$Ni_{1-x}Li_xO$, $0.01 \leqslant x \leqslant 0.08$, mag. susceptibility in region 80 to 800K *(Russian)* 8−2664
$(Ni_{1-x}Mg_x)_2SiO_2$, reduction to Ni *(Russian)* 8−44043
$Ni(NH_3)_6(BF_4)_2$, enantiomorphic transition, X-ray powder diffr. meas. 8−30574
$Ni(NH_3)_6(NO_3)_2$, Raman spectra exam. of orientational phase transitions 8−31184
$Ni(NH_3)_6X_2$, (X=Cl, Br, I, ClO_4, BF_4) and d, far IR, Raman spectra, 80-300K 8−31190
$Ni(NH_3)_6X_2$, X=Cl,Br,I, rotational tunnelling by inelastic neutron scatt. 8−30553
$NiNa_2H_8(PO_4)_4.4H_2O$, cryst. struct. determ. *(French)* 8−26504
$Ni_3NbB_3O_{15}$, flux growth and chem. characts. 8−23595
$NiNb_2O_6$, bonding characterisation 8−38680
$Ni_3Nb_2O_8$, flux growth and chem. characts. 8−23595
NiO (001), surface layers, sublattice magnetisation temp. depend., LEED exam. 8−27018
NiO (100), antiferromag., LEED calcs. of exchange refls. 8−14949
NiO (100) surface, electronic states, electronic energy loss spectroscopy 8−6426
NiO, chemical diffusion of Ga^{3+}, influence on reaction rate of $NiGa_2O_4$ spinel form. *(German)* 8−22894
NiO, diffusion obs., RF sputtering as microsectioning technique 8−14499
NiO, diffusion of Cr_2O_3, spinel formation via solid state reaction, kinetic parameters calc. 8−34644
NiO doped glass, improved band-pass characts. 8−42394
NiO, elec. cond. meas. at 1000°C 8−10451
NiO, electronic struct. calc. 8−43297
NiO, entropy of form. determ. using solid electrolyte twin thermocell 8−27812
NiO, evaporation curve struct. from AC arc electrodes *(Russian)* 8−3051
NiO, formation on Ni (110), initial stage kinetics, RHEED and X-ray emission 8−15588
NiO, H chemisorption, cluster model, bonding 8−38939
NiO, interface for xerographic Se photoreceptor on flexible Ni foils 8−29184
NiO, L_I and L_{II} X-ray emission spectra 8−39631
NiO, meas. of standard molar free energy of form. by EMF method of high temps. *(Japanese)* 8−11546
NiO, on Ni, particle and photon emission during tensile deform. 8−39672
NiO, paramag. shifts of ^{19}F at O 8−43719
NiO, plasma reduction melting *(Russian)* 8−31359
NiO, polycrystalline, high temp. deform. 8−3174
NiO powder, mixed with graphite, reduction mechanism *(Korean)* 8−11555
NiO, self consistent energy band calc. 8−23022
NiO, self-diffusion of Ni, 700-1400°C, rel. to Ni oxidation mechanism 8−27681
NiO, thermal expansion, birefringence, AC susceptibility, temp. depend. 8−10664
NiO, with spinel-type defect struct., ferromagnetic reson. meas. 8−43647
NiO-Al_2O_3 powders, coprecipitated particle-size distrib. meas. 8−39726
NiO-WO_3, phase relns. 8−3106
NiO(:Li), dielec. dispersion and polarozation 8−2803
NiO(100) surface, rumpling calc. 8−14559
NiP_4O_{11}, formation in phosphoric acid melts 8−27394
$NiPS_3$-Li, chemical and electrochemical intercalation *(French)* 8−38679
NiS, spin polarons exam. and metal-insulator transition 8−10377
NiS_2, spin struct. and mag. props. 8−39300
$Ni_{1-x}S$, oxidation, TG/DTA/MS obs. 8−31745
β-Ni_3S_2, formation during Ni sulphidation in H_2S-H_2 mixtures 8−3257
β-Ni_3S_2, formed during sulphidation of Ni, defect struct. and chemical diffusion 8−2115
$NiSO_4.H_2O$, hydrate librational modes in IR spectra 8−48161
$NiS_{2-x}Se_x$, elec. resistivity temp. depend., pressure depend., paramagnetic-antiferromagnetic transition 8−10690
NiSb, cryst. growth from nonstoichiometric melt, and cryst. chem 8−35286
NiSb, electronic struct., XPS meas. 8−2990
β-NiSe, d-electron deficit model, electrochem. meas. of free enthalpy *(French)* 8−30605
NiSe, thin film phases, struct. and resist. 8−39236
Ni_3Si, homogeneity region 8−23678
$NiSiF_6.6H_2O$, dielec. loss and relax., 100-270K, reorient. mech. 8−35088
$NiSiF_6.6H_2O$, EPR spectrum at low temp. 8−43632
$NiSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164
Ni_2SiO_4, reaction with Fe to produce Ni *(Russian)* 8−15332
$NiTO_3$, sintering additive for $SrZrO_3$ 8−23638
$Ni(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589
$Ni_3V_2O_8$, flux growth and chem. characts. 8−23595
$Ni_2V_2PbO_8$, flux growth and chem. characts. 8−23595
NiZn ferrite, exchange integrals, magnetisation data and mol. field theory 8−19241
NiZn ferrite, magnetic field effect on Rayleigh wave attenuation 8−6557
NiZn ferrites, comp., X-ray diffr. and saturation magnetisation obs. 8−18617
NiZnCo ferrite, quantitative anal., using X-ray fluorescence 8−40090
$Ni_{1-x}Zn_xFe_2O_4$, LPE growth, film quality, mag. meas. 8−11136

nickel compounds continued
$Ni_{1-x}Zn_xFe_2O_4$ spinel, low-temp. transitions and spin configurations, Mossbauer study 8−27144
$Ni_xZn_{1-x}Mn_2O_4$, mag. props. 8−43573
$Ni[B_6O_7(OH)_6].5H_2O$, cryst. struct. determ., X-ray diffr. 8−26546
$Ni[UO_2(SO_4)_2].4H_2O$, revision of crystallographic data 8−22699
Pb_2NiReO_6, new seignettomagnets and ferroelectrics 8−19425
$RbCl_2$-$NiCL_2$, impurity ion and vacancy aggregation, thermally stimulated depolarisation exam. 8−18678
$ScNiSi_3$, cryst. struct., X-ray diffr. meas. 8−10027
Sr_2NiReO_6, new seignettomagnets and ferroelectrics 8−19425
TiO_2-NiO-Sb_2O_3 phase equilibria 8−44098
UO_2-Ni, surface, grain boundary and interfacial energies 8−21649

night airglow *see nightglow*

night sky
see also nightglow; twilight
extragalactic background light intensity at 5100 Å wavelength 8−4414
light pollution and possible measures 8−49139
Simkin effect and Hg I 4047 Å night sky contamination effect on galaxy redshift determ. 8−41032
zenithal brightness monitoring, light pollution rel. to astronomical observations 8−49141

nightglow
continuum near 8500 Å, intensity meas. 8−49195
temperatures, internal gravity wave effects 8−45066
N I 5200 Å forbidden line, ground-based meas. contamination by OH emissions 8−4020
Na I D-line profiles, interferometric studies 8−36353
O I 5577 Å green line, nighttime var. of 2-15 min fluctuations 8−49193
O I 5577 Å nightglow, meas. via two-channel rocket photometer 8−45078
O I 6300 Å emission, line profiles and Doppler shifts rel. to thermospheric winds and temps. 8−32263
O I 6300 Å emission assoc. with F-layer irregularity zone 8−12038
O I 6300 Å forbidden line, ground-based meas. contamination by OH emissions 8−4020
O I 6300 Å mid-latitude fluctuations rel. to F-region 8−49194
O_3 electronically excited state, role in stratospheric chemistry and nightglow 8−20472
OH, obs. using balloon-borne IR telescope 8−36453

Nilsson's model *see nuclear shell model*

niobium
see also nuclei with ......
air contamination effect on compatibility with liquid Li in stainless steel vessels at 600°C 8−25285
blistering under He ion irrad. *(Russian)* 8−18686
bulk granular supercond., thermal fluctuations compared to Josephson weak link array 8−43520
catastrophic slip bands, fine struct. *(Russian)* 8−38718
cathodic sputtering by Hg^+ ions, mech. of positive ionisation of atoms 8−27363
charge density distortions and lattice dynamics 8−30714
cold plastic deform., oriented microdistortions *(Russian)* 8−39840
corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
determination, in Mg alloy, emission spectrographic DC arc-powder technique 8−48713
diffusion of ^{95}Zr in bulk crystal, diffusion coeff., effect on Nb self diffusion isotope effect 8−47602
diffusion of Fe and self-diffusion 8−47590
diffusion of H_2 *(Japanese)* 8−10221
diffusion of H and D at high conc. 8−26731
diffusion of O_2 8−2298
dislocation etching of single crystal 8−14352
electrical resistance, 200-2700K 8−39088
electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8−34542
electron diffraction axial channelling Kossel patterns, Bloch wave model, obs. 8−42869
electron-phonon interaction, calc. using APW band struct. calcs. and measured phonon spectra 8−14869
electron-phonon spectral function and mass enhancement 8−26988
etching, selective plasma 8−39940
field evaporation, search for high ionic charges 8−35269
flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
friction, He environment 4.2-80K 8−48543
Friedel's theory of amplitude depend. damping 8−27552
impurity concentration monitoring during single cryst. production 8−31337
internal friction and elastic constants, reson. vibrs. of metal spheres 8−15443
interstitial impurity effects on strength 8−3194
ion irradiated, void ordering 8−22770
isotope effect for H diffusion 8−6182
mixed state, sp. ht., 0.03-0.3K, electronic and nucl. contribs. 8−10621
$muon^+$ depolarisation, localisation and thermal diffusion 8−39489
$muon^+$ depolarisation rate, anomalous temp. depend. 8−48104
muon diffusion, μ^+SR meas. 8−39487
oxidation, staged flow of O_2 interaction process, secondary ion emission obs. 8−11386
oxide film characterisation, using low energy electron induced X-ray spectroscopy *(French)* 8−41386
phonon dispersion, anomalous struct., tight-binding calcs. 8−10137
phonon linewidth, electron phonon contrib. determ. 8−10146
precipitation from gaseous phase, Ta behaviour during H_2 reduction of $NbCl_5$ and $TaCl_5$ *(Russian)* 8−44017
radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
reactive, trapping of energetic 18 keV deuterons 8−10096
rotational magnetisation and torque meas. in mag. field 8−43515
self diffusion, 1353 to 2693K, diffusion coeff. 8−47576
self diffusion, up to 2570K 8−47564
sputtered film, compressive stress transition 8−10310
sputtering by energetic neutrons and protons, round robin expt. 8−11052
sputtering by fast neutrons 8−15255
steady state O_2 solubility *(German)* 8−38851

niobium continued
superconducting, nonequilib. mixed state, with pinning centres, mag. flux interactions *(Russian)* 8−39275
superconducting, strong-coupling microscopic parameters, electron tunnelling obs. 8−14888
superconducting critical temperature, enhancement by radiation damage 8−2609
superconducting film prod. by electron beam sputtering *(Russian)* 8−15308
superconducting point contacts, DC and HF behaviour 8−31021
superconducting surface layers, O enrichment, penetration depth and resist. meas. 8−19180
superconducting T_c control by N ion implantation 8−2606
superconducting weak link fabrication, electron beam lithography, ion implantation 8−47913
superconducting wire, helical propag. of flux jumps 8−14901
superconductivity and phonon softening, between electron bands and phonons 8−14859
superconductor, dielastic interaction of flux line lattice with internal stresses of cryst. imperfections 8−14906
superconductor energy gap determ. by pt. contact tunnelling 8−19185
surface geometry and emission parameters, changes during directional mass transport 8−2344
thermal conductivity, 0.3-20K, temp. and impurities effects 8−14883
thermal expsn., 1261-2289K 8−43150
type II superconductor, inductive response to trapezoidal magnetic field 8−39277
US anomalous attenuation, single cryst. at low temps. 8−43076
X-ray reflection intensities, charact. temps. and Debye-Waller factors, 100-370K 8−18731
Al/Nb superimposed layer anodic oxidation, ion movement study by O^{18} and MeV ion beam techniques 8−15604
Cr coated, prior thermal working effect on coating quality *(Russian)* 8−23820
Fe-Ni-Nb, cryogenic toughness, strength, rel. to reactive metal addition 8−39885
Nb, de Haas-van Alphen study of Fermi surface, cyclotron effective masses, mag. breakdown effects, KKR calcs. 8−43288
Nb, of H, lattice distortion and migration energy of H impurities 8−30796
Nb, superconducting film, thickness depend. of electrophys. parameter *(Russian)* 8−10590
Nb:He, implant saturation and annealing, effect on struct. and supercond. props. *(Russian)* 8−43538
Nb:N, deviations from Matthiessen's rule 8−39092
Nb:N, H, atomic tunnelling of interstitial pair, specific heat meas. 8−47600
Nb:N, H_{c2} anisotropy, impurity and temp. dependence 8−43533
Nb-H, incoherent spinodals, meas. by Gorsky effect 8−19712
Nb-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
Nb-H interstitial alloys, prep. and props. 8−23669
Nb-H single crystal, shear moduli, temp. and H conc. depend. 8−39823
Nb-N system, ion-implanted, supercond. crit. temp., effect of implantation conditions 8−19176
Nb-Nb_xO_y-Pb Josephson tunnel junction form. and ageing, adsorbed gas effect *(Russian)* 8−14899
Nb-NbO_x-Pb tunnel junction, crit. Josephson currents, temp. depend. 8−2629
Nb-oxide-Pb Josephson junctions, anomalous microwave-induced voltages 8−39266
Nb-stainless steel bimetallic strip Cu interlayer struct. during thermal fatigue *(Russian)* 8−15498
$NbD_{0.04}$, neutron scatt. exam., press. depend. of superstruct. reflection 8−22696
^{95}Nb inhalation in beagle dogs, deposition and retention, dosimetry 8−35959
$SrTiO_3$:Nb, heat treated, Hall effect, electrical cond., optical absorpt., defect states 8−47812
TiO_2:Nb, rutile, Seebeck effect, 90-300K 8−43427

niobium alloys
see also niobium compounds
A15 compounds, mode softening and high supercond. crit. temp. 8−14851
A-15 compounds, irrad. effect on supercond. transition temp. 8−6472
creep, high temp. estimation and long term strength charact. 8−3195
interstitial impurity effects on strength 8−3194
Ni_3Al-Ni_3Nb eutectic alloy, aluminide coating microstruct. exam. 8−15593
steel, Cr-Ni-Mo-V-Nb (12,8,1,1.5,0.4 wt.%) Ce addition effects on strength and hardness *(Russian)* 8−15454
steel, Nb, high and medium C, austenite grain growth 8−11249
steel, R6M6, micro-alloying effect 8−6939
Co-Fe-Nb alloys, effect of cold working on mag. props., and precipitation morphology 8−39803
Co-Nb, dil., NMR-ON meas., mag. hyperfine splitting const. of ^{90}Nb 8−43651
Cu-Nb composite superconductor produced by rapid quenching 8−48351
Cu-Nb_3Sn, in situ formed multifilamentary composite, supercond. and mech. props. 8−39279
Cu-Nb_3Sn composite wires, powder metallurgically produced, supercond. props. 8−31026
Cu-Nb-Sn dil. alloys containing Nb_3Sn precipitates, superconductivity 8−43507
Cu-Sn-Nb multifilamentary alloy, high field crit. current density 8−27004
Fe-Nb (3.1 wt.%), semihard mag. alloy, Recalloy, mag. props., elec. cond. *(Japanese)* 8−10723
Fe-NbN-C-Mn-Si, dispersion hardening effect on mech. props. 8−3137
Fe-NbN-(C), dispersion hardening effect on mech. props. 8−3137
Mo-Zr-Nb-C, polythermal sections *(Russian)* 8−15365
Nb-Al, prep. from gaseous phase *(Russian)* 8−27451
Nb-Al (20 at.%), diffuse scatt. before Nb_3Al phase form., unstable phase *(Russian)* 8−3131
Nb-Co, X-ray emission spectra investigation of electron struct. of Laves phases *(Russian)* 8−23554
Nb-Cu (0.02 wt.%), Cu electron Nb_5Si, $NbSi_2$ and NbB_2 form. *(Russian)* 8−15400

niobium alloys continued
- Nb-Fe, X-ray emission spectra study of electron struct. of Laves phases *(Russian)* 8–23555
- Nb-Ga, A15 type, melt produces specimens, supecond., homogeneity, transition temp. *(German)* 8–2608
- Nb-Ge, superconductivity film prod. by electron beam sputtering *(Russian)* 8–15308
- Nb-Ge film, supercond., TEM expts., correl. of struct. and elec. props. 8–14628
- Nb-Ge-Si, Si effect on raising superconducting transition temp. in pelicular specimens *(Russian)* 8–23188
- Nb-H, incoherent spinodals, meas. by Gorsky effect 8–19712
- Nb-H, spinodals and diffusion coefficients of H, sample shape depend. 8–19713
- Nb-H interstitial alloys, prep. and props. 8–23669
- Nb-H single crystal, shear moduli, temp. and H conc. depend. 8–39823
- Nb-Ir-O, H-phase, cryst. struct. 8–38664
- Nb-Ir-O, phase struct., supercond. H-phase 8–39246
- Nb-Mo, optical props., 0.1-25 eV, band models 8–10892
- Nb-Mo, superconductivity and phonon softening, between electron bands and phonons 8–14859
- Nb-Mo alloys, phonon dispersion, anomalous struct., tight-binding calcs. 8–10137
- Nb-Mo-Fe, dil., local moment formation 8–43562
- Nb-Mo-Zr, erosion coeff., temp. depend. reactor wall swelling due to He ion bombardment 8–17418
- Nb-N system, ion-implanted, supercond. crit. temp., effect of implantation conditions 8–19176
- Nb-Nb-Al-(Cr), γ/γ'-δ type eutectic, fatigue, effect of composition and microstruct. 8–48520
- Nb-Ni, amorphous, synthesis by vapour quenching, and struct. 8–11111
- Nb-Ni metallic glass, temp. depend. of resistivity 8–47759
- Nb-O, cyclic creep, effect of O_2 conc. and temp. 8–48466
- Nb-Pt, A15- and δ-phases, Knight shift of ^{195}Pt meas. 8–19350
- Nb-Pt alloy, superconducting parameters of A15- and σ-phases 8–39242
- Nb-Sn, depend. of supercond. transition temp. on composition *(Russian)* 8–19173
- Nb-T alloy, effect of T on low temp. yield stress of Nb, comparison with Nb-H alloy behaviour 8–39863
- Nb-Ta (20.at.%), optical props., 0.1-25 eV, band models 8–10892
- Nb-Ta-O solid soln., thermodynamic props. 8–31386
- Nb-Ti, thermal conductivity in low temp. range 8–39259
- Nb-Ti, type II supercond., hysteresis losses for round cross section with collective interaction 8–43513
- Nb-Ti (60 at.%), aged, TEM exam. of precipitation process *(Japanese)* 8–48409
- Nb-Ti alloy strip, crit. current anisotropy 8–10624
- Nb-Ti alloys, crit. current density, scaling law 8–31027
- Nb-Ti superconducting alloy, critical current density, heat treatment effects *(Japanese)* 8–14909
- Nb-V, valence bands, X-ray M- and L-emission bands obs. *(Russian)* 8–19602
- Nb-V (20 at.%), optical props., 0.1-25 eV, band models 8–10892
- Nb-W, cold plastic deform., oriented microdistortions *(Russian)* 8–39840
- Nb-Y, cold plastic deform., oriented microdistortions *(Russian)* 8–39840
- Nb-Zr, (10 at.%), optical props., 0.1-25 eV, band models 8–10892
- Nb-Zr, cold plastic deform., oriented microdistortions *(Russian)* 8–39840
- Nb-Zr, diffusion of O_2 8–2298
- Nb-Zr (1 wt.%), ion irradiated, void ordering 8–22770
- Nb-Zr alloy, 5VMTs1, thermal expsn., 1261-2289K 8–43150
- Nb-Zr-C, erosion coeff., temp. depend. reactor wall swelling due to He ion bombardment 8–17418
- Nb-Zr-C alloy, strengthening phase, struct. and morphology after stress ageing *(Russian)* 8–31454
- Nb-Zr-N, deformed and annealed, internal friction, rel. to structural state *(Russian)* 8–6957
- Nb-Zr-O, corrosion resistance in molten Li *(Russian)* 8–31567
- Nb$_3$Al, obs. of shear struct., electron microscopy *(Russian)* 8–6938
- Nb$_3$Al superconductors, sputter deposited, BCC to A15 transition, microstruct. investig. 8–27512
- Nb$_3$Al:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8–19369
- NbAlIr A′ phase, struct. 8–18587
- Nb$_3$(AlSi) film, thermomodulation spectra, 1.1-2.8 eV 8–48250
- NbBe$_{12}$, by diffusion saturation in vacuum, resistance to heat 8–44259
- NbD$_{0.04}$, neutron scatt. exam., press. depend. of superstruct. reflection 8–22696
- Nb$_3$Ga:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8–19369
- Nb$_4$Ga$_5$, cryst. struct. and homogeneity range 8–42957
- Nb$_3$Ge, α-particle irrad., supercond. transition width 8–23193
- Nb$_3$Ge film, CVD, thermal expansivity, X-ray diffr. meas. 8–6166
- Nb$_3$Ge film, EXAFS meas. 8–2935
- Nb$_3$Ge film, electron beam co-deposited, prep. and supercond. crit. temp. 8–15310
- Nb$_3$Ge film, low temp. sputter deposition 8–48315
- Nb$_3$Ge film, superconductive, crit. temp., resistivity, structure depend. on comp. 8–6470
- Nb$_3$Ge, low fluence alpha irradiation, behaviour of supercond. transition temp. 8–43510
- Nb$_3$Ge, superconducting hybridisation and bonding, XPS exam. 8–2988
- Nb$_3$Ge tape, supercond., prep. by continuous CVD process 8–11121
- Nb$_3$Ge:H film, sensitivity of supercond. transition temp. to H content 8–47894
- Nb$_3$Ge-based superconducting alloys, upper critical field temp. depend. *(Russian)* 8–10622
- Nb$_5$Ge$_3$, 0.30K supercond. transition temp. meas. with 0.14K transition width 8–6468
- NbH$_{0.3}$, α-α' phase transition, sp. ht. anomaly 8–39764
- Nb$_{80}$Mo$_{20}$, Nb$_{75}$Mo$_{25}$, supercond., phonon cond. below 1k 8–14881
- Nb$_3$Sb, de Haas-van Alphen effect and Fermi surface 8–6262
- NbSe$_2$ nonstoichiometry, electrical props. *(Japanese)* 8–10593
- NbSe$_x$, nonstoichiometric, thermodynamic props. and crystal struct. *(Japanese)* 8–11206

niobium alloys continued
- Nb$_3$Si film, supercond., obtained by vaporisation in vacuum, props. 8–14865
- Nb$_3$Si, superconducting, high transition temp., sputtering 8–15309
- Nb$_4$Si, Nb$_5$Si$_3$ and NbSi$_2$, ultrasoft X-ray emission bands, empirical band schemes 8–15249
- Nb$_{1-x}$Sn$_x$, sp. ht., supercond. T$_c$ and martensitic transform. *(French)* 8–43508
- Nb$_3$Sn, A15 compound, exam. of deformation processing, review 8–39864
- Nb$_3$Sn, crit. current density, low dose fast neutron irrad. effect 8–14910
- Nb$_3$Sn, effect on critical temp. for supercond. of disorder, induced by α-particles 8–47897
- Nb$_3$Sn, elastic instability in cubic to tetragonal phase transitions 8–39767
- Nb$_3$Sn, fast neutron irradiation, effect on critical current density 8–19197
- Nb$_3$Sn film, electron beam codeposited, growth morphology and tensile props. 8–10301
- Nb$_3$Sn, gap anisotropy, electron irrad. effect on transition temp. 8–10599
- Nb$_3$Sn, grain size in A15 reaction layers 8–14911
- Nb$_3$Sn, irrad. effects on supercond. transition temp. 8–6472
- Nb$_3$Sn, low fluence alpha irradiation, behaviour of supercond. transition temp. 8–43510
- Nb$_3$Sn, martensitic transform. coupling with supercond. transition 8–44126
- Nb$_3$Sn multifilamentary conductors, enhancement of supercond. crit. current by tensile stress 8–6490
- Nb$_3$Sn, nonstationary Josephson effect, 13-18.3K, 9-10 GHz, 20 MW *(Russian)* 8–2631
- Nb$_3$Sn, phonon softening and T$_c$, strong electron-phonon coupling 8–31009
- Nb$_3$Sn, proton and γ-irradiated, lattice dynamics from ^{119}Sn Mossbauer studies 8–39458
- Nb$_3$Sn, proton irradiated, Mossbauer effect at 78K 8–19394
- Nb$_3$Sn strip, made by diffusion method, crit. curent anisotropy, Zr alloying addition effects *(Russian)* 8–47921
- Nb$_3$Sn, supercond., dielastic interaction of flux line lattice with internal stresses of cryst. imperfections 8–14906
- Nb$_3$Sn superconducting bridge junction, crit. current temp. depend. *(Russian)* 8–34938
- Nb$_3$Sn superconductors, mech. behaviour, diffusion *(German)* 8–39880
- Nb$_3$Sn, thin film weak-links SQUIDs, localised region radiation damage, fabrication and properties 8–47912
- Nb$_3$Sn, vap. deposited supercond. film, effect of N$_2$ and tape heating 8–34939
- Nb$_3$Sn-Au, supercond. tunnel junction with microshort circuit, nonlinear phenomena 8–14898
- Nb$_3$(Sn$_{1-x}$Ga$_x$), bronze processed wires, critical current densities in fields up to 23.5 T 8–47922
- Nb$_{80}$Ta$_{20}$, supercond., phonon cond. below 1k 8–14881
- Ni/Ni$_3$Al-Ni$_3$Nb eutectic, directionally solidified, plastic deformation *(Russian)* 8–39843
- Ni-Fe-Nb, hardperm alloy, effect of sheet thickness and heat treatment on magnetic props. *(Japanese)* 8–31095
- Ni-Nb$_2$O$_5$, fibrous composite, aligned in situ growth by preferential internal oxidation 8–6879
- Ni-Nb-Al (21,2.5 wt.%), eutectic aligned alloy, mech. behaviour at high strain rates 8–39855
- Ni-Nb-Cr-Al, directionally solidified eutectic superalloy, high temp. oxidation resistant coatings 8–39937
- Ni-Nb(-Cu)-C, NbC dispersed supercond. tapes, fabrication and characts. 8–19773
- Ni$_3$Al-Ni$_3$Nb eutectic alloy, ^{63}Ni diffusion rate rel. to struct. defects *(Russian)* 8–2288
- Ni$_{60}$Nb$_{40}$, stability, crystallisation, ductility meas. 8–47246
- Pd$_2$Mn$_{1-x}$Nb$_x$Sn, Heusler alloy, NMR and mag. coupling 8–43676
- Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8–3153
- Ti$_3$Al-Nb, ordering transform. and mech. props. 8–31402
- U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8–23729
- U-Nb-C system, phase equilibrium exam. *(German)* 8–23670
- U-Q^4(Q^5), Q^4=quad, Q^5=quint, stress corrosion cracking in moist air, salt water, salted moist air 8–35562
- V-Nb, diffusion in H$_2$ *(Japanese)* 8–10221
- V-Nb, mech. props., –196-1000°C, comp. depend. 8–39847
- V-Nb, vacuum deposited supercond. films, T$_c$ chem. comp. depend. *(Russian)* 8–19174
- V-Nb-Ta, supercond., elec. resist. and electron-phonon interaction parameters 8–14862
- V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8–10594
- W-C-Nb, vacuum melted, phase composition, struct. and props. 8–31403
- W-Nb (0-30 at.%), average thermal expansion coeff., 500-1200K 8–14483
- WC-Co-Ta-Ti-Nb, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8–39854
- Zr-Nb (1 and 2.5 wt.%), annealed, thermal expansion, α/β transition *(Russian)* 8–26702
- Zr-Nb (2.5 wt.%), cold worked, in reactor oxidation of crevices and cracks 8–23865
- Zr-Nb (2.5 wt.%), fuel cladding, anisotropy after creep and irradiaton 8–7001
- Zr-Nb (2.5 wt.%), H$_2$ induced subcritical crack growth meas., application of potential drop method 8–27645
- Zr-Nb (2.5 wt.%), hydride forming materials, H$_2$ induced delayed cracking 8–27623
- Zr-Nb (2.5 wt.%), memory effect in hydride precipitation 8–11227
- Zr-Nb (2.5 wt.%), oxidation kinetics appl. to loss of coolant accidents, data review 8–19958
- Zr-Nb (2.5 wt.%) neutron effects on oxidation kinetics 8–690
- Zr-Nb alloy, isothermal decomposition at elevated temp. 8–27470
- Zr-Nb microduplex alloys, struct. and props. 8–3170
- Zr-Nb solid solutions, BCC, direct imaging of linear defect using diffuse scatt. 8–22726

niobium alloys continued
Zr-Nb-Mo-Re, alloying effect on dislocation core struct., determ. by discrete lattice modelling 8−30618
ZrNb, ω-phase, diffuse neutron scatt. meas. 8−14311

niobium compounds
see also niobium alloys
complex, $NbOCl_3.2L$ ($L=Ph_2SO$, Ph_3PO and $(Me_2N)_3PO$), prep. and characterisation 8−30592
pyrochlore, high temperature chlorination 8−11180
B_2O_3-Nb_2O_5 complexes, phase equilib. high resolution TEM obs. 8−35378
Bi_2O_3-Nb_2O_5, sintered, high oxide ion cond. meas. 8−14503
$CeNbO_{4+x}$, oxidation-reduction reactions 8−39930
$Cr_{8-x}Nb_{3+x}Si_8$, cryst. struct. *(French)* 8−38675
CuO-Nb_2O_5, phase anal., density determ. 8−10015
Cu_2O-Nb_2O_5, phase anal., density determ. 8−10015
Fe-NbC condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
Fe_xNbS_2, ordering of Fe atoms 8−38650
K_2O-Al_2O_3-P_2O_5-Nb_2O_5 glasses, struct. singularities, IR spectra *(Russian)* 8−2861
$Mn_{0.25}NbS_2$, mag. anomaly rel. to struct. disordering 8−43557
$(Na,Li)NbO_3$ ceramic, optimum prep. conditions and characterisation 8−3079
$(Nb,Ti)N_x$, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
Nb anodic oxide films, reversible optical changes 8−35580
Nb-N system, disordered, hopping cond., expt. evidence for electron correl. effects, low temp. 8−14729
Nb-NbO_x-Pb tunnel junction, crit. Josephson currents, temp. depend. 8−2629
Nb-O solid solutions, desorpt. of oxides *(French)* 8−14610
NbC, C implanted, channelling crit. angle and min. yields 8−47458
NbC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
NbC particles, growth and dissolution, in aged and deformed austenitic stainless steel 8−39782
NbC, recrystallisation 8−11251
NbC, supercond., phonon anomalies, microscopic theory 8−14867
NbC, valence band struct. *(Russian)* 8−6268
NbC-NbB_2, phase relns. 8−23677
NbC_x, reactor irrad. effects on elec. resist. and supercond. props. *(Russian)* 8−47895
NbC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
Nb_xC powders, plastic deform. characts. on vibratory milling 8−11183
NbC_xN_{1-x}, s.p. ht., 4.2-100K, phonon anomaly rel. to supercond. transition 8−14880
$NbCl_5$, mol. struct., vibr. assignments, barries to pseudorotation 8−29858
$Nb_2Cl_9^{3-}$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
$Nb_xCr_{1-x}O_2$, ($x\geqslant0.5$), cryst. growth by chem. transport and phase transitions 8−35281
NbD, orthorhombic β phase, ^{93}Nb Knight shift and quadrupole coupling parameters 8−19352
Nb_3Ge, superconducting transition temp. 8−47898
NbH, internal friction 8−6962
NbH, orthorhombic β phase, ^{93}Nb Knight shift and quadrupole coupling parameters 8−19352
$NbH_{0.3}$, α-α′ phase transition, sp. ht. anomaly 8−39764
NbI_4, quasi-one dimens., press.-induced metal-insulator transition 8−43447
$Nb_zM_{11-z}Ge_8$, M=V, Cr, Mn, cryst. struct. *(French)* 8−38675
NbN film, ultrathin granular, zero dimensionality and Josephson coupling 8−10612
NbN-NbN point-contact Josephson junction, fabrication and characts. 8−19189
NbN-V_3Ga point-contact Josephson junction, fabrication and characts. 8−19189
NbO_2, low temp. elastic consts. and Debye temp. 8−47463
NbO_2, structural phase transform., neutron scatt. obs. 8−14458
Nb_2O_3 in MIM structure, space charge density *(Russian)* 8−10579
Nb_2O_5, dielec. dispersion and polarisation 8−2803
Nb_2O_5, diffusion of O_2, solid-gas isotope exchange method *(French)* 8−34650
Nb_2O_5, hydrated gel, prep. conditions on pore struct., adsorpt. meas. 8−3068
s-Nb_2O_5, prep. by high temp. chlorination of pyrochlore mineral 8−11180
Nb_2O_5-MgO-Al_2O_3, solid state equilibria at 1400°C phase diagram *(Italian)* 8−23671
$Nb_{28}O_{70-x}$, O diffusion, rel. to Nb_2O_5 nonstoichiometry *(French)* 8−47583
Nb_xO_y, lattice imaging 8−30522
$NbOPO_4$, cation ordering effect on Raman spectra 8−43850
$Nb(OR)_2Cl_3.L$, halo-alkoxide complex, prep. and props. 8−18605
NbS_2, 2H layer cpd., electronic susceptibility and CDWs 8−39040
NbS_2, 2H layer cpd., tight-binding fit to bond struct. 8−39000
$NbS(Se)_2$, polymorphism at high press. and temps., T_c and band struct. 8−26528
$NbSe_2$, 2H layer cpd., electronic susceptibility and CDWs 8−39040
$NbSe_2$, 2H layer cpd., tight-binding fit to bond struct. 8−39000
$NbSe_2$ (2H), charge density waves state, NMR meas. 8−39421
$NbSe_2$, adsorption of Cs and O_2, 200-300K 8−26767
$NbSe_2$, I_2 vapour phase transport kinetics *(French)* 8−11092
$NbSe_2$, $NbSe_3$, comparison of elec. cond. 8−14715
$NbSe_2$, supercond. and normal state, thermal cond., temp. and mag. field depend. 8−26992
$NbSe_2$, thermal dissociation 8−44370
$NbSe_2$, thermal expansion, lattice parameter meas. 8−18804
$NbSe_3$, CDW form., direct electron diffr. 8−30877
$NbSe_3$, CDW transitions *(Japanese)* 8−30880
$NbSe_3$, linear chain metal, anomalous transport props. 8−14718
$NbSe_3$, Shubnikov-de Haas oscills. 8−2502
$NbSe_3$, Young's modulus meas. 8−48443
$NbTe_2$, phase transformations and domain structures *(French)* 8−27509
$Nb_{1-x}W_xSe_2$ x=0 to 0.15, elec. resist., mag. suscept., heat capacity, structural, supercond. transition *(Russian)* 8−31006

niobium compounds continued
$Rb_{12.20}Nb_{33.56}O_{90}$, tunnel cryst. struct., X-ray diffr. 8−18611
$SnNbS_2$, intercalate, cryst. struct. determ. 8−26534
TiN-Nb(Ta)N, microcomposite film prod. for radio resistors 8−3052
ZnO-Nb_2O_5 system, Czochralski growth, phase relations and cryst. data 8−9975
ZrC-NbC, kinetic characteristics, review 8−47613

nitrogen
see also nuclei with ......
a.c. discharge, stability *(Russian)* 8−26358
adsorbed layer on Cu (110) surface, temp. depend. evolution, Auger line shape 8−2376
adsorption on Ir, field emission exam. of effect of steps on surface potential 8−30829
adsorption on Ir (110) surface 8−38961
adsorption on microporous C 8−22956
adsorption on PAN-based C fibres, surface characts. 8−35536
adsorption on Ru (0001) surface, AES, LEED and thermal flash desorption meas. 8−38954
adsorption on vacuum-deposited Ta film photoelec. props. 8−15298
afterglow plasma, interaction with glass, Cu, steel walls, calorimetric method obs. 8−14177
Antarctic ice sheet, nonbiogenic fixed N, ecological implications 8−32129
antiprotonic atoms of light nuclei and isotopes, $\bar{p}$-n strong interaction effects 8−29867
arc, high intensity, anode region temp., current density, flow field, numerical anal. 8−9827
atmospheric gases condensation on cold metal surfaces, nucleation barrier 8−22838
atom, bremsstrahlung by electrons, configuration interaction 8−13483
atom, dipole oscill. strength distribs., sums 8−21975
atom, high Rydberg states, radiative decay rates, TOF meas 8−46302
atom, intermediate coupling props., relativistic average of config. wavefunctions applicability 8−17574
atom, nucl. quadrupole coupling const., relativistic many-body perturbation theory 8−37566
atom, oscillator strength calc. for $^4S^0$ to ^4P sequences 8−25485
atom, outer 1s, 2s and 2p electron loss cross sections by multicharged ions 8−42185
atom, photoionis. cross section, many-channel quantum defect method 8−17638
atom, polarisation functions for Gaussian basis sets 8−5126
atom, real STOS, parameter optimisation method 8−41929
atom, ZZ 8−46418
atom+organic molecule, rate const., discharge flow-reson. fluoresc. meas. 8−7178
body storage, man, dynamic model 8−27997
boiling in tubes, heat transfer, cryogenic stabilisation 8−30162
CdS:N, Mn, ion implanted, anomalous enhancement of EPR signal of Mn^{2+} 8−27080
chemisorbed layer on Cu, self-consistent electronic struct. calc. 8−2544
chemisorption on Ni, Cu, Pd, and Ag, semiempirical calcs. 8−14611
chemisorption on polycryst. Ti, secondary electron yield spectrum obs. 8−38933
condensed gas films, thermal radiation absorpt. 8−32824
continuum rel. to atm. absorpt. spectra near 2400 cm^{-1} 8−11968
crystal, screened nucl. pot. and lattice dynamics., pseudo-atom approx. 8−34575
determination, in nonferrous metals by nucl. reaction method, surface treatment effects 8−11596
determination, in Ta film on Corning glass, nondestructive method *(German)* 8−43272
determination in metals, by deuteron irrad., nucl. microprobe anal. 8−7285
determination in thin steel sheets by internal friction meas. *(German)* 8−27715
diamond:N, N9 and ND1 energy levels, electron irrad. photocond. obs., thermolum. 8−6324
diamond, transformation of type IB dispersed N into type IA aggregate N 8−6089
diffusion, anomalous, in microporous graphite compact 8−34655
diffusion and surface distrib. in Ta, probed by (p,γ) resonance broadening method 8−38918
diffusion in liquid Ni and Ni-Cr (W) (Mo) *(Russian)* 8−18812
diffusion in V, least squares computer technique 8−38881
diffusion through graphite powder compacts, time-lag analysis 8−2301
discharge, non-Boltzmann vibr. level populations, CARS determ. 8−5968
discharge, streamer, spatial and temporal spectroscopy 8−5971
discharge plasma, ionic comp., mass spectra meas. *(Russian)* 8−22571
electric breakdown between coaxial cylinders in crossed elec. and mag. fields 8−5963
film, condensed, UPS linewidths 8−31294
fixed N in fertilizers, effect on stratospheric ozone 8−28288
gas, μ, ρ and T-surfaces, global behaviour, rel. to catastrophe theory 8−26226
gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
gas, vibr. energy diffusion coeff., 900-2000K 8−26227
gas, virial coeffs., from theory of system of nonpolar mols. of arbitrary symmetry 8−9743
gas, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
glow discharge, DC, low-press., translational/rot. temps. relation 8−38454
glow discharge, DC, nitridation of Mg surfaces, 0.3-5 torr, mechanism 8−3370
glow discharge, ionis. mechanism 8−13613
interstellar N bearing molecules, gas phase reactions 8−28754
ion impurity in linear Z-pinch He plasma, outer 2s-shell electron excitation emission 8−22113
ionisation, radial dose, LET and energy per ion pair for ^{18}O ions 8−7452
ions, two vacancies in K shell, 2 electron 1 photon, and hypersatellite transition probabilities 8−46294
isotopic composition determ. using RMO-4S omegatron mass spectrometer 8−5368
laser, 3371 Å, fringe visibility curve 8−46695
laser, development of miniature high-power high-press. UV and IR lasers 8−46642
laser, high-press., effect of SF_6 addition 8−25859

nitrogen continued
laser, home-built, design improvements 8−46612
laser, sealed-off miniature high-power, transverse excitation 8−22143
laser, superrad., inexpensive construction *(Korean)* 8−22147
laser, TEA, for sub ns spectroscopy, modified elec. field 8−17964
laser, TEA system, coherent UV generation, synchronisation technique 8−17949
laser, UV, discharge-excited, improvement in efficiency *(Japanese)* 8−33724
laser channel dynamic behaviour, spontaneous emissions obs. *(German)* 8−25867
laser for pumping dye lasers with spectral narrowing 8−25903
late-type supergiants, C, N and O abundances for G AND K Ib stars 8−24509
liquid, absorpt. of high energy electrons 8−882
liquid, automatic level controller, transfer system for cold traps 8−24805
liquid, nucleate boiling heat transfer from PTFE coated surface 8−34000
liquid, partial discharge, cryogenic insulators 8−1920
liquid, solubility of solidified hydrocarbons and halogen-hydrocarbons, calc. by Preston-Prausnitz method 8−26686
liquid, tunable anti-Stokes Raman scatt. by light mixing 8−18007
liquid, vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8−27221
liquid, wavefront restoration during stimulated Raman scatt. 8−18013
liquid N_2 level detector for storage Dewar, teaching labs. 8−41125
low threshold breakdown, near target, by pulsed laser radiation *(Russian)* 8−22594
mesic atom, X-ray radiation anisotropy, suppression coeffs. *(Russian)* 8−22058
methane+N_2, rot. line width of vibr. bands 8−33552
methane-N_2-H_2 gas mixtures, RF discharge, vibr. and rot. anal. of CN, N_2 and C_2 8−5241
microwave discharge at high press., vibr. excitation *(French)* 8−14239
mobility of Li^+ in N_2 gas, obs. using injected-ion drift tube mass spectrometer 8−1784
moist, sound tube meas. of relaxation freq. 8−1058
molecular, electron density distrib., electron correl. effects, approx. HF-CI calcs. *(German)* 8−33439
molecular charge density contours for cryst. struct. 8−38645
molecule, $a^1\Pi_g$, Doppler free two-photon excitation 8−17641
molecule, bonding, spin density functional theory 8−17558
molecule, C $^3\Pi_u$ state, vibr. levels radiative lifetime, transition moment internucl. distance depend. 8−1027
molecule, collision induced far IR absorption at high press. 8−5161
molecule, core-ionised, core-valence excited and shake-up states, all electron MRD CI calc. 8−21858
molecule, dipole oscill. strength distribs., sums 8−21975
molecule, elastic electron scatt., low-energy, static exchange in R-matrix 8−13601
molecule, elastic electron scatt., total cross-section, 0-1000 eV 8−17795
molecule, elastic low energy electron scattering, ab initio pseudostates calcs. 8−9247
molecule, electron elastic scatt., discrete basis static exchange approx. calcs. 8−42219
molecule, electron impact excitation, resonances in metastable and UV emitting levels 8−25727
molecule, electron impact excitation, $x^1\Sigma_g^-$ and $y^1\Pi_g$ states lifetimes meas. 8−17806
molecule, electron impact excitation of electronic states, 10-50 eV 8−13619
molecule, electron impact excitation of electronic states, 10-50 eV 8−17810
molecule, electron impact excitation of electronic states, 12.5-14.2 eV energy loss region 8−17811
molecule, electron scatt., vibr. struct. in resonances 8−17813
molecule, electron scatt. ground state vibr. levels population 8−1093
molecule, electronic ground state correl. energy, many-body diagrammatic perturbation theory calc. 8−917
molecule, geometry optimisation, using bond function augmented basis sets 8−905
molecule, ground state MNDO calcs. 8−911
molecule, HF calcs., compared with optimised LCAO results 8−5139
molecule, in upper atmosphere, electron impact cross-section 8−28398
molecule, in upper atmosphere, electron impact yield spectra 8−28401
molecule, inner shell $(2s)^{-1}(\pi 2p)^1\Pi$ state, energy, vibr. struct., electron impact investig. 8−13611
molecule, inner-valence ionisation, correl effects calcs. 8−9198
molecule, intracavity laser spectroscopy, transient absorption 8−1293
molecule, ionisation by UV radiation from CO_2 laser produced Cu plasma 8−17624
molecule, ionisation potential, Green's function-eqns. of motion calcs., third order terms 8−41926
molecule, low-energy electrons elastic scatt. cross sections 8−42213
molecule, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
molecule, MRD CI calc., lowest dissoc. limits 8−21859
molecule, nonequilibrium dissociation rates in electrical discharges, temp. depend. 8−33447
molecule, photoabsorption, moment anal. 8−46321
molecule, photoabsorption and photionisation, UV region meas. 8−42087
molecule, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
molecule, Q-branches, high resolution pulsed CARS 8−17676
molecule, radiation chem., primary neutral dissoc. excitation, isotopic exchange mechanism 8−48670
molecule, static polarisabilities, ab initio SCF HF calcs., internucl. separation depend. 8−9073
molecule, transition moments between excited electronic states 8−5204
molecule, UV spectra, new band, $^3\pi_u$ state lower vibronic levels 8−17682
molecule, vertical electronic spectrum, MRD-CI method calcs. 8−42033
molecule, vertical valence ionis. pot., many-body Green's functions 8−22051
molecule, zeolite matrix isolated, induced IR spectra 8−46333
molecule, ZZ 8−46418
molecule+H(2S), collisional quenching, mass spectral obs. 8−25685

nitrogen continued
monolayer on graphite, phonon dispersion curves for postulated four sublattice struct. 8−47667
N_2+Li^+, differential cross-sections, classical trajectory calcs. 8−29841
nebulae, N and O abundances 8−8093
origin and abundances in terrestrial planets and meteorites 8−28559
photoelectron spectra, partial cross sections depend. on photon energy, 16 to 40 eV 8−1025
plasma created by electron beam, spectral composition *(Russian)* 8−30453
plasma impurity, high-temp. ionis. equilib. and radiative cooling 8−42712
pulsed electrical breakdown at high temps. *(Russian)* 8−34379
removal from Fe, by dry H_2 method *(Japanese)* 8−11234
shock activation of supersonic nozzle with overexpansion, jet form. 8−18330
solar quiet corona, X-ray spectrum of highly ionised O and N 8−45297
solid, α-phase, librational motion, spin-lattice relax. 8−15047
solid, low-press. diffusion of vapour 8−22842
solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
solid, simulation of dynamical props. of molecular solids 8−30710
solid, stimulated Raman scatt. and CARS 8−13752
solid, vacuum UV luminesc., 8K 8−10958
solubility in $CaO-Al_2O_3$ melt in presence of graphite 8−38850
solubility in electroslag remelting type slag $CaO-Al_2O_3-CaF_2$ 8−44110
solubility in liquid Fe-Cr-Ni containing Mn and Mo 8−44087
stable N^- prod. in sputter ion source, design implications for tandem for sensitive C anal. 8−33350
steel, 30N9K4, effects of Mo, V, and N on grain growth, tempering, hardenability, strength and toughness 8−44202
Texas impoundments, critical levels of P and N_2 8−11929
thermomagnetic effect, Knudsen gas between Au surfaces, low temp. 8−30405
thermosphere, temperature-depend. model 8−16226
translational energy transfer rate, after pulsed discharge, interferometric obs. *(Russian)* 8−26322
upper atmosphere, far UV N and N_2 emissions in dayglow 8−28361
vapour columns, cryogenic, complex flow 8−34119
vapour from solid N for temp. production in 20-63K range 8−221
vapour pressure, effect of high mag. fields 8−38825
venous gas bubble prod. by transient deep isobaric counterdiffusion of He against N_2 8−11790
viscosity measurement using capillary-type closed viscometer, effect of unsteady flow 8−9736
Ar plasma jet, surrounded by Ar, He, N_2, H_2 gases, recombinations in decaying jet 8−9753
Ar-N_2 mixtures, DC arc, energy balance of electrons 8−42797
Ar-$N_2(Cl_2)(F_2)(H_2O)$ laser, energy pathways by proton excitation 8−5459
Ar+N_2, pulsed microwave discharge, early afterglow and radiative transitions, Penning ionisation 8−9874
Ar+N_2, vibr. cross-section, exponential distorted wave and effective Hamiltonian 8−37709
Ar+N_2, vibr. excitation of N_2(C) and N_2(B), reaction rate and branching ratio determ. 8−25662
$Ar^+(Ar^{2+})+N_2$, reaction rate consts. 8−48613
$Ar(^3P_{0,2})+N_2$, rate consts. and $N_2(C)$:$N_2(B)$ branching ratio 8−5327
Ar^*+N_2, 3371 and 3577 Å laser emission, kinetic model 8−5465
atom, UV, visible spectra in Ar plasma, 230-620 nm 8−13456
CO-N_2, liq., polarised vibr. Raman scatt. lineshapes 8−27199
CO-N_2 discharge, energy balance influence of N_2 rot. level reson. excitation 8−17903
CO_2-N_2, CW gasdynamic laser, qualitative comparison with N_2O-N_2 laser 8−25856
CO_2-N_2-H_2O mixture, unstable-oscillatory expansion *(Russian)* 8−1637
CO_2-N_2-He discharge, energy balance, influence of N_2 rot. level reson. excitation 8−17903
CO_2-N_2-He laser, civr. temp. approx. for N_2, applicability limit 8−5452
CO_2-N_2-He mixture, ionisation and attachment coefficients 8−42706
CO_2-N_2-He(H_2) laser mixtures, composition effect on excitation efficiency in dicharge 8−5453
CO_2-N_2-O_2 mixtures, thermalisation under reson. excitation by laser radiation *(Russian)* 8−26231
CdS:N, P, As, Sb, Bi photoluminescence obs. 8−10965
Cr particle nitrogenation, metallographic obs. *(Bulgarian)* 8−15712
Cs_2+He(Ne)(Ar)(Kr)(N_2)(CH_4), collision-induced dissoc., atom-mol.-exchange optical pumping 8−22008
Cs^*+N_2, excited states quenching 8−5330
Fe:N, ion implanted foil, Mossbauer effect study, nitride form. 8−27149
Fe:O,N, bonding of Al, growth of intermediate phases, effect of O and N impurities 8−27680
$GaAs_{1-x}P_x$, N trap bound state, Hall effect determ. 8−19055
$GaAs_{1-x}P_x$:N, Koster-Slater model and N-states 8−47732
$GaAs_{1-x}P_x$:N, N isoelectronic trap, model calc. of N_Γ and N_x electronic states 8−10398
GaP:N, Cd(Zn),(C), interimpurity recomb., acceptor binding energies 8−34796
GaP:N, epitaxial layer, determination of nitrogen concentration from cathodoluminescence spectra 8−38744
GaP:N, radiative recomb. from electron-hole drops, impurity induced transition 8−19547
GaP:N, temp.-modulated photoluminesc., phonon assisted tunnelling process 8−23511
$H+N^+(N^{2+})$, ionization model for NGC 7027 planetary nebula 8−36671
HBr-nN_2 aggregates, near IR spectra in monatomic matrix 8−21921
HCl-nN_2 aggregates, near IR spectra in monatomic matrix 8−21921
He-N_2, pulsed atomic N laser, time and energy characts. in mag. field *(Russian)* 8−22108
He-N_2 laser, energy pathways by proton excitation 8−5459
He-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
He-N_2-CO_2 mixture in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
$He+B^{3+}(C^{4+})(N^{5+})(O^{6+})$, electron transfer 8−13598

nitrogen continued
$He^+(He_2^+)+N_2(CO)(CO_2)(H_2S)$, charge transfer Penning ionis. 8−17784
$He_2(^3\Sigma_u)+Ne(Ar)(N_2)(CO)(C_2)(CH_4)$, excitation transfer reaction rates 8−5332
$In_{1-x}Ga_xP$:N, composition depend. of bound state luminesc. transitions 8−39595
$Li^*+H_2(N_2)$, thermal, high-Rydberg Li behaving as ion core 8−22004
Mo:N film, high T_c amorphous phase stabilisation by interstitial nitrogen 8−23622
Mo-Zr, nitride form. in N_2 atmos. *(R7ssian)* 8−19938
N I, resonance line broadening in low press. He discharge lamps 8−9123
N I 5200 Å forbidden line nightglow, ground-based meas. contamination by OH emissions 8−4020
N V, ionis. rate meas. in theta-pinch plasma, VUV obs. 8−26254
N V, plasma impurity UV emission, poloidal asymmetry obs., grad B drift 8−26331
N V, VI, laser produced plasma, satellite spectra 8−5165
N^-, continuous absorption coeffs., from elastic e-N scatt. data, target wavefunction effect 8−9128
N^+, amorphous target impact, 800 keV, electronic stopping power, models comparison 8−2180
N^{4+}, 1s3s3p $^4p^0$ state, Hartree-Fock function, third-order energy 8−37569
N^{4+}, N^{5+}, production and acceleration in cyclotron *(Japanese)* 8−5084
N^{x+}, (x=1-7), electron loss and capture in He, N_2, Ne and Ar *(Russian)* 8−13600
$N+N \rightarrow N_2$, recombinational afterglow spectra, 10-300K 8−44355
N+Ne, electron excitation, multi-state impact parameter approx. 8−42200
N^++CO, integral reactive cross-section calcs. 8−27750
N^++inert gas, electron capture (loss) by metastable (ground-state) ions, 2-30 keV 8−25695
N^++N, 35-200 keV, K MO X-rays, production mechanism, spectral distrib. 8−42183
N^++N_2, 35-200 keV, X-ray spectrum, rel. to N^++N mechanism 8−42183
N^++N_2, luminescent charge transfer, metastable and ground state ions 8−42202
N^{n+}+C, 4 to 40 MeV, beam-foil K-shell X-ray prod. cross sections 8−33461
N_2 $(^1\Sigma_g^+)$ charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
N_2, $(C^3\Pi_u)$ state, radiative lifetime, collisional quenching, pulse radiolysis meas. 8−29813
N_2, (N_2^+), Franck-Condon factors, isotope effects calcs. 8−1031
N_2, electron impact excited, broadband photon yield meas. *(French)* 8−25723
N_2 free jet expansion, rot. level population kinetics, electron-beam diagnostics 8−5776
N_2, gas with clusters, free expansion, upper rot. levels population *(Russian)* 8−33581
N_2, hypersonic nozzle flow, supercooling and spontaneous condensation 8−1549
N_2, identified as source of 2150 Å auroral emission feature rather than NO 8−45083
N_2, liquid, Q-band position, width in cryogenic mixtures *(Russian)* 8−46401
N_2, N_2^+, airglow emissions from cometary inner comas 8−45282
N_2, nonempirical calc. for molecules in electric field 8−25459
N_2, pressure broadening of HNO_3 linewidth, 200 and 300K 8−46399
N_2, self-consistent electron pairs with higher order effects, quadruple iteration convergence 8−46276
α-N_2, solid, Raman spectra vibron bands, a priori calcs. 8−31181
N_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
N_2, valence-shell MO calc. with pseudopot. 8−907
N_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
N_2, vibr. populations of excited states under auroral conditions 8−42035
N_2, Xα-SW MO projection of LCAOC MOs 8−25422
N_2^-, vibr. autodetaching states, from H^-+H_2, excitation and decay, Franck-Condon factors 8−33620
N_2^+, 1NG: $B^2\Sigma_u^+ \rightarrow X^2\Sigma_g^+$, 3800 to 4750 Å spectra, mol. consts. 8−42081
N_2^+ 4278 Å bands in meteor spectra, quantitative anal. 8−45290
N_2^+ $(B^2\Sigma_u^+)$ state in Ne-N_2 mixture, excitation kinetics 8−9239
N_2^+, electronic transition moment, internucl. separation depend., semiempirical calc. method 8−9199
N_2^+ first negative (0-1) band temp. height profile in auroral arc 8−40725
N_2^+, fluoresc. and production cross-sections by photoionis. of N_2 8−9204
N_2^+, interaction with Si, SiO, and SiO_2 surfaces, XPS and UPS obs. 8−48265
N_2^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
N_2-Ar, detection gas suitability for proportional scintillation counter *(German)* 8−41901
N_2-Ar, visomag. diffusion flux theory 8−47087
N_2-Ar laser, stimulated emission obs. at 337.1, 357.7 and 380.5 nm 8−17925
N_2-Ar mixture, picosecond dephasing of coherently excited vibrations 8−22172
N_2-Ar plasma, coupled thermal-chem. relax., thermodynamic nonequilib. 8−34265
N_2-Ar-O_2, liq. vap. equilib. prediction using cubic eqn. of state 8−18737
N_2-CO mixed cryst., librational motion, Raman obs. 8−6661
N_2-H_2O-CO_2 gas mixture, oscillatory nonequilib. in planar supersonic nozzle flow 8−1758
N_2-Na-H_2 jet, ignition and extinguishment in simulated LMFBR accident conditions 8−8932
N_2-Ne, charge transfer kinetics, weak H^+ beam effects 8−9243
N_2-Ne, positive column, electron vel. distrib. function *(German)* 8−1885
N_2-Ne glow discharge, energy balance, ionis. collisions *(German)* 8−34263
N_2-Ne glow discharge, kinetic eqn., transport coeff., collision freq., mean energy *(German)* 8−34261

nitrogen continued
N_2-SF_6 laser, UV, discharge-excited, improvement in efficiency *(Japanese)* 8−33724
N_2+Ar, polarisation in elastic scatt., close-coupling calcs. 8−25650
N_2+Ar, rot. inelastic collision, orientation depend., close coupling calcs. 8−9232
$N_2+Ar^+(He^+)(Ne^+)$, charge transfer, thermal energy, product distrib. obs. 8−25656
$N_2+Ar^*(^3P_{0,2})$, rot. and vibr. energy transfer, relative reaction rates 8−9233
$N_2+C^-(O^-)$, electron detachment cross-sections, 20-150 keV 8−25690
$N_2+C^+(N^+)(O^+)$, luminescent charge transfer, metastable and ground state ions 8−42202
N_2+CO_2, vibr. energy transfer, time-resolved laser induced fluorescence 8−29842
N_2+CO_2, vibr. relax., optoacoustic obs. *(French)* 8−42178
N_2+Cs, collisional relax. and population quenching of Cs 8−25467
N_2+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
N_2+H^-, 1 to 5 keV, production cross sections for 3d,3s,4s,5s states of H 8−33603
$N_2+H^- \rightarrow N_2^-+H$, vibr. autodetaching states, excitation and decay 8−33620
N_2+H^+, excitation process, N_2 and N_2^+ light emission *(Japanese)* 8−25678
N_2+H^+, K-shell capture cross-section, Auger effect 8−33602
N_2+H(He), vibr. state distrib., charge exchange 150-2400 eV 8−42195
$N_2+He^+(Ar^+)$, small angle charge exchange, 0.5 to 1.0 keV, time of flight spectra 8−33604
N_2+I_2, $(A^3\Sigma_u^+)$ state quenching 8−13580
N_2+inert gas, state-to-state rates from press.-broadened linewidths, data reduction method 8−46430
N_2+Li(Na)(K), excited atom quenching, semi-empirical model 8−1065
N_2+methane, liquid mixture, press. effect on excess thermodynamic functions 8−47494
$N_2+N_2^++He \rightarrow N_4^++He$, transition state theory 8−27755
$N_2+N_2(CO)$, in matrix, vibr. energy transfer and relax. 8−46426
N_2+Na, collisional deactivation of Na excited states, time resolved fluoresc. 8−42197
$N_2+Ne^{m+}(N^+)$, K-shell vacancy prod. cross-section, charge state depend. 8−17751
N_2+Ne^*, quenching rate const. for metastable $Ne(^3P_2)$, flowing afterglow 8−46295
N_2+OCS, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
N_2+S_2, fluoresc. quenching and lifetimes of S_2 8−46386
N_2+SO_2, rot. linewidths (intensities) of $^{32}S^{16}O_2(^{34}S^{16}O_2)$, 91.5 95.5 GHz 8−42044
N_2+Si^*, collisional quenching, reson. line absorpt. expt. 8−46297
$N_2^++SO_3$, in mass spectroscopy of SO_3 mixtures 8−3415
$N(^2D)$ chemistry in ionospheric F-region 8−16241
$N_2(N_2^+)$, UV, visible spectra in Ar plasma, 230-620 nm 8−13456
$N_2(N_2+Ar)$ pulse excited microwave discharge diagnostics at moderate press. 8−9873
$N_2O/N_2/H_2O$, CW gasdynamic laser, numerical anal. 8−29935
N_2O-N_2, CW gasdynamic laser, qualitative comparison with CO_2-N_2 laser 8−25856
N_2O-N_2 mixture, thermalisation under reson. excitation by laser radiation *(Russian)* 8−26231
$N^+(^5S)$+inert gas, de-excitation cross section, 2-30 keV 8−25695
$N(^4S)+O_2(^3\Sigma_g^-) \rightarrow NO(^3\pi_u)+O(^3P)$ doublet surface minimum energy path calcs. 8−7194
^{14}N, ^{15}N, laser isotope separation, by NH_3 photodissoc., book contrib. 8−9208
$^{15}N/^{14}N$ ratios in gaseous NH_3, NO_2 and NO_3^- in aerosols and precip. 8−44896
$N_2^*+SO_2$, quenching of vibr. excited N_2, photoionis. detect. technique 8−46388
$Na+N_2$, rot. excitation and fine struct.-changing collisions 8−42176
Nb:N, deviations from Matthiessen's rule 8−39092
Nb:N, H, atomic tunnelling of interstitial pair, specific heat meas. 8−47600
Nb:N, H_{c2} anisotropy, impurity and temp. dependence 8−43533
Nb-N system, ion-implanted, supercond. crit. temp., effect of implantation conditions 8−19176
Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
Ne-N_2, N_2^+ $(B^2\Sigma_u^+)$ state excitation kinetics 8−9239
Ne-N_2 laser, energy pathways by proton excitation 8−5459
Ne-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
$O^-+N_2 \rightarrow N_2O+e$, rate studies 8−40036
O_2+N_2, collision induced UV absorpt., Herzberg continuum, dimer form. 8−9167
OH $(A^2\Sigma^+)+H_2(N_2)(Ar)$, collisionally induced population change rates, laser-induced fluoresc. obs. 8−5326
Si:N, interstitial Si atom formation by light ion bombardment 8−47406
Si:N, struct. defects formed by 50 keV N^+ irrad., depth distrib. 8−18688
Si:P, N implantation through Si_3N_4 film, depth distrib. of knock-on N, SIMS meas. 8−10066
SiC, N doping inhomogeneities due to growth conditions 8−22741
SiC:Al,N, blue cathodolum. spectra obs. 8−19574
SiC:N, conversion factor at high doping levels 8−22744
n-SiC:N, O, cathodolum. spectra meas. 8−19573
ZnSe:N, ion implanted cond. type conversion on annealing *(Korean)* 8−18668

nitrogen compounds
see also ammonia; ammonium compounds
electroionisation synthesis 8−23937
graphite nitrate, structural ordering in intercalation compounds 8−26539
molecule, ground state MNDO calcs. 8−911
nitrate salts, Raman spectra, thermally disordered energy states 8−35122
nitrates, atmospheric sampling with glass fibre filters, errors 8−16169
nitrates, detection by chemiluminescence analyser 8−40094
ocean-atmosphere-continent system, N compounds exchange 8−3794
oxides, atmospheric pollution, ozone depletion *(Russian)* 8−16154

nitrogen compounds continued
oxides, tropospheric photochemistry 8–44914
Purex process, concs. of U, Pu, HNO_3, fission products, in LMOM2 extractor, expt., graphical determ. 8–41843
$Ba+N_2O$, crossed mol. beams, BaO recoil vel. spectra 8–7184
$Ba+N_2O \rightarrow BaO+N_2$, chemiluminesc., ang. distrib. 8–44361
$CO+NO(O_2)(D_2)$, $(\nu=1)$ relax., temp. depend. 8–17760
CO_2-N_2O, mixed cryst., librational motion, Raman obs. 8–6661
$Ca_{10}(PO_4)_6F_2:NO_2^{2-}$ apatite, ESR, struct. of ions *(French)* 8–43640
$H+NO_2 \rightarrow OH+NO$, energy disposal, information theory appl. 8–15658
$H+NO_2 \rightarrow OH+NO$, laser induced fluorescence for OH, $^2\pi$ to $^2\Sigma$ region, preferential population of Λ doublets 8–31620
$HCO+NO(O_2)$, reaction rate consts. 8–31617
HNO_3, high resolution spectral meas. of 11.3 μm band, using tunable diode lasers 8–33504
$Kr^*(Kr^+)+NF_3$, rate consts., electron attachment coeffs., flowing afterglow 8–13578
NCO, $A^2\Sigma$ state, Fermi resonance and vibr. relax. in solid Ar 8–5212
NCl_3, ab initio LCAO SCF calc. for ground state, inversion barrier 8–25426
ND, $d^1\Sigma^+$-$c^1\Pi$, spectra, equilib. consts., dissociation energy 8–33517
ND in solid Ar, role of rotational and translational modes, in vibr. relax. 8–10132
N_2D^+, interstellar, radio detect. 8–16492
N_2D^+, lab. rest frequencies 8–1102
NF_3, dissoc. electron attachment, rate consts. meas. 8–3326
NF_3, IR spectrum in liquid Ar, vibr. anal. 8–21927
NF_3, liq., plastic cryst., gas, Raman spectra, Coriolis coupling and transition dipole 8–39533
$N_2F_4+Ne^*$, quenching rate const. for metastable $Ne(^3P_2)$, flowing afterglow 8–46295
NH, $d^1\Sigma^+-c^1\Pi$, $d^1\Sigma^+$-$b^1\Sigma^+$, spectra, equilib. consts., dissociation energy 8–33517
NH in solid Ar, role of rotational and translational modes in vibrational relax. 8–10132
NH, multipole expansion of diatomic overlap, MEDO calcs. 8–46264
NH^+, pot. curves, ab initio CI calcs., equilib. distances 8–17579
NH_2, (A^2A_1), fluoresc., form. by photolysis of $NH_3(A^1A_2'')$ 8–13547
NH_2, hyperfine level crossing spectroscopy of (0, 9, 0) and (0, 10, 0) vibr. states 8–17728
NH_2, X^2B_1, A^2A_1 and B^2B_2 states, ab initio SCF CI calcs. 8–29746
NH_2^-, photodetachment energy, eqn. of motion method 8–5301
NH_2^+, quintet states, pot. energy surfaces, ab initio SCF MO calc. 8–25419
$NH_2^++H_2O$, bimolecular reactions, product. distrib., rate consts. 8–11513
NH_3, detection by chemiluminescence analyser 8–40094
N_2H+He, scattering cross-sections, factorisation and fitting, IOS approx. 8–33575
N_2H_2, lone pair orbital explicit representation, augmented contracted Gaussian basis set 8–25423
cis-N_2H_2+ethylene, chem. reaction, intermediate geom. calcs. 8–35655
N_2H_4, adsorpt. on Cu, photoelectron spectra 8–6830
NH_2Br, He(I) photoelectron spectrum 8–25615
NH_xF_{3-x}, geometry changes during inversion, ab initio calcs. 8–5154
NH(NF)(NCl), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8–9067
$NH_2(X^2B_1)$, MODR, hyperfine coupling consts., spin rot. consts. 8–1010
NO, adsorbed on IR surface, oxidation of CO, XPS and UPS 8–15702
NO, adsorbed on Si (111) surface, electron energy loss spectroscopy 8–2374
NO, adsorpt. and decomp. on stepped Pt surface, LEED, AES and desorption expts. 8–38943
NO, adsorpt. and dissociative chemisorpt. on Cu, photoelectron spectra 8–6830
NO adsorption on Ti, W evaporated films, mutual replacement of CH_4, CO and NO *(Japanese)* 8–22949
NO airglow, 2150 Å (1,0) γ-band intensity meas. with polarising NO photometer 8–45076
NO, and isotopic forms, $X^2\Pi$ state, IR obs., mol. consts. 8–42045
NO and O_3 meas., mixing ratio in stratosphere 8–44915
NO, atm. trace gases and pollutants, data compilation on mag. tape 8–44995
NO, atmospheric, high-altitude rocket meas. of density 8–45068
NO, chemisorpt. and decomp. on Ru 8–18903
NO, chemisorption on Ni, Cu, Pd and Ag, semiempirical calcs. 8–14611
NO, chemisorption on Ni, angle-resolved UPS in modified LEED system 8–15293
NO, chemisorption on Pt, effect of particle size of Pt supported on inorganic oxide carriers *(French)* 8–11552
NO, chemisorption on Ru(101) via mobile precursor state 8–43247
NO, coadsorpt. and reactivity with Na on Ag (111) 8–38948
NO, combustion gas sampling system and valves for sampling during engine expansion process 8–24380
NO, desorption in Ni/SiO_2, 200 to 400K *(German)* 8–30835
NO dimerisation, equilib. const. anal., trans-/cis-$(NO)_2$ zero pt. correlation energy difference 8–11509
NO, dipole oscill. strength distribs., sums 8–21975
NO, doublet-quartet transitions, 5-7.4 eV, electron-impact spectroscopy, 5-80° 8–37754
NO, EPR line shape in solvating mixtures 8–33532
NO, electron impact, energy loss spectra, electronic transitions obs. 8–17805
NO, electronic spectrum, press. induced config. demixing 8–42090
NO excited state vibrational energy transfer, for optoacoustic spectroscopy 8–37724
NO, first monolayer on MgBr cleavage face, triple point 8–6227
NO, fundamental intensity and linewidth of IR absorpt. spectra, press. broadening 8–25530
NO, γ (1,0) band auroral emission at 2150 Å probably N_2 feature 8–45083
NO, $I^2\Sigma^+$ state, valence bands, absorpt. spectra 8–46361
NO, in exhaust gas, direct optical detect., transverse sensitivity *(German)* 8–35751
NO in lower thermosphere, joint meas. by rocket borne UV photometer and mass spectrometer 8–40723
NO in thermosphere, temperature-depend. model 8–16226

nitrogen compounds continued
NO, interstellar, ion-molecule reactions rel. to candidate mols. form. 8–28739
NO, ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8–41948
NO, laser mag. reson. and IR-RF double-reson. near 5.3 μm 8–5258
NO, NO_2, pollutants conc. meas. at ground level at unpolluted maritime site 8–3951
NO, oxidation in O_2 matrix, IR spectra of products 8–23936
NO, photoabsorption and photionisation, UV region meas. 8–42087
NO, photoionisation by vac. UV laser *(Russian)* 8–9205
NO, quenching of pyrene dual fluoresc. 8–5266
NO, radical spin labels, appl. to solvent-solute interactions 8–17698
NO, Salyut 4 IR spectral obs. in upper atmosphere mid-latitudes 8–16223
NO thermal desorption from Re single cryst. surface *(French)* 8–22959
NO, two-photon spectra by three-wave mixing 8–29826
NO, var. in ionospheric E-region correl. with solar activity 8–49207
NO, vibr.-rot. bands of Raman spectra 8–29173
NO, ZZ 8–46418
NO^+, mobility in CO_2, obs. using injected-ion drift tube mass spectrometer 8–1784
NO^+, R_e-function of A-X system, rel. to astrophysical meas. 8–13554
^{15}NO, vibr.-rot. transitions, Λ-doubling, optoacoustic spectroscopy meas. 8–42062
$NO+Ar^+(He^+)(Ne^+)$, charge transfer, thermal energy, product distrib. obs. 8–25656
NO+aromatic compounds mixture, charge transfer equilib. consts. adiabatic ionis. energies, entropy changes 8–37738
NO+fluoromethylene, vibr. energy distrib., lasing action 8–48644
NO+formaldehyde(-d_2), laser beam-induced free radical reactions, quenching 8–44387
$NO+HO_2$, reaction kinetics meas. 8–31624
$NO+H+H_2 \rightarrow HNO+H_2$, rate of reaction, temp. depend., third body efficiencies 8–23933
NO+O, in Ar matrix, chemiluminesc. 8–35688
$NO+O_3$, (001), laser enhanced reaction, temp. depend., reactive and nonreactive channels 8–48642
$NO+O_3(001)$, laser-enhanced reaction, rates, temp. depend. 8–48675
$NO+O_3 \rightarrow NO_2^*$, mol. beam chemiluminesc., kinetic and internal energy depend. 8–31638
$NO+O(^1S)$, product channels 8–46422
NO+Sc(Y), nascent product state distribs., laser fluoresc. detect. 8–7187
$NO+Si^*$, collisional quenching, reson. line absorpt. expt. 8–46297
$NO^++e^- \rightarrow N+O$, recombination rate const. determ. in flames 8–48632
$NO^++X^- \rightarrow NO+X$ (X=Cl, Br, I), rate const. determ. in flames 8–48633
NO_2, $^2B_2$ state, fluoresc. anomalous mag. depolaris. 8–21962
NO_2, 7390 Å band, vibronic transition within ground state manifold 8–21919
NO_2 and isotopic forms, total quartic potential function 8–13486
NO_2, atm. trace gases and pollutants, data compilation on mag. tape 8–44995
NO_2, atmospheric, tangent ray meas. technique, effects of NO_2 conc. vars. at twilight 8–32141
NO_2, atmospheric concentration determ. dye laser differential lidar system 8–32250
NO_2 concentration in stratosphere, HNO_3 simultaneous meas. *(French)* 8–16107
NO_2 concs. in dwellings with gas or electric stoves 8–16086
NO_2, EPR, mag. dipole transitions, Zeeman parameters 8–17697
NO_2, fluoresc. quenching mechanism 8–25599
NO_2, fluoresc. spectra from selectively excited HFS levels 8–21961
NO_2, Hanle effect, using Doppler reduced laser excitation 8–25627
NO_2, high-press. Raman matrix isolation spectra 8–45721
$(NO)_2$, IR spectra in O_2 matrix, vibr. freqs. 8–23936
NO_2 in atmosphere, remote sensing via computer assisted correl. spectrometer 8–4002
NO_2, NO_2^+, NO_2^-, SCF and MC SCF CI calcs. 8–46280
NO_2, NO_3^-, in atm. aerosols and precip., $^{15}N/^{14}N$ isotope ratios 8–44896
NO_2, Ne matrix isolated, 6K, B←X band system 8–993
NO_2, optoacoustic detect. using pulsed dye laser 8–27835
NO_2, photodissoc. rate constant depend. on altitude 8–11949
NO_2, reson. Raman spectra, vibr.-rot. scatt. Q branch enhancement 8–989
NO_2, rot. Zeeman spectroscopy, 8_{08} to 7_{17} rot. transition 8–25610
NO_2, stack plume obs. by laser radar *(Japanese)* 8–11990
NO_2, two step photoionisation by vac. UV laser *(Russian)* 8–9205
NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8–25518
$^{14}N^{16}O_2$, IR spectra, $2\nu_2+\nu_3$ and $\nu_1+\nu_2+\nu_3$ bands, vibr. and vibr.-rot. consts. 8–983
NO_2-cyclohexane-air mixtures, photochem. particulate form. 8–11529
NO_2-N loss from microcosms as soil pollution indicator 8–16019
NO_2+Cl, matrix reactions, IR absorpt. obs. 8–15667
NO_2+HO_2, reaction rate consts. by laser mag. reson. 8–27748
NO_2+SO_2 aerosol, form. kinetics, irrad. by 488 nm light 8–40067
NO_3, atmospheric particles, size distrib. and chem. comp., Nagoya area, Japan 8–11980
NO_3^-, detect. in subway air 8–36273
NO_3^-, in molten monovalent metal nitrates, ion struct., pulsed neutron diffr. obs. 8–22631
NO_3^{2-}, in γ-irrad. Y-type zeolite, EPR triplet assignment, instead of H_2O^- 8–11534
NO_x atmospheric chemistry, significance of HO_2NO_2 8–11971
NO_x chemiluminescent analysis using diffusion interface module 8–40095
NO_x, detection by chemiluminescence analyser 8–40094
NO_x emission from thermal power plants, review of preventive measures *(Croatian)* 8–3935
NO_x, form. in combustion, oxidising agent excess depend., thermodynamic anal. 8–15677
NO_x from SST and subsonic aircraft emission, potential O_3 column increase 8–11979
NO_x, urban air pollution in Genoa, Italy 8–11981
N_2O, abundance in air, IR spectrochem. anal. 8–15738

nitrogen compounds continued
N_2O, anomalous Zeeman effect, nonlinear optical techniques, book contrib. 8−9279
N_2O, atm. distrib., mixing ratio 8−32175
N_2O, atmospheric life cycle rel. to O_3 reductions 8−16140
N_2O, conc. meas. in stratosphere 8−32171
N_2O, dipole oscill. strength distribs., sums 8−21975
N_2O, dissoc. in alternating elec. field, kinetic and energetic data *(French)* 8−13620
N_2O, dissolved, consumption in anoxic basin, Saanich Inlet, British Columbia 8−40594
N_2O, electron impact, energy loss spectra, electronic transitions obs. 8−17805
N_2O, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
N_2O, gasdynamic laser, flow inhomogeneity effect on gain distrib. 8−1205
N_2O, ground level abundance, simultaneous determ. of CO_2, CO and H_2O 8−11969
N_2O, IR absorpt. spectra, N_2-broadened lines of ν_3 band 8−5228
N_2O, IR combination band spectral emissivity, 1200, 1700, 1900K, shock tube obs. 8−5287
N_2O, IR spectrum in liquid Ar, vibr. anal. 8−21927
N_2O in lower stratosphere, latitudinal profiles 8−44989
N_2O mixing ratio meas. and residence time 8−49088
N_2O, photoabsorption and photionisation, UV region meas. 8−42087
N_2O, photoionisation and ion dissoc., isotope effects, mass spectra 8−9203
N_2O, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
N_2O, vertical profile meas. in seawater *(German)* 8−3814
N_2O, ZZ 8−46418
N_2O^+, fluoresc. and dissociation lifetimes of vibr. excited states 8−42108
N_2O^+, fluoresc. and production cross-sections by photoionis. of N_2O 8−9204
N_2O^+, mobility in Ne gas 8−14125
$N_2O/N_2/H_2O$, CW gasdynamic laser, numerical anal. 8−29935
N_2O-acetylene flame, background compensation in differential atomic emission spectrometry *(French)* 8−7296
N_2O-CO_2, optically pumped transfer lasers, continuously tunable 8−13678
N_2O-H_2 flame, appls. to Mn determ. in gasoline by AAS 8−15729
N_2O-He, species concentrations in glow discharge and afterglow, mass spectra, laser conditions 8−14241
N_2O-N_2, CW gasdynamic laser, qualitative comparison with CO_2-N_2 laser 8−25856
N_2O-N_2 mixture, thermalisation under reson. excitation by laser radiation *(Russian)* 8−26231
$N_2O+Ar^+(He^+)(Ne^+)$, charge transfer, thermal energy, product distrib. obs. 8−25656
N_2O+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
N_2O+Ne^*, quenching rate const. for metastable $Ne(^3P_2)$, flowing afterglow 8−46295
$N_2O+O(^1D)$, rate consts., temp. depend. 8−27747
$N_2O+O(^1S)$, product channels 8−46422
$N_2O+Pb \rightarrow PbO+N_2$, chemiluminesc. reaction, vel. depend. 8−27762
$N_2O+Si(3p^2(^1S_0))$, attenuation of reson. radiation, time-resolved kinetic obs. 8−5329
N_2O_4, effect on mech. props. of Cr and Cr-Ni steels and alloys after long-time exposure *(Russian)* 8−48573
N_2O_4, He I photoelectron spectrum, new interpretation 8−17713
N_2O_4, IR spectra in O_2 matrix, vibr. freqs. 8−23936
N_2O_4, paramag. shift effects on PMR spectra of electron donating organic compounds *(Russian)* 8−21946
N_2O_4-HNO_3-H_2O dissociating system, surface tension at liquid-vapour boundary *(Russian)* 8−47643
N_2O_5, IR spectra in O_2 matrix, vibr. freqs. 8−23936
N_2O_5+O, rate const., 220K, 300K, discharge-flow method 8−44352
NOCl, optically pumped laser, 11-17 μm 8−46581
NO_2Cl, force fields calc. 8−42241
NO_2F, force fields calc. 8−42241
$NO(NO_2)+O_3$ reactions in power plant plumes 8−3923
$NO_2(NO_2^-)$, ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
$NO_3(NO_3^-)$, ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
$NO(^2\Pi_{3/2}, J=3/2)$ at X-band, high resolution EPR spectra 8−37661
NO^*+NO, van der Waals mols. in mol. fluoresc., vibr. predissoc. model 8−42120
$NO_2^*+CO \rightarrow NO+CO_2$, laser stimulated reaction, rate const. 8−40044
$N_2O_4 \rightleftarrows 2NO_2$ equilib. system, condensation heat transfer on horizontal tube bundle *(Russian)* 8−46970
$NO^+.H_2O$, photodissoc. cross sections, mass spectrometric determ. 8−1038
$NO^+.NO$, photodissoc. cross sections, mass spectrometric determ. 8−1038
No_2 oxidation of C fibres, modification of struct., props. 8−44237
SF_6+NO+O_3, laser sensitised reaction, time-resolved NO_2^* emission obs. 8−20017
$Sb(5^4S_{3/2})+NO(O_2)$, rate consts., time-resolved reson. fluoresc. meas. 8−27732
Ti-V-C-N, solid solns., quasibinary cross sections 8−23676
Xe^++NF_3 reaction, XeF^+ form., $Xe^+(^2P_{1/2})$ radiative deactivation 8−27737

NMR line breadth
benzene, partially ordered solid, NMR line shape, orientational distrib. 8−35048
borate glass, of ^{11}B, fast stable analysis technique 8−6585
broadening effects associated with cryst. imperfections, theory 8−35021
clathrate deuterohydrates, ^1H NMR lineshape of tunnelling methyl group, <5K 8−46370
clathrate hydrates, identification from NMR line shapes 8−27861
dimethylacetylene, solid-solid phase transition, NMR meas. 8−6583
graphite intercalation compound, LiC_6, ^7Li NMR *(French)* 8−35050
methacryloyloxyethyleneoxycarbonyloxypropylene, NMR relaxation mechanism *(German)* 8−33527

NMR line breadth continued
methyl-containing mol. solids, proton NMR line shape, methyl group tunnelling 8−6588
molecule, homonuclear dipolar broadening removal using multiple pulse-magic angle spinning probe 8−12735
molecules, indistinguishability of permutations in same NMR mode 8−33524
nonequidistant NMR spectrum, spin-spin width suppression by RF pulses *(Russian)* 8−23357
paramagnet, low-dimens., model 8−23356
paramagnetic material effect on chem. shift and relax. times, mol. struct. effect 8−46373
polydimethylsiloxane-solvent system, NMR spectrum narrowing, dipolar spin coupling modulation 8−39413
polyethylene, fibre, phase structure and molecular mobility, broad-line NMR spectroscopy 8−14290
polymer-solvent system, NMR spectrum narrowing, dipolar spin coupling modulation 8−39413
polymers, magic angle rotation ^1H NMR, appls. 8−43649
polymethacrylic acid aq. solns., PMR spectra 8−27099
pyrrole, liq. and nonaq. solns., ^{14}N NQR, ^1H line shape anal. 8−6598
relaxation measurements, Markov theory, systems with multiple degrees of freedom 8−46368
RF field effect in system with nonequidistant spectrum 8−10788
solid, partially ordered, orientational distrib. from NMR and EPR line shapes 8−35048
sphingomyelin bilayer systems, monolayer coupling, choline methyl proton line width 8−35807
spin-lattice relax., periodically-irrad. system, master eqn. predictions 8−43664
two-dimensional resolved spectroscopy, phase separation techniques, rare nuclei 8−19341
Au-V, dil., ^{51}V CW NMR line width anal., RKKY broadening 8−15033
Co, HCP, ferromag., anisotropic hyperfine interactions, NMR expt. 8−43658
^{59}Co NMR line breadth and chemical shift data compilation *(Japanese)* 8−15045
H_2, solid, NMR, pulsed, linewidth transition, T_1, low ortho conc. 8−43667
^3He, optically oriented nuclei, in two-chamber cell, NMR linewidth obs. 8−17591
^4He:^3He, solid spin diffusion coeff. and T_2, impuritons, temp. depend. 8−34675
$KH_3(SeO_3)_2$, ferroelastic, central peak in local proton fluctuation spectrum 8−23363
K_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8−15051
$LaNi_5H_{6.6}$, $LaNi_5H_{6.2}$, H diffusion NMR spectra *(Russian)* 8−2287
NH_4^+, NMR line shapes at low temp., composite tunnelling, reorientation 8−48054
NH_4ReO_4, PMR, NH_4^+ tunnelling, ground torsional level struct. 8−27097
Na_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8−15051
Nb-Pt, A15- and δ-phases, Knight shift of ^{195}Pt meas. 8−19350
NbD, orthorhombic β phase, ^{93}Nb Knight shift and quadrupole coupling parameters 8−19352
NbH, orthorhombic β phase, ^{93}Nb Knight shift and quadrupole coupling parameters 8−19352
^{17}O NMR, proton decoupling 8−2752
$RbMnF_3$, Heisenberg antiferromagnet, paramag. region, NMR, spin pair correl. 8−15032
$Sr(NH_3)_6$, PMR linewidth, proton tunnelling and NH_3 rot., rapid NH_3 diffusion 8−35045
SrO-B_2O_3, ^{11}B NMR lineshape, BO_3^{-3} triangle, perfect trigonal symm. *(Korean)* 8−19367
W, with H adatoms, PMR meas. of adsorption state, surface migration 8−10275

nobelium
No entries

nobelium compounds
No entries

noble gases *see inert gases*

noctilucent clouds *see clouds*

noise
see also acoustic noise; atmospherics; electron device noise; random noise; white noise
AC voltmeter, ambiguity in equivalence noise bandwidth approximation 8−4662
biomembranes, low noise amplification of voltage and current fluctuations 8−44741
birefringence modulator devices for sensitive polarisation determ. 8−8437
black-body radiation field interaction with photoconductor, noise, Langevin method 8−30950
coded aperture imaging, signal to quantum noise ratio 8−37122
complex system characteristic derivative meas. by input deep modulation *(Russian)* 8−45588
cone ionic channel closure, turtle 8−15830
data processing by coherent light, photographic noise *(Italian)* 8−22088
electrocardiogram baseline noise estimation and removal using cubic splines and state space computation techniques 8−11755
electronic speckle pattern interferometry, optimal signal processing 8−16837
EM particle simulation codes, initial noise, quiet start 8−1883
EM propagation in multilayered struct., noise calculations by flow graph anal. 8−22069
Fourier spectroscopy, S/N ratio 8−32885
hair cells of organ of Corti, thermal noise 8−15845
immunity of optical signal reception with unstable modulator characts. 8−46690
ion-selective membrane, flicker noise and turbulent convection in depleted layer 8−48692
kinetic systems, differentiation between equilib. and nonequilib. systems 8−44439
laser tracker, target induced pointing noise 8−5519
lidar for atmospheric multiple backscatt. and depolarisation obs. 8−36297
low temperature NMR and SQUIDs, low-noise circuitry 8−4672
mechanical light modulator, harmonic anal. of noise spectrum 8−1362

noise continued
Michelson interferometer, active noise compensation *(Russian)* 8−12751
nerve membrane permeability changes, fluctuation anal. 8−11636
nonlinear systems, white and coloured external noise and transition phenomena 8−45569
nuclear reactor behaviour unattended surveillance system 8−29621
nuclear reactor noise theory, adjoint space applic. 8−13202
optical image processing by spatial filtering, noise problems 8−37817
optical pulsed signals, time position accuracy determ. for correlated noise types 8−12761
optical radar, S/N ratio statistics 8−17866
optical signal processor, 2-dimens., high accuracy 8−46532
Permalloy film magnetometer, mag. props. and LF noise 8−48005
phase measurement, synchronous marker for meas. in noise 8−12725
phase transition induced by external noise 8−16764
quantum noise source for Brownian oscillator, whiteness 8−75
radiometry, second order, radiant noise coherence 8−287
retinal bipolar cell dark noise and stability of rod rhodopsin 8−11644
seismographs, noises and generating mechanisms in long-period equipment 8−12017
semiconductor, n-type, quasisteady noise effect on thermionic emission 8−2974
semiconductor laser, quantum noise 8−1228
solar fine structure radio bursts at meter wavelengths, review *(Russian)* 8−16386
stellar speckle interferometry, S/N ratio 8−12102
sudden cosmic noise absorpt., solar Zenith angle depend. 8−12047
teaching, Campbell's theorem, use in elec. noise formulae derivation 8−24602
thermocouples, voltage spikes and temp. error due to time varying mag. fields 8−4617
transaxial X-ray tomography reconstruction using convolution methods, digital simulation *(Japanese)* 8−35931
vision, temporal noise, detectability of power fluctuations 8−48811
vision, temporal stereopsis and dynamic noise 8−7368
ZPR, noise analyses, determination of kinetic parameters *(Rumanian)* 8−46139
CdS, localised level anal. from generation-recomb. noise spectra 8−14777
CdS sintered film, photolum. and recomb. photocurrent noise spectra 8−6743
p-Ge, temp. depend. of noise and diffusion of hot holes 8−39174
He-Cd extended-life laser characts. 8−46586
He-Ne laser, 0.63 μm emission intensity fluctuations, spectral correl. 8−1212
n-InSb, noise, round trip acousto-electronic amplification, anodic piezoelectric transducer *(Russian)* 8−23139
InSb-NiSb, 8 mm band noise generation *(Russian)* 8−39175
MBBA, nematic, anomalous spectra of current induced noise under high DC field 8−38617
Si, hot hole diffusion and white noise, microscopic Monte Carlo model 8−30937
W_2O_{5-x} film, current, excess noise 8−6421

noise abatement
see also acoustic wave absorption
acoustic waveguide, active noise suppression 8−5613
active compensation, of vibrs. of inhomogeneous elastic structs. 8−18103
active suppression systems, effectiveness of criteria for placement of compensating sources 8−18099
active suppression systems with finite number of couplings, approximation and stability aspects 8−18111
air conditioning plants, sound attenuators, attenuation characts. 8−30123
air transport noise reduction measures 8−1505
barriers, sound attenuation estimation via calculating charts *(Japanese)* 8−30126
centrifugal fan noise reduction by acoustically lined casing 8−1494
closed building, forecasting program for determ. of noise abatement measures efficacy *(French)* 8−13856
control technique fundamentals *(Japanese)* 8−18107
diffracted field formed by rigid scatterers in field of harmonic point sound source, compensation 8−18112
diffraction by acoustically penetrable or electromagneticlly dielectric half plane, noise barrier model 8−5595
dissipative mufflers with locally reactive lining, modelling 8−13849
electric utilities, impact of noise control regulations 8−33958
flexural mode vibration damping by reinforcing beams 8−18097
food processing industry, noise reduction materials 8−38132
hearing protectors, meas. of real-ear attenuation by standardised test methods 8−1508
hearing protectors, performance estimation 8−40192
highway noise shielding methods 8−9492
industrial building, system effectiveness study *(German)* 8−5612
industrial ear protectors, standardisation of testing, current developments 8−22225
industrial noise and hearing conservation 8−22223
industrial noise control, costs and legal requirements 8−33957
industrial noise hazard control programme 8−9490
industrial noise induced deafness and protective measures 8−22224
industry, choice of engineering or administrative controls or personal protection 8−33956
machine vibration control, active vibr.-mounting techniques 8−18102
materials for noise and vibr. control, review 8−13854
mechanical ventilation systems noise control, design approach 8−42489
microjet noise and micropore diffuser-muffler design 8−30335
multimode waveguide sound fields, active suppression system 8−18113
multiple acoustic screens, influence of physical factors on noise reduction *(French)* 8−13844
open plan offices, noise abatement via sound absorbing partial partitions 8−18116
party wall and floor transmitted noise nuisance survey 8−42491
physical and technical acoustics, conference, Zvenigorodskii, USSR (Sep. 1977) 8−18081
plate radiation compensation at subcritical freqs., coupling of sound and vibr. fields 8−18110
reactive acoustic attenuator for air conditioning 8−38140
self excitation of active noise suppression in a waveguide 8−18109
ship, using viscoelastic materials 8−22226

noise abatement continued
sound and vibration fields suppression, synthesis of systems 8−9494
sound attenuation by wide barriers, acoustical scale model study 8−1499
steel wheel/steel rail vehicles using steerable steel wheel system for noise reduction 8−26005
traffic noise, attenuation around buildings 8−1498
traffic noise reduction by closed balcony shielding on buildings 8−33951
transformer noise reduction by acoustic compensation 8−38134
vibration and noise control systems, review 8−30127
vibration control, energy propag. in absorbing structs. 8−9596
wood joist floor-ceiling systems, sound-insulating efficiency upgrading 8−1515

noise control (acoustic) *see noise abatement*

noise control (interference) *see interference suppression*

noise elimination *see interference suppression*

noise generators
pseudo-random sound absorption and buildings, insulation testing *(Spanish)* 8−13861

noise levels, acoustic *see acoustic noise*

noise measurement
see also acoustic noise measurement; electric noise measurement; optical noise measurement
combustion products, noise temp. meas. using contactless capacitive convertor 8−9830
sinusoidal signal, in presence of noise via synchronous marker 8−12725
two-dimensional analysis, applic. to Hall generator 8−6420

nomenclature and symbols
see also units (measurement)
comets, 1976 perihelion passage designations 8−36523
polarised light definitions and nomenclature 8−29897
reflectance, geometrical considerations and nomenclature 8−29146
reflection, transmission, scatt. and emission terminology 8−37044
star names register *(Swedish)* 8−4188
thin layer chromatography, high performance, efficiency parameter terminology 8−20098

nomograms
see also graphs
air humidity meas. above 100°C 8−226
black body monochomatic emissive power, fast calc. by nomograph 8−22257
gravitational parameter inaccuracy consequences computation, for orbits in Earth's gravitational field 8−40460
heat transfer coefficient determ., water flowing in pipes or tubes 8−9641
pore size in thin dielec. films 8−6632
sound attenuation by barriers, estimation via calculating charts *(Japanese)* 8−30126
US tool, radial mode, with statically loaded inner surface, reson. condition nomogram 8−183

nomographs *see nomograms*

non-Newtonian flow
see also non-newtonian fluids
in annular conduits *(Japanese)* 8−9660
boundary layer, in convergent channel, eqn. derivation by perturbation method 8−30322
Cosserat fluid flow in curved pipe. 8−14048
critical point region, theory 8−22377
dumbbell shaped particles in power-law liq., struct.-phenomenological theory 8−1730
elastic liquids, stability of plane Poiseuille flow 8−9662
elastico-viscous flow reversal, stationary and torsionally oscill. disc 8−1698
extrusion and forming of solids, plastic deform., nonNewtonian flow, numerical solns. 8−19824
flow past sphere, finite difference numerical solns 8−9661
fluid spheres in viscoelastic fluid, drag coeff., low Reynolds number *(Japanese)* 8−9694
forced convection, on circular cylinder, suction and slip velocity effects 8−34169
gas bubble suspensions, incompressible nonNewtonian and Newtonian fluids, dilatational props. 8−30343
heat transfer by fluctuating flow past porous plate 8−38309
hydraulic behaviour research, rheology *(Italian)* 8−38376
kinematical tensors, rheological eqns. of state 8−30326
laminar and turbulent flow in noncircular pipes 8−18315
Maxwell viscoelastic liquid, drag on circular cylinder with transient vel. 8−18270
micropolar fluid, second order, fund. and constitutive eqns., thermodynamics and flow 8−20970
micropolar fluid flow between concentric cylinders 8−5767
micropolar laminar radial channel flow, heat transfer 8−30328
Oldroyd B-fluid flow between porous plates with fluctuating vel. 8−26168
parallel plates, torsional oscill. of one plate, radial-axial flow 8−38375
phase-equilibria of rod-like molecules in extensional flow field 8−26158
polyisobutylene-oil, laminar plane stagnation flow kinematics, laser Doppler anemometry 8−38374
polymeric liquid pulsatile flow in circular tubes, flow enhancement, Goddard-Miller model 8−30324
Prandtl-Eyring law appl., jetstream pump parameters *(German)* 8−30331
pseudoplastic fluids, heating in laminar flow 8−34128
Rivlin-Ericksen fluid, flow about rot. sphere 8−30323
rolling, Newtonian or non-Newtonian liqs., two-roll mill problem 8−42616
rotational flow between 2 parallel plates, unsteady flow of Rivlin-Ericksen liq. 8−30320
rotatory oscillatory flow, rheological consts. determ. 8−30251
second order fluid, unsteady motion between parallel plates 8−30321
second order liquid porous parallel walled channel flow with free and forced convection 8−42635
second-order fluid creeping flow, stick-slip and die swell 8−30325
secondary flow in cylindrical tubes 8−30327
Stokes flow due to body rot. in micropolar fluid 8−38372

non-Newtonian flow continued
surface diffusion flux in Newtonian or nonNewtonian fluid, laminar flow, double pulse meas. *(French)* 8−40055
suspension, dilute, arbitrary-shape particles, time-depend. flow, Brownian rot. effect 8−26188
thermal boundary layers, in suddenly started viscoelastic fluid in circular pipe entrance region 8−9658
viscoelastic (viscoplastic) fluid, free coating of vert. surface 8−42576
viscoelastic flow, continuum thermodynamic theory, configurational entropy effects 8−1621
viscoelastic flow at stagnation point over moving wall 8−18319
viscoelastic flow in tube, eddy diffusion reduction for heat and momentum transfer 8−22382
viscoelastic fluid, elongational flow, elongational viscosity 8−14061
viscoelastic fluid, elongational flow, gas bubble collapse 8−14060
viscoelastic fluid, oscillatory flow past infinite porous plate with variable suction 8−38373
viscoelastic fluid, turbulent flow, frictional drag reduction 8−1696
viscoelastic fluid film, flow along conical rotor 8−1697
viscoelastic fluid in annulus, entry flow anal. 8−1699
viscoelastic fluid layer, convective instability, boundary thermal cond. independence 8−9659
viscoelastic Maxwell fluid, unsteady flow between parallel planes, in transverse mag. field 8−38411
viscoelastic reacting fluids flowing over flat plate, boundary layer anal. of surface deposition 8−42675
viscoelastic Rivlin-Ericksen fluids, unsteady flow through circular and coaxial ducts in radial mag. fields 8−42632
viscoplastic conducting liq., finite perturbations, Hartman flow instability *(Russian)* 8−47049
viscoplastic liq. in slot channel, peristaltic flow 8−5770
viscous liquid in cylindrical nozzles, entrance press. losses 8−47012

non-Newtonian fluids
see also colloids; polymer melts; polymer solutions; rheology
convection, steady-state 8−22376
dumbbell kinetic problem, rheology, Langevin approach 8−42633
film flow over soluble wall, solvent layer form 8−42634
laminar forced convection heat transfer in square duct, numerical solns. 8−18318
laminar heat transfer, in tubes 8−9624
micropolar fluid, second order, fund. and constitutive eqns., thermodynamics and flow 8−20970
polypropylene melt, zero-shear-rate viscosity, press. depend. meas. 8−43164
polystyrene melt, normal and shear stress relax., Rheometrics mech. spectrometer transient response 8−42577
power-law liquid, shear flow, general soln. for mag. rheology *(Russian)* 8−47003
Rivlin-Ericksen fluids, unsteady flow through circular and coaxial ducts in radial mag. fields 8−42632
spherical gas bubble, in nonNewtonian liquids, growth by solute diffusion 8−34677

noncrystalline state structure
see also amorphous state; vitreous state
alkali borate glasses, Mossbauer effect 8−39476
alkali borates, vitreous and cryst., vibr. spectra and struct. comparison 8−23470
alkali silicate glass, suitability of small angle neutron scatt. for struct. determ. 8−22663
amorphous semiconductor, tetrahedrally bonded, random stacking model, X-ray scatt. intensity 8−9953
amorphous structure, computer simulation 8−30541
amorphous thin films, crack networks of voids 8−2399
borosilicate glass, IR refl. spectra resulting from phase separation *(Japanese)* 8−39542
butadiene-isoprene copolymers, monomer unit distrib., ^{13}C NMR determ. 8−26456
cellulose hydrated film, orientational heterogeneity, IR spectra and dichroism obs. *(Russian)* 8−38990
Cl ThO$_2$ glasses, thermal anal. *(French)* 8−14282
conference on noncrystalline solids, Clausthal, Germany (Sept. 1976) 8−22654
dispersion relation of phonon-like excitations 8−18727
elastometric glasses and porous network polymers, review of future developments 8−22657
EM scattering techniques, phase retrieval methods 8−22656
extended X-ray absorption fine structure using real space transform, struct. determ. technique 8−23553
film, microporosity induced by nucleation and growth processes, TEM expt. 8−10303
glass, elementary defect creation during glassmaking, model 8−22668
glass, glass surface, inhomogeneities and defects, detection using microbubbles, implantation technique *(German)* 8−47647
glass, heat treated, thin foil prep. for TEM obs. 8−7154
glass, NMR investig. techniques 8−23358
glass, phase separated, EPR rel. to struct., elec. and opt. props. 8−23333
glass, relaxation phenomena, review 8−2014
glass, relaxation phenomena and Raman spectroscopy, review of developments 8−22665
glass, review 8−2013
glass, surface layer, model *(German)* 8−30817
glass porous, struct. and texture rel. to heat treatment effects *(German)* 8−44140
interpenetrating polymer networks, and related materials, review 8−42923
ion distribution function for complex solid, appl. to cond. of glasses 8−47585
Kevlar 49 fibre, macromol. struct., electron diffr. and dark-field electron microscope obs. 8−34446
metal, amorphous, icosahedral microclusters as possible structural unit 8−34439
metallic glasses, electronic structure, neutron scatt., elec. resist., Hall coeff., mag. susceptibility and XPS 8−23013
metallic glasses, free vol. theories of glass transition 8−14284
metallic glasses, Polk model and struct. 8−42916
metallic glasses, prep., characterization, review struct., formation, electronic, mag. and mechanical props., review 8−3074
metallic glasses, structure and crystallisation, review 8−2008

noncrystalline state structure continued
microfibils of oriented polymers, struct. of amorphous sections 8−18559
models and exptl. methods, review 8−22655
Nylon 6, fibre, crystallite dimensions, effect on struct., mech. and diffusive props. 8−11273
oxide glasses with Bi or Se granules, elec. props. and microstructure 8−2490
PET, fibre, crystallite dimensions, effect on struct., mech. and diffusive props. 8−11273
PMMA, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
poly(S)-2-methylbutyl vinyl ether, conformation, IR spectra 8−1116
poly(S)-5-methyl-1-heptene, conformation, IR spectra 8−1116
polybutene-1, microstructure determ. by ^{13}C-^{1}H NMR 8−26455
polycarbonate, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polycarbonate, highly hot-drawn, mechanical prop. and phys. struct. changes 8−14293
polyethylene, amorphised by γ-irrad., interchaie ordering, X-ray obs. 8−30545
polyethylene, cross-linked and low-density, pseudo spherulite structures and elec. discharges 8−42920
polyethylene, extended chain crystal, fine structure and nucleation mechanism 8−14287
polyethylene, fibre, phase structure and molecular mobility, broad-line NMR spectroscopy 8−14290
polyethylene, fibrous samples, struct. obs. by low-angle X-ray diffr. 8−34445
polyethylene, high-density, lamellar sep. during deform. 8−23775
polyethylene, high-density, semicryst., fold-surface morphology effect on deform. processes 8−34447
polyethylene, mixed morphology and linear fractions, light scatt. obs. 8−2023
polyethylene, solid, heterogeneity investigation by small angle neutron scattering 8−14298
polyethylene, uncrosslinked amorphous matrix embedded cryst. orientation distrib., strain energy and hydrodynamic pot. effects 8−9968
polyethylene films, uniaxially and doubly oriented, crystallite size determ., microparacrystallite lamellar surface identification 8−48431
polyethylene high press. phase, struct., phase diagram and compressibility 8−9961
polyethylene single cryst., FT IR spectra, CH_2 rocking mode 8−2843
polyethylene single cryst., FT IR spectra, CH_2 wagging mode 8−2842
polyethylene spherulites, lamellar struct. obs. 8−30547
polyethylene spherulites, STEM and microdiffr. obs. of micromorphology 8−34444
polyethylene terephthalate film, X-ray diffr. exam. of morphology 8−18558
polyethylene total joint replacement, props. improvement by C fibre reinforcement, SEM obs. 8−24183
polyethyleneterephthallate, sorption of low MW solvents on struct. and mech. props. *(Russian)* 8−11358
polymer, amorphous, bulk, structure models and exptl. methods, review 8−22671
polymer, amorphous, molecular origin of relaxations 8−26058
polymer, amorphous, stress-optical investig. of short-range order 8−22672
polymer, ESCA investigations on selected systems, struct. and bonding obs. 8−14302
polymer, semicrystalline, mol. morphology 8−38631
polymer, yield behaviour, interpret. w.r.t. correlated motion 8−6973
polymer chain conformations in liq. and cryst. slates *(French)* 8−18552
polymer film, stretched, mol. distrib. determ. by polarised spectra 8−27298
polymers, elec. props. and morphology, correl. review 8−43786
polymers, multicomponent, props. and struct., review 8−44076
polystyrene, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polystyrene, oriented amorphous, supermol. structures rel. to mech. behaviour 8−22673
polystyrene, soln. grown isotactic crystals, degree and distrib. of crystallinity, thermal stability 8−9964
polystyrene, solution grown isotactic crystal, thermal change kinetics study by X-ray diffr. 8−9965
polystyrene, X-ray scatt. and conformational analysis 8−26449
polystyrene-polybutadiene block copolymer, oriented microlattice obs. 8−2025
polytetramethyl-p-silphenylenesiloxane, degree of crystallinity 8−26453
polytrioxane, γ-irrad., layer-like void formation 8−22760
polyvinylidene fluoride X-ray diffr. pattern changes due to corona charging 8−14285
α-quartz and quartz glass, neutron irradiated struct., neutron diffr. meas. 8−22769
review of properties, current and potential applications 8−30539
rubber-epoxy resins, heterogeneity analysis, light scatt. and statistical methods 8−2024
selenide systems, binary, glass transition behaviour, model, comp. depend. 8−26673
semiconductors, chem. bonding, struct., pseudopot. theory *(German)* 8−30581
silicate glass, IR refl. spectra resulting from phase separation *(Japanese)* 8−39542
spherulite, two-phase, ht. cond. anisotropy 8−2316
steel, stainless, amorphous film, sputtered, prep. and characterisation 8−43266
styrene-butadiene copolymers, struct. study by pyrolytic capillary gas chromatography *(German)* 8−18557
tetramethyl-p-silphenylenesiloxane-dimethyl siloxane copolymers, degree of crystallinity 8−26453
transition metal-metalloid glass, struct. simulation 8−38624
$Al(PO_3)_3$, vitreous struct. 8−26443
As-S amorphous film, photo-induced optical changes, annealing effect 8−27345
As-Se-Te glasses, glass form., charact. temp., density, thermal expansion and dynamical viscosity, struct. model 8−26672
As_2S_3, amorphous semicond., photo-induced optical and structural changes *(Japanese)* 8−47244
As_2Se_3, glassy, rel. to photostimulated changes in contact props. 8−19162

noncrystalline state structure continued
  $AsSeI_{0.1}$, glassy, rel. to photostimulated changes in contact props. 8−19162
  B films, amorphous, prep., struct., props., review, book contrib. 8−48321
  B_2O_3 glass, nonlinear structural relaxation model for glassy state 8−26448
  Be-Zr alloy, glassy, rel. to supercond. props. 8−26983
  C, amorphous, X-ray and electron diffr. intensities, model struct. 8−26441
  C amorphous film struct., TEM obs. using bright field hollow cone illum. 8−22609
  C fibres with large breaking strain, prep., mech. props., struct., appl. 8−44077
  CaO-B_2O_3-Fe_2O_3 glasses, effect of heat treatment on electronic props. 8−2480
  CaO-Fe_2O_3-B_2O_3 glasses, phys. props. rel. to struct. and comp. 8−23331
  CaO-SiO_2 glass, solid reactions, study by hot stage electron microscope *(Japanese)* 8−12798
  $Ca_3(PO_4)_2$, amorphous, reduced intensity functions, thermal vibr. coupling 8−42910
  $CdGeAs_2$, short-range order, Mossbauer expts. 8−22648
  $CdGe_{1-x}M_xAs_2$ (M=Si,Sn,Pb), (x=0.0,0.1,0.2), amorphous struct. 8−22651
  $CdGe_{1-x}Sb_xAs_2$ system, amorphous and cryst. phases, DTA and microhardness obs. 8−22835
  Cr_3Ge amorphous films, short range order struct. *(Russian)* 8−30841
  Fe, amorphous, relaxed Bernal structure, model 8−2007
  Fe, realistic relaxed struct. model pair distrib. function 8−30544
  Fe, struct. relax. of dense random packing model 8−30540
  Fe-Cu alloy, vapour-deposited, struct. and thermal stability 8−43265
  Fe-P-C, amorphous, struct. and mag. props., Mossbauer, X-ray diffr. and elec. resist. meas. 8−2009
  Fe_2O_3-P_2O_5 system, vitreous, struct. obs. using neutron scatt. 8−22667
  Ga_2O_3-R_2O_3:Nd^{3+} glass, prep., characts., X-ray diffr., absorpt. and thermal anal. obs. *(French)* 8−19704
  $Ga_{20}Te_{80}$, amorphous, splat cooled, thermoelectric props. 8−43426
  Gd-Ag (0-16 at.%), vapour-quenched, struct. and mag. props. 8−38980
  Ge, amorphous, struct., dislocation model 8−42911
  Ge, amorphous, vibrational spectra, struct. model calcs. 8−22806
  Ge, amorphous whisker growth 8−2400
  Ge, electrodeposited, X-ray, electrochem., and electrorefl. characterisation 8−14624
  Ge film, amorphous, high resolution electron microscopy, digital processing use 8−37116
  Ge-As-Se, amorphous film, condensation formation and struct. props. *(Russian)* 8−38629
  Ge-Te alloy films, amorphous, semicond. props., refr. index, struct. study 8−26978
  $Ge_xAs_xTe_xSe_{100.3x}$, glassy, rel. to IR absorpt. spectra 8−23448
  GeO_2, vitreous, neutron diffr. obs. using Harwell linac 8−22666
  Ge_xSe_{1-x} glass, $1/3 \leq x \leq 1/2$, Raman scatt., local order 8−23442
  $Ge_{15}Te_{85}$, splat-cooled, rel. to thermoelec. props. 8−43426
  In-S system, vac. deposited films, form., reacts. 8−43259
  $In_{20}Te_{80}$, splat-cooled, rel. to thermoelec. props. 8−43426
  K_2O-Al_2O_3-P_2O_5-Nb_2O_5 glasses, struct. singularities, IR spectra *(Russian)* 8−2861
  K_2O-TiO_2-SiO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667
  Li_2O-B_2O_3-SiO_2 glass systems, phase separation effect on the diffusion processes 8−26734
  MgO-Al_2O_3-SiO_2 system glasses and glass ceramics, EPR obs. of transition elements, crystn. effects 8−23332
  Na_2O-B_2O_3-SiO_2 glass, ^{11}B NMR obs. of struct. 8−38625
  Na_2O-GeO_2 glasses, rel. to low temp. viscosity, as function of composition 8−38865
  Na_2O-SiO_2 glasses, Si-O bonds, effect of Na_2O *(Japanese)* 8−42918
  Na_2O-TiO_2-SiO_2 glass, IR refl., Raman and EPR spectra, struct. *(Russian)* 8−2860
  Nb-Ni, amorphous, synthesis by vapour quenching, and struct. 8−11111
  Ni-P, amorphous, reversible effects of temp. on struct. 8−34442
  Ni-P metal metalloid glass forming alloys, gram atomic volumes 8−38628
  $P_2Se_xS_y$ glass, thermophysical props., 303-413K, struct. interpretation 8−47615
  PbO-SiO_2 glass, IR and Raman spectra interpreted in terms of struct. 8−27213
  PbO-SiO_2 glass, rel. to EPR of Cu^{2+}, V^{4+}, and Mn^{2+} 8−39392
  $Pd_{80}Si_{20}$, amorphous, structural changes by neutron irradiation, X-ray scatt. meas. 8−6104
  $Pd_{80}Si_{20}$ glass, struct. simulation 8−38624
  S, random chain assembly model 8−6015
  Se, amorphous, random chain assembly model 8−6015
  Se, DSC and X-ray diffr. expts. 8−22662
  Se, relax of sound velocity, struct. determ. 8−38786
  Si, amorphous, reduced intensity functions, thermal vibr. coupling 8−42910
  Si, amorphous, structural disorder rel. to electronic props. 8−34756
  Si film, amorphous, high resolution electron microscopy, digital processing use 8−37116
  SiO_2, amorphous, optical and elec. props., comparison with chalcogenide semiconds. 8−6721
  SiO_2, cryst. and vitreous, struct. sensitive expansivity 8−22873
  SiO_2, glassy-amorphous, light scatt. exam. 8−14281
  SiO_2 glassy-amorphous system, struct. *(German)* 8−38626
  SiO_2 layers, crystallisation, structural props. rel. to annealing 8−34724
  SiO_2, noncryst., radiation-induced defect centres, ESR spectra and struct. 8−23343
  SiO_2, vitreous, fast neutron irrad. effect on struct., interstitials role 8−26599
  SiO_2:TiO_2, prep., amorphous struct., effect of roasting, bonds 8−44061
  Te, amorphous, random chain assembly model 8−6015
  Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8−23474
  Tl_xSe_{1-x}, amorphous and cryst., IR transmission spectra and struct. interpret. 8−23471
  V_2O_5, water in noncryst. solid, quenching of molten V_2O_5 *(French)* 8−42912

noncrystalline state structure continued
  V_2O_5-TeO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667
  ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304
  $Zr_{0.7}Pd_{0.3}$, supercond., rel. to sp. ht. and thermal cond., 0.1-10K 8−26991

nondestructive testing
  see also crack detection; ultrasonic materials testing; X-ray fluorescence analysis
  acoustic emission NDT appls., review 8−11489
  attachable electromagnets of ferroprobe coercimeters, use of pole shoes 8−45662
  bending wave propag. in transversely struck plate, birefringence obs. *(German)* 8−48582
  book 8−44340
  CANDU nuclear reactors, in-situ inspection of press. tubes, nonrotating device 8−25259
  castings, defect classification 8−27690
  coercimeter, electromagnetic, magnetising current amplitude and turn off speed effect 8−39997
  coherent optical defectoscopy, signal processing *(German)* 8−7110
  column buckling criteria determ. using vibr. data 8−34098
  critical evaluation of test results, representation, processing *(German)* 8−7145
  eddy current inspection system with simulated signal, calibration 8−3285
  eddy current meter standards 8−27709
  eddy current thickness gauge, total factor experiment exam., metrological characteristics determ. 8−39999
  eddy current transducer, electrical conductivity meas. of coatings, tuning out of gap instability 8−36994
  electromagnetic instruments, interference factors on readings 8−48601
  electromagnetic method, used for destructive materials testing anal. *(German)* 8−23909
  electron probe determ. of pn-junction depth in Si *(German)* 8−2552
  failure anal. by SEM 8−27710
  Ferrography, use of temper colours 8−3302
  Ferrography, use to predict wear, for maintenance 8−3303
  ferromagnet, Rayleigh const. determ. method 8−12732
  ferromagnetic probe, core prep. method 8−44334
  ferrous materials surface defect detection by portable EM inductors *(French)* 8−35616
  films and powders, using electron spectroscopy 8−3430
  fission reactors, detection of flaws in metal during operation, review 8−17343
  flash radiography, high energy, for dynamic NDT 8−15624
  gamma-ray spectrometry method for fuel burn-up control *(Slovak)* 8−21672
  glass, raster technique for automatic checking in sheets 8−23883
  glass-textolite shells, NDT 8−11471
  graphite fibre reinforced epoxy resin, radiographic technique for resin content meas. 8−3286
  hermetic sealing of film products, use of $_{86}Rn^{220}$ 8−48595
  holographic, nondestructive testing of brazed, and epoxy bonded honeycomb panels 8−40017
  holographic instrumentation and materials developments *(German)* 8−39975
  holographic interferometry, appl. to materials and components *(German)* 8−48576
  holographic interferometry appl. *(French)* 8−42305
  holographic interferometry applic. 8−35628
  holographic nondestructive testing at Fourier plane 8−46536
  holographic techniques using photothermoplastic film *(German)* 8−22097
  IAEA safeguards, instruments and techniques, for nondestructive assay 8−33302
  impedance inspection unit for inspecting joints in multilayer parts 8−44335
  impedance type ferromagnetic probe sensors for magnetic inspection 8−48599
  industrial X-ray film information processing methods *(German)* 8−15637
  inelastic critical strength prediction by vibration testing 8−35611
  inhomogeneous material structural characts., automatic test system 8−48586
  internal cavities in objects, exam. by scanning with ionising radiation beams, from radioactive sources 8−40003
  leak testing with dyed liquid tracers 8−23907
  linear electron accelerator appl. to NDT 8−40009
  magnetic inductive method appl. *(German)* 8−48581
  magnetic leakage fields, methods 8−3296
  magnetic particle inspection fundamentals 8−44285
  magnetic sheets, NDT by external induction and field selective display 8−15618
  magnetic stray fields, optical detection 8−31602
  magnetoelastic probe with controlled magnetic reluctance under poles 8−40011
  materials and structures testing 8−3298
  medical X-ray diagnostics, NDT impetus, novel techniques *(German)* 8−7146
  metal, plastic deform. effects from X-ray diffr. data, moment method *(Czech)* 8−31593
  metal machined surface, defect detection by laser scanning 8−40018
  metal using positron annihilation technique 8−3293
  metal using positron annihilation technique 8−3294
  metals, magnetostriction effects appl. *(German)* 8−23311
  method comparison and optimum combination determ. 8−44308
  Mossbauer spectroscopy appl. 8−3295
  multiparameter methods, linear, nonlinear and transcendental transformations 8−35600
  neutron, tomography investigation using research reactor 8−23915
  neutron conversion efficiency enhancement in neutron radiography 8−7444
  neutron radiography, high-speed system, modulation transfer function 8−7158
  neutron radiography of electronic piece parts reliability evaluation 8−31610
  neutron radiography with electron linear accelerator *(German)* 8−7150
  nonuniformity of dielec. props., at mm wavelengths, method of determining 8−40001

nondestructive testing continued
nuclear power plant components, acceptance tests, using X- and gamma ray images *(German)* 8−44297
optical fibre refractive index profile meas., nondestructive transverse interference method 8−38024
optimum parameter determ., for critical parts inspection 8−44307
p-n junction, planar, nondestructive determ. of depth by SEM 8−19132
peeling detection in three layer objects by high-speed thermal scanning 8−44324
penetration technique, S and halogen traces dosage methods *(French)* 8−15625
pipeline girth welds, NDT of defects 8−27704
polycrystals, deformed, particle sizes and mean square strains *(German)* 8−3284
polyurethane, void detection by neutron gauging 8−23910
pressure vessels, water pressure testing, test method and anal. *(German)* 8−25260
pulsed eddy current testing, for smooth and ribbed tubing 8−23906
radiographic image enhancement and anal. system, digital computer eval. 8−27708
radiographic inspection, spectra and angular distrib. meas. of scattered X-radiation *(German)* 8−7148
radiographic weld testing between tubes and tube-plates in heat exchangers *(German)* 8−7151
radioisotopic wall thickness gauge, description 8−44310
reliability indices, methods of increasing them 8−40010
replication, NDT anal. and inspection technique 8−11467
residual stresses in thin specimens, layer-by-layer X-ray diffr. analysis, additional strains and corrections 8−39964
rubber, nondestructive testing during production, portable instrument 8−23892
semiconductor dislocation Burgers vector exam., birefringence method 8−30626
shift registers, reliability assessment by scanning electron microscope 8−29215
site training for radiography 8−25329
slag-metal interface determination using electrochem. conc. element 8−7114
solar cell welds, mechanical strength evaluation 8−35630
solar cell welds, system selection 8−35629
steel, austenitic stainless, weld metal, delta ferrite content measurement 8−31600
steel, detector designed to meas. retained austenite 8−35602
steel, internal cavities exam. by scanning with ionising radiation beams, from radioactive sources 8−40003
steel, structural, nondestructive method of struct. damage investig. using cyclic loading effects and mag. characts. 8−3275
steel, structural heterogeneities, detection by mag. aerosol method 8−44314
steel, tubing, NDT method comparison, optimum combination determ. 8−44308
steel 17G1S, magnetic method of mech. prop. determ. of thick sheet 8−48600
steel bearing balls, exoelectron emission for surface fatigue wear testing 8−39960
steel parts, cylindrical, hardness inspection by EM method with higher harmonics 8−23891
steel tubing, cold rolled, nondestructive mag. method for determ. of mech. props. 8−23903
strain meas. by X-ray diffraction *(French)* 8−15626
surface layers and thin films, thermal diffusivity of microsections, IR and X-ray electron-probe microanal. 8−2314
surface potential pattern measurement by potential probes, crevice depth determination in metallic testpieces *(German)* 8−35597
thermal methods, review of theoretical and experimental problems 8−44325
thermal testing, scanning and printing head 8−44329
thermoplastic moulding quality assurance using holography and speckle photography 8−27720
transducer, force measuring, EM, design and appl. *(Russian)* 8−16784
transmission X-radiographic development trends *(German)* 8−15636
turbine blades, crack detect., holographic interferometric method 8−35625
turbine blades, fatigue crack detect., strobed hologram method 8−35624
TV analyzer for material structure studies 8−27696
wear, laboratory measurement method using Ferrography, study of diesel engine wear 8−3304
weld joint, use of flux sensitive magnetic heat for magnetographic inspection 8−44328
X-ray film processing 8−27707
X-ray NDT using 420 kV equipment incl. metal-ceramic tube *(German)* 8−4747
X-ray spectra of industrial radiographic units *(German)* 8−7149
Li nuclear microprobe method, appl. to in situ anal. of H-related materials problems 8−7299
Pb, plastically deformed, annealed, positron trapping rate, 4-100K 8−31275
SiO_2 glass, stressed state investigation by NDT using UHF waves 8−11460
W-Mo-Co high-speed cutting steels, Co determ. 8−3416

nonelectric sensing devices
capillary temperature sensor, using laminar fluidic amplifier 8−24793
chromatography, liquid, detector characts. and use, book 8−15751
photoacoustic detector, for laser beam energy monitoring, construction and calib. *(Czech)* 8−29156
velocity sensor, optical, for liquid flow *(Russian)* 8−1759

nonleptonic decays
see also baryon hadronic decay; meson hadronic decay
gauge model of weak and electromag. interactions, $\Delta T=1/2$ rule *(Russian)* 8−45838
reduction formula and non-leptonic decays in light-front formalism 8−12911
SU(3)×SU(3) chiral renormalisable gauge model, nonleptonic decays 8−24938
weak nonleptonic decays in SU(4) and SU(8), adjoint representation admixture 8−21426

nonlinear control systems
articulation development, possible nonlinear time varying control in feedback path 8−35870
proportionate Coulomb and viscously damped isolation system 8−42561
sounding rocket attitude stabilisation H_2O_2 jet system *(Japanese)* 8−28482
sounding rocket three-axis attitude control system *(Japanese)* 8−24422

nonlinear differential equations
$\varepsilon XY(dY/dX)=X-Y(Y+1)$, exact perturbation soln., stellar struct. theory 8−32439
beams, frames, arches, axisymmetric shells, finite element anal., Newton Raphson method, nonlinear equilib. eqns. 8−22282
beams, nonlinear bending, finite element anal. 8−26068
bifurcations, singular perturbations 8−16626
blast waves, spherical, time-depend. energy deposition 8−9655
boundary value problems, second order, iterative method 8−32660
circular plates subjected to transient loads, nonlinear dynamic response 8−16648
cochlear hydrodynamics model, digital simulation 8−31821
curvilinearly aeolotropic thin rubber tubes, forced oscillations soln. 8−9589
diffusion, approach of solns. to travelling front solns. 8−24743
diffusion, asymptotic behaviour of solns. 8−24744
electrochemical machining, approx. method for solving problems 8−44241
electron propagator, Dyson-Schwinger eqn. solns. 8−24984
evolution eqns., prolongation structs. 8−24637
fermion system of self-interacting particles, field patterns 8−16909
finite element anal. of nonlinear partial differential eqns., appl. to estuarine flow *(Japanese)* 8−8233
flow between rotating discs, finite element anal. using exponentially weighted basis functions 8−16655
flutter eqn., continuation and direct soln. 8−34047
heat conduction eqn., nonlinear boundary control problems, maximum principle *(German)* 8−9528
hyperbolic waves, Poincare-Lighthill-Kuo method secular term elimination 8−41166
inverse scattering transform solvable nonlinear evolution eqns., existence, Lax's method extension 8−32711
inversion equation method generalised to matrix NLPDE 8−8223
Josephson junction, solns. of nonlinear eqn. of resistively shunted model 8−2628
Klein Gordon eqns., localised nondissipative stationary solns., quantum droplets 8−12819
Korteweg-de Vries eqn., higher order, prolongation struct., Lie algebra, soliton solns. 8−8249
limit cycles and multiperiodic flow bifurcation and nonequilibrium phase transitions 8−24759
linear correspondents of nonlinear eqns. 8−20949
Love waves, hypoelastic stratified solid with material boundary 8−30225
MHD flow over infinite rotating disc with suction, existence of soln. 8−30366
modulated electron beam in inhomogeneous isotropic plasma, nonlinear wave generation 8−1852
multibody system equations of motion, computer-aided formulation *(German)* 8−39
nerve, temporal stability of solitary impulse solns. of nerve eqn. 8−35830
oscillator eqn., Poincare-Lindstedt solns. 8−30
partial, differential eqn. soln. by discrete least squares 8−45474
particle diffusion across mag. fields, stable profile for nonlinear diffusion eqns. 8−22456
plasma, ion-acoustic waves, Korteweg-de Vries soliton, higher order terms in reductive perturbation theory 8−1824
rectangular orthotropic plates with nonlinear stress-strain relns., large deflections 8−26040
renal counterflow systems differential equation, soln. by numerical method 8−24082
Saint Venants eqns., three point weighted scheme for numerical soln. 8−30356
Schrodinger nonlinear eqns., Cauchy problem soln. blowing up 8−8220
self-dual network eqn., shock wave and hole type soliton 8−27
semiconductor-on-piezoelectric SAW convolver saturation phenomena 8−2358
sine-Gordon equation, classical solns. of field eqns., moving t'Hooft-Polyakov monopole *(Russian)* 8−16935
sine-Gordon equation, difference analogue 8−20976
solid propellent burning in three coord. systems, anal. 8−1558
soliton eqns., Lie group framework 8−24635
soliton solutions and dispersion relation 8−45467
solitons, geometrical interpretation, rigid body motion along helical space curves 8−24684
solitons, lecture 8−24690
stochastic differential eqn., perturbation theory, projection operator method, statistical linearisation 8−41229
Toda equation, difference analogue 8−20975
transformation group and limit cycle containing nonlinear differential eqns., connection with perturbation techniques 8−20941
unified wave propagation theory, tenuous random medium 8−4491
water-cooled water-moderated reactor cooling system faults, hybrid simulation *(Russian)* 8−5008
wave equations, asymptotic solns. using methods of averaging and two-timing 8−59

nonlinear equations
see also nonlinear differential equations
Bessel functions, squares of positive zeros, infinite nonlinear algebraic eqns. 8−20942
bound state, two charged media interaction, self-consistent field theory 8−16667
CO_2-laser, numerical soln. to nonlinear rate eqns. of population level density *(Bulgarian)* 8−33720
Compton effect, multiple scatt., operator formalism, nonstationary electrons 8−12846
evolution equations solvable by inverse spectral transform of rank 4 matrix Schrodinger eqn. 8−41187
Hermite polynomials, zeros of combinations, n-body problems 8−45466

nonlinear equations continued
infinite systems, proof of Calogero's real and unique solutions 8−24636
Korteweg-de Vries eqn. difference analogue 8−55
metal creep, nonlinear integral eqn., existence and approx. solns. 8−13931
progressively changing equilib. eqns. soln. for nonlinear struct. 8−1581
soliton trajectories from nonlinear field eqns. of Dirac field, Lorentz and gauge invariant 8−4791
solitons, in dispersive media, nonlinear evolution eqns. soln., review 8−60
solitons, theory and applications 8−36811
nonlinear field theory
σ-model, nonlinear two dimens., finite action solns. of Euclidean eqns. of motion 8−37133
anomalies of quantum conserved currents in exactly solvable models 8−387
Bethe-Salpeter eqn., quantised solitons 8−32985
charged particles, classical field model 8−12807
chiral fields, two-dimens., hidden symm. 8−29243
chiral SU(3)×SU(3) models, soliton solns. 8−4761
classical electrodynamics, nonlinear gauge approach, charged particle solns. 8−32695
classical scalar field theory, localised solns. 8−32976
classical solns. 8−21327
cosmological constant, broken gauge theories and 3K black-body radiation 8−28870
covariant quantisation of solitons in gauge theories 8−16916
Dirac field eqn., Lorentz and gauge invariant 8−4791
factorized U(n) symmetric S-matrices, two dimens., scatt. of solitons 8−45802
Feynman path integrals on nonlinear phase space 8−37147
gauge field in stability subgroup of vacuum in nonlinear realization 8−390
hydrodynamic model, nonlinear pion+pion chiral Lagrangian, $e^+ + e^-$ and p+p collisions 8−32966
instantons, variational anal. 8−24934
inverse scattering method for equation $\sigma_{xt}=e^{\sigma}$, soliton soln. 8−389
Klein-Gordon eqn. in stationary space times, positive and negative frequency solns. 8−29002
Klein-Gordon kinks with fourth order derivative self coupling 8−32970
massive Thirring model, sine-Gordon eqn., soliton struct., Coleman correspondence 8−8509
meson interactions, LSZ reduction formulae, soliton asymptotic theory 8−4774
multisolitons, kinklike, in polynomial field theories 8−21014
O(3) σ model, struct. of instanton plasma anal. 8−16912
Penrose theory in particle physics 8−29321
polynomial field theories, nonlinear Klein Gordon eqn., exact multiple solution solns. 8−45773
quantum field theory, nonperturbative, resonance states, solitons 8−380
relativistic field eqns., geometric and algebraic foundation of spinor formalism 8−37128
renormalisable theories from nonrenormalisable interactions 8−383
review, classical soliton solns. and semi-classical quantisation techniques 8−8255
scalar interactions, 1/N expansion 8−16903
semiclassical fields in soliton sectors 8−29232
semiclassical spectrum of two dimens. nonlinear σ models 8−378
sine-Gordon equation, classical solns. of field eqns., moving t'Hooft-Polyakov monopole *(Russian)* 8−16935
sine-Gordon equation, regular solns. using surfaces of const. negative curvature *(Russian)* 8−20980
sine-Gordon equations for 3-D solitons, classical $\lambda\varphi^4$, double and single eqns. 8−45785
soliton dynamics in nonintegrable systems, classical solns. 8−28996
soliton quantisation using Bogolyubov transformation 8−16695
soliton scattering in non-linear Schrodinger theory 8−8256
solitons, nontopological, and appls. to hadrons 8−32968
solitons and instantons in field theory 8−8495
spherical symmetric solution stability, influence of weak perturbations *(French)* 8−16904
spinor soliton as elementary particle, wave packet-soliton equivalence 8−12814
SU(2) multi-instanton solutions, conformal transformation props. of one-loop tunnelling amplitudes 8−12822
SU(2) nonlinear σ model, kink solns., form factor interpretation 8−24964
supersymmetric form of nonlinear σ model in two dimens. 8−24957
supersymmetric quantum theory construction around supertranslated soliton soln., Dirac's method 8−45783
WKB wave function, systems with many degrees of freedom, solitons and pseudoparticles 8−29255
zero frequency mode contributions in soliton quantisation general scatt. amplitude 8−29234
π field, nonlinear chiral models, many dimensional solitons 8−4792
nonlinear network synthesis
adaptive spatial filter for image classification *(Russian)* 8−42292
nonlinear optical susceptibility
antisymmetric components interrel. with symmetric components, in Kleinman symmetry relation 8−33770
barium formate, nonlinear optical susceptibility tensor, Maker fringes 8−13751
benzene, third-order nonlinear electric susceptibility, from CNDO wavefunction 8−37558
cholesteric liquid crystal, third harmonic generation, third order susceptibility 8−30021
conjugated hydrocarbon chains, linear and nonlinear elec. susceptibilities calcs. 8−19437
density operator, diagrammatic evaluation 8−5523
isotropic media with fifth-order nonlinear susceptibility, focusing effects on six-photon processes *(Russian)* 8−25917
layered compounds, SHG at 0.6943 and 1.06 μm, energy gap depend. 8−30019
methanes, halogenated, nonlinear optical polarisability, bond-bond interaction role 8−18010
NMBA, monoclinic, cryst. struct. and nonlinear optical props. 8−26560
nonlinear optical susceptibility continued
polymer, one dimensional, nonlinear optical props. 8−46708
pyroelectric, uniaxial, spontaneous polarisation, calc. from results of optical meas. 8−27162
Raman scattering, reson., coherent, lineshape, 3rd order nonlinear optical susceptibility 8−42378
semiconductor, one-dimensional nonlinear optical props. 8−46708
two-photon resonant Rayleigh-type optical mixing and relax. 8−42380
AlN film, SHG expt. 8−30012
$BaTiO_3$, ferroelec., nonlinear optical susceptibility calc. 8−9409
$Ba_2TiSi_2O_8$, fresnoite, unsuitability for phase matched SHG 8−46721
CO, liq., IR four-wave mixing 8−18006
CS_2 in benzene, third-order nonlinear susceptibility ratio by CARS 8−46713
$CaCO_3$, third order nonlinear optical difference frequency generation 8−22176
$CaCO_3$, with and without inversion centres, nonlinear susceptibilities *(Russian)* 8−13750
CdS, third order nonlinear optical difference frequency generation 8−22176
GaN, nonlinear susceptibility and coherence length, SHG meas. 8−25924
$Gd_2(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
$Ho_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
KH_2PO_4, third order nonlinear optical difference frequency generation 8−22176
KH_2PO_4, with and without inversion centres, nonlinear susceptibilities *(Russian)* 8−13750
$KNbO_3$, ferroelec., nonlinear optical susceptibility calc. 8−9409
$LiNbO_3$, third order nonlinear optical difference frequency generation 8−22176
$MgBaF_4$, nonlinear optical susceptibility tensor, Maker fringes 8−13751
Na-Ar, nonlinear optical 5th order susceptibility meas., VUV harmonic generation 8−42381
$Nd_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
$PbTiO_3$, ferroelec., nonlinear optical susceptibility calc. 8−9409
$Sm_{2x}Gd_{2(-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
$Tb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
TeO_2, antisymm. components 8−13755
TeO_2, paratellurite cryst., polariton Raman scatt., nonlinear susceptibility 8−25928
TiO_2, third order nonlinear optical difference frequency generation 8−22176
$Yb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
ZnO, third order nonlinear optical difference frequency generation 8−22176

nonlinear optics
see also nonlinear optical susceptibility; optical frequency conversion; optical parametric devices; optical saturation; optical self-focusing; photon echo; self-induced transparency; stimulated scattering
aerosol, aqueous, thermal clearing by laser radiation *(Russian)* 8−28312
amplification of strong light-pulse in multicomponent media 8−30006
amplifying region, exponential, enhanced internal refl. 8−37939
atomic, two-level system, absorption spectrum, intense two-photon excitation obs. *(Russian)* 8−33465
bilevel absorber, partial differential rate eqns. 8−37950
chirp reversal, optical integration in degenerate four-wave mixing 8−46730
chlorophyll-a, nonlinear absorpt. spectra 8−25522
complex diamond like crystals, optical nonlinearity and average refractive index 8−30011
condensed matter, review lecture 8−25918
conjugate wavefront generation and image reconstruction by four-wave mixing 8−13746
density operator, diagrammatic evaluation 8−5523
1,1′-diethyl-4,4′-quinocyanine iodide, S_0-S_1 transition, relax. time meas. by reson. Rayleigh technique 8−42374
diffraction and freq. conversion, similitude theory 8−46710
digital data acquisition and on-line processing at Moscow State University 8−46709
electro-optical nonlinear Fabry-Perot resonator, for optical signal processing 8−42460
Fabry-Perot interferometer, lossless nonlinear 8−42375
Fabry-Perot interferometer, transient behaviour 8−33787
Fabry-Perot non-linear optic media devices, instability and regenerative pulsation phenomena 8−46685
fixed intensity approximation *(Russian)* 8−9410
fluoride crystals, nonlinear refr. index, 1064 nm 8−30005
four photon parametric freq. adjustable picosecond lightwave packet mixing *(Russian)* 8−1296
intramolecular longit. relax. in mol. system with Rabi oscills., transient regime theory 8−46404
inverse Raman scattering, highly fluorescent substances 8−4702
laser, damage of laser components, threshold meas. 8−13740
laser beam, high power, focusing props., influence of nonlinear refractive index medium *(French)* 8−46696
laser frequency switching, subnanosec. expts. 8−42391
laser spectroscopy inside Doppler line *(Russian)* 8−21231
lattice vibration nonlinear interaction with powerful light beam 8−46711
lattice vibrations, nonlinear interaction with light beam 8−30034
lectures on interaction of radiation with condensed matter, Trieste, Italy (Jan.-March 1976) 8−27172
methane, continuous coherent radiation in spatially separated fields 8−30007
methane, nonlinear optical reson. shift in mag. field, vibr.-rot. transition 8−13549
molecular crystals, self-induced nonlinear optical rotation 8−1308
molecular systems, identification by spectroscopic methods 8−29168
multiphoton absorption, Kerr nonlinearity, cone-type light beam struct. 8−33790

nonlinear optics continued
parametric generation, from quantum noise effect of photon statistics 8−25921
parametric image convertor with freq. rise, phase aberrations *(Russian)* 8−9455
parametric instabilities, theory 8−14151
plant leaves, spectra of nonlinear optical effects *(Russian)* 8−48829
ps light pulse length determ. by parametric amplification in nonlinear crysts. 8−1306
Q-switched pulse stretching by intracavity nonlinear ellipse rot. 8−17991
quantum optics, introductory lecture 8−25843
rarefied absorbing gas, coherent rad., in time separated fields 8−37938
rectification in nonlinear cryst. in external resonator 8−13748
resonant Rayleigh type optical mixing, appl. to ultrafast relax. process obs. 8−42373
resonant Rayleigh type optical mixing, appl. to ultrafast relax. in dye solns. 8−42374
resonant three level spin system, two-photon spectra 8−30017
rhodamine 6G alcohol soln., two-photon absorpt. efficiency 8−13749
ruby, coherent transients obs. by Stark switching with narrow optical hole burning 8−37947
semiconductor, ionic, nonlinear intraband absorpt. and harmonic generation 8−33779
semiconductor, many-photon absorption by intraband transitions in mag. field 8−27261
semiconductor, nonequilibrium processes exam. by method of transient holograms 8−23105
semiconductor, nonlinear light absorption in presence of laser wave field 8−13747
semiconductor, two-photon absorpt., free carrier storage by deep centres *(Russian)* 8−23131
single-beam two-photon absorbed light, off diagonal density matrix 8−30009
spontaneous anti-Stokes scattering as high-resolution and ps-time-scale vacuum UV light source 8−9411
stationary optical wave mixing, relax.-time determ., inhomogeneously broadened resonant transition *(German)* 8−1297
ternary semiconductor crystals for nonlinear optical applics., review 8−33782
ternary semiconductors, review of developments 8−34737
tetracene in alcoholic glasses, laser-induced hole burning mechanisms, zero-phonon fluoresc. 8−43912
thermal blooming compensation with multidither COAT system 8−33789
three-level atom system, distortionless optical pulse propag. 8−22179
time evolution operators and Feynman diagrams appl. 8−18004
time-reserved replica obs. of monochromatic wave 8−33768
transient scattering, stochastic theory of intermediate state interaction 8−13756
two interacting intensities, evolution in space and time 8−18005
two level atoms, method of separated optical fields 8−30008
ultrashort pulse attenuation in active medium, calc. *(Russian)* 8−1295
wurtzite-type crystals, optical second-order nonlinear polarisability 8−25919
As_2S_3, crystalline and vitreous, nonlinear absorption of ruby laser radiation *(Russian)* 8−22165
$Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8−3026
CO_2 laser self-modulation by means of nonlinear absorbing filters, anal. 8−37925
CdS, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
^{113}Cd, two-level system, absorption spectrum, intense two-photon excitation obs. *(Russian)* 8−33465
GaAs, nonlinear refractive index dispersion at helium temp. 8−2820
GaP, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
GaP:Te, photon drag, optical rectification response meas., anomalous polarisation depend. 8−33769
Ge, nonlinear reflection props. rel. to thermal effects 8−42371
Ge, plasma excitation, ultrafast optical props. 8−31248
Ge, refr. index and refl. changes due to intense laser irrad., surface heating effect 8−42372
$LiIO_3$, nonlinear light scatt. on cryst. defects 8−5527
Na, mag. perturbed gas, distortionless optical pulse propag. 8−22179
Na_2SbF_5, linear and nonlinear optical props., hyperpolarisability 8−30010
Si, excited by ultrashort laser pulses, self-diffr. effects 8−18022
$SrTiO_3$ 8−6678
TiO_2, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678

nonlinear programming
see also quadratic programming
viscoplastic flow, finite element method with added boundary terms 8−42543

nonlinear symmetries
gauge field in stability subgroup of vacuum in nonlinear realization 8−390

nonlinear systems
see also bang-bang control; nonlinear control systems
active, self-consistent soln. method for calc. of power spectrum of fluctuations 8−16735
dual input nonlinear system characterisation using impulse trains 8−31761
liver disease computer-aided diagnosis using nonlinear stochastic modelling technique 8−36024
neural system Wiener anal. using Poisson-Charlier crosscorrelation 8−24055
nonhamiltonian systems with one degree of freedom, forced periodic motion *(Russian)* 8−20959
nonholonomic Chetaev systems, Lagrange eqns. derivation from modified Pontryagin maximum principle 8−12557
oscillators with nonlinear restoring forces, first passage failure probability calc. 8−42562
PWR system nonlinear model comparison with test results 8−29571
time varying systems, stability anal. 8−37

nonparametric statistics
methods, probabilistic models and test problems *(French)* 8−12538

nonradiative transitions
acetaldehyde+CO_2, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
acetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
activated crystal, electronic excitation energy migration efficiency, inverse transfer influence 8−19546
1,8-anilinonaphthalene sulphonate, aq. and ethanolic solns., excited singlet state decay pathway 8−17703
anthracene, carbonyl derivatives, triplet state population, picosec. laser obs. 8−13544
anthracene, pure and d_n, PMMA soln., triplet lifetimes, 77-300K 8−25594
anthracenes, nonradiative relax. of higher excited triplet states, double excitation obs. 8−29805
anthrone, 533 nm excited state absorpt. kinetic, triplet quenching solvent, internal conversion, vibr. relax. 8−21935
atoms, relativistic transitions, Dirac-Fock formalism 8−37574
Auger kinetic and relax. energies in atoms and solids 8−15297
basis set choice criterion, for closely coupled electronic states 8−33546
benzene-d_0,-d_6, phosphoresc., Boltzmann population and spin-lattice relax., decay processes 8−31230
benzophenone, fluoresc. quenching and intermol. intersystem crossing, nonlinear press. depend. 8−25603
borate glass: $UO_2^{2+}\rightarrow Ho^{3+}$, energy transfer processes 8−10969
carbocyanine dyes, triplet state quenching by nitroxyl radical, charge transfer complexing 8−25585
chalcogenide glasses, non-radiative recombination of electron-hole pairs 8−6759
chalcogenide semiconductors, optical and elec. props., comparison with SiO_2 8−6721
collision free triplets, spectrum, temporal evolution 8−33441
coupled molecular normal vibr. system, radiationless energy relax. *(German)* 8−35184
2,5-diphenyloxazole, phosphoresc., 77K, solvent effect 8−42118
dissociating molecule, vibr. spectra *(Russian)* 8−21864
dye solution, fluoresc. yield, photoacoustic determ. method 8−42117
excited atoms ejected in ion-surface bombard., effect on optical emission intensity of radiationless transitions 8−39652
fluorescence quenching and intermol. intersystem crossing, nonlinear press. depend. 8−25603
formaldehyde, $^1A_2$-state, radiative and nonradiative decay calcs., rel. to photochem. decomp. 8−37669
Forster migration of electronic excitation, randomly oriented system 8−48211
haloazulenes, S_2-state deactivation, intersystem crossing and heavy atom effects 8−13545
N-heteroarenium cations B, resonant, nonradiative energy transfer *(German)* 8−25659
N-heterocyclics, radiationless transitions, vibronic coupling effect 8−33543
hydroxypyridines, phosphoresc. emission, polarisation and lifetimes 8−31232
indole, and derivatives, temp. fluoresc. quenching, rel. to H_2O solvent struct. 8−5265
intersystem crossing rates, triplet sublevel decay, vibronic coupling 8−5271
luminescence conference, Szeged, Hungary (Aug. 1976) 8−27279
metal-ion point defects in solids, non-radiative relax. 8−6753
Migration of the excitation energy in luminescent media 8−27280
molecular dimers, intersystem crossing, struct. 8−33537
molecule, optically prepared state undergoing radiationless decay, three-state model 8−5260
molecules, transition probability studies, review of recent advances 8−17655
molecules, vibronic interactions, out-of-plane vibrs. 8−17705
multiphonon nonradiative transition rates, quadratic impurity-phonon coupling 8−23506
multiphonon tunnel processes in homogeneous elec. field *(Russian)* 8−39607
naphthalene, internal conversion rate, effect of benzene triplet state self-quenching 8−25586
naphthalene, nonradiative transition rates, rot. struct. 8−42119
β-naphthylmethyl amine, solvent-induced intramol. exciplex fluoresc. 8−25592
oxalyl fluoride, radiative and nonradiative transitions, self-quenching, unimol. dissoc. 8−17708
pentacene, mol. dephasing, radiationless decay meas. by laser-acoustic diffr. spectroscopy 8−37667
photochemical processes, internal conversion, intersystem crossing 8−13548
polyene derivatives, horizontal radiationless transitions, singlet-pot. and rot. angle, semi-empirical model 8−42109
porphyrin solns., quenching of excited states by nitro-cpds., donor-acceptor interactions 8−2899
pyrazine, lowest triplet state, phosphoresc., intersystem crossing 8−5269
pyrimidine, and derivatives, intersystem crossing rates, triplet sublevel decay, vibronic coupling 8−5271
quinoxaline, fluoresc. quenching and intermol. intersystem crossing, nonlinear press. depend. 8−25603
rhodamine 6G soln., cyclooctatetraene effects on laser props. *(Russian)* 8−25875
semiconductor, indirect band gap, Auger recomb. of electron-hole drops 8−39600
semiconductor, multiphonon electron-hole recomb. processes 8−6750
semiconductor, nonradiative multiphonon carrier capture and ejection props. of deep traps 8−35190
semiconductors, multiphonon electron-hole recomb. processes 8−6751
semiconductors and insulators, non-radiative processes multiphonon recomb. 8−6752
solid, phonon dispersion effects on nonradiative transitions 8−43926
stilbene, horizontal radiationless transitions, singlet-pot. and rot. angle, semi-empirical model 8−42109
tetracyanoethylene(d), charge-transfer complex, fluoresc. quantum field and decay time 8−42107
three component system, energy transfer parameters 8−27292
trans-stilbene, fluoresc. lifetimes, 77-295K 8−1029
transition probabilities, mol. cryst. model 8−10973
1,1,1-trifluoroacetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706

nonradiative transitions continued
two-k-shell-vacancy systems, excited states, radiationless decay probability calcs. 8–41993
unstable molecular states, with memory effects, prep., decay, EM pulse excitation 8–46384
xanthione, solns., triplet state quenching by ground state xanthione 8–42180
Al$_x$Ga$_{1-x}$As-GaAs heterostructure, nonradiative large dark spots rel. to minority carrier transport 8–9378
Ar$^+$+H$_2$, collinear reactions, electronic nonadiabatic transitions 8–7180
BaO-B$_2$O$_3$:UO$_2^{2+}$→Er^{3+} glass, energy transfer 8–2895
CaO-Li$_2$O-B$_2$O$_3$:Er, Tb, calibo glass, nonradiative energy transfer 8–19541
CdS, photoconductivity, luminescence, radiative and radiationless transition mechanisms 8–10948
CdSe, low resist., mech. for nonradiative recombination of carriers, photoluminesc. and photocurrent characts. 8–19092
Co complex, [^{57}Co(1,10-phenanthroline)$_3$](ClO$_4$)$_2$.2H$_2$O, time differential Mossbauer spectra, aftereffects 8–27131
Cr^{3+} in crystals, radiationless relax., photoacoustic spectra 8–27264
GaAs, nonradiative capture, direct obs. of phonons 8–30976
n-GaP, LPE, non-radiative recombination 8–19565
GaP, non-radiative recombination and structural defects 8–19566
I$_2$, mol. dephasing, radiationless decay meas. by laser-acoustic diffr. spectroscopy 8–37667
KI:Tl, triple decay-time in low-energy emission 8–43929
Li, autoionisation states, config. decays and excitation energies 8–13475
N$_2$O$^+$, fluoresc. and dissociation lifetimes of vibr. excited states 8–42108
Na$_2$O-B$_2$O$_3$ glass, Eu^{3+}→Nd^{3+} diffusion-limited energy transfer, quantum efficiency 8–31238
Pb$_2$, in Ar matrix, excitation and emission spectra, vibr. freq. 8–13507
SO$_2$, fluoresc. and photosensitised phosphoresc. of biacetyl, quenching and triplet theory transfer 8–25608
Si, nonradiative deexcitation in O$_2$ atmos., using differential meas. of excited state lifetime 8–2920
SiO$_2$, amorphous, optical and elec. props., comparison with chalcogenide semiconds. 8–6721

normalising
hydrologic data set distribution functions, extremes and confidence intervals 8–24313
steel, medium C, static and dynamic stress effect on hardenability and grain growth *(Korean)* 8–35404
steel, Mn-Cr, normalised, shot peening effect on bending fatigue strength *(German)* 8–35401
steel-cast Fe cam-roller pair, wear resistance after strengthening treatment *(Russian)* 8–31542
Fe, cast, steel cam-roller pair, wear resistance strengthening treatment *(Russian)* 8–31542

notch brittleness
edge notch, semicircular, in semi-infinite plate, stress anal. 8–38258
steel, mild, microbehaviour of notch tip during increasing load in brittle fracture beyond general yield 8–35487

notch ductility
heat resistance testing, massive sample for mech. prop. changes obs. 8–7124
Zr$_3$Al, ordered, notch sensitivity, neutron suppression 8–23779

notch sensitivity *see notch strength*

notch strength
see also fracture toughness
bars, elastic plastic stress and strain conc. factor *(Japanese)* 8–26052
creep rupture of circumferentially notched circular tension bars 8–39901
creep rupture strength at nonstationary loading, stress conc. influence 8–31514
creep rupture strength under longit. shear and torsion 8–5689
fatigue damage detection, using optical correlation technique 8–35511
glass fibre reinforced resins, fatigue damage in notched samples 8–15496
Long-life notch strength reduction due to local biaxial state of stress 8–96s2
notched specimen, brittle fracture characts. under impact bending 8–23810
polycarbonate, notched specimens deform. and fracture 8–11293
rectangular bars , stresses at plastic deflection *(German)* 8–34025
steel, 40Kh, effect of deform. ageing *(Russian)* 8–31427
steel, complex alloy, exam. of temper brittleness 8–44209
steel, crack opening displacement in deeply notched specimens 8–27617
steel, CrMo and CrMoV, creep resistant, ductile-brittle transition temp., precipitation effects *(German)* 8–19856
steel, hardened and casecarburized, fatigue crack initiation, propag. and termination, notch depth effects *(Japanese)* 8–7022
steel, low C, brittle fracture of notched specimens, ferrite grain size and notch geometry effects 8–19860
steel, low strength notched specimens, preloading effects on brittle fracture 8–27642
steel, martensitic, Cr-Co-Ni-Mo, notch toughness, rel. to sensitivity to stress conc. 8–31532
steel 40Kh, notch sensitivity under cyclic impact loads 8–3220
steels, S 45 C, SK 5 SCM 3, SNCM 8 and SUS 403, heat treated JIS, statistical fatigue props. 8–44222
Al alloy, 2024-T3, notched sample fatigue damage detection via optical correlation technique 8–35511
Al alloy V93, high strength, notch sensitivity in static and repeated loading 8–27639
Al alloys, critical stress intensity factor determ., fatigue tests on notched specimens *(French)* 8–35502
Cu-Be alloy, notched specimen, static and dynamic behaviour 8–27634
Fe-Si (3.12 wt.%), brittle fracture, work hardening effect at notch tip 8–44220
Ti, notched sample, fatigue damage detection via optical correlation technique 8–35511

notch testing
see also fracture toughness testing
heat resistance testing, massive sample for mech. prop. changes obs. 8–7124

notch testing continued
precompression cracking method, for fracture toughness testing *(Japanese)* 8–15612
rectangular bar, notched, strain meas. *(German)* 8–11451
steel, high temp. props. determ. with grooved tensile specimens 8–23902
steel components, safety anal. for loading conditions 8–39979

novae
see also supernovae
A0620–00, transient X-ray source, spectrophotometry 8–4400
accretion belts on white dwarfs, rel. to nova phenomenon 8–36582
Ariel 0620–00 (V616 Monocerotis), transient X-ray source, spherical model 8–12415
BD–7°3007, nova-like variable, simultaneous spectroscopy and photometry 8–12250
Cephei 1971, chemical comp. of ejecta 8–12244
classical novae, minimum number of outbursts determ. 8–28692
classical novae, photospheric props. of optically thick winds 8–24516
SS Cygni, dwarf nova, ANS detection of both soft and hard X-ray emission 8–36579
V1500 Cygni, search for gamma ray lines 8–8013
V1500 Cygni, spectral development, visible and near IR obs. 8–4231
Cygni 1975, synchrosignal for extraterrestrial civilizations 8–28546
Cygni 1975 (V1500 Cygni), brightness meas., (1917 to 1976) 8–36618
Cygni 1975 (V1500 Cygni), BV photometric obs. 8–36613
Cygni 1975 (V1500 Cygni), BV photometry 8–36619
Cygni 1975 (V1500 Cygni), He abundance of ejecta 8–28691
Cygni 1975 (V1500 Cygni), high-energy gamma-ray flux upper limit 8–36603
Cygni 1975 (V1500 Cygni), interstellar reddening and distance 8–4230
Cygni 1975 (V1500 Cygni), line spectrum evolution 8–32493
Cygni 1975 (V1500 Cygni), linear polarization obs. 8–36601
Cygni 1975 (V1500 Cygni), near IR spectroscopy 8–36599
Cygni 1975 (V1500 Cygni), near IR spectrum 8–36606
Cygni 1975 (V1500 Cygni), optical polarisation obs. 8–36622
Cygni 1975 (V1500 Cygni), photoelectric obs. 8–36620
Cygni 1975 (V1500 Cygni), photometric and spectroscopic obs. 8–36604
Cygni 1975 (V1500 Cygni), photometric obs. 8–36616
Cygni 1975 (V1500 Cygni), photometric obs. at Skalnate Pleso Observatory 8–36617
Cygni 1975 (V1500 Cygni), photometry rel. to 3.3 hour var. and flickering 8–36591
Cygni 1975 (V1500 Cygni), polarimetric and photometric obs. 8–36612
Cygni 1975 (V1500 Cygni), short-term light vars. 8–36609
Cygni 1975 (V1500 Cygni), small amplitude light var. 8–36608
Cygni 1975 (V1500 Cygni), spatial and kinematic envelope model 8–36600
Cygni 1975 (V1500 Cygni), spectral energy distrib. 8–36605
Cygni 1975 (V1500 Cygni), spectroscopic obs., three hour periodicity, nebula model 8–12235
Cygni 1975 (V1500 Cygni), spectrum variations 8–36607
Cygni 1975 (V1500 Cygni), TV photometry 8–36602
Cygni 1975 (V1500 Cygni), UBVR Hα photometry and polarimetry 8–36611
Cygni 1975 (V1500 Cygni), UBVRI photometry and polarimetry 8–36614
Cygni 1975 (V1500 Cygni), visible and near UV photoelec. photometry 8–36610
Cygni 1975 (V1500 Cygni), visible and near UV spectrophotometric obs. 8–32492
Cygni 1975 (V1500 Cygni), visible and near UV spectrophotometry 8–32494
Cygni 1975 (V1500 Cygni), visible spectroscopy 8–36598
Cygni 1975 (V1500 Cygni), visible-band linear polarimetry 8–36621
Cygni 1975 (V1500 Cygni), visual magnitude estimates (1977 Aug.-1978 Jan.) 8–32474
Cygni 1975 (V1500 Cygni), wide-band IR photometry 8–36615
Delphini 1967, emission line spectrum *(Russian)* 8–16440
Delphini 1967, spectrophotometry in 3400 to 6500 A range 8–16430
Delphini 1967 (HR Delphini), physical conditions in envelope at max. light 8–24519
Delphini 1967 (HR Delphini), physical props. and element abundances in nebular state 8–36573
Delphini 1967 (HR delphini), spectral evolution during decline period 8–40957
Delphini 1967 (HR Delphini) premax. envelope conditions 8–24518
Delphini (1967), photoelectric and spectrographic obs. 8–20844
dwarf nova brightening, magnetic fields and outburst phenomena *(Afrikaans)* 8–32481
dwarf novae, mass transfer instability in semidetached binary systems 8–8047
dwarf novae, rapid brightness oscills. obs. 8–40968
dwarf novae, search for light oscills. during outbursts 8–40966
dwarf novae and possibly related objects, IR photometry 8–8015
envelope collisions model, dynamics of transition from premax. to principal spectrum 8–8025
explosions, Rayleigh-Taylor instability 8–36551
galactic nova, discovery in Curtis Schmidt thin prism survey of extragalactic emission-line objects 8–28538
U Geminorum, 1978 February magnitude estimates 8–36589
Harvard Photographic Collection, recent novae and variable star research 8–32486
EX Hydrae, U Geminorum type star, possible counterpart of (4U 1249-28) 8–36729
VW Hydri, dwarf nova, short period light oscills. 8–20837
VW Hydri, light curves of dwarf nova 8–12245
light echoes, obs. of seven galactic novae 8–12246
in LMC, discovery confirmation, magnitude, photometric obs., premax. spectra 8–49456
LMC, probable nova discovered 1978 March, position and magnitude 8–45341
LMC 1977b, photometry, light curves, distance modulus 8–8019
magnetic white dwarf in binary system, collapse, mass ejection, nova mechanism 8–32485
Monocerotis 1975 (V616 Monocerotis), photographic photometeric obs. 8–36587

novae continued
- MXB 1730−335, comparison with dwarf novae rel. to neutron star model 8−12410
- nonejecting novae as EUV sources 8−12238
- old novae, search for rapid photometric oscills. 8−4251
- Ophiuchi 1977, X-ray intensity on 1978 Mar. 9 8−40961
- Ophiuchi 1977 (H1705−25), X-ray light curve 8−49453
- Ophiuchi 1977 (H1705−25), X-ray nova, HEAO 1 obs. 8−49452
- V400 Persei (Nova Persei 1974), photoelectric obs. 8−4252
- prenova model with shell in thermal imbalance, pulsational stabilities 8−45316
- T Pyxidis, recurrent nova, photoelectric obs. 8−4252
- recurrent, magnitude-frequency relation 8−28699
- review of 50 years research 8−4239
- V Sagittae, light curve coherent oscills. 8−8022
- WZ Sagittae, recurrent nova, photometric study at minimum light 8−24513
- Sagittae 1977, visual magnitude estimates (1977 Aug.-Oct.) 8−8021
- Sagittae 1977, visual magnitude estimates (1977 November 6 to 1978 January 7) 8−36593
- Sagittarii 1977, early spectrum 8−32496
- Sagittarii 1977, visual magnitude estimates (1977, Aug.-Oct.) 8−4246
- Sagittarii 1978, discovery on 1978 April 7, position, Balmer emission lines 8−45342
- Sagittarii 1978, identified with IRC −20494=V3876 Sagittarii, IR obs. 8−49459
- Sagittarii 1978, precise position, visual magnitude estimates 1978 Apr. 8−49458
- U Scorpii, probable identification at minimum 8−45343
- Scuti 1975, spectrum, line identifications 8−45335
- Serpentis 1970, search for gamma ray lines 8−8013
- Serpentis 1970, thick inhomogeneous shell model for radio emission 8−12236
- Serpentis 1978, discovery obs. 8−36594
- Serpentis 1978, image tube spectrograms, emission lines 8−40964
- Serpentis 1978, precise position, spectra, visual magnitude estimates 8−36596
- Serpentis 1978, UBV photoemtry, visual magnitude estimates, spectrographic obs. 8−40963
- Serpentis 1978, UBV photometry and magnitude estimates 8−40959
- Serpentis 1978, visual magnitude estimates 1978 Mar.-Apr. 8−49457
- slow nova, evolution of model with Z=0.03 envelope from pre-explosion to extinction 8−32468
- slow nova, hydrodynamic study of outburst 8−40954
- Star of Bethlehem, possible nova in 5 BC 8−32365
- V3888 Sagittarii (1974), photometry during decline stage 8−20836
- Vulpecula 1976 (NQ Vulpeculae), isothermal dust condensation phase, broad-band photometry 8−36586
- Vulpeculae 1976, IR spectrum *(Russian)* 8−16441
- Vulpeculae 1976 (NQ Vulpeculae), Hα emission line profiles in 1976 November to December *(Russian)* 8−40971
- Vulpeculae 1976 (NQ Vulpeculae), light, colour and vel. curves 8−28708
- Vulpeculae 1976 (NQ Vulpeculae), visual magnitudes (1977 Aug.-Nov.) 8−16434
- NQ Vulpeculae (Nova Vulpeculae 1976), photoelectric obs. 8−4252
- white dwarfs, accreting, thermonuclear runaways 8−40937
- X-ray nova at $\alpha=1^h14^m$, $\delta=+64.4°$, discovery obs. 8−24515

novoids *see novae*

nozzles
- acoustic disturbance from gas nonuniformities convected through a nozzle 8−34179
- air in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
- aortic stenosis, turbulent wall press. meas. in exptl. model 8−3538
- atomisation of high-viscosity liqs. by parallel flow air-liq. nozzle *(Japanese)* 8−38385
- boiling, expt. study of outflow from accelerating two-phase nozzle 8−1721
- bubbly liquid, nozzle flow based on Wijngaarden's model 8−26182
- convective heat transfer, turbulent boundary layer regime 8−9670
- critical flow through axisymmetric nozzle, discharge coeffs. 8−38381
- gas ejector, energy separation mechanism *(Russian)* 8−34178
- gas ejector, inverse energy separation 8−47013
- gas-liquid nozzle design, inverse problem formulation 8−47015
- high-velocity gas jets, interaction, photographic study 8−42695
- Langley expansion tube, flow characts. from vel. meas., He, CO_2, air 8−14057
- MHD convertor, acceleration nozzle, with supersonic flow deformation 8−26181
- microjet noise and micropore diffuser-muffler design 8−30335
- nonsteady flow with spontaneous condensation 8−47011
- nozzle, convergent-divergent, compressible turbulent boundary-layer heat transfer *(German)* 8−22399
- nozzle-to-cylinder structures subjected to internal pressure, finite plate method 8−34007
- optical fibre coating concentricity improvement by tapered nozzles *(German)* 8−38095
- plasma flame, with rectangular cross section, prod. by nozzle *(Japanese)* 8−47108
- primary coolant inlet of PWR vessel, fracture mech. exam. of integrity *(German)* 8−17327
- quarter circle and combined, investigation *(Russian)* 8−42689
- round jet of inviscid liquid from nozzle of slowly varying profile 8−14055
- spray, air atomised, dispersion characts., orifice shape depend. 8−34182
- square, transonic flow, 3-dimens. density field meas., holographic technique 8−47080
- steady state arcs, nozzle flow 8−32664
- supersonic, jet flow from nozzle, coords. of acoustic cross-section 8−5778
- supersonic flow, finite difference method calcs. *(French)* 8−34157
- tall-form spray chamber, residence-time distribution of air 8−9679
- transonic flow, gases with rate process 8−14058
- transonic flow, rotational, relaxation solution 8−30312
- turbulent mixing noise, aircraft, in-flight simulation expt. 8−1501
- two-phase flow through sharp-edged orifices, pressure-drop study 8−1726

nozzles continued
- viscous flow, time-dependent two-dimensional, moving boundary walls 8−14059
- viscous liquid in cylindrical nozzles, entrance press. losses 8−47012
- wetting of a vertical plate by a liquid, model 8−22319
- wind tunnel contraction section, smoothly varying nozzle construction method 8−47081
- Br_2, dissociating flow in supersonic nozzles, atomic recomb. and vibr. relax. effects 8−42677
- Br_2 recombination in supersonic expansion in nozzle *(Russian)* 8−1757
- CO_2-N_2-H_2O gas mixture, oscillatory nonequilib. in planar supersonic nozzle flow 8−1758
- D_2-HCl electric discharge gasdynamic laser, turbulent mixing characts. 8−9366
- He-N_2-CO_2 mixture in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
- N_2, hypersonic nozzle flow, supercooling and spontaneous condensation 8−1549
- N_2 in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
- SF_6, condensation in supersonic nozzle flow 8−34611

NTC thermistors *see thermistors*

ν (neutrino) *see neutrinos*

nuclear alignment *see nuclear polarisation*

nuclear binding energy
- *see also nuclear forces*
- A=18 shell model spectra and 3 nucleon force 8−25124
- A=3 nuclei, charge asymm. from EM contribution to ^{3}He-^{3}H binding energy difference 8−29378
- atomic mass evaluation 1977: mass table, mass excesses, total BEs, β-decay energies 8−4894
- Bethe homework problem, variational calcs. for neutron and nuclear matter 8−37292
- Bethe-Goldstone eqn., nucl. matter, nucleon optical pot. anal. 8−12981
- charge symmetry breaking nuclear forces, two-body, many-body nuclear systems 8−17109
- compressibility of nuclear matter, density depend. of binding energy, hyperspherical functions method *(Russian)* 8−17093
- effective interactions, folded diagram expansion, self consistent and oscillator sd shell model spaces 8−21502
- even-even nuclei, semi-empirical correlation energy 8−17092
- hadronic colour induced Van der Waals force consequences 8−45863
- hypernuclei, produced by strangeness exchange reactions, ground state binding energy 8−17130
- liquid drop energy, shell correction determ. 8−12992
- nuclear matter, symm. and asymm., simple effective interaction for props. 8−25141
- nuclear matter binding energy, corelated basis functions method appl. 8−45998
- nucleon, bound in harmonic oscill. pot., coupled to pion field, EM struct. 8−8732
- nucleon binding in nuclei at high ang. momentum 8−25104
- optical nucleon-nucleus potential *(Russian)* 8−37321
- Pauli principle effect in nuclear matter, exchange of interacting two pions 8−12983
- quark exchange, nuclear force model 8−41648
- separation and alpha- and beta-decay energies, 1977 at. mass evaluation tables 8−4895
- separation and nuclear-reaction energies, 1977 at. mass evaluation tables 8−497
- shell correction, account of continuum in thermodynamic calc. *(Russian)* 8−29409
- shell correction method for finite well potentials, appl. to ^{240}Pu nucleus 8−37298
- subcoulomb fusion, effective barrier at low energies, total reaction cross section 8−37385
- three nucleon clusters in nuclear matter, energy per particle density dependence 8−17112
- three-body forces in 3- and 4-nucleon systems 8−29400
- triton, momentum space calculations, Faddeev bound-state eqns., binding energy 8−25122
- triton *(Russian)* 8−29376
- α-nucleus separation energies, Woods-Saxon pot., A depend., closed shell effects 8−25107
- NΔ conversion, two-channel formalism and three-body forces approaches 8−8733
- π bound states in finite nuclei, π-nuclear optical pot. 8−46013
- π-nucleus scattering, binding effects in optical pot. of pion in nucleus 8−41685
- ^{8}Be, cluster formation, multicentre variational model *(Chinese)* 8−25128
- ^{9}Be, α-cluster struct., binding energy determ., Faddeev eqn. soln. 8−41640
- ^{12}C, α-cluster struct., binding energy determ., Faddeev eqn. soln. 8−41640
- ^{12}C structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
- ^{40}Ca structure, supersoft-core pot., HF approx., ground state props. 8−533
- ^{2}H deformation effects in nuclear interaction, DWBA anal. *(Japanese)* 8−21575
- ^{3}H, binding energy, unitary pole and Adhikari-Sloan expansions 8−499
- ^{3}H, NN realistic nonlocal pots. from inverse scatt. theory for $^3S_1$-$^3D_1$ interaction 8−41651
- He, A=3, 5, BE, level calcs. using new boson expansion to n-fermion problem 8−511
- ^{3}He, one-boson exchange pot. 8−41652
- ^{4}He binding energy, unitary pole approx. 8−25103
- ^{4}He, α-cluster model, four-body problem unitary pole approx. calc. 8−516
- ^{4}He, from Alt-Grassberger-Sandhas eqns. 8−41650
- ^{4}He, structure in the translation-invariant oscillator basis *(Russian)* 8−25123
- ^{6}Li, cluster formation, multicentre variational model *(Chinese)* 8−25128
- ^{6}Li, three-body model using hyperspherical harmonics 8−29411
- ^{16}O, charge distribution, orthogonal scheme model *(Russian)* 8−29382

nuclear binding energy continued
^{16}O structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{17}O valence energies, extended multiple scatt. approach to 2p1h system 8−29396
Sn(d,t)Sn, even A=112 to 124, deeply bound hole states of odd A Sn 8−8725
nuclear bombardment targets
see also nuclear reactions and scattering
cryogenic targets for streamer chambers and cryofluid target supply *(Russian)* 8−13381
gas, small medium press. target cell for polarised and unpolarised ion beams 8−17460
goniometer for nuclear reaction cross section and channelling expts. 8−21801
liquid target mounting 8−46197
polarised materials, proton beam effects 8−29723
powdered target prod. by centrifugal precipitation method 8−841
refractory matrices, fast release of reaction products from 600 MeV irradiation 8−29652
Br(p,xn)^{77}Kr, prep. of carrier free ^{77}Kr using natural Br 8−29678
^{11}C isotopes, production and transport system 8−46200
Cr complex, Cr^{V}, doping agent for polarised targets 8−46198
Fe, proton bombardment, stable nuclide form. and separation 8−20045
^{4}He liquid target with remote handling for TRIUMF cyclotron 8−25364
^{127}I(p,5n)^{123}Xe, in-beam collection of ^{123}Xe for carrier-free ^{123}I prod. 8−44610
^{82}Kr(d,3n)^{81}Rb, non-linear behaviour of gas targets for isotope prod. 8−25361
^{14}N(d,n)^{15}O, non-linear behaviour of gas targets for isotope prod. 8−25361
P, thin red target preparation 8−46196
Pb, self supporting O$_2$ free targets 8−13365
^{124}Te(p,2n)^{123}I, improved targetry and radiochem. for ^{123}I prod. 8−28064
^{124}Te(p,n)^{124}I, improved targetry and radiochem. for ^{124}I prod. 8−28064
^{235}UO$_2$ single crystals, electrochemical prep. 8−37478
nuclear branching and mixing ratios
A=16, (π^-, γ) and (μ^-, ν_μ) capture reactions on ^{16}O, branching ratios 8−17105
E2 α_k conversion coeffs. for $2^+ \rightarrow 0^+$ transition, review 8−17143
eikonal approx., electron-oriented nucleus scatt., polarisation of e$^-$, nuclei and emitted γ rays 8−37331
odd mass nuclei, $59 \leq A \leq 149$, E2, M1 multipole mixing ratios 8−4911
ν-nucleus reactions, multimuon events, QCD predictions for associated prod. of charm 8−25034
^{111}Ag, 376.7 keV level lifetime, shape coexistence, γ-branching 8−551
^{26}Al, isoscalar and isovector E2 transition matrix elements 8−25148
^{11}B(d,p)^{12}B reactions, 1.3 to 3.0 MeV, DWBA analysis of magnetic substate populations of residual nucleus 8−29480
^{12}B, β-ray branching and $T_{1/2}$ 8−41674
^{206}Bi, nucl. orientation in ferromag. BiMn 8−13010
^{207}Bi, nucl. orientation in ferromag. BiMn 8−13010
^{12}C(μ^-,$\nu_\mu\gamma$)^{12}B, impulse approx. calc., photon branching ratios 8−37315
^{37}Cl, in-beam γ-ray spectroscopy via ^{3}H(^{35}Cl,pγ) 8−13013
^{60}Co low lying states from ^{57}Fe(α,pγ), spin constraints, γ mixing ratios 8−29487
^{62}Cu, yrast states obs. in ^{60}Ni(α,pnγ) and ^{63}Cu(p,pnγ) 8−12945
^{58}Fe high spin states from ^{55}Mn(d,pγ), decay props., γ-γ coincidence 8−21515
^{156}Gd transitions from second $K^\pi=0^+$ band following ^{156}Eu decay, branching, mixing ratios 8−25150
^{71}Ge, levels, studied via ^{68}Zn(α,nγ), 8 to 10 MeV, comparison with coupling model calcs. 8−8742
^{41}K, l-forbidden M1 decay from 1st excited state 8−13024
^{176m}Lu, electron capture meas. *(German)* 8−33153
^{24}Mg, T=2 state props., obs. in ^{23}Na(p,γ)^{24}Mg reaction 8−8767
^{26}Mg, isoscalar and isovector E2 transition matrix elements 8−25148
^{94}Mo, level spins and multiple mixing ratios from γ-γ correlation meas. 8−21517
^{12}N, β-ray branching and $T_{1/2}$ 8−41674
^{14}N 9.13 MeV state, obs. in ^{13}C(p,γ) 8−41641
^{14}N unbound 4_1^+, 5_1^+, 3_2^+ states from ^{13}C(p,γ), lifetimes, branching ratios 8−25184
^{91}Nb, struct. anal. from ^{91}Zr(p,nγ) at 3.5-4.8 MeV 8−13011
^{20}Ne, from ^{16}O(α,γ), 10.27 MeV, first T=1,2$^+$ state radiative width meas. rel. to analogue β-decays 8−549
^{237m}Np fission isomer from ^{238}U(p,2n), statistical model anal., fission to γ branching ratio 8−25256
^{194}Os beta decay, X-ray/gamma relative intensities, L_1 subshell yields 8−4919
^{208}Pb region, finite Fermi systems, review 8−537
^{85}Rb, single-particle estimate of γ-γ transition probability 8−13023
^{105}Ru, γ-γ ang. correl. meas., spin and γ-ray mixing ratios 8−21516
^{119}Sb, γ-γ and γ-e directional correls. following ^{119m}Te decay, branching ratios 8−546
^{42}Sc, β^+ decay, isospin symm. hindered, branching fraction 8−21526
^{26}Si, isoscalar and isovector E2 transition matrix elements 8−25148
^{27}Si, γ-branchings and mixing ratios determ. from ^{24}Mg(α,nγ) 8−17224
^{150}Sm, yrast bands anal. from ^{150}Nd(α,4n), interacting boson approx. 8−13124
^{228}Th decay, γ-ray and internal conversion intensities 8−41669
^{163}Tm, high spin rot. levels, studied via ^{165}Ho(^{3}He,5n) and ^{165}Ho(α,6n) reactions 8−8722
^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S$'\gamma$), EM props. of ground state rot. band 8−8726
^{238}U, multipolarities involved in electrodisintegration 8−590
^{127}Xe decay, absolute gamma-ray intensities 8−548
^{64}Zn, γ-ray spectroscopy from ^{61}Ni(α,nγ)^{64}Zn 8−21514
^{90}Zr, $\gamma\gamma$ directional correl. meas. 8−33144
^{100}Zr, lifetime meas. of 331.3 keV 0_2^+ state 8−21523
nuclear charge
A=3 nuclei, charge asymm. from EM contribution to ^{3}He-^{3}H binding energy difference 8−29378
actinide fission, statistical anal. of gamma emission 8−17255
nuclear charge continued
anomalous nuclei, crit. charge *(Russian)* 8−8736
Coulomb displacement energies and n-p density distribs. 8−17084
Coulomb energy differences, Cottingham formula appl. 8−37256
deep reconstruction of Coulomb field, shake-up of vacuum *(Russian)* 8−4910
density distrib., Glauber-Sitenko approx. fast hadron scatt. anal. *(Russian)* 8−25161
exotic atoms, E2 and E4 nucl. moments from HFS, review 8−37265
fission, droplet model of charge division 8−17173
fission, most probable charge, shell and deform. effects 8−29440
folded diagram calculation of effective charges, valence nucleon in 1s0d shell 8−4905
heavy particle track grain counting for nucl. charge determ. 8−17528
heavy-ion reactions, time for charge equilibration, microscopic hydrodynamical model 8−8857
heavy-ion sub-Coulomb collisions, e$^+$-e$^-$ pair creation as probe for strong Coulomb fields 8−12962
linearised Hartree Fock model, effective charge, isoscalar nuclear shifts, rms radius ^{208}Pb, ^{90}Zr 8−25138
many-body charge density operators, breakdown of Siegert theorem 8−29379
nuclear forces, charge symm. breaking, two-body, many-body nuclear systems 8−17109
RMS radii mass number depend., fine struct. 8−501
^{197}Au+^{129,132,136}Xe, near interaction barrier, charge asymm. equilibrium 8−8843
^{9}Be, molecular model, charge form factors for electron scatt. 8−46015
^{12}C, isospin mixing of 1^+ states 8−4898
^{12}C, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{13}C(^{14}N, ^{14}C)^{13}N, sub-Coulomb charge exchange *(Russian)* 8−46106
^{40}Ca, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{48}Ca, neutron radius determ., charge symm. 8−29380
^{48}Ca, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{249}Cf(n,f), thermal., yields of isotopes of Nb, I and Cs, charge distrib. 8−41789
^{252}Cf, SF, charge distrib., determ. of fractional cumulative yields of ^{134}Te and ^{135}I 8−41791
^{252}Cf, spontaneous fission product charge distrib. 8−13176
^{59}Co, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8−41707
Cr, A=48-52, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
Cu, A=63, 65, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8−41707
^{161}Dy, E0, E2 and E4 charge moment determ., using muonic atoms 8−21490
^{17}F, effective charges and radial integrals calc. 8−4897
Fe, A=52, 4, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
^{154}Gd(α,α'), 11.8 MeV, charge deform. parameter determ. 8−33201
^{3}H$_\Lambda$, charge symm. breaking, Λ separation energy in hypertriton 8−17132
^{3}H$_\Lambda$, charge symm. breaking considerations for hypertriton 8−17133
^{3}He, charge form factor one-boson exchange pot. 8−41652
^{3}He(e,e), charge density distrib., charge form factor, of ^{3}He 8−29453
^{4}He, structure in the translation-invariant oscillator basis *(Russian)* 8−25123
^{4}He(e,e), cross section anal., nuclear charge form factor, short range correl. 8−8746
^{178}Hf, 2^+-0^+ transitions, mean square nuclear charge radius change, Mossbauer expt. 8−25109
^{6}Li, EM form factors and vertex consts. 8−12958
^{58}Ni, charge density, single particle struct., using proton wave functions 8−45995
^{60}Ni, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8−41707
^{16}O, charge distribution, orthogonal scheme model *(Russian)* 8−29382
^{16}O, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{17}O, effective charges and radial integrals calc. 8−4897
^{17}O(e,e), elastic and inelastic, cross sections, excited states, charge radii 8−46049
^{192}Os, muonic, dynamic hyperfine effect, model independ. anal. 8−22057
^{208}Pb, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{105}Pd muonic X-rays, nuclear charge parameters, quadrupole moments 8−29377
Ti, A=44-50, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
Ti, A=46,50, neutron radius determ., charge symm. 8−29380
^{238}U, proton-induced fission, asymm. region, nucl. charge distrib. 8−4967
^{238}U(p,f), 35-85 MeV, nuclear charge dispersion in light mass region 8−8864
V, A=47-51, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
^{90}Zr, pion-exchange contribs. to charge densities, HF calcs. 8−46001
nuclear chemistry
see also chemical effects of nuclear reactions and scattering; radiation chemistry; radiochemistry
Fe, proton bombardment, stable nuclide form. and separation 8−20045
T, release behaviour and chem. forms on heating neutron irradiated UO$_2$(Li) pellets 8−40071
T+chloroethane(cyclobutane), recoil reaction, 5×10^{-2} torr 8−44389
nuclear cluster model
3-cluster systems, orthogonality condition model, appl. to 3-α model 8−530
angular correlation anal. 8−634
antisymmetrisation effects in nuclear collisions, projection operator techniques 8−46036
antisymmetrized n-nucleon problems, refined resonating group calcs., reduction to cluster modes 8−17123
fission of actinides, fragment shell effects determ. from ^{32}S many nucleon correlations 8−41690
hadron-nucleus interactions, secondary particle multiplicity, one-cluster model *(Russian)* 8−17165
hadron-nucleus reactions, quasi-elastic cluster knock-out, multiplicities 8−46042
light nuclei, α transfer and knockout reactions, α clustering 8−41687

nuclear cluster model continued
light nuclei coupling constants from dispersion anal. of N and d scatt. amplitudes 8−29399
low density α clustering effects of Skyrme N+N interactions in nuclear matter 8−29398
multichannel nuclear reactions, connected kernel formalism 8−46038
nuclear matter, three nucleon clusters with intermediate Δ-states exchange diagrams calc. 8−17112
Pauli-principle effects, simulation 8−8756
self consistent long range order in nuclear matter Hartree Fock Overhauser orbitals 8−17127
Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations in light nuclei 8−29435
spherical nuclei, probabilities of α-transitions, effect of higher configs. of α-particle internal waves functions 8−17155
two-centre generator coordinate model functions, ang. momentum eigenstates projection 8−12994
two-centre molecule-like states, generator coordinate wave function projection 8−12995
wave functions from shell and cluster model 8−29412
α particle nuclei, cluster struct., ground state energy lower bounds 8−46017
α-nucleus separation energies, Woods-Saxon pot., A depend., closed shell effects 8−25107
α-preequilibrium decay, emission rate, α-preformation factor 8−41676
^{6}Li, d+α clusters, break up in nuclear field, ^{118}Sn+^{6}Li study 8−46092
p+nucleus, 200 GeV/c, clusterisation and secondary particle correl. *(Russian)* 8−33133
π+nucleus, 200 GeV/c, clusterisation and secondary particle correl. *(Russian)* 8−33133
^{8}Be, α-cluster excitation via α-α-scatt., coupled channel calcs. 8−529
^{8}Be, cluster formation, multicentre variational model *(Chinese)* 8−25128
^{9}Be, α-cluster behaviour via ^{9}Be(α,α) anomalous 40 MeV effects 8−615
^{9}Be, α-cluster struct., binding energy determ., Faddeev eqn. soln. 8−41640
^{12}C, 3-α struct. in boson model 8−17124
^{12}C, α-cluster struct., binding energy determ., Faddeev eqn. soln. 8−41640
^{12}C struct. calcs. via 3α system resonating group method 8−531
^{12}C structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{12}C(p,^{6}Li)^{7}Be, 51.9 MeV, cluster coupling shell model 8−46058
^{18}F alpha particle cluster states, rot. bands in ^{14}N+α model 8−8757
^{18}F, trinucleon cluster states, low lying negative parity states 8−29387
^{4}H, cluster model, energy levels by interaction set anal. 8−25136
^{6}He β-decay from three body model of A=6 system, α-N, N-N interactions 8−46032
^{6}Li, cluster formation, multicentre variational model *(Chinese)* 8−25128
^{6}Li, EM form factors and vertex consts. 8−12958
^{6}Li, three-body model using hyperspherical harmonics 8−29411
^{7}Li(α,α), low energy elastic and inelastic scatt., Pauli principle effect 8−4953
^{7}Li(d,αα)n, 2 MeV, quasi free reaction, ^{7}Li struct. 8−41727
^{8}Li scattering system, microscopic multichannel cluster model calc., resonating group calc. 8−4906
^{16}O, configuration mixing and α-cluster transfer 8−46004
^{16}O structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{18}O alpha particle cluster states, rot. bands in ^{14}C+α model 8−8757
^{18}O, trinucleon cluster states, low lying negative parity states 8−29387
^{18}O, two-body surface correls. in extended basis shell model 8−532
^{44}Ti, yrast states as α-particle cluster states 8−33114
^{64}Zn(d,^{6}Li), 55 MeV, cluster model DWBA anal. 8−21573

nuclear collective model
see also cranking model; nuclear liquid drop model
adiabatic time dependent Hartree Fock theory of collective paths 8−525
adiabatic time-depend. theory, classical Hamiltonian quantisation for collective phenomena 8−526
canonical conjugate momenta to collective coords. 8−17119
core-quasiparticle model, odd transitional nuclei 8−12988
deformation of neutron-density in inelastic scatt. 8−46000
deformed even nuclei, level energies, γ transitions, moment of inertia, collective Hamiltonian 8−25133
deformed even-even nuclei, real and complex boson expansions for vibr. anharmonicities 8−527
energy-weighted moments, relations between nucl. collective theories 8−33130
even-even deformed nuclei, nonadiabatic effects 8−528
even-even nuclei, microscopic anal. of low-lying collective states 8−12941
even-even nuclei, semi-empirical correlation energy 8−17092
even-even nuclei, yrast band energies, coherent states model, three parameter formula 8−17091
even-even nuclei with collective oscillations, surface probabilities of α-particle formation *(Russian)* 8−41677
fluid dynamic approach to nuclear collective motion 8−17121
gradient formula for the group U(2l+1) in nuclear collective model theory 8−37300
harmonic quadrupole collective Hamiltonian, exact soln. 8−37301
heavy-ion reactions, time for charge equilibration, microscopic hydrodynamical model 8−8857
hole-line expansion convergence in nuclear matter 8−8762
interacting boson model, rot. limit 8−46016
isovector pairing vibrations, in two nucleon transfer ion-nucleus reactions 8−21487
macroscopic nuclear dynamics 8−12993
many phonon systems, projection operator method 8−25130
microscopic description of direct processes in (N,N′), effective interaction 8−12979
microscopic model, wobbling motion in fast rotating nuclei 8−21505
microscopic theory of collisions between complex nuclei based on generator coord. method 8−13145
nuclear shape meas. and collective model validity for N≠Z nuclei 8−45999
odd-odd man nuclei, decoupled and strongly coupled particles system 8−8727

nuclear collective model continued
one body nuclear dynamics, classical theory for collective motion 8−8755
pairing collective degrees of freedom, Dyson-like representation of fermion space 8−25134
propagation and damping of collective modes in nuclear matter 8−25132
rotating nuclei, two-phase model 8−33113
rotating toroidal nuclei, ang. mom. thresholds 8−41629
rotation effects on collective props. review *(Russian)* 8−37299
rotation of light nuclei, quantum mechanical probability current 8−29410
Sp(n,R) discrete series, harmonic oscill. eigenstates, nuclear collective model 8−71
Stephens rotation alignment model, limits of application *(French)* 8−8754
Thomas-Fermi approach to rotating nuclei 8−41657
extended Thomas-Fermi density matrix 8−41658
Thomas-Fermi model of finite nuclei 8−8747
three-particle system outside closed-shell nuclei, nucl. field treatment 8−25129
vorticity in nuclear fluid dynamics 8−33131
yrast level spacing discontinuity, rotation alignment mechanism 8−17085
π condensation in nuclear matter, Hartree-Fock and generator coord. methods 8−17129
^{A}Au, A=193-199, positive parity states, particle-asymmetric rotor description 8−46005
^{12}C(e,e′p)^{11}B, energy spectra calc. in terms of dynamic collective model *(Russian)* 8−8804
^{156}Er, non axial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
^{166}Er, non axial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
Ge, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626
Hg, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
^{24}Mg, highly-excited rot. band obs. from ^{10}B(^{14}N,α)^{20}Ne 8−33218
^{24}Mg, rotational band fragmentation and rotation-vibr. model, ^{12}C+^{12}C appl. 8−25096
^{207}Pb(p,p′), excitation of neutron-hole states, 61.2 MeV protons 8−8724
^{208}Pb, Thomas-Fermi model 8−8747
Pd, even-mass isotopes, collective model with deform., vibr., rot. energy levels, B(E2) ratios 8−17120
Pt, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
Sm(n,n), (n,n′), (n,n′γ), A+148,150,2, E=2.47 MeV collective excitations obs. 8−33187
Zn, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626

nuclear collective motion *see nuclear collective model*

nuclear collective states and giant resonances
see also isobaric analogue resonances
^{154}Er, high-spin states 8−29373
^{239}U vibr. states, obs. in ^{238}U(n,γ) 8−41627
backbending associated with alignment of quasiparticle momenta 8−33112
band crossing anomalies in cranking model 8−25127
band mixing with several valence nucleons, E2 and M1 matrix elements *(French)* 8−45994
compound nucleus, giant resonances, force functions for partial E1-transitions 8−12985
Coulomb-nuclear interference for high spin states 8−46097
deformed even-even nuclei, E2 transitions within ground state band 8−13012
deformed even-even nuclei, real and complex boson expansions for vibr. anharmonicities 8−527
deformed nuclei, splitting of giant multipole states, vibr. pot. model 8−4893
dipole giant resonance in fissioning nuclei, microscopic calcs., excitation energies, dipole strengths, transition densities 8−29442
doorway mechanism in deep inelastic heavy ion reactions 8−632
double crossing of ground rotational band and super band 8−45996
even-even deformed nuclei, aligned rot. of octupole vibrational states 8−12955
even-even deformed nuclei, multiphonon K$^{\pi}$=0^{+} states, matrix elements of general Hamiltonian 8−41621
even-even deformed nuclei, multiphonon K$^{\pi}$=0^{+} states, norms 8−17089
even-even deformed nuclei, nonadiabatic effects 8−528
even-even nuclei, microscopic anal. of low-lying collective states 8−12941
even-even nuclei, yrast band energies, coherent states model, three parameter formula 8−17091
fission lifetime distribution and probability estimates 8−659
fp-shell nuclei, high-spin states 8−12946
giant dipole resonance, role of compound nucleus levels *(Russian)* 8−25164
giant multipole reson. fragmentation over two-phonon states in spherical nuclei 8−575
giant multipole resonances, review 8−13044
giant quadrupole reson. splitting in light deformed nuclei 8−4924
giant resonance simple microscopic model *(Russian)* 8−578
harmonic quadrupole collective Hamiltonian, exact soln. 8−37301
high spin effects in nuclei with proton no. 40-60, shape, deforms. 8−503
high-spin nuclear rotations, single particle Nilsson model 8−12943
high-spin states of transitional and spherical nuclei, decoupled and strongly coupled bands 8−12939
hot nuclei with high angular momenta, γ-ray emission in heavy ion reactions, rot. bands 8−13133
inelastic form factors properties from energy weighted sum rules 8−37319
isovector pairing vibrations, in two nucleon transfer ion-nucleus reactions 8−21487
light nuclei, giant quadrupole resonances excited by α or p inelastic scatt. 8−624
microscopic description of direct processes in (N,N′), effective interaction 8−12979

nuclear collective states and giant resonances continued
- microscopic description of giant electric and magnetic multipole resonances in ^{12}C, ^{16}O, ^{90}Zr, ^{208}Pb 8−538
- odd-odd man nuclei, decoupled and strongly coupled particles system 8−8727
- photo-nucleon spectra, shell and pre-equilibrium decay model of giant reson. decay *(Russian)* 8−579
- rare-earth nuclei transition density, ang. momentum projection corrections to rot. model 8−500
- rotating nuclei, two-phase model 8−33113
- rotating nuclei of high and v.high nucl. spin *(German)* 8−25102
- rotating toroidal nuclei, ang. mom. thresholds 8−41629
- rotation, zero point energy 8−25101
- semiempirical rotational formulae for energy of rot. levels 8−17070
- Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations in light nuclei 8−29435
- spherical nuclei, excitation of collective states in high-energy proton interactions 8−17073
- statistical model calcs. of α-emission from excited nuclei 8−17157
- statistical model radiation widths for $75<A<130$ 8−33161
- Thomas-Fermi approach to rotating nuclei 8−41657
- two-quasi particle excitations, high-spin rot. state, ang. momentum projection 8−41615
- vibrational transitional nuclei, quasirotational states 8−12942
- vorticity in nuclear fluid dynamics 8−33131
- yrast level spacing discontinuity, rotation alignment mechanism 8−17085
- yrast traps, island of high spin isomers near N=82 8−8844
- yrast traps, struct., nuclear deform. 8−21486
- ^{20}Ne, rotational bands 8−45993
- ^{238}(e,e′), scatt. from octupole band, model for nuclear surface vibrations 8−37333
- ^{227}Ac, 7 to 16 MeV photofission, giant resonance and nuclear deformation *(Russian)* 8−41795
- ^{26}Al, coherence widths, level density param. and effective moment of inertia 8−37360
- ^{27}Al, low lying states, band mixing effects, quadrupole moment 8−490
- ^{27}Al+^{12}C, 83 MeV, giant resonance excitation 8−17235
- Au, photonuclear cross-sections in giant reson. region 8−17178
- Ba isotopes, microscopic dynamic calc. of collective states 8−17075
- ^{125}Ba, 7/2$^{\pm}$ states, populated in ^{116}Sn(^{12}C, 3n), explained by triaxial core model 8−37258
- ^{10}Be, form. in ^{7}Li(t,γ) reaction, excitation functions and resonant struct. for 17.79 MeV state 8−13110
- ^{209}Bi, effect of pairing modes in multiplet struct. 8−12973
- C, photonuclear cross sections in giant reson. region 8−17178
- ^{12}C isoscalar giant resonance from ^{10}B(d,α)^{8}Be(g.s.) excitation functions struct. 8−46073
- ^{13}C, giant reson. isospin splitting, photonuclear and e-scatt. cross-sections 8−577
- ^{40}Ca, excitation of low lying collective states by (n,n′) scatt. 8−17205
- ^{40}Ca+^{40}Ca, 284 MeV, energy spectra struct. obs. 8−4958
- Cd, even-mass, shape coexistence, quasi-rot. band 8−496
- Cd, isotopes A=109, 106, 105, 104, high spin states excited by (α,xnγ) *(French)* 8−29394
- ^{140}Ce, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097
- ^{52}Cr, total photoneutron cross section, high resolution meas., isospin effects 8−8792
- ^{124}Cs, β-decay props. of collective 1^{+} states 8−13028
- ^{126}Cs, β-decay props. of collective 1^{+} states 8−13028
- ^{62}Cu, yrast states obs. in ^{60}Ni(α,pnγ) and ^{63}Cu(p,pnγ) 8−12945
- ^{63}Cu, paradoxical octupole-multiplet pattern 8−41617
- ^{63}Cu+^{63}Cu, 450 MeV, energy spectra struct. obs. 8−4958
- ^{158}Cy, double crossing of ground rotational band and super band 8−45996
- Dy (A=154, 156), negative parity band crossing in even-even nuclei 8−21488
- ^{156}Dy, superband 8−29374
- ^{162}Dy, intraband transition rates in gamma vibr. bands 8−45992
- ^{162}Dy+^{16}O, Coulomb-nuclear interference for high spin states 8−46097
- ^{163}Dy(α,α′), E2 and E4 transition moments, rotational states 8−41740
- ^{a}Er, A=166-170, α-particle Coulomb excitation of octupole vibr. states 8−41618
- ^{156}Er, negative parity band crossing in even-even nuclei 8−21488
- ^{156}Er, negative parity yrast states, microscopic calc. 8−495
- ^{156}Er, non axial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
- ^{156}Er, rotating nuclei, two-phase model 8−33113
- ^{158}Er, double crossing of ground rotational band and super band 8−45996
- ^{160}Er, produced in ^{124}Sn+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
- ^{162}Er, microscopic calc. of high-spin rot. states 8−8730
- ^{163}Er, excited states populated in ^{163}Tm decay 8−17146
- ^{164}Er, populated via ^{150}Nd(^{18}O,4n)^{164}Er, multiple band crossings 8−37257
- ^{166}Er, non axial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
- ^{166}Er, rotating nuclei, two-phase model 8−33113
- ^{167}Er(α,α), E2 and E4 transition moments, rotational states 8−41740
- ^{168}Er, intraband transition rates in gamma vibr. bands 8−45992
- Fe isotopes A=53-58, spectroscopic calcs. using mass independ. effective interaction, yrast levels 8−41638
- Fe, photonuclear cross sections in giant reson. region 8−17178
- ^{56}Fe yrast band, coexistence of prolate and oblate shapes 8−12947
- ^{57}Fe, Mossbauer effect in Ge, appl. of in-beam implantation method 8−25372
- ^{146}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8−41666
- ^{147}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8−41666
- ^{152}Gd, negative parity band crossing in even-even nuclei 8−21488
- Ge, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626
- ^{172}Hf, decoupled two-quasiparticle bands, backbending 8−4890
- ^{172}Hf rotation bands from ^{160}Gd(^{16}O,4n), high spin states, halflives 8−25217
- ^{174}Hf, double crossing of ground rotational band and super band 8−45996
- ^{174}Hf, microscopic calc. of high-spin rot. states 8−8730

nuclear collective states and giant resonances continued
- ^{176}Hf, ground rotational band level energies calc. 8−45996
- ^{176}Hf yrast traps, cranking Hartree Fock Bogoliubov calcs. 8−25100
- ^{180}Hf, nonrotational interpretation of E$_4$ matrix element 8−33111
- ^{a}Hg, A=198-204, reorientation effect meas. on 2^{+} states 8−37282
- I energy levels, collective excitations, spin,parity, populated in ^{121,123}Sb(α,2n), γ spectra 8−4891
- In, photonuclear cross sections in giant reson. region 8−17178
- ^{174}Lu, populated by ^{176}Lu (p,t)^{174}Lu, energy levels and rotational bands 8−37346
- ^{175}Lu(γ,γ′), elastic and Raman scatt. at 8.5-11.4 MeV, GDR parameters 8−587
- Mg, giant quadrupole resonance strength, p- and α-inelastic scatt. and α capture 8−37323
- ^{24}Mg, form. in ^{12}C+^{12}C reaction at 10.5 to 15 MeV, possible rot. band 8−13134
- ^{24}Mg, rot. band, reson. states, J$^{\pi}$ via ^{12}C+^{12}C 8−491
- ^{24}Mg, rot. band obs. with ^{12}C(^{12}C,α)^{20}Ne 8−12951
- ^{24}Mg, rotational band fragmentation and rotation-vibr. model, ^{12}C+^{12}C appl. 8−25096
- ^{24}Mg, rotational band struct., obs. in (^{3}He,^{3}He′) 8−41616
- ^{24}Mg(p,p′), 22.5 to 28.5 MeV, giant reson. effects 8−4923
- Mn photonuclear cross sections in giant reson. region 8−17178
- ^{15}N, photoabsorption, shell-model anal. of giant dipole state 8−29447
- ^{23}Na, band mixing, E2 and M1 matrix elements *(French)* 8−45994
- ^{58}Ni, giant electric resonances, study of ^{54}Fe(α,γ)^{58}Ni 8−41739
- ^{60}Ni, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097
- ^{16}O, giant dipole reson. struct. anal. from ^{15}N(p,γ)^{16}O 8−4942
- ^{16}O isoscalar giant quadrupole resonance, α-decay dominance from ^{16}O(α,α′+charged particle) 8−46035
- ^{16}O, spreading of giant quadrupole resonance, calcs. using 2p-2h admixtures 8−21485
- ^{16}O(γ,n)^{15}O, ang. distrib. asymmetry anal. 8−25172
- ^{16}O(π,π)^{16}O, microscopic isobar-hole calc. doorway states 8−4965
- ^{17}O, giant reson. isospin splitting, photonuclear cross-sections 8−577
- ^{204}Pb yrast levels populated in ^{204}Hg (α,4n), spin, parity, γ spectra 8−12954
- ^{206}Pb proton pairing vibr. obs., using (^{3}He,n) reaction at 33.3 MeV 8−13128
- ^{208}Pb, excitation of low lying collective states by (n,n′) scatt. 8−17205
- ^{208}Pb, isoscalar breathing mode state obs. in (α,α′) scatt. at 96 MeV 8−17086
- ^{208}Pb region, finite Fermi systems, review 8−537
- ^{208}Pb(α,α′), RPA calcs., existence of breathing mode 8−25163
- ^{208}Pb(d,d′), RPA calcs., existence of breathing mode 8−25163
- ^{208}Pb(e,e′), RPA calcs., existence of breathing mode 8−25163
- ^{208}Pb(p,p′), 40, 45 MeV, fine struct. in giant resonance region, collective dipole spin flip excitation 8−46056
- Pd, even-mass isotopes, collective model with deform., vibr., rot. energy levels, B(E2) ratios 8−17120
- ^{188}Pt side band, low lying and high spin states populated in ^{191}Ir(p,4nγ) 8−4936
- ^{195}Pt(n,γ)^{196}Pt, low spin positive-parity states struct., O(6) limit of IBA model 8−33110
- ^{28}Si dipole reson., effect of 2^{+} core excitation 8−17166
- ^{28}Si, shell model and statistical spectroscopic anal. 8−29390
- ^{144}Sm, isoscalar breathing mode state obs. in (α,α′) scatt. at 96 MeV 8−17086
- ^{144}Sm, produced in ^{100}Mo+^{48}Ca 8−37260
- ^{150}Sm, negative parity band crossing in even-even nuclei 8−21488
- ^{152}Sm, giant resonance excitation by (e,e′) at 60-105 MeV, DWBA analysis *(Russian)* 8−41686
- ^{116}Sn particle-hole states, strength decoupling form giant dipole resonance, Gaussian force, δ-force diagonalisation 8−25125
- 121^{20}Sn, giant multipole reson. fragmentation over two-phonon states 8−575
- ^{124}Sn, electron excitation of giant multipolar resonances *(Russian)* 8−8802
- ^{181}Ta, ground state rotational band, electroexcitation 8−33168
- ^{181}Ta(e,e′), giant monopole and quadrupole resonances excitation 8−17184
- ^{181}Ta(γ,γ′)^{181}Ta, elastic and Raman scatt. at 8.5-11.4 MeV, GDR parameters 8−587
- ^{95}Tc, high momentum states band structs. obs. in (α,2nγ) 8−33109
- ^{118}Te, produced in ^{82}Se+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
- ^{124}Te, giant multipole reson. fragmentation over two-phonon states in spherical nuclei 8−575
- ^{44}Ti, yrast states as α-particle cluster states 8−33114
- ^{48}Ti, (A+2)particles-2 holes excitations, interaction renormalisation 8−29375
- ^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S′γ), EM props. of ground state rot. band 8−8726
- ^{232}U→^{212}Pb decay chain, obs. of collective states fed by weak α-transitions 8−8786
- ^{233}U(d,d′), multipolarities and reduced transition probabilities 8−17215
- ^{235}U(d,d′), 13.1 MeV multipolarities and reduced transition probabilities 8−17215
- ^{238}U, ground rotational band level energies calc. 8−45996
- ^{238}U, microscopic calc. of high-spin rot. states 8−8730
- ^{238}U, negative parity band crossing in even-even nuclei 8−21488
- ^{48}V, K$^{\pi}$=4^{-} rotational band 8−12944
- W, produced in (^{16}O,xn) 8−37371
- ^{174}W, decoupled two-quasiparticle bands, backbending 8−4890
- ^{179}W, backbending, high spin isomer decay 8−45997
- Xe isotopes, microscopic dynamic calc. of collective states 8−17075
- ^{124}Xe, energy level scheme, ^{124}Cs decay 8−13033
- ^{89}Y(e,e′), 92.5 MeV, giant reson. and bound collective states 8−13070
- Yb, A=163, 165, 167, backbending of rotational bands 8−8728
- Yb, A=172,174,176, Mossbauer effect in Yb cpds., appl. of in-beam implantation method 8−25372
- ^{161}Yb, produced in (^{16}O, xn), γ-ray spectra, dipole moment in yrast cascade 8−37371
- ^{168}Yb, microscopic calc. of high-spin rot. states 8−8730
- Zn, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626
- Zn, even isotopes, effect of particle-vibr. coupling in nucl. struct. 8−12940
- ^{64}Zn, electron excitation of giant multipolar resonances *(Russian)* 8−8802

nuclear collective states and giant resonances continued
^{64}Zn, γ-ray spectroscopy and role of $g_{9/2}$ orbital 8−33142
^{64}Zn, quasi-rotational states populated in ^{51}V(^{16}O,p2nγ), lifetimes and effective population times 8−17140
^{64}Zn(γ, n)^{63}Zn, giant dipole reson. isospin splitting, reaction cross section *(Russian)* 8−46040
^{65}Zn, γ-ray spectroscopy and role of $g_{9/2}$ orbital 8−33142
^{90}Zr, giant multipole reson. fragmentation over two-phonon states 8−575
^{90}Zr(^{3}He,t)^{90}Nb, 130 MeV, giant Gamow-Teller resonance, T=4, T=5 components 8−46081
^{90}Zr(^{6}Li,^{6}Li′), 74 MeV, excitation of giant quadrupole reson. 8−8854
nuclear coupling, molecular *see molecular nuclear coupling*
nuclear decay schemes *see radioactive decay schemes*
nuclear decay theory
see also alpha decay theory; beta decay theory
composite exponential decay curve anal. 8−46241
highly excited nuclei, lifetime *(Russian)* 8−29430
low-energy nucl. physics, test of elementary particle theory 8−21361
unstable particles in elec. field 8−562
vertex constants *(Russian)* 8−33155
^{9}Be, molecular model, n and α-particle decay widths, charge form factors 8−46015
^{176m}Lu, electron capture meas. *(German)* 8−33153
^{33}S levels, excited by α-capture reactions 8−33124
nuclear deformation *see nuclear shape*
nuclear density
colliding nuclear slabs, density compression 8−642
compressibility of nuclear matter, density depend. of binding energy, hyperspherical functions method *(Russian)* 8−17093
Coulomb displacement energies and n-p density distribs. 8−17084
density matrix approx. 8−33128
nuclear density distrib., Glauber-Sitenko approx., fast hadron scatt. anal. *(Russian)* 8−25161
nuclear fireballs, break-up densities 8−8790
one-body density matrix determ. by iterative steepest descent approach, appl. to ^{20}Ne 8−17125
rapidly rotating nuclei, density distrib. 8−8734
statistical description of nuclear compound states, temp. Green's functions method *(Russian)* 8−17115
extended Thomas-Fermi density matrix 8−41658
Thomas-Fermi model of finite nuclei 8−8747
three nucleon clusters in nuclear matter, energy per particle density dependence 8−17112
two-particle density matrix, for U(3(n−1)) states with E_{min}+1 in nuclei with n≤16 8−41624
^{14}Ca(p,p), A=40, 42, 44, 48, 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{16}O(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
Pb, A=204,206,208, neutron density RMS radii determ. from (α,α) scatt. 8−17088
^{208}Pb, Thomas-Fermi model 8−8747
^{208}Pb(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{48}Ti(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{238}U(e,e′), scatt. from octupole band, HF calc. of intrinsic equilib. density 8−37333
nuclear electric moment
see also molecular nuclear coupling
E2 matrix calc., band mixing with several valence nucleons *(French)* 8−45994
exotic atoms, E2 and E4 nucl. moments from HFS, review 8−37265
intrinsic multipole moments in deformed nuclei, correls. effects 8−29385
orientation with combined elec. and mag interactions 8−41633
quadrupole pairing forces influence on backbending, cranked Hartree Fock Bogoliubov approach 8−29401
review of meas. 8−37266
short-range correlations and pseudopotentials, even-even isotopes, Hartree Fock Bogoliubov method 8−535
transitional nuclei, ang. momentum projected quasiboson states 8−41637
^{27}Al, low lying states, band mixing effects, quadrupole moment 8−490
^{27}Al(α,α′), 145 MeV, excitation energy anal., octupole strength conc. 8−21584
^{29}Al, mag. moment quadrupole coupling const. β-ray detected NMR in Al$_2$O$_3$ cryst. 8−37267
Ba isotopes, ang. momentum projected quasiboson states 8−41637
Cd, quadrupole moments of first excited states of even isotopes 8−17099
^{a}Cd, static quadrupole moments determ. for A=111, 113, 115 8−37281
^{140}Ce, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097
^{133}Cs, quadrupole interaction of 81 keV state in Te 8−48088
^{161}Dy, E0, E2 and E4 charge moment determ., using muonic atoms 8−21490
^{163}Dy(α,α′), E2 and E4 transition moments, rotational states 8−41740
^{166}Er, Coulomb excitation with ^{4}He and ^{16}O ions 8−8839
^{167}Er(α,α), E2 and E4 transition moments, rotational states 8−41740
^{19}F, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
Ge, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626
^{2}H, quadrupole moment and percentage D state lower bounds 8−37286
^{3}H, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^{3}He, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^{4}He harmonic oscillator sum rules for photonuclear reactions, dipole moments, E1 transitions 8−41692
^{198}Hg, static quadrupole moment of 1st excited state 8−17095
^{132}I isotope, doubly odd, quadrupole moments, PAC meas. 8−37280
Mo complex, ^{97}Mo and ^{95}Mo nuclear elec. quadrupole moment, nuclear quadrupole double reson. spectra 8−10802
^{23}Na, band mixing, E2 and M1 matrix elements *(French)* 8−45994
^{23}Na, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
nuclear electric moment continued
^{21}Ne, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{58}Ni, giant electric resonances, study of ^{54}Fe(α,γ)^{58}Ni 8−41739
^{60}Ni, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097
^{a}Os, A=186, 188, 190, 192, electromagnetic moments from muonic X-rays 8−12972
^{192}Os, muonic, dynamic hyperfine effect, model independ. anal. 8−22057
^{192}Os(^{12}C,^{14}C)^{190}Os, 70 MeV, shape transition effect on quadrupole transfer strength 8−644
Pb, A=204,6, quadrupole moments of first excited state meas. 8−21491
Pd, quadrupole moments of first excited states of even isotopes 8−17099
^{102}Pd, meas. of Q(2_1^+) by reorientation precession technique 8−12971
^{104}Pd, meas. of Q(2_1^+) by reorientation precession technique 8−12971
^{105}Pd muonic X-rays, nuclear charge parameters, quadrupole moments 8−29377
Re, A=183, 184, 186, 188, nuclear quadrupole alignment in Re single cryst. at low temp. 8−48091
^{183}Re, elec. quadrupole moment of 514 Nilsson state, TDPAC meas. 8−37276
Ru, quadrupole moments of first excited states of even isotopes 8−17099
S6, A=120, 122, 3^+ isomeric states quadrupole moments, (p,n) excited, TDPAD method 8−41635
^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S′γ), EM props. of ground state rot. band 8−8726
^{238}U(^{136}Xe, ^{136}Xe), multiple Coulomb and nucl. excitation 8−21603
^{238}U(^{238}U, ^{238}U), multiple Coulomb and nucl. excitation 8−21603
V isotopes, A=47-51 8−25114
W isotopes, A=182, 184, 186, Coulomb excitation with ^{4}He and ^{16}O ions 8−8839
W, reorientation meas. quadrupole moment determ. 8−12968
Zn, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626
nuclear electric shielding *see nuclear screening*
nuclear electromagnetic transitions *see nuclear energy level transitions*
nuclear electron capture
see also beta-decay
laser spectroscopic techniques involving atom, mol. excited states, book contrib. 8−9212
semi-leptonic weak interactions 8−555
^{106}Ag^{m}, L/K ratios, Q-value 8−29426
^{244}Am decay, relative probability of electron capture 8−17153
^{37}Ar, double internal bremsstrahlung in electron capture, ang. correl. meas. 8−25157
^{131}Ba, L/K and M/L capture ratios 8−29425
^{7}Be→^{7}Li, total electron capture decay energy from inner bremsstrahlung spectrum, student experiment 8−24611
^{109}Cd, LX-, LX-coincidences during decay 8−17149
^{109}Cd nuclear transformation rate meas. using 4π proportional counter 8−21826
Cr, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Cu, K_β/K_α following K-electron capture and X-ray excitation 8−13031
^{64}Cu, autoionisation of K-shell following β-decay 8−13029
^{252}Es, half-life, γ-ray decay obs. 8−4914
Fe, K_β/K_α following K-electron capture and X-ray excitation 8−13031
^{55}Fe β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{71}Ge, energy release accompanying electron capture 8−17148
^{71}Ge, LX-, LX-coincidences during decay 8−17149
^{54}Mn, electron-capture decay, K X-ray emission rate determ. 8−21530
^{92}Nb, half life determ. by gamma spectroscopy, comparison of ^{92}Nb, ^{94}Nb activities and abundances 8−29423
^{237}Pu , half-life determ. by gamma counting in NaI(Tl) 8−8775
^{145}Sm, electron capture decay to ^{145}Pm, γ-transition decay rate and intensities 8−13030
^{145}Sm, electron capture decay, internal bremsstrahlung 8−13035
^{85}Sr, decay to ^{85}Rb, two-quantum γ-γ decay of 514 keV excited state 8−13009
Ti, K_β/K_α following K-electron capture and X-ray excitation 8−13031
V, K_β/K_α following K-electron capture and X-ray excitation 8−13031
^{260}X$_{105}$, prod., L X-ray spectra, decay 8−8780
Xe, K X-ray energy shifts following electron capture beta decay, role of nucl. hyperfine struct. 8−5166
^{127}Xe decay, absolute gamma-ray intensities 8−548
^{88}Y solution, standardisation using efficiency extrapolation method, β-γ coincidence meas. 8−21832
Zn, K_β/K_α following K-electron capture and X-ray excitation 8−13031
nuclear emulsions *see nuclear track emulsions*
nuclear energy *see nuclear power*
nuclear energy level lifetimes
^{154}Er, high-spin states 8−29373
charge plunger technique, nuclear lifetime meas. 8−29698
fission lifetime distribution and probability estimates 8−659
fp-shell nuclei, high-spin states 8−12946
plunger device for in-beam meas. of nuclear lifetimes, tested on ^{22}Na and ^{153}Dy 8−13375
^{161} Dy, in Gd$_2$O$_4$, and Gd, TDPAC meas. 8−10809
^{111}Ag, 376.7 keV level lifetime, shape coexistence, γ-branching 8−551
^{203}Bi high spin states from ^{203}Tl(α,4n), lifetimes meas. 8−29485
^{56}Co levels populated in ^{58}Ni(d,αγ), 7 MeV, mean lifetimes 8−4950
Dy, studied via ^{164}Dy(^{32}S,^{32}S′γ), recoil distance lifetimes of ground state bands 8−8774
^{170}Er, studied via ^{170}Er(^{32}S,^{32}S′γ), recoil distance lifetimes of ground state bands 8−8774
^{52}Fe, low-lying excited states, ^{50}Cr(^{3}He,nγ)^{52}Fe reaction 8−4952
^{58}Fe high spin states from ^{55}Mn(d,pγ), decay props., γ-γ coincidence 8−21515
Ga, A=66, 68 isomeric state from ^{56}Fe+^{13}C and ^{56}Fe+^{15}N reactions, lifetimes, g-factors 8−33147
Gd(^{35}Cl,^{35}Cl′γ), A=154, 6, 132-43 MeV, lifetime meas. of high spin states 8−13140
^{146}Gd, 3^- 1579 keV first excited state 8−41670
Ge, A=68, 70, lifetime meas. by DSAM, using (α, 2nγ) reaction at E_α=30 MeV 8−8773
^{68}Ge, excited states populated in ^{58}Ni(^{12}C,2p), spins and parities of levels 8−13020

nuclear energy level lifetimes continued
^{172}Hf rotation bands from ^{160}Gd(^{16}O,4n), high spin states, halflives 8-25217
Hg, A=199, 197, 5/2^{-} state halflife and mag. moments 8-506
^{184}Hg$\rightarrow$^{184}Au decay, energy levels and lifetimes *(French)* 8-41661
^{41}K, l-forbidden M1 decay from 1st excited state 8-13024
^{54}Mn, excited states populated in ^{51}V(α,nγ), Doppler shift attenuation mesa. of lifetimes 8-17141
^{99}Mo, short lived isomers from photonuclear reactions, internal conversion coeffs. 8-37308
^{14}N, DSA lifetimes determ. from exptl. stopping powers 8-17142
^{14}N unbound 4_1^+, 5_1^+, 3_2^+ states from ^{13}C(p,γ), lifetimes, branching ratios 8-25184
^{21}Na, mag. moment and lifetime of first excited state determ. 8-550
^{21}Na, produced in ^{2}H(^{20}Ne,nγ)^{21}Na energy level lifetime 8-41631
Nb, A=90, 92, short lived isomers from photonuclear reactions, internal conversion coeffs. 8-37308
^{91}Nb, struct. anal. from ^{91}Zr(p,nγ) at 3.5-4.8 MeV 8-13011
^{90m}Nb, decay rate perturbation by implantation in metals 8-21524
^{21}Ne, mag. moment and lifetime of first excited state determ. 8-550
^{21}Ne*, produced in ^{2}H(^{20}Ne,p)^{21}Ne*, 351 keV $^{5}/_{2}{}^{+}$ state lifetime and mag. moment 8-41631
^{22}Ne, lowest 4^{+} state lifetime meas. via Doppler shift technique 8-37307
^{22}Ne(4_1^+) from ^{4}He (^{19}F,pγ), lifetime meas. by high vel. coincidence DSA method 8-33148
^{15}O, nucl. g-factor and lifetime of 5.24 MeV 5/2^{+} level 8-37269
^{101}Pd, level struct. obs. in ^{101}Ag β-decay 8-37311
^{147}Pm, level struct. via ^{148}Nd(p,2nγ) 12.1-20.2 MeV 8-510
^{192}Pt 3^{+} and 4_1^+ states from ^{192}Ir β decay, lifetime meas. by β-γ coincidence 8-25153
^{101}Ru, short lived isomers from photonuclear reactions, internal conversion coeffs. 8-37308
Sb, A=115, 117, 11/2^{-} isomeric states, half-life, and g-factor 8-33122
^{43}Sc, g-factor of 3/2^{+} hole state meas. in (α,p) react. 8-21492
^{27}Si, γ-branchings and mixing ratios determ. from ^{24}Mg(α,nγ) 8-17224
^{152}Sm(^{35}Cl,^{35}Cl$'\gamma$), 132-43 MeV, lifetime meas. of high spin states 8-13140
Sn(^{16}O, 4nγ), 76 MeV, lifetimes of yrast states of even Ce nuclei 8-21589
^{149}Tb, lifetimes of low-lying levels *(Russian)* 8-46027
Tc, A=98, 100, 101, short lived isomers from photonuclear reactions, internal conversion coeffs. 8-37308
^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S$'\gamma$), EM props. of ground state rot. band 8-8726
^{238}U(p,nf), multiple scatt. effect due to filling in of blocking patterns 8-21617
^{50}V excited states populated in ^{42}Ti(α,pγ), lifetimes 8-21583
^{118}Xe, decay investig. using mass separator on-line with synchrocyclotron 8-17139
^{119}Xe, decay investig. using mass separator on-line with synchrocyclotron 8-17139
^{174}Yb, studied via ^{174}Yb(^{32}S,^{32}S$'\gamma$), recoil distance lifetimes of ground state bands 8-8774
^{64}Zn, populated in ^{51}V(^{16}O, p2nγ) 8-13019
^{64}Zn, quasi-rotational states populated in ^{51}V(^{16}O,p2nγ), lifetimes and effective population times 8-17140
^{65}Zn, high spin states obs. in (α,nγ), and (^{16}O,np) 8-13016
^{67}Zn, excited state lifetime, DSA meas. *(Russian)* 8-41668
^{67}Zn, high spin states obs. in (α,nγ) 8-13016
^{70}Zn, lifetime meas. by DSAM, using (α, 2nγ) reaction at E_α=30 MeV 8-8773
^{86}Zr, populated in ^{73}Ge(^{16}O,3n), lifetime meas. by Doppler shift method 8-25152
^{100}Zr, lifetime meas. of 331.3 keV 0_2^+ state 8-21523

nuclear energy level transitions
see also internal conversion; Mossbauer effect; nuclear branching and mixing ratios; nuclear energy level lifetimes
actinide fission, statistical anal. of gamma emission 8-17255
analogue states, dipole radiative decay 8-17135
biparametric γ-γ coinc. method, γ-transition intensity meas. *(French)* 8-29697
collective state excitation in high-energy proton interactions with spherical nuclei 8-17073
compound highly excited states populated in (n,α) *(Russian)* 8-29472
compound nucleus, giant resonances, force functions for partial E1-transitions 8-12985
Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8-25216
data sheets for A=184 nuclei 8-12948
data sheets for A=231, 235, 239 nuclei 8-12949
deformed even nuclei, level energies, γ transitions, moment of inertia, collective Hamiltonian 8-25133
deformed even-even nuclei, E2 transitions within ground state band 8-13012
E2 α_k conversion coeffs. for 2$^{+}\rightarrow$0^{+} transition, review 8-17143
eikonal approx., electron-oriented nucleus scatt., polarisation of e^{-}, nuclei and emitted γ rays 8-37331
even-even nuclei, microscopic anal. of low-lying collective states 8-12941
exchange current contribs. to parity violating elec. transitions 8-29383
heavy nuclei, β and γ transitions, effective coupling consts. 8-46025
hot nuclei with high angular momenta, γ-ray emission in heavy ion reactions, rot. bands 8-13133
laser spectroscopic technique involving atom, mol. excited states, book contrib. 8-9212
light nuclei, E1 transitions from reson. states, probability distribs. 8-13021
low energy positive parity spectra, $2\hbar\omega$ excitations, ang. momentum projected deformed particle-hole model calcs. 8-25119
medium nuclei, β and γ transitions, effective coupling consts. 8-46026
neutron excess nuclei, near equality of isoscalar and EM transition rates 8-8770
particle spectra line shapes after γ emission in flight 8-41665
rare-earth nuclei transition density, ang. momentum projection corrections to rot. model 8-500
(p,p$'$) and (e,e$'$) scattering, core polarisation, microscopic models, transitions, cross sections, form factors 8-604

nuclear energy level transitions continued
$\bar{p}p$ atom and $N\bar{N}$ nucl. interaction, radiative transitions 8-25065
^{105}Ag decay, γ-ray spectra, γ-γ coincidence and ang. correl. meas. 8-13007
^{110}Ag^{m} cascade decay, γ-γ linear polarisation direction correls., Ge detectors *(Japanese)* 8-41903
^{111}Ag, obs. in ^{111}Pd^{g,m} β-decay 8-541
^{26}Al, isoscalar and isovector E2 transition matrix elements 8-25148
^{27}Al, analogue-antianalogue M1 transitions, nucl. shape change influence 8-13006
^{27}Al(e,e$'$), transition widths, multipolarity assignment DWBA calc. 8-13068
^{46}Ar decay, gamma-ray spectra meas., half-life determ. 8-21513
Ar(e,e$'$), A=36, 40, 65 to 115 MeV, low lying level struct., lifetimes 8-8798
^{a}Au, A=193-199, positive parity states, particle-asymmetric rotor description 8-46005
^{187}Au energy states from ^{187}Hg decay, parities γ-spectra, triaxial nuclear deform. *(French)* 8-33143
^{194}Au decay scheme, γ-spectrum, low-intensity transitions and level energies of ^{194}Pt 8-13003
^{196}Au, studied via ^{197}Au(n,2n), isomeric cross-section ratio and spin-cut-off factor 8-13096
^{129}Ba, excitation and props. of high-spin levels using ^{120}Sn(^{12}C,3nγ) 8-17104
^{135}Ba(α,α'), 8-10 MeV Coulomb excitation, reduced E2 transition probabilities 8-13127
^{8}Be, ΔT=1 γ-decay from 16.6-16.9 MeV states 8-8771
^{10}Be, form. in ^{11}B(γ,p) reaction, 18 to 31 MeV, photoproton spectra and ang. distrib., excited state transitions 8-13056
^{207}Bi, decay, time differential perturbed ang. γ-γ correl. meas. 8-17134
^{209}Bi, effect of pairing modes in multiplet struct. 8-12973
^{80}Br, study of excited states from ^{79}Br(n,γ) and ^{80}Se(p,nγ) *(French)* 8-29393
^{82}Br, study of excited states from ^{82}Se(p,nγ) and ^{81}Br(n,γ) *(French)* 8-29393
^{12}C, EM and allowed weak transitions, improved impulse approx. treatment 8-41662
^{12}C$_{2+}$ spin alignment using γ-decay in flight in ^{16}O(^{12}C,^{12}C$_{2+}$)^{16}O and ^{12}C(^{16}O,^{12}C$_{2+}$)^{16}O interactions 8-41767
^{12}C(p,d)^{11}C, 700 MeV, transitions confirm multistep processes 8-46110
^{12}C(π^{+},d)^{10}C, transitions to low lying states in ^{10}C 8-46110
^{12}C(π^{+},p)^{11}C, 49.3 MeV, transitions confirm multistep processes 8-46110
^{13}C, ΔT=0,1 E1 or M2 population of isospin splitting of giant reson. 8-577
^{17}C populated in ^{48}Ca(^{18}O, ^{17}C), mass excess, low lying level struct. 8-8744
^{14}Ca, A=40,42,44,48, E0 matrix elements determ. from (e,e$'$) scatt. 8-33141
^{40}Ca(γ,γ), 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8-13059
^{43}Ca high spin positive parity states, struct., from ^{40}Ar(α,nγ) 8-46025
Cd, isotopes A=109, 106, 105, 104, high spin states excited by (α,xnγ) *(French)* 8-29394
^{107}Cd, heavy ion nucl. alignment, recoil in vac., time-differential meas. 8-37304
^{111}Cd, pionic, E2 nuclear resonance effects 8-29868
^{112}Cd, kaonic, E2 nuclear resonance effects 8-29868
Ce band structures populated in ^{116,118}Sn(^{16}O,3n), high spin levels, yrast cascade 8-8842
Ce isotopes, neutron rich, decay properties 8-13032
^{140}Ce, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8-25097
^{35}Cl(n,γ)^{36}Cl, E1 and M1 radiative strength functions 8-4940
^{37}Cl, in-beam γ-ray spectroscopy via ^{3}H(^{35}Cl,pγ) 8-13013
^{59}Co, radiative transitions from unbound states obs. in neutron inelastic scatt. *(Russian)* 8-41664
Cr, A=48-52, effective charges and E2 transitions in 1f-2p shell nuclei 8-544
^{123}Cs, decoupled band obs. by in-beam γ-ray spectra of ^{115}In(^{12}C,4n) 8-21520
^{133}Cs, populated in (n,n$'\gamma$) reaction, level scheme and deexcitation 8-13004
^{59}Cu, analogue resons. excited in ^{58}Ni(p,γ), γ-decay 8-13005
^{60}Cu levels from ^{60}Ni(^{3}He,t) 8-46079
^{62}Cu, yrast states obs. in ^{60}Ni(α,pnγ) and ^{63}Cu(p,pnγ) 8-12945
^{63}Cu, decay of analogues, γ-ray ang. distribs. and spins of resons. 8-13002
^{162}Dy, intraband transition rates in gamma vibr. bands 8-45992
Dy(α,α'), A=156,8, E=12-13 MeV, E2, E4 transition matrix elements determ. 8-33202
Er, A=161,162, high ang. momentum states from Nd+^{16,18}O, γ decay modes from multiplicity meas. 8-29419
^{163}Er, excited states populated in ^{163}Tm decay 8-17146
^{166}Er, Coulomb excitation with ^{4}He and ^{16}O ions 8-8839
^{168}Er, intraband transition rates in gamma vibr. bands 8-45992
Er(α,α'), A=162, 4, E=12-13 MeV, E2, E4 transition matrix elements determ. 8-33202
^{18}F, 1.08 MeV γ transition, circular polarisation affected by neutral weak currents 8-41663
^{18}F, 5603 keV level, isospin mixing via (α,γ) and (p,γ) reactions 8-543
^{19}F, transition probabilities and multipole moments between states calc. by generator coordinate method 8-13022
Fe, A=52, 4, effective charges and E2 transitions in 1f-2p shell nuclei 8-544
^{56}Fe, 6^{+} doublets populated in heavy-ion compound reactions, side feeding 8-13014
^{56}Fe, radiative transitions from unbound states obs. in neutron inelastic scatt. *(Russian)* 8-41664
^{146}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8-41666
^{147}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8-41666
Gd(α,α'), A=154,156,158,160, E2 and E4 reduced matrix elements 8-29490
^{71}Ge, levels, studied via ^{68}Zn(α,nγ), 8 to 10 MeV, comparison with coupling model calcs. 8-8742

nuclear energy level transitions continued
- ^{4}He harmonic oscillator sum rules for photonuclear reactions, dipole moments, E1 transitions 8-41692
- ^{172}Hf, decoupled two-quasiparticle bands, backbending 8-4890
- Hf(α,α'), A=176,8,180, E2 and E4 reduced matrix elements 8-29490
- ^{180}Hg, $T_{1/2}$=3s decay chain, on-line γ-ray spectroscopy 8-13034
- ^{184}Hg→^{184}Au decay, energy levels and lifetimes *(French)* 8-41661
- ^{197}Hg energy levels from ^{195}Pt(α,2n), γ and conversion electron spectra, spins, parities 8-25149
- ^{165}Ho, electron-oriented nucleus scatt., eikonal approx. calc. 8-37331
- I energy levels, collective excitations, spin,parity, populated in ^{121,123}Sb(α,2n), γ spectra 8-4891
- ^{127}I γ cascade following ^{127}Te decay, 360.3-57.6 keV γ-γ directional correl. 8-25151
- ^{108}In, level scheme determ. from ^{108}Sn decay and ^{108}Cd(p,n) 8-41636
- ^{111}In, populated in ^{111}Cd(p,nγ), γ-ray spectra, level scheme 8-13083
- ^{115}In, K-shell positron annihilation, excitation of nucleus *(Russian)* 8-33171
- ^{181}Ir, γ-ray spectra, half-life, decay scheme 8-41672
- ^{40}K excitation energy, γ decay, of lowest T=2 state populated in ^{40}Ar(p,n) 8-8769
- ^{41}K, l-forbidden M1 decay from 1st excited state 8-13024
- ^{81}Kr low lying states populated in ^{81}Br(p,nγ), γ spectra, γ-γ coincidences 8-25195
- ^{140}La, s- and p-wave resonances, obs. in La(n, γ) 8-17186
- ^{140}La, spectra from ^{139}La(n, γ) 8-17185
- ^{7}Li(K^{-},$\pi^{-}\gamma$), hypernuclear γ-ray line 8-37377
- ^{8}Li, form. in ^{11}B(n,α) reaction, 14.4 MeV, spectra and ang. distribs., recoil nucl. transitions 8-17193
- ^{176}Lu, reson. spins, secondary γ-transition intensity, from ^{175}Lu(n,γ) 8-21512
- ^{177}Lu, reson. spins secondary γ-transition intensity meas. in ^{176}Lu(n,γ) 8-21512
- ^{24}Mg, T=2 state props., obs. in ^{23}Na(p,γ)^{24}Mg reaction 8-8767
- ^{26}Mg, isoscalar and isovector E2 transition matrix elements 8-25148
- Mo, A=103-5, half-lives and γ-ray energies of short-lived isotopes following ^{235}U fission 8-17137
- ^{15}N, obs. of high spin states in ^{12}C(^{6}Li,t) and ^{12}C(^{6}Li, ^{3}He) 8-13015
- ^{15}N(e,e$'$), excitation of energy levels 9.7 to 14.7 MeV, 60-194 MeV, EM form factor meas. 8-25175
- ^{23}Na, transition probabilities and multipole moments between states calc. by generator coordinate method 8-13022
- ^{93}Nb(n,n$'\gamma$), 1.3-2.7 MeV, energy levels, decay scheme, de-excitation gammas 8-41710
- ^{97}Nb level structure from ^{97}Zr decay, spins, parities γ ang. correls. 8-29418
- ^{20}Ne, form. in ^{19}F(p,γ) reaction, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8-17191
- ^{20}Ne, from ^{16}O(α,γ), 10.27 MeV, first T=1,2^{+} state radiative width meas. rel. to analogue β-decays 8-549
- ^{21}Ne, transition probabilities and multipole moments between states calc. by generator coordinate method 8-13022
- ^{58}Ni, isovector M8 strength fragmentation, inelastic electron scatt. meas. 8-37305
- ^{60}Ni, aero-phonon, $4_1^{+}\rightarrow 2_2^{+}$ γ-ray transition 8-17136
- ^{60}Ni, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8-25097
- ^{15}O, obs. of high spin states in ^{12}C(^{6}Li,t) and ^{12}C(^{6}Li, ^{3}He) 8-13015
- ^{16}O(γ,γ), 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8-13059
- ^{17}O, ΔT=0,1 E1 or M2 population of giant reson. isospin splitting 8-577
- ^{196}Os, $T_{1/2}$ and partial decay scheme 8-21527
- ^{31}P, analogue-antianalogue M1 transitions, nucl. shape change influence 8-13006
- Pb, A=204,6, quadrupole moments of first excited state meas. 8-21491
- ^{208}Pb(p,p$'$), 40, 45 MeV, fine struct. in giant resonance region, collective dipole spin flip excitation 8-46056
- Pd, even-mass isotopes, collective model with deform., vibr., rot. energy levels, B(E2) ratios 8-17120
- ^{105}Pd, from decay of ^{105m,g}Ag 8-37306
- ^{145}Pm, form. in electron capture decay of ^{145}Sm, γ-transition decay rate and intensities 8-13030
- ^{149}Pm, shape factor anal. of β-transitions 8-21532
- ^{152}Pm decay, β and γ rays, spins, half lives, ^{152}Sm levels 8-542
- ^{146}Pr→^{146}Nd, decay scheme and energy levels, log ft values 8-4912
- ^{191}Pt energy levels, γ and conversion electron spectra, spins, parities 8-25149
- ^{194}Pt+^{136}Xe, multiple Coulomb excitation, E2 transition probabilities of ^{194}Pt 8-4961
- ^{85}Rb, single-particle estimate of γ-γ transition probability 8-13023
- ^{85}Rb, two-quantum γ-γ decay of 514 keV excited state 8-13009
- ^{177}Re, populated in decay of Os isotopes, lower excited state obs. 8-17145
- ^{179}Re, populated in decay of Os isotopes, lower excited state obs. 8-17145
- ^{99}Rh γ-ray cascade, obs. in ^{90}Zr+^{12}C, and ^{91}Zr+^{11}B 8-41762
- ^{105}Ru, γ-γ ang. correl. meas., spin and γ-ray mixing ratios 8-21516
- ^{32}S, decay of reson. states populated in ^{31}P(p,γ) 8-13085
- ^{43}Sc, resonance struct obs. in ^{42}Ca(p,γ)^{43}Sc below 2.75 MeV 8-13072
- ^{46}Sc, s- and p-wave radiative widths obs. in ^{45}Sc(n, γ) 8-17187
- ^{75}Se decay, gamma transitions 8-13008
- ^{83m}Se, decay scheme refinement, ^{83}Br levels 8-17147
- ^{26}Si, isoscalar and isovector E2 transition matrix elements 8-25148
- ^{28}Si, shell model and statistical spectroscopic anal. 8-29390
- ^{152}Sm levels populated in ^{152}Pm decay, γ spectra 8-542
- Sn, photoactivation by 42 MeV bremsstrahlung, gamma transition energies and line intensities 8-13057
- ^{122}Sn, kaonic, E2 nuclear resonance effects 8-29868
- ^{182}Ta, decay scheme, conversion electron spectra, K-line transitions 8-13025
- ^{96}Tc low lying states, level scheme, parities, from conversion electron, γ spectra 8-46024
- ^{228}Th decay, γ-ray and internal conversion intensities 8-41669
- ^{228}Th, precise γ-ray energy meas. with Ge(Li) detectors 8-13376
- ^{230}Th, precise γ-ray energy meas. with Ge(Li) detectors 8-13376
- Ti, A=44-50, effective charges and E2 transitions in 1f-2p shell nuclei 8-544
- ^{163}Tm, high spin rot. levels, studied via ^{165}Ho(^{3}He,5n) and ^{165}Ho(α,6n) reactions 8-8722

nuclear energy level transitions continued
- ^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S$'\gamma$), EM props. of ground state rot. band 8-8726
- ^{232}U→^{212}Pb decay chain, obs. of collective states fed by weak α-transitions 8-8786
- ^{233}U(d,d$'$), multipolarities and reduced transition probabilities 8-17215
- ^{235}U, K-shell positron annihilation, excitation of nucleus *(Russian)* 8-33171
- ^{235}U(d,d$'$), 13.1 MeV multipolarities and reduced transition probabilities 8-17215
- ^{238}U, multipolarities involved in electrodisintegration 8-590
- V, A=47-51, effective charges and E2 transitions in 1f-2p shell nuclei 8-544
- V isotopes, A=47-51 8-25114
- ^{51}V, levels populated in 200 MeV (π,$\pi'\gamma$) 8-21611
- W isotopes, A=182, 184, 186, Coulomb excitation with ^{4}He and ^{16}O ions 8-8839
- ^{174}W, decoupled two-quasiparticle bands, backbending 8-4890
- ^{118}Xe, decay investig. using mass separator on-line with synchrocyclotron 8-17139
- ^{119}Xe, decay investig. using mass separator on-line with synchrocyclotron 8-17139
- ^{168}Yb(α,α'), 12-13 MeV, E2, E4 transition matrix elements determ. 8-33202
- ^{172}Yb, gamma ray spectra, β-decay of ^{172}Hf and ^{172}Lu 8-33140
- Zn, even isotopes, effect of particle-vibr. coupling in nucl. struct. 8-12940
- ^{63}Zn, low-lying negative parity states anal. by ^{60}Ni(α,nγ) ^{63}Zn 8-21521
- ^{64}Zn, γ-ray spectroscopy and role of $g_{9/2}$ orbital 8-33142
- ^{65}Zn, γ-ray spectroscopy and role of $g_{9/2}$ orbital 8-33142
- ^{65}Zn, high spin states obs. in (α,nγ), and (^{16}O,np) 8-13016
- ^{67}Zn, high spin states obs. in (α,nγ) 8-13016
- ^{90}Zr, anal. of spectrum of transitions to low-lying 2^{+} states 8-17138
- ^{91}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8-17190
- ^{92}Zr, gamma-gamma directional correl. study 8-29422
- ^{93}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8-17190
- ^{95}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8-17190
- ^{97}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8-17190

nuclear energy levels

see also isobaric analogue states; nuclear collective states and giant resonances; nuclear resonances
- ^{90}Y, 1^{+} and 0^{+} states populated in ^{88}Sr(^{3}He,p) 8-25116
- A=18 shell model spectra and 3 nucleon force 8-25124
- A>228 odd mass nuclei, single particle states, nuclear deform. 8-12952
- Coulomb displacement energies, charge and mass number depend. in isotope shifts 8-8729
- Coulomb displacement energies and n-p density distribs. 8-17084
- Coulomb energy differences, Cottingham formula appl. 8-37256
- data sheets for A=184 nuclei 8-12948
- data sheets for A=231, 235, 239 nuclei 8-12949
- decoupled bands, perturbative anal. level energies 8-41623
- deep nuclear levels, practicability of kaon probe 8-25237
- deformed even nuclei, level energies, γ transitions, moment of inertia, collective Hamiltonian 8-25133
- deformed nuclei, gaps in single-particle level scheme and backbending 8-17072
- deformed nuclei, one-particle state fragmentation, general regularities *(Russian)* 8-494
- deformed single-particle basis for pot. energy surfaces and spectra 8-8735
- density of states of spherical nuclei calc. 8-513
- direct nucleon transfer reactions, model-independent spectroscopic information, use of spectroscopic factor and vertex constants 8-17168
- Fermi surface in double magic nuclei, self consistent description *(Russian)* 8-33120
- field theory, renormalisation of single particle states 8-24926
- fission lifetime distribution and probability estimates 8-659
- high-spin states in N=28 nuclei 8-29407
- hypernuclei, produced by strangeness exchange reactions, level structure 8-17130
- hypernuclei, symmetry classification for excited states, appl. to Be isotopes *(Chinese)* 8-25144
- isospin mixing in nuclei, matrix elements explained by Coulomb interaction 8-37264
- level density with schematic forces, appl. to ^{116,117}Sn 8-41639
- mean field theory of nuclear dynamics, time depend. 8-12986
- microscopic model, wobbling motion in fast rotating nuclei 8-21505
- multipole excitation of doubly-open shell spherical nuclei 8-21507
- N=29 nuclei, effective 2-body interactions and level spectra 8-41647
- neutron level spacing distrib., nonstatistical effects *(Russian)* 8-41625
- neutron strength function, spin depend. *(Russian)* 8-17069
- non-normal parity states, 1p shell nuclei, 1$\hbar\omega$ spectra 8-12977
- nucleon, bound in harmonic oscill. pot., EM struct. and binding energy 8-8732
- one-hole states, in double magic nuclei, form factors, spectroscopic factors, centroid energies 8-17090
- projection of wave functions on states with definite ang. momentum 8-12590
- propagation by pairing and surface excitations, nuclear states description 8-46007
- rare earths, pairing energy, single particle levels and interaction matrix elements 8-8721
- sd shell nuclei, effective interaction between nucleons 8-17117
- self-consistent wave functions, oscillatory parameters *(Russian)* 8-21506
- shell model calcs. A=24, mass, spectra and β decay 8-4903
- single particle realistic level schemes, nuclear shell correction energies, temp. smearing method 8-17118
- single particle states in 1f 2p shell, energy calcs. 8-25098
- single-particle density, decomposition in time-even and time-odd parts 8-17074
- single-particle energy levels, shell-model anal. 8-17071

nuclear energy levels continued
spherical nuclei, low lying states, effects of particle-particle channel residual interaction 8−12978
spin, parity and spectroscopic factors of excited states populated in ^{24}Mg(d,p) 8−8826
translational nuclei, ang. momentum projected quasiboson states 8−41637
UPEAK spectral decomposition routine 8−32798
Δ(1236), virtual isobar admixtures in complex nuclei, OBE approx. 8−17107
(n,2n) reactions at 14.8 MeV, isomeric ratios in $107<A<143$ mass range 8−13073
N$\bar{N}$ quasinuclear systems, review 8−25065
p$\bar{p}$ atom, nuclear energy level shift *(Russian)* 8−37295
^{159} Tb, 58 keV level, nuclear reson. fluorescence 8−33121
^{105}Ag, high spin states γ-single spectra, γγ coincidence, excitation functions, ang. distrib., polarisation meas. 8−21519
^{108}Ag, form. in ^{107}Ag(n,γ) reaction, isomeric level scheme at 215.38 keV 8−12975
^{24}Al, low-lying 1^+ state anal. in ^{24}Mg(^{3}He,t) 8−29484
^{26}Al, coherence widths, level density param. and effective moment of inertia 8−37360
^{28}Al, ang. correls. and branching ratios meas. using (^{3}He,pγ) at 11-15 MeV 8−13129
^{28}Al, spectroscopic meas. in ^{30}Si(d,α) react. with polarised deuterons 8−41728
^{38}Ar high spin states from ^{27}Al(^{14}N,2pn), decay scheme 8−25232
^{39}Ar low lying states from ^{37}Cl(α,d), spectra, ang. distribs., spins 8−25212
Ar(e,e′), A=36, 40, 65 to 115 MeV, low lying level struct., lifetimes 8−8798
^{78}As, level struct. determ. in ^{80}Se(d,α) at 16 MeV 8−8827
^{185}Au, high-spin states anal. $h_{9/2}$ and $i_{13/2}$ bands 8−25117
^{187}Au energy states from ^{187}Hg decay, parities γ-spectra, triaxial nuclear deform. *(French)* 8−33143
^{9}B, energy levels anal. in ^{9}Be(p,pn)^{8}Be 8−21550
Ba isotopes, ang. momentum projected quasiboson states 8−41637
^{129}Ba, excitation and props. of high-spin levels using ^{120}Sn(^{12}C,3nγ) 8−17104
^{7}Be excited state from ^{4}He(^{3}He,^{3}He) polarised scatt. study 8−46078
^{8}Be, mixed T=0 and 1 states, isospin mixing matrix elements 8−37289
^{9}Be(p,pn)^{8}Be, kinematically complete exam. of ^{9}B and ^{9}Be levels 8−21550
^{203}Bi high spin states from ^{203}Tl(α,4n), lifetimes meas. 8−29485
^{209}Bi, effect of pairing modes in multiplet struct. 8−12973
^{209}Bi(γ,γ′), 7.28, 7.63 MeV, energy levels anal. 8−13058
^{80}Br, level struct. determ. from thermal (n,γ) meas. 8−41667
^{80}Br, study of excited states from ^{79}Br(n,γ) and ^{80}Se(p,nγ) *(French)* 8−29393
^{82}Br, level struct. determ. from thermal (n,γ) meas. 8−41667
^{82}Br, study of excited states from ^{81}Br(n,γ) and ^{82}Se(p,nγ) *(French)* 8−29393
^{83}Br, levels assignment, ^{83m}Se decay scheme obs. 8−17147
^{12}C, 3-α struct. in boson model 8−17124
^{12}C excited states between 29 and 34 MeV, obs. in ^{10}B(d,αα)α, and ^{9}Be(^{3}He,αα)α 8−21494
^{12}C, isospin mixing of 1^+ states 8−4898
^{12}C, mixed T=0 and 1 states, isospin mixing matrix elements 8−37289
^{12}C, spin flip excitation of 1^+ T=0 state in (p,p′) 8−8817
^{12}C struct. calcs. via 3α system resonating group method 8−531
^{12}C structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{12}C(e,e′) excitation of 2^+ T=1 state at 16.11 MeV, radiative width, magnetisation density 8−25176
^{12}C(p,p′), pair decay of 7.65 MeV level meas. 8−29469
^{13}C, reson. struct. anal. from ^{13}C(γ,n_0)^{12}C 8−586
^{14}C, populated by ^{12}C(t,p)^{14}C, spin and parity of states near 10 MeV excitation in ^{14}C 8−37263
^{16}C, spectroscopy with ^{14}C(t,p)^{16}C at 3.02-6.1 MeV 8−613
^{17}C populated in ^{48}Ca(^{18}O, ^{17}C), mass excess, low lying level struct. 8−8744
Ca, neutron densities from 1 GeV proton scatt. 8−17087
^{40}Ca, 1^-, T=0 state at 6.95 MeV, isospin forbidden electroexcitation 8−25177
^{40}Ca, alpha transfer to 4p-4h states obs. in ^{36}Ar(^{6}Li,d) 8−21590
^{40}Ca, shell model anal. of ground state energy 8−29389
^{42}Ca 0^+ 4p-2h and 6p-4h configs. populated in ^{38}Ar(^{6}Li,d) 8−25220
^{43}Ca, four-particle one-hole states anal. by ^{41}K(α,d) 8−21580
^{43}Ca high spin positive parity states, struct., from ^{40}Ar(α,nγ) 8−46025
^{47}Ca, low-lying levels anal. in ^{48}Ca(d,t) reactions 8−13114
Ca(p,p′), 19 MeV, nuclear struct. anal. 8−17197
Cd, A=105 to 109, parity assignments from (^{16}O,xnγ) obs. 8−41630
Cd, even isotopes, effect of residual interaction in particle-particle channel on low-lying states 8−21503
^{113}Cd, level scheme from ^{113}Ag 5.3 h β-decay 8−46028
^{114}Cd proton hole states populated in ^{115}In(d,^{3}He), DWBA anal. 8−8829
^{115}Cd, level scheme from ^{115}Ag 20 min decay 8−46029
Ce band structures populated in ^{116,118}Sn(^{16}O,3n), high spin levels, yrast cascade 8−8842
Co, A=59,60, yrast decay scheme from ^{48}Ca+^{15}N(^{18}O) fusion-evaporation reactions 8−13154
^{56}Co, ang. correls. and branching ratios meas. using (^{3}He,pγ) at 11-15 MeV 8−13129
^{59}Co(e,e), mag. elastic scatt., radial distrib. of $1f_{7/2}$ proton orbit using cross sections 8−13067
^{60}Co low lying states from ^{57}Fe(α,pγ), spin constraints, γ mixing ratios 8−29487
^{60}Co low lying states struct., orbital ang. momentum, spectroscopic factors 8−29478
^{49}Cr energy levels, spins, parities, spectroscopic factors, from ^{50}Cr(τ,α) 8−33199
^{52}Cr levels populated in decay of ^{52}V, ^{52}Mu^{g} and ^{52}Fe→^{52}Mn→^{52}Cr 8−21529
Cs, A=119, 121, 123, 125, deformed $9/2^+$ proton hole states 8−41620
^{129}Cs, band struct., in-beam γ-ray spectroscopy after (γ,2n) reaction 8−4951
^{133}Cs, populated in (n,n′γ) reaction, level scheme and deexcitation 8−13004
nuclear energy levels continued
^{60}Cu, ang. correls. and branching ratios meas. using (^{3}He,pγ) at 11-15 MeV 8−13129
^{60}Cu levels from ^{60}Ni(^{3}He,t) 8−46079
^{62}Cu high spin states populated in ^{60}N+α, ^{63}Cu+p, ^{52}Cr+^{14}N, level scheme *(French)* 8−21496
^{63}Cu, paradoxical octupole-multiplet pattern 8−41617
^{156}Dy, prompt transitions multipolarities, γ and conversion electron spectra, energy level bands, spin, parity 8−8768
^{157}Dy, decoupled bands, perturbative anal. level energies 8−41623
^{159}Er, decoupled bands, perturbative anal. level energies 8−41623
^{162}Er, microscopic calc. of high-spin rot. states 8−8730
^{163}Er, excited states populated in ^{163}Tm decay 8−17146
^{166}Er, level population by radioactive decay of ^{166}Ho *(French)* 8−545
^{170}Er level struct. obs. in ^{170}Ho β^--decay 8−41675
^{149}Eu level structure populated in ^{150}Sm(p,2nγ), spin, parity 8−21561
^{16}F levels populated in ^{19}F(^{3}He,^{6}He) and ^{16}O(^{3}He,t) 8−17231
^{18}F, 5603 keV level, isospin mixing via (α,γ) and (p,γ) reactions 8−543
^{18}F, trinucleon cluster states, low lying negative parity states 8−29387
^{19}F, low-lying excited states calc. by generator coordinate method 8−12974
^{19}F, produced in ^{15}N(α,γ)^{19}F, 5.2 to 8.4 MeV, resonances and gamma decay schemes 8−37358
^{19}F, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{20}F, 4 to 6 MeV levels populated in ^{19}F(d,p) 8−25118
^{20}F, ang. correls. and branching ratios meas. using (^{3}He,pγ) at 11-15 MeV 8−13129
^{20}F energy levels populated in ^{14}N(^{7}Li,p), spin, parity 8−21596
Fe, A=59,60, yrast decay scheme from ^{48}Ca+^{15}N(^{18}O) fusion-evaporation reaction 8−13154
Fe isotopes A=53-58, spectroscopic calcs. using mass independ. effective interaction, yrast levels 8−41638
^{52}Fe, low-lying excited states, ^{50}Cr(^{3}He,nγ)^{52}Fe reaction 8−4952
^{56}Fe(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{56}Fe(n,n′γ), up to 14.6 MeV, radiation and neutron widths for highly excited levels *(Russian)* 8−605
^{146}Gd, 1579 keV state, assignment of isospin and parity, using γ-ray ang. distrib. 8−21489
^{146}Gd, 3^- 1579 keV first excited state 8−41670
^{150}Gd, vibr. levels anal. from ^{150}Tb decay 8−8772
^{156}Gd transitions from second $K^\pi=0^+$ band following ^{156}Eu decay, branching, mixing ratios 8−25150
Ge excited states from ^{72,74,76}Ge(p,t), spins, parities 8−25194
^{70}Ge, high-spin states anal. from γ-ray spectra of heavy-ion reactions 8−33146
^{71}Ge, levels, studied via ^{68}Zn(α,nγ), 8 to 10 MeV, comparison with coupling model calcs. 8−8742
^{74}Ge, 26 MeV levels from ^{75}As(d,^{3}He) 8−25112
^{2}H D-state, asymptotic normalisation 8−41653
^{4}H, cluster model, energy levels by interaction set anal. 8−25136
He, A=157, 159, 161, 163, single proton states, Dy(^{3}He,d) and Dy(α,t) reactions 8−489
He, A=3, 5, BE, level calcs. using new boson expansion to n-fermion problem 8−511
^{4}He isospin splitting of 1p-1h excitation, obs. in ^{3}H(p,p) 8−41622
^{174}Hf, microscopic calc. of high-spin rot. states 8−8730
Hg, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
^{197}Hg energy levels from ^{195}Pt(α,2n), γ and conversion electron spectra, spins, parities 8−25149
^{159}Ho, level scheme, γ-singles, conversion electron spectra via ^{159}Er decay 8−547
^{165}Ho(π^-,X), 175 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
I energy levels, collective excitations, spin,parity, populated in ^{121,123}Sb(α,2n), γ spectra 8−4891
I, odd-mass nuclei, $9/2^+$ bands, deformed states 8−17106
In, odd-mass isotopes, positive parity bands in deformed and spherical representation 8−21495
^{108}In, level scheme determ. from ^{108}Sn decay and ^{108}Cd(p,n) 8−41636
^{111}In, populated in ^{111}Cd(p,nγ), γ-ray spectra, level scheme 8−13083
Ir, A=193, 195, proton states, populated via Pt(t,α), A=194, 196 8−33123
^{39}K high spin states from ^{24}Mg(^{18}O, p2nγ), decay scheme 8−25232
^{40}K excitation energy, γ decay, of lowest T=2 state populated in ^{40}Ar(p,n) 8−8769
^{42}K, levels, studied by ^{44}Ca(d,α)^{42}K reactions, 11 MeV, DWBA analysis 8−8723
^{81}Kr low lying states populated in ^{81}Br(p,nγ), γ spectra, γ-γ coincidences 8−25195
^{87}Kr energy levels from ^{87}Br β-decay, delayed neutrons, high energy γ spectra 8−25155
Kr(p,p′), 51.9 MeV, low-lying octupole states anal. 8−21497
La, A=144-6, β-decay, γ-ray singles and coincidence meas. 8−4913
^{133}La, band struct., in-beam γ-ray spectroscopy after (^{3}He,3n) reaction 8−4951
^{135}La, band struct., in-beam γ-ray spectroscopy after (α,2n) reaction 8−4951
^{139}La(γ,γ′), 7.28, 7.63 MeV, energy levels anal. 8−13058
^{6}Li, levels anal. from ^{3}H(^{3}He,^{3}He), 20-33 MeV 8−17227
^{7}Li, ang. momentum eigenstates projection from two-centre generator coordinate model functions 8−12994
^{7}Li, two-centre molecule-like states, generator coordinate wave function projection 8−12995
^{174}Lu, populated by ^{176}Lu (p,t)^{174}Lu, energy levels and rotational bands 8−37346
^{175}Lu(π^-,X), 230 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{24}Mg, 6 MeV 4^+ state, configuration anal., electron scatt. form factors 8−25115
^{24}Mg, form. in ^{12}C+^{12}C reaction at 10.5 to 15 MeV, possible rot. band 8−13134
^{24}Mg, identification of 10^+ levels using ^{12}C(^{16}O,α) at 26.7 MeV 8−33119
^{25}Mg highly excited states from ^{24}Mg(d,p), fluctuation anal. 8−46071
^{25}Mg, low-lying excited states calc. by generator coordinate method 8−12974
^{26}Mg, spectroscopic factors, via ^{27}Al(n,d) 56.3 MeV 8−4935
^{14}N 9.13 MeV state, obs. in ^{13}C(p,γ) 8−41641

nuclear energy levels continued
^{14}N, meas. of nucl. g-factor of 5.11 MeV 2^- state by recoil distance technique 8−37268
^{14}N unbound 4_1^+, 5_1^+, 3_2^+ states from ^{13}C(p,γ), lifetimes, branching ratios 8−25184
^{15}N energy levels populated in ^{13}C(^{3}He,p), p ang. distrib. 8−21581
^{15}N low-lying states, obs. in (e,e′) scatt. 8−12976
^{15}N, spins of p-h states from analysing powers of (d,τ) reacts. 8−25111
^{21}Na, produced in ^{2}H(^{20}Ne,nγ)^{21}Na energy level lifetime 8−41631
^{22}Na, resonance levels obs. in ^{20}Ne(d,p_0) 8−46072
^{23}Na, low-lying excited states calc. by generator coordinate method 8−12974
^{23}Na, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{93}Nb(n,n′γ), 1.3-2.7 MeV, energy levels, decay scheme, de-excitation gammas 8−41710
^{93}Nb(n,n′γ), up to 14.6 MeV, radiation and neutron widths for highly excited levels *(Russian)* 8−605
^{145}Nd level scheme from ^{144}Nd(n,γ) 8−8823
^{147}Nd, energy levels anal. from ^{148}Nd(d,t)^{147}Nd 8−507
^{20}Ne, 0g orbit mixing via (e,e′), one-step forbidden transition anal. 8−493
^{20}Ne, [211] quartet state, by study of ^{19}F(p,α)^{16}O, 1.5 to 2 MeV 8−46006
^{20}Ne, configuration mixing and α-cluster transfer on ^{16}O 8−46004
^{20}Ne, highly excited α-unbound states, cluster model 8−634
^{21}Ne low lying states from ^{17}O(^{6}Li,d), weak coupling behaviour, ^{20}Ne+n 8−46100
^{21}Ne, low-lying excited states calc. by generator coordinate method 8−12974
^{21}Ne, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{21}Ne*, produced in ^{2}H(^{20}Ne,p)^{21}Ne*, 351 keV $^5/_2{}^+$ state lifetime and mag. moment 8−41631
^{57}Ni, studied via ^{54}Fe(^{6}Li,t)^{57}Ni, t-energy spectra and reaction mechanism 8−41756
^{58}Ni, charge density, single particle struct., using proton wave functions 8−45995
^{58}Ni, neutron densities from 1 GeV proton scatt. 8−17087
^{59}Ni, studied via ^{56}Fe(^{6}Li,t)^{59}Ni, t-energy spectra and reaction mechanism 8−41756
^{16}O, configuration mixing and α-cluster transfer 8−46004
^{16}O excited states near 15 MeV, R-matrix anal. of ^{15}N+p reactions 8−29460
^{16}O, isospin mixing anal. 8−8832
^{16}O, levels near 13 MeV via ^{15}N+p 0.9-1.25 MeV 8−509
^{16}O, mixed T=0 and 1 states, isospin mixing matrix elements 8−37289
^{16}O, spin-orbit coupling in relativistic Hartree model 8−8731
^{16}O structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{17}O valence energies, extended multiple scatt. approach to 2p1h system 8−29396
^{17}O(e,e), elastic and inelastic, cross sections, excited states, charge radii 8−46049
^{18}O, neutron deform. param. determ. from (π,π′) scatt. 8−29502
^{18}O, trinucleon cluster states, low lying negative parity states 8−29387
^{18}O+^{18}O, scatt. and neutron transfer reactions, excitation levels, recoil DWBA analysis 8−8837
^{19}O high spin states populated in ^{13}C(^{7}Li,p) 8−21595
^{a}Os, A=186, 188, 190, 192, electromagnetic moments from muonic X-rays 8−12972
^{193}Os, energy levels investig. using ^{192}Os(d,p)^{193}Os and ^{192}Os(n,γ)^{193}Os reactions 8−41642
^{32}P, ang. correls. and branching ratios meas. using (^{3}He,pγ) at 11-15 MeV 8−13129
^{32}P, spin-parity assignments from ^{34}S(d,α)^{32}P 8−17219
Pb, A=193, 5, 7, 9, high-spin states anal. by heavy ion reactions 8−21500
Pb, A=200, 202, 204, seniority four admixtures in low lying 0^+ states 8−8741
^{203}Pb, high-spin level struct. determ. from ^{202}Hg(α,3nγ) at 38.2 MeV 8−29489
^{206}Pb, level scheme including conversion electrons ≤40 eV 8−21518
^{207}Pb(p,p′), excitation of neutron-hole states, 61.2 MeV protons 8−8724
^{208}Pb region, finite Fermi systems, review 8−537
^{209}Pb unbound high spin shell model states, single nucleon states 8−25126
^{211}Pb, Pauli principle effects on level spectrum, ^{210}Pb(t,d) spectroscopic factors 8−17108
^{101}Pd, level struct. obs. in ^{101}Ag β-decay 8−37311
^{102}Pd(p,p′γ), 8 MeV, ang. correl. meas. to determ. level scheme 8−21559
^{104}Pd levels populated in ^{104m,g}Ag β^+ decay, spins, parities 8−13018
^{105}Pd, from decay of ^{105m,g}Ag 8−37306
^{109}Pd, energy levels determ. from decay of ^{109}Rh 8−25154
^{145}Pm, low-lying levels anal. using ^{145}Sm decay 8−29420
^{147}Pm, level struct. via ^{148}Nd(p,2nγ) 12.1-20.2 MeV 8−510
^{146}Pr→^{146}Nd, decay scheme and energy levels, log ft values 8−4912
Pt, A=192, 194, 2^+, 3^+ states via (α,α′) Coulomb excit. 8−622
Pt, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
^{191}Pt energy levels, γ and conversion electron spectra, spins, parities 8−25149
^{177}Re, populated in decay of Os isotopes, lower excited state obs. 8−17145
^{179}Re, populated in decay of Os isotopes, lower excited state obs. 8−17145
^{187}Re, 206 keV state, g-factor, time differential PAC meas. 8−505
^{31}S, studied via ^{28}Si(^{6}Li,t)^{31}S, t-energy spectra and reaction mechanism 8−41756
^{33}S levels, excited by α-capture reactions 8−33124
^{37}S energy level scheme from (d,p) study, proton spectra *(Russian)* 8−41733
Sb, A=127-33, fission fragments, partial level schemes determ. 8−29392
Sb, odd-mass nuclei, $9/2^+$ bands, deformed states 8−17106
^{117}Sb, levels studied via ^{116}Sn(^{16}O,^{15}N)^{117}Sb, ang. distrib. anal. of 64 MeV reacts. 8−8836
^{121}Sb, positive parity levels, Coulomb excitation obs. 8−21522

nuclear energy levels continued
^{123}Sb, positive parity levels, Coulomb excitation obs. 8−21522
^{133}Sb, level scheme of one proton and doubly closed shell core 8−37291
Sc, A=43, 47, $d_{3/2}$ hole states, wave functions mag. moment, M2 transitions, shell model 8−17116
^{42}Sc, energy levels anal. by ^{40}Ca(α,d) at 40 MeV 8−21579
^{44}Sc, 68 keV state, g-factor, time differential PAC meas. 8−505
^{45}Sc, neutron stripping and pick-up, reanalysed data, sum rule anal. and spectroscopic factors 8−8828
^{49}Sc, location of major $2p_{1/2}$ strength using (^{7}Li,^{6}He) react. 8−25095
^{72}Se, high spin and excitation regions anal., ^{58}Ni(^{16}O,2pγ) 8−25226
^{83}Se, IAS, J^π via ^{82}Se(p,pγ) 4.5-7.7 MeV 8−573
^{27}Si, studied via ^{24}Mg(^{6}Li,t)^{27}Si, t-energy spectra and reaction mechanism 8−41756
^{28}Si, energy levels populated in ^{24}Mg(α,n)^{27}Si, threshold to 13.1 MeV 8−618
^{28}Si, excited levels populated in ^{27}Al(p,α)^{24}Mg at E_p=1540-2220 keV 8−17189
^{28}Si, shell model and statistical spectroscopic anal. 8−29390
^{150}Sm, yrast bands anal. from ^{150}Nd(α,4n), interacting boson approx. 8−13124
Sn, A=104, 106, 108, seniority four admixtures in low lying 0^+ states 8−8741
Sn odd isotopes, spreading widths of deep lying hole states 8−29388
^{115}Sn, levels, J^π via ^{116}Sn(d,t)^{115}Sn 23 MeV 8−612
^{116}Sn, level density with schematic forces 8−41639
^{116}Sn, levels studied via ^{116}Sn(^{16}O,^{16}O) and ^{116}Sn(^{16}O,^{16}O′), ang. distrib. anal. of 64 MeV reacts. 8−8836
^{117}Sn, level density with schematic forces 8−41639
Sn(d,t)Sn, even A=112 to 124, deeply bound hole states of odd A Sn 8−8725
^{83}Sr levels from ^{84}Sr(^{3}He,α), 18 MeV, DWBA calcs. using optical model 8−41738
^{88}Sr populated in ^{86}Kr(^{3}He,n), subshell closure, 0^+ states 8−21582
^{182}Ta, levels, J^π, via 2-3 eV neutron capture γ-spectra 8−602
^{95}Tc, high spin states, coupled proton-neutron excitations 8−17225
^{96}Tc low lying states, level scheme, parities, from conversion electron, γ spectra 8−46024
^{98}Tc energy levels from ^{99}Tc(p,d), l-values, spectrocopic factors, parities 8−25183
^{99}Tc level structure, spin-parity, from inelastic scatt. and proton stripping studies 8−8743
Te, even isotopes, effect of residual interaction in particle-particle channel on low-lying states 8−21503
^{118}Te, levels studied via ^{116}Sn(^{16}O,^{14}C)^{118}Te, ang. distrib. anal. of 64 MeV reacts. 8−8836
^{231}Th β decay and ^{235}U α decay, γ-radiation study, energy level scheme *(Russian)* 8−17160
^{45}Ti $d_{3/2}$ hole states, wave functions, mag. moment, M2 transitions, shell model 8−17116
^{48}Ti(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{50}Ti, shell model calcs. using surface delta interaction 8−37290
Tl, A=208,206,204, high-spin states, α-spectra via (d,α) 80 MeV 8−504
Tl, odd isotopes, negative-parity level props. 8−17103
^{233}U, high-energy spin state obs. using Coulomb excitation 8−17102
^{235}U, levels, J^π, multipolarities via (n,γ) 5-49 MeV 8−512
^{238}U, microscopic calc. of high-spin rot. states 8−8730
V, A=47,59,51, spectra, e.m. moments, B(E2) and B(M1) values calc. 8−8745
^{50}V excited states populated in ^{42}Ti(α,pγ), lifetimes 8−21583
^{50}V, γ-ray spectrum from thermal neutron capture 8−21568
^{50}V, high-spin levels anal. in ^{48}Ti(α,pnγ) reaction *(French)* 8−21572
^{51}V, shell model calcs. using surface delta interaction 8−37290
^{51}V(e,e), mag. elastic scatt., radial distrib. of $1f_{7/2}$ proton orbit using cross sections 8−13067
^{124}Xe, energy level scheme, ^{124}Cs decay 8−13033
^{124}Xe, level struct. exam. using β^+-decay of Cs 8−21498
^{126}Xe, level struct. exam. using β^+-decay of Cs 8−21498
^{137}Xe level and decay scheme from ^{136}Xe(n_{th},γ) 8−13102
^{87}Y, low-lying states anal. in ^{84}Sr(α,p) at 18 MeV 8−17228
^{168}Yb, microscopic calc. of high-spin rot. states 8−8730
^{173}Yb, level struct. determ. from (d,p) and (d,t) reactions 8−29482
Zn, even isotopes, effect of particle-vibr. coupling in nucl. struct. 8−12940
^{61}Zn, studied via ^{58}Ni(^{6}Li,t)^{61}Zn, mass, t-energy spectra and reaction mechanism 8−41756
^{64}Zn, γ-ray spectroscopy from ^{61}Ni(α,nγ)^{64}Zn 8−21514
^{64}Zn, high-spin states anal. from heavy-ion reactions 8−33145
^{68}Zn, 26 MeV levels from ^{69,71}Ga(d,^{3}He) 8−25112
^{70}Zn, 26 MeV levels from ^{69,71}Ge(d,^{3}He) 8−25112
^{92}Zr(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{94}Zr(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{100}Zr, confirmation of 331 keV 0^+ state 8−41643

nuclear engineering
see also fission reactors
breeder reactor development, survey *(German)* 8−5007
cooperative education programs in Omaha Public Power District 8−4429
cooperative utility programs at North Carolina State University 8−4430
desalination by very low temp. nuclear waste heat 8−41850
graduate cooperative program with industry, experience over 3 years 8−4434
industrial internship programme in nuclear engineering education 8−4432
laboratory course at Purdue University 8−4443
LMFBR concrete containment struct., exptl. anal. of dynamic loading 8−41867
nuclear engineering, teaching project management as part of international technology transfer 8−4428
O-ring compounds, resistance to heat and ionizing radiation 8−29584
process instrumentation lab. 8−17447
radiation protection optimisation in nuclear engineering, cost, risk *(Czech)* 8−33295
reactor fuel, selected enrichments for minimisation of blending losses, optimal set 8−17402
reactor heat, limiting conditions for use in thermoelectrochemical cycle for water decomposition *(Russian)* 8−46183

nuclear engineering continued
site radiography training 8−25329
structural mechanics in reactor technology, conf. 8−41874
teaching laboratory, development at Ecole Polytechnique 8−4444
teaching laboratory for expansion of student knowledge horizons 8−4445
training of existing staff for new nuclear units at university 8−4431
undergraduate cooperative industrial program at Cincinnati University 8−4433
USA nuclear standards index 8−29662

nuclear engineering computing
see also computerised control; computerised instrumentation
ANS annual meeting, 1977 8−663
breached element location from mixture of Xe tags, MIXTAG code 8−33274
bubble and spark chamber photographs analysis with PA-BESM-4 system, exchange apparatus 8−9045
burnup calculation code for cluster-type fuel lattices, BUNDLE 8−33246
BWR, control rod sequence exchanges utilizing an off-line predictive code 8−21725
BWR, fast moderator feedback effects during severe press. transients 8−4990
BWR, feasibility study of core management system by data communication 8−13254
BWR, Hatch-1, core management data magnetic tape transfer to central office 8−21719
BWR, optimal in-core fuel management using OPTLWR computer code 8−17363
BWR fuel assembly, radiant heat transfer 8−17287
BWR of Hamaoka nuclear power station, operating experience *(Japanese)* 8−17333
BWR turbine, simulation 8−737
BWR-II containment vessel, soil-struct. interaction for transient loads 8−29604
CAMAC-controlled calibration system for nucl. reactor systems 8−37532
CANDU reactor, shutdown system design, performance during commissioning 8−25319
CANDU-PHW thorium convertor, study of running-in period 8−25313
commercial reactor code incorporation into nuclear engineering course 8−4448
concrete reactor pressure vessels, finite element creep anal. 8−41813
containment blowdown following LOCA, press. and temp. transients and COPDA results 8−13303
Controlled Fusion Atomic Data Center 8−17432
cooling medium pressure calc. using ZOCO VI program *(German)* 8−21668
core disassembly calculations, vapour press. eqn. of state, VENUS-II code studies 8−8908
data centres of NSRDS, role in technical information transfer 8−13402
data covariance estimation methods for sensitivity-based data assessment 8−13400
data evaluation at Nuclear Safety Information Center, products and available services 8−17545
deep-penetration radiation transport, event and point value in Monte Carlo importance sampling 8−8869
directional integration method for 2-D fluid transients 8−683
discrete angle finite element formulation of radiation transport 8−13197
epithermal 1/V self-shielding of reactor poisons using Nordheim integral method 8−17306
Evaluated Nuclear Data File, ENDF/B-V, at Brookhaven Nat. Lab. 8−13398
Evaluated Nuclear Structure Data File for basic and applied research 8−17544
expanding nuclear power systems, initial fissile U requirements for fuel cycle, computer simulation 8−17320
explicit iterative technique for FX2 reactor analysis computer code 8−17302
fast reactor containment, COVA program for computer code validation 8−41833
fast reactor containment safety, study using computer code SEURB-NUK-2 8−33260
fault tree analysis, development of DICOMICS-TWIN self-adaptive algorithm for minimal cut sets determ. 8−17380
fault tree and reliability analysis, modular decomp., PL/1 program 8−17381
fault trees, methodology for computer-aided construction, nuclear system appl. 8−37412
FBR, rigorous and efficient struct. Doppler effect calcs. 8−33256
fission reactor, automatic diagnosis of abnormal phenomena 8−17330
fission reactor, utility use of NSSS supplier reactor analysis code for operational support 8−21724
fission reactor, zero-power control rod group reactivity worth, computerized determ. method 8−21702
fission reactor fuel, U enrichment, optimal blending 8−13309
fission reactor pressure vessels for high temp., computer appl. *(Japanese)* 8−673
fission-gas-induced swelling in UC, porosity effects study by UCSWELL code 8−8959
fluid piping systems, transient cavitation effects 8−29554
Fourier-transformed neutron slowing-down kernel moments, MAGGIE code 8−29540
fuel accounting system, nuclear inventory and management system program 8−13245
fuel cycle, GASP IV simulation model 8−41847
fuel management analysis core, computer code for teaching assistance 8−4449
fuel pin heat transfer, digital transfer matrix 8−29548
fuel pin imagery, computer enhancement and mensuration 8−37395
fuel rod anal. program, CYGRO-4 8−41805
fuel rods, thermal and mechanical anal. with URANUS code 8−41803
fuel sheath deform. following fuel power transients, simulation 8−33258
fusion reactor quantitative cross-section data assessment 8−9047
GCFR, Pu fuelled, fission products and secondary gamma-ray spectra 8−676

nuclear engineering computing continued
HCDA, first-generation model for UO_2 particle size distribs. 8−13295
HCDA due to transient overpower, model for prediction of press. in core and upper plenum 8−8926
heterogeneous fuel pin cells, nodal method in 2-D calcs. 8−21631
HTGR, control rod ejection accident, comparison of one- and two-dimens. models 8−13279
HTGR fuel particle, computer code for anal. of transient behaviour 8−8964
HWR, multidimens. space time kinetics studies 8−29547
HWR reboiler hybrid computer dynamic simulation 8−8949
hydraulic pressure wave propagation in plastically deforming pipe, rel. to reactor HCDA 8−8876
INSITE system for nuclear site data storage and retrieval 8−5109
isotope composition tables for isotopes produced in CANDU reactors 8−29564
kinetics eqns., piecewise polynomial approx. 8−4981
large pools for spent fuel, LUSH code cf with design methods for struct. load calc. 8−17337
LMFBR, advanced, core design methods 8−8885
LMFBR, Clinch River, assessment of containment response to hypothetical core melt-through accident 8−8928
LMFBR, Clinch River, consequences of boiling in radial blanket due to hypothetical major pipe leak 8−8922
LMFBR, Clinch River, LOCA in one heat transport loop without reactor trip 8−8924
LMFBR, Clinch River Plant, pipe rupture simulation using DEMO code 8−8927
LMFBR, Clinch River Plant, sensitivity for radiological consequences to var. in aerosol parameters 8−13294
LMFBR, computation studies of cladding relocation dynamics after transient undercooling accident 8−13255
LMFBR, core design optimisation, simplified reactor physics model 8−8886
LMFBR, effective conduction mixing lengths for subchannel anal. of finite hexagonal bundles 8−13210
LMFBR, enrichment and control optimization for reactivity losses during burnup 8−21692
LMFBR, high power, optimisation by nonconvex programming mathematical model 8−41810
LMFBR, local boiling calculations in subchannel geometry, feasibility study using CLAYMORE code 8−25280
LMFBR, LOFT for loss-of-piping-integrity transient, expt. data and COBRA-3M comparison 8−17370
LMFBR, molten cladding film relocation following HCDA, large wave dynamics 8−17365
LMFBR, parametric safety analyses for reduced energetics in PLBR-sized core 8−13298
LMFBR, performance characts. in US nucl. energy system. rel. to breeding ratio, sp. power, discharge exposure 8−17404
LMFBR, probabilistic accident anal. with deterministic codes 8−37420
LMFBR coupled fluid-struct. problems, advanced Eulerian method 8−682
LMFBR fuel pin bundle, wire-spaced, three-dimens. deflection modes 8−13301
LMFBR HCDA, simulation of fuel-speed pool during transition to transition phase 8−8937
LMFBR outlet plenum mixing, 3-D numerical simulation 8−8880
LMFBR safety analysis, computer code for determ. of aerosol attenuation in leakage paths 8−13293
LMFBR shell structures, finite element elastic-plastic anal. 8−41804
LMFBR shielding calculations, accuracy of ENDF/B-IV cross sections 8−13401
LMFBR subassembly, central blockage wake anal. 8−29556
LOCA, condensing heat transfer 8−21684
LOCA capability code for utility appl. 8−21690
LWR, anal. of BNL exponential expts. with ENDF/B-IV data 8−13218
LWR, ENDF/B-IV eigenvalue calcs. for UO_2 and mixed oxide critical lattice expts. 8−25272
LWR anal., CASMO fast transport theory assembly depletion code 8−25278
LWR LOCA analysis, TRAC-1D code for Standard Problem 2 8−13288
LWR utility, development of non-LOCA safety anal. methods 8−21691
LWR version of URANUS integral fuel rod code 8−17278
mesh-packed cold traps, impurity interaction anal. 8−25262
microscopic depletion in UO_2 and mixed oxide fuel rods, MICBURN code 8−25276
multidimensional neutron transport equation, spherical harmonics soln. by finite Fourier transform. 8−17269
multidimensional reactor dynamics equation, fast factorization and exponential transform. procedures 8−17303
multigroup libraries from radiation shielding information centre 8−13399
multigroup neutron flux calcs. with MURLAB program 8−29541
multigroup time-dependent delayed γ-spectra from fission and activation of U and Pu 8−13184
neutron, homogenized-cell diffusion parameters from transport codes 8−17300
neutron, p-cell homogenization, transient flux effects, incorporation into 2-D iteration scheme 8−17301
neutron evaluated nuclear data files in unresolved resonance region, data representation 8−29459
neutron information at National Neutron Cross-Section Center 8−13403
neutron radiography, high-speed system, modulation transfer function 8−7158
neutron transport theory, buckling approximation inclusion in finite element calcs. 8−17276
neutron two-group diffusion calc. by spatial synthesis algorithm 8−13200
neutronics code, CONIFERS for reactors with channels 8−25281
nonlinear finite element anal. ADINA program for stress anal. 8−41148
nuclear containment vessel, dynamic response to fluid pressure pulses 8−26077
on-line nuclear materials accounting and control 8−29629
PBHTR, depressurisation in primary circuit after failure of main coolant duct, analysis 8−25316

nuclear engineering computing continued
PBHTR, steady state coolant gas activity, STADIF-II code 8−29569
Pickering reactor, simulation of wire activation expts. with SORGHUM code 8−25310
piping systems, pipe rupture and steam/water, hammer design loads for dynamic anal. 8−41868
point model nuclear reactor heuristic approach to reinforcement learning control 8−46144
power plant pathology 8−17345
power reactor, computational method of approximating discrete power distrib. meas. 8−17340
pressure vessels, shearing stress minimisation by automated design optimisation 8−17289
PWR, bidimensional transport coeff. N_h, influence of transverse flow *(Spanish)* 8−8873
PWR, improved instrumentation and computer control systems 8−29601
PWR, LOCA test, effect of LOFT pressurizer on RELAP4/MOD5 modelling 8−13286
PWR, shielding against neutron and gamma streaming, computational methods 8−21783
PWR accident consequences, with loss of coolant *(Slovak)* 8−29594
PWR core, large, appl. of coarse-mesh finite difference eqns. for k_e and peak power factors 8−17305
PWR core, steady-state single stage thermal anal. of hot assembly subchannels 8−13212
PWR plant, dynamics, digital simulation 8−8882
PWR reflood simulation of FLECHT-SET system using RELAP4/MOD6 8−13285
radiation instrumentation, computer-based data acquisition system for multi-station teaching laboratory 8−4446
radiation shielding, effects of thickness and geometry var. on neutron spectra 8−33300
radiation shielding, in 3-D direct-coupled-ray method 8−21785
Radiation Shielding Information Center, international technology resource 8−17543
radiation transport, appl. finite element methods 8−13196
radioactive waste management system, risk assessment for potential accidental releases 8−17353
reactor, core power and flux distribs., BITNOD large-mesh code appl. 8−17304
reactor coolant accidents, appl. of self-initialized RELAP4 momentum eqn. 8−13287
reactor fuel, rod modelling, utility requirements 8−21747
reactor physics codes, utility use and requirements 8−17299
reactor safety, event tree construction by AUTOET 1 computer code 8−17379
reactor spatial dynamics, hybrid computer simulation 8−29567
reactor technology structural mechanics, conf. 8−41874
RFIT, data evaluation program, theoretical background 8−29562
safety systems, time dependent unavailability anal., FRANTIC computer code 8−29588
seismic design, automated generation of spectrum compatible artificial time histories 8−29661
sensitivity-based cross-section data assessment for reactor core and shield anal. 8−9048
simulation, modular data based codes appl. *(German)* 8−17445
spent reactor fuel, risk analysis of alternatives from reactor pool until final disposal 8−17355
structural anal. of reactor fuel elements 8−41814
teaching laboratory, computer modules for calculation of prompt-neutron generation time 8−4447
thermal channel heat transfer gap calc. by numerical methods 8−21630
thermal-hydraulic margin analysis, appl. response surface methodology 8−17378
Tokamak ohmic heating pulsed power supply digital simulation 8−8991
Tokamak plant, superconducting toroidal field magnet model 8−17425
toroidal geometry effects in neutron transport eqn., discrete ordinate S_n method 8−13327
transient heat conduction, soln. by hybrid method 8−681
transient overpower, comparison of EPIC and PLUTO fuel-coolant interaction codes 8−8920
TREAT, fission gas non-equilib. behaviour during fast thermal transients, simulation 8−41831
tubular joints stress anal., finite element anal., computer programs 8−41808
two-phase nonstationary velocity tracking by adaptive cross-correl. algorithm 8−14074
validated computer codes for nuclear electric utility 8−17403
water-cooled water-moderated reactor cooling system faults, hybrid simulation *(Russian)* 8−5008
water-moderated water-cooled reactor operational mode anal. *(Russian)* 8−21760
Ge on-line, hyperpure detector, radiation monitoring system 8−37493
^{16}N activity in water from $^{16}O(n,p)^{16}N$, computer code and expt., nuclear powered ship 8−13192
Pt self-powered detector, neutron sensitivity calc. 8−37449
$(Pu,U)O_2$, criticality data generation using SU-HAMMER code 8−29581
Pu fuel cycle back end services, utility optimisation model 8−41845
U enrichment plant criticality analysis *(Japanese)* 8−46156

nuclear explosions
see also weapons
acoustic gravity waves in ionosphere, propag. *(French)* 8−12042
discrimination between explosions and earthquakes 8−11809
EM pulse, induced currents and charges on aircraft 8−42258
EM pulse, surface currents and charges on aircraft 8−42257
EM pulse measurement both inside and away from nuclear source regions 8−21773
EM pulse produced, anal. 8−21771
EMP, system generated by photoelectron emission current, anal. 8−21772
Eurasian earthquakes and explosions, discrimination using P codes spectral characts. 8−7576
neutron bombs, effects *(German)* 8−814
neutron stars, thermonuclear flahses model for X-ray bursts 8−12417
radioactive waste, comparison of USA military and civilian inventories 8−4995

nuclear explosions continued
seismic discrimination improvement using pattern recognition 8−40694
turbulent radiowave propagation, ionospheric phase and frequency spectra 8−24405
underground fusion explosion, use as geothermal energy source 8−46176
underground nuclear explosions, distinction from natural earthquakes *(French)* 8−20364
weapons testing, radionuclide distributions in oceans and marine sediments 8−13344

nuclear fission *see fission*

nuclear fission of plutonium *see fission of plutonium*

nuclear fission of uranium *see fission of uranium*

nuclear fission piles *see fission reactors*

nuclear fission products *see fission products*

nuclear forces
see also binding energy; meson field theory; nuclear binding energy
A=18 shell model spectra and 3 nucleon force 8−25124
alternating layer spin structure, one-dimensional, localised, in nuclear system, and π^0 condensation 8−4902
axial currents in nuclei, one-pion exchange diagram 8−46008
Bethe homework problem, variational calcs. for neutron and nuclear matter 8−37292
Bethe-Goldstone eqn., nucl. matter, nucleon optical pot. anal. 8−12981
binding energy of nuclear matter, corelated basis functions method appl. 8−45998
bound states in baryon-antibaryon systems, NN, $N\bar{N}$, dispersion method *(Russian)* 8−16933
Brueckner and Green's function theories, ground state props., nuclear matter calcs. 8−8750
charge asymmetry and charge dependence of two nucleon scattering 8−4899
charge symmetry breaking nuclear forces, two-body, many-body nuclear systems 8−17109
collective mode of nucleon system with π^0 condensate 8−41660
collective modes in nuclear matter, propag., damping 8−25132
configuration mixing, Coulomb energy anomaly, inmirror nuclei 8−25099
constrained Hartree-Fock calcs. 8−8758
continuum shell model, recoil corrections for nucleon-nucleus scattering 8−8751
coupling constants of dN and d*N three-body vertices, spectator functions 8−46011
degenerate many fermion system in exp. S form, linked valence expansions 8−41654
effective interactions, folded diagram expansion, self consistent and oscillator sd shell model spaces 8−21502
effective NN interaction, long range components, configuration mixing 8−41646
exchange effects, trace of energy-momentum tensor, in weakly bound states 8−37293
Fermi hypernetted chain calcs. for model nuclear matter 8−8759
five-body equation, wave function treatment for binary partitions 8−16686
four-nucleon systems, unitary pole approx. 8−516
Hamada-Johnston interaction, nucleon optical pot. 8−12982
hard-core spin-polarised neutron matter, ground state energy calc. 8−12999
heavy ion fusion, internuclear potential determ. 8−41800
heavy spherical nuclei, choice of density depend. interaction and α-decay *(Russian)* 8−46010
high density matter, relativisitc quantum many-body problem 8−4909
Jastrow correlations and nuclear photoeffect 8−4927
K-harmonics method for nuclear many body problem with two-body interaction 8−33125
level density with schematic forces, appl. to $^{116,117}Sn$ 8−41639
local two-body interactions, general off-shell phase eqns. 8−36880
long range NN interaction, axial polarisability, two pion exchange 8−29397
low density α clustering effects of Skyrme N+N interactions in nuclear matter 8−29398
low density expansion of nuclear matter optical pot., self consistency requirement 8−8760
mass depend. of spin-orbit splitting in A=176-208 region 8−29405
mean field theory of nuclear dynamics, time depend. 8−12986
meson exchange currents in nuclei 8−12980
micrononcausal Euclidean wave functions for hadrons, virtual mesons in deuterons 8−41408
Migdal and surface δ interactions, strength consts. 8−8749
N=29 nuclei, effective 2-body interactions and level spectra 8−41647
N resonances in NN interaction 8−25066
nonlocal continuous potentials, theory of integral operators and eigenvalue anal. 8−8274
nonlocal separable interactions in the study of nucl. props. *(French)* 8−33115
nuclear matter, central spin- and isospin-dependent potentials 8−46023
nuclear matter, symm. and asymm., simple effective interaction for props. 8−25141
nuclear matter transparency to fast particles, rel. to high-energy strong interactions range *(Russian)* 8−4901
nucleon, bound in harmonic oscill. pot., coupled to pion field, EM struct. 8−8732
nucleon binding in nuclei at high ang. momentum 8−25104
nucleon-nucleon repulsive core, quark model forbidden states explanation 8−12984
one nucleon absorption of slow pions, pion condensate effect *(Russian)* 8−8765
one-hole states, in double magic nuclei, form factors, spectroscopic factors, centroid energies 8−17090
Overhauser's model, Skyrme force, Hartree-Fock test 8−12997
pairing-force interaction many-fermion system, energy calc. 8−8339
Pauli principle effect in nuclear matter, exchange of interacting two pions 8−12983
Pauli-principle effects, simulation 8−8756
perturbative anal. of two-body effective interactions from large matrix diagonalisations 8−41644
propagation by pairing and surface excitations, nuclear states description 8−46007

nuclear forces continued
quark exchange, nuclear force model 8−41648
radius perturbation theory, appl. to NN system and pionic atoms 8−21007
relativistic nucleus-nucleus collisions, high density nuclear Mach shock waves 8−633
renormalised shell model matrix elements from nucleon-nucleon phase shifts 8−12991
sd shell nuclei, effective interaction between nucleons 8−17117
shell model anal. of effect of geometry 8−4900
short-range repulsion, gauge theory of coloured quarks 8−12880
Skyrme interaction, mag. moments, polarisability, gyromag. factors 8−21501
spherical nuclei, low lying states, effects of particle-particle channel residual interaction 8−12978
spin-2 mesons exchange interaction in superdense neutron matter, relativistic theory 8−45349
statistical description of nuclear compound states, temp. Green's functions method *(Russian)* 8−17115
Thomas-Fermi model of finite nuclei 8−8747
three body systems in nuclear physics, review 8−517
three nucleon clusters in nuclear matter, intermediate Δ-states, exchange diagrams calc. 8−17112
three- and four-body interaction props., hyperspherical expansion convergence *(Russian)* 8−518
three-body Amado-Lovelace eqn. at positive energies, anal. soln. 8−16938
three-body forces in 3- and 4-nucleon systems 8−29400
total single particle energy, asymptotic form of smooth part 8−4892
two-body transition matrix and UPA model, convergence props. of generalised separable expansion 8−16939
two-nucleon stripping reactions with Tabakin pot. 8−21570
two-nucleon system, Δ resonance, excitation spectrum 8−41649
Yukawa pot., superposition, off-shell Jost function 8−29415
Yukawa potential, scatt. amplitude, nonperturbative var. approx. calcs. 8−24981
α particle nuclei, cluster struct., ground state energy lower bounds 8−46017
d stripping reactions, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
(N,N′), microscopic description of direct processes, effective interaction 8−12979
N-nucleus optical model potential, spin-orbit component from internucleon pot., ^{40}Ca+p appl. 8−46039
NΔ conversion, two-channel formalism and three-body forces approaches 8−8733
NN forces matrix elements in hyperspherical basis *(Russian)* 8−46009
$N\bar{N}$ quasinuclear systems, review 8−25065
NN realistic nonlocal pots. from inverse scatt. theory for $^{3}S_{1}$-$^{3}D_{1}$ interaction 8−41651
NN scatt., potential models, high-energy phase shifts and off-shell react. matrices 8−45936
np interaction and nucl. deformation 8−8748
$p\bar{p}$ atom, nuclear energy level shift *(Russian)* 8−37295
pp scatt., low energy, strong van der Waals interaction 8−41563
π bound states in finite nuclei, π-nuclear optical pot. 8−46013
π condensation in isospin symm. nuclear matter, phenomenological approach 8−29414
π propagator in nucl. matter, NN correls. 8−515
π^0 condensation in finite system, extended Thomas-Fermi model 8−41645
πN scattering amplitude in nuclear medium at nuclear matter density 8−29500
^{12}C, 3-α struct. in boson model 8−17124
Cd, even isotopes, effect of residual interaction in particle-particle channel on low-lying states 8−21503
^{40}Cd(d,p)^{41}Ca, 11 MeV, effect of Skyrme type density depend. effective pots. 8−46069
Fe isotopes A=53-58, spectroscopic calcs. using mass independ. effective interaction, yrast levels 8−41638
^{2}H, quadrupole moment and percentage D state lower bounds 8−37286
^{2}H+n scattering, 14.4 MeV, parity nonconserving asymm. 8−21449
^{2}H(π,2nγ), final state interactions, n+n scatt. parameters 8−25245
^{3}He, charge form factor one-boson exchange pot. 8−41652
^{3}He, one-boson exchange pot. 8−41652
^{3}He(p(polarised),p)^{3}He, nuclear force and T-violation effects 8−4797
^{4}He(e,e), cross section anal., nuclear charge form factor, short range correl. 8−8746
^{17}O valence energies, extended multiple scatt. approach to 2p1h system 8−29396
^{18}O, effective interaction, Hartree-Fock effects 8−534
^{208}Pb region, effective interaction and energy spectra 8−25121
^{208}Pb, Thomas-Fermi model 8−8747
Te, even isotopes, effect of residual interaction in particle-particle channel on low-lying states 8−21503
^{48}Ti, (A+2)particles-2 holes excitations, interaction renormalisation 8−29375

nuclear fusion
see also nuclear explosions; nuclear reactions involving few nucleon systems
absorption effects in low energy heavy ion fusion reactions 8−8851
compound nucleus, relatively cool, with high ang. momentum, production *(Russian)* 8−29519
compound nucleus formation cross section in heavy ion reactions, shell model calcs. 8−13132
compound nucleus reaction, superheavy element prod. method optimisation 8−46103
electron beam heated solenoid reactors appl. 8−8992
fragmentation theory, two body breakup channels in fission, fusion, heavy ion scatt. 8of21746037
heavy ion, critical angular momentum, phenomenological approach 8−33203
heavy ion, fusion barrier at sub-Coulomb energies 8−628
heavy ion deep inelastic reactions, as probes of nuclear matter, review 8−46083
heavy ion fusion, internuclear potential determ. 8−41800
heavy ion fusion barrier, penetrability calc. 8−41798
heavy ion reactions, DWBA anal. 8−13143
heavy-ion collision, fusion barriers calc. 8−25225

nuclear fusion continued
heavy-ion reactions, collective pot. energy surfaces, appl. to Ar+Ag, Kr+Cu, and Xe+Bi 8−41748
inertia confinement, expt. *(Japanese)* 8−46121
laser-fusion expts., calorimeters for meas. of ions, X-rays and scatt. radiation 8−16800
mean field theory of nuclear dynamics, time depend. 8−12986
micro-explosions, electron beams initiated, progress and future applicability *(French)* 8−746
reaction rate enhancement due to strong screening 8−13186
subcoulomb fusion, effective barrier at low energies, total reaction cross section 8−37385
switch for mag. cct. supply *(German)* 8−37441
thermonuclear react. rates, computation with STEEP code 8−18375
Tokamak devices, power supplies *(Dutch)* 8−741
underground fusion explosion, use as geothermal energy source 8−46176
Ag+^{20}Ne, 175 MeV, γ-ray multiplicities and energies, primary fragment angular momenta 8−46093
^{243}Am(^{49}Ca,xn), production of superheavy elements with A=114-116 8−29493
^{197}Au(^{14}N, xn), in flight mass separation of Rn isotopes 8−25381
^{9}Be+^{12}C, 2.8-6.3 MeV, fusion and neutron transfer cross-sections 8−41746
^{9}Be+^{16}O, 2 to 5.1 MeV, sub barrier, cross sections and optical model calcs. 8−8838
^{12}C+^{12}C, partial widths of molecular resonances 8−46094
^{12}C+^{14}N fusion, 248 MeV, cross-section meas. liquid-drop limit for ^{26}Al 8−4959
^{40}Ca+^{40}Ca, evaporation-residue cross-sections meas. 8−33211
^{40}Ca+^{40}Ca, low impact parameters, energy dependence of fusion cross section 8−41751
^{48}Ca+^{15}N(^{18}O) fusion-evaporation reaction, ^{59,60}Fe, ^{59,60}Co yrast decay scheme 8−13154
Cm(^{48}Ca,xn), production of superheavy elements with A=114-116 8−29493
Er production in ^{a}Ge+^{86}Kr, A=70, 74, 76, and ^{a}Sn+^{40}Ar, A=122, 124, 50 to 120 MeV, angular momentum limits 8−25224
^{19}F+^{12}C, 92 MeV, fusion and direct reactions anal. 8−21591
^{70}Ge+^{32}S, 110, 132 MeV fusion evaporation residues, Monte Carlo simulation 8−41799
^{2}H(tμ,nμ^{-})^{4}He, fusion reaction, 2 GeV energy release 8−17250
^{100}Mo+^{100}Mo$\rightarrow$^{200}Po, two dimensional fusion barrier, penetrability calc. 8−41798
^{14}N+^{16}O, 20-60 MeV, compound nucl. form. 8−4954
^{150}Nd+^{20}Ne, 175 MeV, cross sections and energy spectra 8−41760
^{58}Ni+^{32}S, 110, 132 MeV, fusion evaporation residues, Monte Carlo simulation 8−41799
^{16}O+^{16}O reaction cross sections, 12.5-30.5 MeV excitation functions 8−643
^{208}Pb+^{40}Ca, 255, 300 MeV, lowered fusion cross section 8−41797
^{208}Pb+^{86}Kr, 469 MeV, search for superheavy nuclei, Z>106, lifetimes >2 ps 8−46102
^{242}Pu(^{48}Ca,xn), production of superheavy elements with A=114-116 8−29493
^{32}S+Mg(^{27}Al), 160 MeV, evaporation residues, isotope and element distribs. meas. 8−13153
Si burning, during advanced evolution of massive stars 8−28652
^{89}Y+^{40}Ar, 237 meV, γ-ray multiplicities and energies, primary fragment angular momenta 8−46093

nuclear fusion reactors *see fusion reactors*

nuclear giant resonances *see nuclear collective states and giant resonances*

nuclear induction *see nuclear magnetic resonance*

nuclear instrumentation
see also angular correlation techniques; beam handling equipment; counters; counting circuits; nuclear reactor instrumentation; particle accelerators; particle detectors; particle track visualisation
computer network for on-line data processing 8−37529
computer-based data acquisition system for multi-station teaching laboratory 8−4446
conferences, nuclear science, nuclear power systems, San Francisco, USA, 19-21 Oct. 1977 8−33304
emitter-coupled integrated circuits, application to nanosecond nuclear electronics 8−5101
fuel reprocessing plant instrumentation for internat. safeguards 8−721
gas jet recoil transport system for fission products, appl. to chemical separation in gas phase 8−17459
goniometer, ultra high vac., manipulator with six degrees of freedom 8−18509
least squares fitting procedure, errors of parameters 8−16768
linear accelerator, magnetically insulated pulse power driven 8−5045
multi-faceted data gathering and analysing system 8−37530
plunger device for in-beam meas. of nuclear lifetimes, tested on ^{22}Na and ^{153}Dy 8−13375
PWR crosslinked polyethylene insulated low noise triaxial cable *(Japanese)* 8−670
standard signal transmission over long cables, using ESL ICs 8−5102
teaching laboratory, development at Ecole Polytechnique 8−4444
time coder with variable channel width for time-of-flight expts. 8−33403
vacuum gauge design 8−17546
He jet, cryogenic, and recoil TOF apparatus 8−17458

nuclear interactions *see nuclear reactions and scattering*

nuclear internal conversion *see internal conversion*

nuclear isobaric analogue resonances *see isobaric analogue resonances*

nuclear isobaric analogue states *see isobaric analogue states*

nuclear isomerism
see also nuclear energy levels
^{154}Er, high-spin states 8−29373
isomeric A=48-50 nuclei, mag. moments and core polarisation 8−37274
oblate high spin isomers, pairing Hamiltonian anal. by RPA 8−12996
s-process isotopes, nonthermal isomeric branching, importance of long-lived states 8−7983
(n,2n) reactions at 14.8 MeV, isomeric ratios in 107<A<143 mass range 8−13073
(n,f), actinide nuclei, influence of isomeric states on independ. fission prod. yield 8−4968

nuclear isomerism continued
^{108}Ag, form. in ^{107}Ag(n,γ) reaction, isomeric level scheme at 215.38 keV 8−12975
^{210}At, isomeric 19^+ state, isospin depend. in two-particle core polarisation 8−21499
^{196}Au, studied via ^{197}Au(n,2n), isomeric cross-section ratio and spin-cut-off factor 8−13096
^{107}Cd, heavy ion nucl. alignment, recoil in vac., time-differential meas. 8−37304
^{109}Cd, 11 μs isomeric level, spin and parity determ. by ^{108}Pd(α,3n) *(French)* 8−8738
^{252}Cf, spontaneous fission, yields and isomer ratio in A=134 chain 8−41786
^{129}Cs, band struct., in-beam γ-ray spectroscopy after (γ,2n) reaction 8−4951
Ga, A=66, 68 isomeric state from ^{56}Fe+^{13}C and ^{56}Fe+^{15}N reactions, lifetimes, g-factors 8−33147
^{146}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8−41666
^{147}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8−41666
^{178}Hf, g-factor for K=6, $J^\pi=6^+$ isomer, perturbed ang. distrib. meas. 8−37277
^{38m}K, end point energy of superallowed Fermi decay 8−46030
^{84}Kr, 1.84 μs isomeric state, g-factor meas. 8−17101
^{99}Mo, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{100}Mo(γ,n)^{99}Mo^{m1,m2,g}, isomeric cross section ratios 8−29448
Nb, A=90, 92, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{91}Nb, 3.8 μs isomeric state, mag. moment, TDPAD meas. 8−41634
^{111}Pd^{g,m}, γ-ray decay, ^{111g}Pd half-life, ^{111}Ag levels and decay 8−541
Po, neutron deficient isotope prod. in ^{182}W(^{20}Ne,xn) reactions 8−8835
^{101}Ru, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{102}Ru(γ,p)^{101}Tc^{m,g}, isomeric cross section ratios 8−29448
S6, A=120, 122, 3^+ isomeric states quadrupole moments, (p,n) excited, TDPAD method 8−41635
Sb, A=115, 117, $11/2^-$ isomeric states, half-life, and g-factor 8−33122
^{122}Sb, 5^+ isomeric state, mag. moment determ. from ^{122}Sn(d,2n)^{122}Sb 8−21493
Sn, photoactivation by 42 MeV bremsstrahlung, gamma transition energies and line intensities 8−13057
Tc, A=98, 100, 101, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{179}W, backbending, high spin isomer decay 8−45997
^{87}Y^m orientation meas. in Al and Au hosts, mag. moment of $9/2^+$ isomeric state 8−41632

nuclear liquid drop model
fission, charge division 8−17173
fission, most probable charge, shell and deform. effects 8−29440
shell correction to liquid drop energy 8−12992
superheavy nuclei, ^{300}120, effect of nuclear force finite range on fission and heavy-ion reactions 8−13180
superheavy nuclei, lifetime, theoretical prediction of nonoccurrence in nature 8−662
^{26}Al, liquid-drop limit, fusion of ^{12}C+^{14}N 8−4959
Cf, splitting of cold and hot nuclei *(Russian)* 8−29516
^{150}Nd+^{150}Nd→^{300}120, effect of nuclear force finite range on fission and heavy-ion reactions 8−13180
^{62}Ni(^{32}Cl,f), statistical anal. of excitation functions, Bohr-Wheeler and liq. drop model 8−13181
^{141}Pr(^{35}Cl,f), statistical anal. of excitation functions, Bohr-Wheeler and liq. drop model 8−13181
^{116}Sn(^{32}Cl,f), statistical anal. of excitation functions, Bohr-Wheeler and liq. drop model 8−13181
^{236}U, effect of nuclear force finite range on fission and heavy-ion reactions 8−13180

nuclear magnetic moment
see also gyromagnetic ratio; molecular nuclear coupling; nuclear magnetic resonance
deformed nuclei, HF approach to mag. moments 8−12967
exchange corrections to dipole sum rule 8−17111
hyperfine fields on fast ions in ferromagnetic media, review 8−37283
Isolde experiments, prod. of extreme neutron/proton ratio nuclei, nuclear props. study *(Danish)* 8−4972
isomeric A=48-50 nuclei, mag. moments and core polarisation 8−37274
light nuclei, mag. moments, configuration mixing and meson exchange contrib. 8−17100
M1 matrix calc. band mixing with several valence nucleons *(French)* 8−45994
N=50 isotones populated in heavy-ion beam reactions, mag. moments, proton core polarisation 8−21598
orientation with combined elec. and mag interactions 8−41633
review of meas. 8−37266
Skyrme interaction, mag. moments, polarisability, gyromag. factors 8−21501
^{29}Al, mag. moment quadrupole coupling const. β-ray detected NMR in Al_2O_3 cryst. 8−37267
Ar, A=37, 40, implantation in Fe, perturbed ang. distrib. 8−12969
Au, spin and mag. moment, trends in neutron deficient nuclei 8−37261
^{12}B, quadrupole coupling const. in ZrB_2 single cryst. 8−37279
^{a}Cd, static quadrupole moments determ. for A=111, 113, 115 8−37281
^{110}Cd, recoiling in Fe, enhanced transient fields 8−37284
^{36}Cl, g-factor determ. from perturbed ang. distribs. 8−12970
Cs isotopes, nucl. spins and mag. moments, atomic-beam mag. reson. expt. 8−17097
Cs isotopes, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
Cs, spin and mag. moment, trends in neutron deficient nuclei 8−37261
^{18}F ions recoiling in vacuum, mag. decoupling of hyperfine interaction 8−37270
^{19}F, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{56}Fe, recoiling in Fe, enhanced transient fields 8−37284
Fr, spin and mag. moment, trends in neutron deficient nuclei 8−37261

nuclear magnetic moment continued
^{2}H, D-state wave function calc. 8−8740
^{178}Hf, g-factor for K=6, $J^\pi=6^+$ isomer, perturbed ang. distrib. meas. 8−37277
Hg, A=199, 197, $5/2^-$ state halflife and mag. moments 8−506
^{a}Hg, A=198-204, reorientation effect meas. on 2^+ states 8−37282
^{132}I isotope, doubly odd, quadrupole moments, PAC meas. 8−37280
^{a}In, A=109,110, nucl. g-factor NMR-ON meas. on Fe-In alloys 8−37275
K, A=40, 41, implantation in Fe, perturbed ang. distrib. 8−12969
^{40}K, g-factor determ. from perturbed ang. distribs. 8−12970
^{84}Kr, 1.84 μs isomeric state, g-factor meas. 8−17101
^{25}Mg(e,e), 40-260 MeV, cross sections, Coulomb multipole moments and magnetic form factor 8−25178
^{93m}Mo, nucl. g-factor NMR-ON meas. on Fe-Mo alloys 8−37275
^{14}N, meas. of nucl. g-factor of 5.11 MeV 2^- state by recoil distance technique 8−37268
^{21}Na, mag. moment and lifetime of first excited state determ. 8−550
^{21}Na, mag. moment of first excited state, time differential plunger meas. 8−37271
^{23}Na, band mixing, E2 and M1 matrix elements *(French)* 8−45994
^{23}Na, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{a}Nb, nucl. g-factor, A=90, 92 m, NMR-ON meas. on Fe-Nb alloys 8−37275
^{91}Nb, 3.8 μs isomeric state, mag. moment, TDPAD meas. 8−41634
^{21}Ne, mag. moment and lifetime of first excited state determ. 8−550
^{21}Ne, recoil into vacuum g-factor meas. of $5/2^+$ state, 0.350 MeV 8−37272
^{21}Ne, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{21}Ne*, produced in ^{2}H(^{20}Ne,p)^{21}Ne* mag. moment and g-factor of 351 keV $^{5}/_{2}{}^{+}$ state 8−41631
Ni isotopes, even determ. of g-factor of $2_1{}^+$ states 8−43697
^{15}O, nucl. g-factor and lifetime of 5.24 MeV $5/2^+$ level 8−37269
^{17}O, M3 suppression in HF theory 8−33134
^{17}O, mag. form factor, core polarisation and exchange current effects 8−46003
^{a}Os, A=186, 188, 190, 192, electromagnetic moments from muonic X-rays 8−12972
^{208}Pb(e,e′), 50 and 63.5 MeV, mag. quadrupole strength fragmentation 8−41705
Rb isotopes, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
Rb, spin and mag. moment, trends in neutron deficient nuclei 8−37261
Re, A=183, 184, 186, 188, nuclear quadrupole alignment in Re single cryst. at low temp. 8−48091
^{212}Rn, Knight shift and absolute mag. moment meas. in Hg 8−37278
^{32}S, transient field g-factor meas. on $2_1{}^+$ states 8−37273
^{34}S, transient field g-factor meas. on $2_1{}^+$ states 8−37273
^{122}Sb, 5^+ isomeric state, mag. moment determ. from ^{122}Sn(d,2n)^{122}Sb 8−21493
Sc, A=43, 47, $d_{3/2}$ hole states, wave functions mag. moment, M2 transitions, shell model 8−17116
^{43}Sc, g-factor of $3/2^+$ hole state meas. in (α,p) react. 8−21492
^{43}Sc, mag. moments in $19/2^-$ state, time-differential perturbed ang. distrib. method 8−33117
^{178}Ta, nucl. orientation in Fe 8−39412
^{a}Tc, A=93-95, nucl. g-factor NMR-ON meas. on Fe-Tc alloys 8−37275
^{232}Th, thermal Westcott g-factor meas. 8−37287
^{43}Ti, mag. moments in $19/2^-$ state, time-differential perturbed ang. distrib. method 8−33117
^{45}Ti $d_{3/2}$ hole states, wave functions, mag. moment, M2 transitions, shell model 8−17116
^{163}Tm, high spin rot. levels, studied via ^{165}Ho(^{3}He,5n) and ^{165}Ho(α,6n) reactions 8−8722
^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S′γ), EM props. of ground state rot. band 8−8726
^{171}Tm, 635.4 keV level props., mag. moment from γ ang. correl. meas. 8−13017
V isotopes, A=47-51 8−25114
Xe, A=126-132 even nuclei, gyromagnetic ratios of 1st 2^+ states 8−12966
^{87}Y^m orientation meas. in Al and Au hosts, mag. moment of $9/2^+$ isomeric state 8−41632
^{94}Zr, 2^+ state, recoiling in Fe, enhanced transient fields 8−37284

nuclear magnetic resonance
see also acoustic nuclear magnetic resonance; chemical shift; double nuclear magnetic resonance; ENDOR; Knight shift; molecular nuclear coupling; NMR line breadth; nuclear quadrupole resonance; nuclear spin-lattice relaxation; proton magnetic resonance; spin echo (NMR); spin-spin relaxation
acetic acid, methyl group dynamics, NMR 8−29802
N-acetyl-valine, NMR of solid, ^{14}N-^{1}H dipolar spectra, NH bond length 8−48055
adamantane, proton-enhanced NMR, magic-angle spinning, polarisation transfer 8−19349
albumin, human serum, $AsF_3{}^-$ NMR probe for anion binding sites 8−48748
alkali metal difluoride, MHF_2, ^{19}F free induction decay 8−2753
alkali silicate and borate glasses, ionic motion, ^{7}Li NMR obs. 8−27107
antiferromagnet, two-dimens., nucl. mag. relax. *(Japanese)* 8−19364
aqueous heterogeneous systems, NMR, substrate struct. and H_2O mol. relax. 8−7247
aromatic acids, mixtures, quantitative anal. by ^{13}C NMR 8−31716
benzaldehydes in EBBA liq. cryst., NMR, mol. struct., reorientation and order matrix 8−5251
binary ^{13}C spectra, ^{1}H noise decoupled, classification 8−27832
biological NMR spectroscopy, instruments and techniques 8−28148
blood flow measurement, flat crossed-coil detector 8−40284
bromides, MAl_2Br_7, (M=Li, Na, K, Cs, NH_4, and $(CH_3)_4N$), ^{81}Br NQR and ^{27}Al NMR meas. 8−6597
butadiene-isoprene copolymers, monomer unit distrib., ^{13}C NMR determ. 8−26456
calibration of large mag. field sweeps 8−261
cement, water adsorption, NMR relax. exam. 8−48354
chromatin nucleosome core particle, ^{31}P mag. reson. of DNA 8−40112

nuclear magnetic resonance continued
clay-water systems, NMR, substrate struct. and H_2O mol. relax. 8−7247
combined retrieval system for IR, ^{13}C NMR and mass spectral data 8−31717
coupled spin systems, review 8−48072
cyclic A_{2n}-systems, trans induction effect in NMR and ESR spectra 8−29799
diammonium oxalate monohydrate, NMR spectra, ^{13}C-^{13}C interaction, chemical shift effects 8−29800
p-diethoxybenzene, ^{13}C shielding tensors determ., by NMR from powder patterns 8−25556
difference NMR spectroscopy, reference lineshape adjusted, expts. 8−17693
difference NMR spectroscopy, reference lineshape adjusted, theory 8−25561
diffusion and flow meas. by NMR system, spin phase graphing 8−47074
diffusion data obtained by NMR and Mossbauer expts., interpretation, mol. dynamics study 8−47567
difluoride ion, ^{19}F free induction decay in NH_4HF_2 and (substituted) phenylamine salts 8−2754
difluoride ion, ^{1}H and ^{19}F free induction decay in alkali metal difluorides, $TlHF_2$, $BaFHF_2$, $SrFHF_2$ 8−2753
dihydromuconic acid, C=C bond, ^{13}C shielding tensor, NMR meas. 8−1005
dilute gases, nucl. mag. relax., theory 8−25559
p-dimethoxybenzene, ^{13}C shielding tensors determ., by NMR from powder patterns 8−25556
direct observation in rotating frame, method tested on chemical shifts in CaF_2 *(Russian)* 8−39422
EBBA-non-mesogenic binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
electrolyte soln. struct. determ. 8−38605
electrolyte solutions, NMR relaxation of ^{1}H, ^{2}D, ^{23}Na *(Russian)* 8−15053
erythrocyte ghost membrane struct. effects of fusogenic agent, fusion mechanism 8−31782
ethylene-β-chloroethylacrylate, ^{13}C-NMR microstruct. investigation, substitution increments, sequence distrib. *(German)* 8−13636
ethylene-glycidylacrylate copolymer, ^{13}C-NMR microstruct. investigation, substitution increments sequence distrib. *(German)* 8−13636
ferroelectric, H-bonded, soft and central modes, mag. reson., review 8−15108
ferromagnetic film, magnon avalanche under NMR saturation 8−10783
fluid flow profiles, convective and press.-driven, meas. using pulsed NMR 8−14109
fluoranil-macrocyclic polyether mol. complexes, configs., IR and NMR obs. 8−33529
fluorobenzenes, substituted, cryst., ^{19}F NMR, chem. shift tensor meas. 8−10789
Fourier transform, digital quadrature detect. 8−24833
glass, struct. investig. techniques 8−23358
glycine, electron-irrad. polycrysts., stable products obs. by ^{13}C NMR 8−15775
graphite intercalation compounds, magnetic resonance determ. of oxidation state 8−35051
graphite-UF_6 intercalation compounds, NMR exam. 8−39416
n-hexatriacontane, cryst. struct., γ-ray effects obs. 8−43048
high resolution, high pressure, commercial NMR spectrometer modifications, vol. of activation meas. 8−45664
high resolution by susceptibility compensation of detection coil 8−12736
2-hydroxy-3-crotonyloxypropyl methacrylate, polymerisation photocrosslinking *(Japanese)* 8−31376
hydroxyl protons, temp. depend. of chem. shift, in R-OH cpds. 8−35054
p-Hz:o-H_z, clustering rate and NMR obs., 25 mK-2K 8−47635
image recovery under nonuniform magnetic fields 8−40282
imaging, display of cross-sectional anatomy 8−44579
imaging, three-dimens., using selective excitation 8−21190
indenyl-Li ion pair in dimethoxyethane, ^{13}C NMR, temp. and counterion depend. 8−48062
indenyl-Na ion pair in dimethoxyethane, ^{13}C NMR, temp. and counterion depend. 8−48062
inhomogeneous static field effect *(Russian)* 8−48053
insulators, neutron activated β-emitters, hyperfine interactions 8−39070
KEL-F, ^{19}F, spectrum using multiple pulse decoupling-magic angle spinning NMR probe 8−12735
l *(German)* 8−15389
LAOCOON3 analysis system, reliability efficiency and error estimates 8−258
lecithin bilayer, ion-induced changes in head group conform, ^{31}P and ^{2}H NMR 8−3452
liquid crystal, premelting, high resolution NMR 8−26671
liquid crystals, nematic and smectic, EPR and NMR relax., first-rank tensor component effects 8−14275
liquid metals and alloys, review 8−2755
lithium acetate, methyl group dynamics, NMR 8−29802
lithium formate crystal, dehydration, influence of hydrostatic press., ^{7}Li NMR 8−2758
lithium perfluoro-octanoate-water system, liq. cryst. struct., self-diffusion, NMR 8−15036
low temperature NMR spectroscopy, low-noise circuitry 8−4672
magnetic field intensity meas. by NMR, meas. accuracy 8−249
magnetic field prod. and meas. 8−8425
magnetometer, type 9298, homogeneous mag. field meas. 8−32839
magnetometer for solenoid calibration 8−21187
MBBA, ^{13}C spin-lattice relax., Fourier-transform NMR, NOE 8−48064
metal, neutron activated β-emitters, hyperfine interactions 8−39070
metal, non-Arrhenius diffusion and NMR relax. relationship 8−47568
metal single crystal meas., sensitivity consideration 8−43659
metal tritides, ^{3}He NMR and distrib. 8−30661
methacryloyloxyethyleneoxycarbonyloxypropylene, NMR relaxation mechanism *(German)* 8−33527
methane+Kr(Xe), ^{13}C-mag. shielding density depend. 8−9173
methane-d_0,-d_1,-d_2,-d_3,-d_4, ^{13}C NMR chem. shifts, coupling consts. 8−37657

nuclear magnetic resonance continued
methyl bromide, liq., NMR relax., anisotropic mol. reorientation 8−2764
methyl group, ^{2}H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methyl group, NMR relax., spin rot. and chem. shift anisotropy effects 8−31117
methyl group dynamics, NMR 8−29802
methyl iodide, and -d_1, dissolved in nematic phase, C-H bond orientation, ^{13}C NMR 8−46371
microemulsions, stability, high field NMR investig. *(French)* 8−27827
molecular reorientation of symmetric top molecules, in liquid state, book contrib. 8−22623
molecular solid, effect of rigid-body vibrs. on NMR, quadrupole, chemical shift and dipole-dipole interactions 8−15056
molecules, C-N spin-spin coupling consts., NMR, MINDO/3 calcs. 8−17694
trans,trans-mucodinitrile solid, NMR relax., mol. motions between unequal pot. wells 8−19353
multiple pulse zero crossing technique, appl. to ^{19}F chem. shift in solids 8−37041
multiple quantum transition in NMR, two-dimensional spectroscopy, selective detection 8−23353
multiple-pulse NMR, spin dynamics *(Russian)* 8−35057
multiple-pulse NMR examination relaxation processes *(Russian)* 8−35056
muscle water transverse and longit. NMR relax. rates 8−35810
nematic liquid crystals, MHD effect, high resolution NMR *(Russian)* 8−15040
nitrobenzene, liq., ^{14}N and D NMR, ^{14}N quadrupole coupling const., environmental effects 8−48052
noble metal complexes, hexafluoro, review of struct. obs., pseudorot., press. effects 8−6045
nonaqueous electrolyte solutions, ionic nuclei, quadrupolar interaction, mag. relax., infinite dilution limit 8−35692
nonexponential nuclear relaxation data acquisition and processing system using Nairi-2 computer 8−32800
operator formation for double quantum NMR 8−2750
oxalic acid dihydrate, NMR spectra, ^{13}C-^{13}C interaction, chemical shift effects 8−29800
paramagnetic material effect on chem. shift and relax. times, mol. struct. effect 8−46373
phenylamine difluoride, and derivs., ^{19}F free induction decays 8−2754
phospholipid transmembrane asymm. studied by NMR spectroscopy with displacing reagents 8−31984
polyatomic molecules, structure recognition, from IR, UV, NMR and mass spectra, computer method 8−25737
polybutene-1, microstructure determ. by ^{13}C-^{1}H NMR 8−26455
polyethylene, linear, cold-deformed, texture and molecular chain mobility 8−19805
polyhedral A_{2n}-systems, trans induction effect in NMR and ESR spectra 8−29799
polymethinecyanines, symm. solvent effects on electronic struct., ^{1}H, ^{13}C NMR 8−13516
powdered specimen, anisotropic mag. interactions, high resolution NMR *(Russian)* 8−39418
progressive-saturation selective population inversion technique, sensitivity gain 8−17692
pulse Fourier transform NMR, vomplex spin system nonequilib. state, Liouville space description 8−48057
pulse Fourier transform NMR, weakly coupled complex spin system 8−48058
pulse NMR, two channel analogue pulse generator design 8−45665
pulsed NMR relaxation, computer controlled, general programme 8−4669
pyridine, ^{13}C-^{1}H spin-spin coupling consts. 8−25562
pyridine, proton-coupled ^{13}C J NMR, strong coupling 8−17691
pyridine+HCl, proton transfer interactions, NMR obs. 8−20007
radiative detection, single-pulse and spin-echo NMR 8−8428
receiver, description and design 8−21193
relaxation measurements, Markov theory, systems with multiple degrees of freedom 8−46368
saturation in rotating system of coordinates under magic angle conditions 8−19346
self-diffusion in cubic crystals, random motion of vacancies, correl. factor and NMR diffusion parameters 8−2284
shielding constant, cusp-type anomaly in fluid crit. region 8−39411
single passage NMR on oriented nuclei experiencing small elec. quadrupole interactions, numerical solns. 8−15031
solenoid, superconducting, homogeneous, for superconductor props. meas. by NMR *(Czech)* 8−29130
solids, high resolution NMR, review 8−6582
spatial selection in NMR by spin locking 8−43656
spectroscopy, ^{1}H, automatic PMR spectra interpretation system 8−32840
spectroscopy, frequency sweep nonlinearity, meas. and correction 8−24836
steroids, mixtures, quantitative anal. by ^{13}C NMR 8−31716
strong magnetic field induction metrology 8−37040
superionic conductors, prefactor anomalies, effect of low dimensionality 8−48061
tetrafluoromethane, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
tetrafluoromethane, compressed fluid ang. momentum relax., NMR 8−19354
tetrafluoromethane-inert gas, compressed fluids, ang. momentum relax., NMR 8−19355
2,2,6,6-tetramethylpiperidine nitroxide radical.alcohol complex, NMR chem. shift 8−46366
thermotropic liquid crystals, NMR relax., review 8−39436
time sharing method in high modulation NMR of fluids *(German)* 8−16822
TMNB, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
TMNC, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
transition metal diborides, C32-type, phys., chem. props., appls., review, book contrib. 8−47308
trichloroacetic acid, proton chemical shift tensor 8−13520
1,2,3-trifluorobenzene, ^{13}C, ^{19}F, and ^{1}H NMR spectral anal. 8−37659
trimethylene oxide, ^{12}C NMR, coupling consts. 8−25570

nuclear magnetic resonance continued
trimethylene sulphide, ^{12}C NMR, coupling consts. 8−25570
tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8−26681
tumour detection by NMR relax., spectrum anal. of multiple components data 8−48851
two-dimensional resolved spectroscopy, phase separation techniques, rare nuclei 8−19341
visual pigment unprotonated chromophore-protein bond, ^{13}C NMR spectra 8−11607
water, lyotropic phase orientation, ^{17}O and ^{2}H NMR study 8−27905
- 8−18749
$[Co(NH_3)_5{}^{15}NH_3]^{3+}$ complex prep. and Fourier transform NMR spectra *(Japanese)* 8−48060
Al-Cu (4 wt.%), precipitation sequence of metastable phases, NMR meas. 8−23713
β-Al_2O_3, additive modified charact. by NMR 8−10785
^{27}Al, NMR in MAl_2Br_2 crysts.(M=Li, Na, K, Cs, NH_4, $(CH_3)_4N$), quadrupole effect 8−6597
^{29}Al, mag. moment quadrupole coupling const. β-ray detected NMR in Al_2O_3 cryst. 8−37267
BF_3, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
^{11}B, NMR, for senior level inorganic courses 8−4424
$BaFHF_2$, ^{19}F free induction decay 8−2753
BrF_3 complexes with BF_3, PF_5 and AsF_5, F NMR, struct. and stability 8−37658
CO_2+Kr(Xe), ^{13}C-mag. shielding density depend. 8−9173
^{13}C, chem. shifts, estimation by computer program based on additivity rules 8−13518
^{13}C NMR probe for high resolution Fourier spectroscopy, cw time sharing appl. *(German)* 8−16823
^{13}C, NMR spectra assignment, proton-C splitting scaling 8−46372
^{13}C NMR with off-reson. proton spin decoupling, proton chem. shift calc. methods 8−27101
^{13}C, peptides and proteins, review 8−24023
C=C bond, ^{13}C shielding tensor, NMR meas. 8−1005
$(CaO)_3.SiO_2$, adsorption of H_2O, NMR exam. 8−48354
Co, NMR-ON meas., mag. hyperfine splitting const. of ^{60}Co, ^{52}Mn and ^{90}Nb 8−43651
$Co_{2-x}(Ni,Fe)_xTiSn$, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8−43654
Co_2TiSn, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8−43654
$Cr_{1-x}V_xCo$, localised mag. moment of Co impurity 8−27014
^{53}Cr:$ErCrO_3$, anomalous freq. variation at 2-8K *(Russian)* 8−43650
$^{133}Cs^+$/Cs g-factor ratio, NMR and zeeman transition freqs. 8−17817
$CsCuCl_3$, one-dimensional antiferromag., ^{63}Cu NMR mas. 8−2756
CsH_2PO_4, NMR of ^{133}Cs, elec. field gradient 8−15034
$CsNiF_3$, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
$CsVO_3$, polycryst., quadrupole coupling const., asymmetry parameter, chem. shift, NMR computer calcs. 8−6584
Cu:Cr(Mn)(Fe), NMR satellite data rel. to impurity struct. 8−35052
Cu-Fe, dil., powder, transferred orbital hyperfine field on near neighbours, NMR meas. 8−27098
$CuCl_2.2H_2O$, effect of press. on mag. phase transition, NMR meas. 8−19253
$CuCl_2.2H_2O$, influence of high hydrostatic press. on intermediate state associated with spin flopping 8−35020
D, in nitrobenzene, liq., ^{14}N quadrupole coupling const., environmental effects 8−48052
$DyFe_{0.998}Co_{0.002}O_3$, mag. transition, NMR meas. 8−27036
$ErCrO_3$:^{53}Cr, NMR frequencies, anomalous behaviour at low temps., 2-8K *(Russian)* 8−43650
$Er_{0.8}Dy_{0.2}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
$Er_{0.3}Ho_{0.7}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
$Er_{0.5}Tm_{0.5}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
^{19}F NMR, ligand hyperfine interaction, shift tensor determ., in TbF_3 and HoF_3 8−48056
^{19}F NMR imaging for biomedical application 8−20240
^{19}F, NMR in MHF_2 (M=alkali metal), $TlHF_2$, $SrFHF_2$, $BaFHF_2$ 8−2753
^{19}F, NMR in NH_4HF_2 and (substituted) phenylamine salts 8−2754
Fe-Co based Laves phases, mag. saturation moment, Co conc. depend. 8−15037
Fe-In, NMR-ON meas. of nucl. g-factor for ^{109,110}In 8−37275
Fe-Mo, NMR-ON meas. of nucl. g-factor for ^{93m}Mo 8−37275
Fe-Nb, NMR-ON meas. of nucl. g-factor for ^{90}Nb and ^{92m}Nb 8−37275
Fe-Tc, NMR-ON meas. of nucl. g-factor for ^{93}-^{95}Tc 8−37275
$FeBO_3$, dynamic NMR frequency shift for ^{57}Fe *(Russian)* 8−43677
Fe_3O_4, low temp. phase ionic ordering, NMR *(Russian)* 8−23354
GaAs:Fe, ordering of Fe impurity, NMR anomalous line shift obs. 8−27102
p-H_2, solid, anisotropic NMR spectra and crystalline state 8−10786
o-H_2+Ar, relax. and kinetic cross sections, DWBA calc. 8−25655
o-H_2+He, relax. and kinetic cross sections, DWBA calc. 8−25655
H_2O, proton mag. moment in Bohr magnetons, g-factor ratio determ. 8−33526
He, polarisation via collision with Tb atom 8−33453
^{3}He, optically oriented nuclei, maser excitation and characts., appls. 8−17891
^{3}He, optically oriented nuclei, in two-chamber cell, spin maser appls. 8−17892
^{3}He, solid, mag. susceptibility near ordering temp., pulsed NMR meas. 8−18869
^{3}He superfluid, A and B phases, pulsed NMR, nucl. susceptibility, spin-lattice relax., freq. shifts 8−47628
^{3}He, superfluid, B-phase, n-solitons, and NMR freq. calcs. 8−34670
^{3}He superfluid, B-phase, nonlinear NMR, instability analogous to ferromag. reson. predicted 8−43202
^{3}He, superfluid, heat capacity, spin susceptibility, NMR and viscosity *(Danish)* 8−22921
^{3}He, superfluid A phase, NMR on textural defects 8−38895
^{3}He, superfluid B-phase ferromagneticlike reson. behaviour obs. in NMR 8−10245
^{3}He-^{4}He liquid mixture, conc. ^{3}He spin diffusion expts. 8−34671

nuclear magnetic resonance continued
HoF_3, ^{19}F NMR, ligand hyperfine interaction, shift tensor determ. 8−48056
n-InAs, nucl. maser effect 8−19345
InAs:Mn, NMR, magnetoresist., Hall effect and mag. susceptibility meas. 8−26888
InSb:Mn, NMR, magnetoresist., Hall effect and mag. susceptibility meas. 8−26888
$KD_3(SeO_3)_2$, deuteron mag. reson. in ordered and disordered phase 8−39414
KIO_3, temp. depend. Raman spectra and phase transitions *(Russian)* 8−15171
$K_2Mn_{1-x}Cu_xF_4$, dynamic Jahn-Teller effect, NMR *(Japanese)* 8−19347
K_2TeO_3, D_2O soln., ^{123,125}Te Fourier transform NMR 8−15046
Kr, polarisation via collision with Rb atom 8−33453
$La_{1-x}Gd_x(Zn,Ag)$, resonance of ^{139}La 8−15038
La_3In, mag. susceptibility and normal state NMR meas. 8−31118
La_3Tl, mag. susceptibility and normal state NMR meas. 8−31118
Li, thermal mixing rate calc. 8−10795
$LiNH_4SO_4$, press.-temp. phase diagram, NMR and SHG meas. 8−23690
$Mn_xFe_{3-x}O_4$ NMR of Mn^{3+} in B-sites 8−35061
$Mn_4N_{0.8-1}$, NMR of ^{55}Mn, reson. curve fine splitting, spin echo meas. 8−2768
MnSi, helically ordered state, ^{55}Mn and ^{28}Si NMR 8−43655
^{55}Mn, NMR in Mn_4N_x 8−2768
N containing molecules, N NMR, nuclear mag. shielding, X-ray photoelectron spectra 8−17695
$(ND_4)_2PbCl_6$-ND_4Cl polycryst. mixture, D spin-lattice relax. times, $ND_4{}^+$ reorientation activation energies 8−6587
$NH_4{}^+$, $ND_4{}^+$, in lyotropic mesophase, ^{14}N NMR, and quadrupole splitting 8−17690
NH_4HF_2, ^{19}F free induction decays 8−2754
NH_4VO_3, polycryst., quadrupole coupling const., asymmetry parameter, chem. shift, NMR computer calcs. 8−6584
^{14}N, in nitrobenzene, liq., ^{14}N quadrupole coupling const., environmental effects 8−48052
^{14}N NMR chemical shift, external neat nitromethane scale 8−24834
^{14}N screening, absolute scale 8−2762
^{15}N NMR chem. shift references evaluation 8−24835
Na_2O-B_2O_3-SiO_2 glass, ^{11}B NMR obs. of struct. 8−38625
Na_2TeO_3, D_2O soln., ^{123,125}Te Fourier transform NMR 8−15046
$NaVO_2$, polycryst., quadrupole coupling const., asymmetry parameter, chem. shift, NMR computer calcs. 8−6584
$Nb(OR)_2Cl_3.L$, halo-alkoxide complex, prep. and props. 8−18605
Nd-Co alloys, NMR of ^{143}Nd and ^{145}Nd 8−19343
$NdFeO_3$, mag. transition, NMR meas. 8−27036
Ne, polarisation via collision with Rb atom 8−33453
Ni complex, hexamethylphosphorotriamide Ni (II), paramagnetic, pulsed NMR, substitution reaction *(French)* 8−10793
$NiPS_3$-Li, chemical and electrochemical intercalation *(French)* 8−38679
^{17}O NMR, proton decoupling 8−2752
$PO_4{}^{3-}$, O isotope effect in ^{31}P NMR spectra 8−42100
$PrCl_3$, cooperative Jahn-Teller ordering of elec. dipoles in non-Kramers doublets 8−15115
Pt-transition metal, dil., mag. susceptibility and NMR meas. 8−39290
RbKr, magnetic resonance meas. of spin-rotational interaction 8−33528
$RbMnF_3$, nucl. spin waves *(Russian)* 8−34973
SF_6, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
Se, trigonal tight-binding calc. of chem. shift 8−2759
SiF_4, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
$SmCo_5$, magnetic anisotropy, Co contrib., ^{59}Co NMR Obs. 8−43583
$SrFHF_2$, ^{19}F free induction decay 8−2753
^{87}Sr, $^{3}P_2$ metastable state, hyperfine struct. at. beam mag. reson. obs. 8−17590
Ta_2D, atomic displacements determ. by deuteron magnetic resonance *(Japanese)* 8−15035
$Ta(OR)_2Cl_3.L$, halo-alkoxide complex, prep. and props. 8−18605
TbF_3, ^{19}F NMR, ligand hyperfine interaction, shift tensor determ. 8−48056
Te, trigonal, tight-binding calc. of chem. shift 8−2759
$TlHF_2$ ^{19}F free induction decay 8−2753
$^{205}Tl^+$, NMR in aq. soln., dissolved O_2 on nuclear spin relax. rate 8−19356
UF_6, isotope enrichment, ^{19}F NMR in gas, liq. and solid 8−23364
UT_3, ^{3}He distribution from triton decay, NMR meas. 8−19360
$V_{1-x}Al_xO_{2\pm y}$, mag. and struct. props. meas. 8−2658
VH_x, NMR, phase transition obs., activation energy for H diffusion meas. *(Russian)* 8−27506
V_2Hf, NMR meas., mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359
V_2Ta, NMR meas., mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359
V_2Zr, NMR meas. mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359
Xe, liq.-vap. crit. exponents, NMR 8−18759
Xe, polarisation via collision with Rb atom 8−33453

nuclear magnetic shielding *see nuclear screening*

nuclear mass
see also atomic mass; mass differences
charge RMS radii mass number depend., fine struct. 8−501
fission, asymmetric, nuclear mass parameter 8−13053
Isolde experiments, prod. of extreme neutron/proton ratio nuclei, nuclear props. study *(Danish)* 8−4972
light nuclides, proton rich, mass excesses 8−37259
nucleon fluid, constrained variational calc. of symmetry coeff. 8−46022
shell model, anal. of mass formula and mass relationships 8−25108
shell model calcs. A=24, mass, spectra and β decay 8−4903
As, stable isotopes, masses meas. 8−12956
^{17}C populated in ^{48}Ca(^{18}O, ^{17}C), mass excess, low lying level struct. 8−8744
Ga, stable isotopes, masses meas. 8−12956
Ge, stable isotopes, masses meas. 8−12956
H^- ion bound state, extensions to finite nuclear mass 8−29743
^{6}He, mass meas. from ^{7}Li(d,^{3}He)^{6}He and ^{19}F(d,^{3}He)^{18}O* reactions 8−41628

nuclear mass continued
^{8}He, mass determ. from spectra of ^{64}Ni(^{4}He,^{8}He)^{60}Ni, and ^{64}Ni(^{4}He,^{6}He)^{62}Ni 8−25106
^{123}I, mass. meas., ground state Q-value of ^{123}Te (^{3}He,d) 8−4896
^{188}Pt side band, low lying and high spin states populated in ^{191}Ir(p,4nγ) 8−4936
Se, stable isotopes, masses meas. 8−12956
^{55}V mass excess determ. and β-decay scheme 8−21528
Zn, stable isotopes, masses meas. 8−12956
^{61}Zn, studied via ^{58}Ni(^{6}Li,t)^{61}Zn, mass, t-energy spectra and reaction mechanism 8−41756

nuclear matter
A=18 shell model spectra and 3 nucleon force 8−25124
abnormal states, pion condensation *(Russian)* 8−37302
analytic hydrodynamic model for expanding fireballs 8−41745
asymmetric, coupling of isospin oscills. to density oscills. 8−21508
Bethe homework problem, variational calcs. for neutron and nuclear matter 8−37292
Bethe-Goldstone eqn., nucl. matter, nucleon optical pot. anal. 8−12981
binding energy, corelated basis functions method appl. 8−45998
Brueckner's theory of nuclear matter, external field 8−33137
Brueckner and Green's function theories, model nuclear matter calcs., ground state props. 8−8750
central spin- and isospin-dependent potentials 8−46023
charged Bose condensates in supercritical external fields, relativistic field theory 8−8766
cold matter at super-nuclear densities including pion condensates 8−17128
cold matter in Einstein-Cartan gravitation theory, static spherical configurations 8−49308
collective mode of nucleon system with π^0 condensate 8−41660
collective modes in nuclear matter, propag., damping 8−25132
compressibility of nuclear matter, density depend. of binding energy, hyperspherical functions method *(Russian)* 8−17093
cranking model anal. of nuclear inertia in fission and heavy ion reacts. 8−41656
deep reconstruction of Coulomb field, shake-up of vacuum *(Russian)* 8−4910
degenerate many fermion system in exp. S form, linked valence expansions 8−41654
density compression in colliding nuclear slabs 8−642
energy calculations, comparison of Baker, Brueckner, and Jastrow methods 8−25143
extended Fermi system, optimum Jastrow function 8−8761
Fermi hypernetted chain calcs. for model nuclear matter 8−8759
Fermi quantum crystals, melting curves low temp. anomalies rel. to neutron stars 8−24757
Fermi superfluid hydrodynamics, time-depend. BCS formalism, compared with He II, finite nuclear systems 8−22920
fluid dynamics of small finite systems, nuclear matter flow, time depend. Hartree Fock 8−46018
heavy ion collisions, critical scatt. and pionic instabilities 8−21586
heavy ion collisions, high energy, depend. of total pion prod. cross sections on eqn. of state 8−41772
heavy ion deep inelastic reactions, as probes of nuclear matter, review 8−46083
heavy spherical nuclei, choice of density depend. interaction and α-decay *(Russian)* 8−46010
high density matter, relativisitc quantum many-body problem 8−4909
high density nuclear Mach shock waves, central heavy ion collisions, compressed nuclear matter, meson condensation 8−46089
hole-line expansion convergence 8−8762
hot hadronic matter in early universe, relativistic eqn. of state 8−45438
hydrodynamic model, nonlinear pion+pion chiral Lagrangian, $e^{+}+e^{-}$ and p+p collisions 8−32966
infinite finite temperature baryon matter, Green's function formalism, quantum correction 8−13000
kinetic theory of nucl. fluids 8−8763
low density α clustering effects of Skyrme N+N interactions in nuclear matter 8−29398
low density expansion of nuclear matter optical pot., self consistency requirement 8−8760
Migdal and surface δ interactions, strength consts. 8−8749
Monte Carlo simulation of many-fermion system 8−12644
neutron star matter, abnormal phase 8−20849
neutron stars, β-decay of π condensates as cooling mechanism 8−4271
neutron stars, eqn. of state for dense hadronic matter, asymptotic freedom 8−36627
neutron stars, neutrino cooling in pion-condensed phase 8−45351
neutron stars, Ni's theory of gravity 8−4273
neutron stars ν transport in π condensed matter 8−4270
neutronization kinetics in superdense matter with frozen-in mag. field *(Russian)* 8−46019
nonlocal separable interactions in the study of nucl. props. *(French)* 8−33115
nucleon fluid, constrained variational calc. of symmetry coeff. 8−46022
one body nuclear dynamics, classical theory for collective motion 8−8755
optical model potential in Λ_{10} approx., complex mass operator 8−33138
correl. with optical nucleon-nucleus potential *(Russian)* 8−37321
Overhauser's model, Skyrme force, Hartree-Fock test 8−12997
Pauli principle effect in nuclear matter, exchange of interacting two pions 8−12983
pion condensate existence determ. from π-nucleus total cross sections at ≈1.2 GeV 8−17249
pion condensation, one nucleon absorption of slow pions *(Russian)* 8−8765
pionization in superdense degenerate matter *(Russian)* 8−46020
polarised, deform. of Fermi surface 8−12998
rapidly rotating nuclei, density distrib. 8−8734
relativistic nucleus-nucleus collisions, high density nuclear Mach shock waves 8−633
relativistic superdense matter 8−12091
relativistic Thomas-Fermi model, nuclear size correction, eqns. of state and mass of superdense matter 8−29413
review, comparison of perturbative to variational techniques 8−33136

nuclear matter continued
self consistent long range order in nuclear matter Hartree Fock Overhauser orbitals 8−17127
semiinfinite and infinite symmetric matter, relativistic Hartree and Thomas-Fermi calcs. 8−25142
sequential decay model for hadron-hadron multiparticle prod., appl. to nuclear matter 8−46021
shock wave dynamics, phase transition effects 8−21509
spin-polarised hard-core neutron matter, ground state energy calc. 8−12999
stable state of cold matter with super-strong magnetic field *(Russian)* 8−25140
superconducting props. of π condensates 8−32993
superconducting quark matter, asymptotically high density 8−12863
superdense matter eqn. of state and relativistic nucleon-nucleus collisions *(Russian)* 8−606
superdense neutron matter, relativistic theory and eqn. of state 8−45349
symmetric and asymmetric, simple effective interaction for props. 8−25141
thermodynamic equilibrium for highly excited state *(Russian)* 8−21510
thermodynamic functions of nuclei *(Russian)* 8−539
Thomas-Fermi model of finite nuclei 8−8747
three nucleon clusters in nuclear matter, intermediate Δ-states, exchange diagrams calc. 8−17112
transparency to fast particles, rel. to range of high-energy strong interactions *(Russian)* 8−4901
NΔ conversion, two-channel formalism and three-body forces approaches 8−8733
p-nucleus interactions, 20 to 200 GeV/c, nuclear matter interaction model *(Russian)* 8−46065
π condensation and tensor binding, parity and isospin 8−33139
π condensation in isospin symm. nuclear matter, phenomenological approach 8−29414
π condensation in nuclear matter, Hartree-Fock and generator coord. methods 8−17129
π field relaxation in nuclear materials *(Russian)* 8−8764
π propagator in nucl. matter, NN correls. 8−515
π-nucleus scattering, binding effects in optical pot. of pion in nucleus 8−41685
π^- in heavy atomic nuclei *(Russian)* 8−25139
π^0 condensation in finite system, extended Thomas-Fermi model 8−41645
πN scattering amplitude in nuclear medium at nuclear matter density 8−29500

nuclear models
see also nuclear cluster model; nuclear collective model; nuclear reaction and scattering models; nuclear shell model
boson sd model of nuclei, group O(6) 8−33132
even-even deformed nuclei, aligned rot. of octupole vibrational states 8−12955
low energy positive parity spectra, 2ħω excitations, ang. momentum projected deformed particle-hole model calcs. 8−25119
microscopic models, core polarisation, transitions, cross sections, form factors 8−604
pairing force model, perturbation theory for projected states 8−33126
^{209}Bi, particle-vibr. model 8−519
^{56}Fe, equilib. compound model invalidity for $E_x>13$ MeV *(Russian)* 8−605
He, A=157, 159, 161, 163, single proton states, Dy(^{3}He,d) and Dy(α,t) reactions 8−489
^{93}Nb, equilib. compound model invalidity for $E_x>11$ MeV *(Russian)* 8−605

nuclear moment of inertia
backbending associated with alignment of quasiparticle momenta 8−33112
cranking model anal. of nuclear inertia in fission and heavy ion reacts. 8−41656
deformed even nuclei, level energies, γ transitions, moment of inertia, collective Hamiltonian 8−25133
double crossing of ground rotational band and super band 8−45996
even-even nuclei, yrast band energies, coherent states model, three parameter formula 8−17091
fission isomer properties investigation using Nilsson pot. 8−29403
hot nuclei with high angular momenta, γ-ray emission in heavy ion reactions, rot. bands 8−13133
quadrupole pairing forces influence on backbending, cranked Hartree Fock Bogoliubov approach 8−29401
quantum corrections to rigid body values 8−25105
rotating nuclei of high and v.high nucl. spin *(German)* 8−25102
yrast level spacing discontinuity, rotation alignment mechanism 8−17085
^{26}Al, coherence widths, level density param. and effective moment of inertia 8−37360
^{27}Al, coherence widths from ^{12}C(^{15}N,α) 8−41619
^{196}Au, studied via ^{197}Au(n,2n), isomeric cross-section ratio and nuclear moment of inertia 8−13096
^{160}Er, produced in ^{124}Sn+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
Hg, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
Pt, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
^{28}Si, shell model and statistical spectroscopic anal. 8−29390
^{144}Sm, produced in ^{100}Mo+^{48}Ca 8−37260
^{118}Te, produced in ^{82}Se+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
^{163}Tm, high spin rot. levels, studied via ^{165}Ho(^{3}He,5n) and ^{165}Ho(α,6n) reactions 8−8722
^{179}W, backbending, high spin isomer decay 8−45997
Yb, A=163, 165, 167, backbending of rotational bands 8−8728
Yb, A=169, 170, moments of inertia of excited bands, even-odd difference *(Chinese)* 8−498
Yb with high angular momentum from heavy ion reactions, moment of inertial using γ-spectra 8−13135

nuclear moments
see also nuclear electric moment; nuclear magnetic moment; nuclear moment of inertia
dipole moment of nuclear state using transient mag. field from ion passing through ferromag. *(Dutch)* 8−29386

nuclear moments continued
^{208}Pb region, finite Fermi systems, review 8−537
V, A=47,59,51, spectra, e.m. moments, B(E2) and B(M1) values calc. 8−8745
W, produced in (^{16}O,xn) 8−37371
^{133}Xe, nuclear moments and optical isotope shift 8−33118
^{161}Yb, produced in (^{16}O, xn), γ-ray spectra, dipole moment in yrast cascade 8−37371
Zn, even isotopes, effect of particle-vibr. coupling in nucl. struct. 8−12940

nuclear muon capture *see muon capture*

nuclear optical model
^{12}C(^{16}O,^{16}O), anomaly at 13.7 MeV, optical model anal. 8−21587
^{16}O(π^+,π^+), 50 MeV, Lorentz-Lorenz effect 8−17247
Λ_{10} approximation, complex mass operator using nonlocal separable central pot. 8−33138
absorption effects in low energy heavy ion fusion reactions 8−8851
analogue resonances, finite Fermi systems, polarisation effects *(Russian)* 8−46041
Bethe-Goldstone eqn., nucl. matter, nucleon optical pot. anal. 8−12981
compound nucleus, giant resonances, force functions for partial E1-transitions 8−12985
deuteron-nucleus optical potential, imaginary L.S interaction 8−41729
elastic proton and neutron, cross sections, microscopic optical model pot. calcs. 8−593
fixed scatterer approx., corrections, correl. expansion 8−571
folding calcs. and density depend. interactions 8−8852
Hamada-Johnston interaction, nucleon optical pot. 8−12982
heavy ion inelastic scatt., folding model, macroscopic formalism, form factors 8−25227
heavy ion optical pot., long range absorpt., from Coulomb distorted states and Green's functions 8−29494
heavy ion optical potential elastic scatt., energy depend., Regge pole and Coulomb amplitudes 8−25228
heavy-ion elastic scatt., dynamic polarisation pot. 8−13136
heavy-ion high-energy scatt., optical phase shift function 8−639
heavy-ion pot., density depend. interactions and folding model 8−17237
Hill-Wheeler eqns. direct solns., pot. scatt. and α-α calcs. 8−4956
Levinson theorem, standard optical pots., nucleon+nucleus scatt. phases *(Russian)* 8−17214
low density expansion of nuclear matter optical pot., self consistency requirement 8−8760
microscopic optical model anal. of (n,n) and (p,p) cross sections 8−29434
model parameters for heavy-ion α-transfer reactions on targets with A=10-20 *(Japanese)* 8−4962
multiple scatt. theory, spectator expansion of full Green's operator 8−17162
nucleon-nucleus potential, correl. with nuclear matter characts. *(Russian)* 8−37321
nucleus+nucleus interaction potential, microscopic approach to real and imaginary parts calcs. 8−37372
off-shell ambiguities and phenomenological optical potentials 8−37379
single scattering optical model, three body approach, appl. to nucleon+nucleus scatt. 8−25162
total scattering cross sections for optical pots., quasiclassical calcs. 8−8270
volume integrals of nucleon absorbing optical pot. 8−8789
West Yennie formula, assessment of validity for Bethe phase, using optical model framework 8−21608
α elastic scattering from ^{90,92}Zr, ^{124}Sn, ^{208}Pb, optical model parametrization 8−33196
α-nucleus elastic scatt., optical model analysis 8−41737
α-nucleus pot., microscopic calc. 8−8788
d+nucleus optical model calcs., tensor spin-orbit interaction 8−13112
(e,e′N) reaction, energy depend. optical potential calc. *(Russian)* 8−41706
(n,n), elastic and inelastic scatt. on various isotopes, cross sections meas. and calcs. 8−13081
N-nucleus optical model potential, spin-orbit component from internucleon pot., ^{40}Ca+p appl. 8−46039
(p,n) cross sections on nuclei with A=89 to 130, anomalous optical model pot. 8−25188
(p,p), 30 MeV, polarised protons 8−597
(p,p), isobaric analogue resonances, microscopic and phenomenological parameters, S-matrix eval. methods 8−13045
(p,p) scatt. on light nuclei, 6 MeV *(Russian)* 8−25200
(π^+,p) near (3,3) resonance region, isobar doorway model 8−41778
π bound states in finite nuclei, π-nuclear optical pot. 8−46013
π-nucleus scattering, binding effects in optical pot. of pion in nucleus 8−41685
π+nucleus total cross section, A-depend. shift of peak 8−33226
^{12}(α, α), 1.37 GeV, microscopic anal. using modified Glauber model 8−617
B, 20 to 50 MeV, total reaction cross sections compared to opaque-nucleus model 8−33174
Ba, A=134-138, average neutron cross sections, statistical and optical model calcs. 8−29458
^{9}Be elastic scattering on heavy target nuclei, 14-26 MeV, universal optical pot. 8−25219
^{9}Be+^{12}C, 2.8-6.3 MeV, fusion and neutron transfer cross-sections 8−41746
^{9}Be+^{12}C, 3.5 to 9.5 MeV, sub barrier, cross sections and optical model calcs. 8−8838
^{9}Be+^{16}O, 2 to 5.1 MeV, sub barrier, cross sections and optical model calcs. 8−8838
^{9}Be+^{19}F, 7 to 16 sub. barrier, cross sections and optical model calcs. 8−8838
^{9}Be(t,t)^{9}Be, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8−41730
^{209}Bi(n,n), 0.6 to 1.0 MeV, optical model params. 8−21557
^{12}C+^{16}O resonances, microscopic double folded model 8−41754
^{12}C+π^-, 40 GeV/c, multiplicity distribs. of secondary charged particles, Glauber model calcs. *(Russian)* 8−17252
^{12}C(^{16}O,α)^{24}Mg, anomaly at 13.7 MeV, optical model anal. 8−21587
^{12}C(^{3}He,^{3}He), 20.5-33.0 MeV, energy depend. of analysing power optical model 8−17226
^{12}C(^{3}He,α)^{11}C, 11 MeV, multistep mechanism, CCBA calcs. 8−41734

nuclear optical model continued
^{12}C(p,^{6}Li)^{7}Be, 51.9 MeV, spectroscopic factors and reaction mechanism 8−46058
^{12}C(p,π^+)^{13}C, 185 MeV, DWBA with Kisslinger type optical pot. 8−4938
^{12}C(t,t)^{12}C, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8−41730
^{14}Ca(p,p), A=40, 42, 44, 48, 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{40}Ca (α,α), α-nucleus pot., microscopic calc. 8−8788
^{40}Ca(^{3}He,^{3}He), 27-84 MeV, energy depend. of optical model param. 8−41736
^{40}Ca(α,α), 104 MeV, optical model analysis 8−41737
^{40}Ca(α,α), 36-61 MeV, large angle struct. 8−41743
^{40}Ca(α,α), back-angle anomaly, semi-microscopic absorpt. pot. 8−616
^{40}Ca(α,α), optical pot., nuclear glory effect 8−21578
^{40}Ca(d,p), 7 MeV, cross-sections calcs. from pseudopotentials, spectroscopic factors 8−572
^{44}Ca(α,α), 36-61 MeV, large angle struct. 8−41743
^{48}Ca+^{16}O 56 MeV, transitions to resolved levels, optical model parameter 8−41758
^{48}Ca(d,t)^{47}Ca, 13.5 MeV, polarised deuterons, low-lying levels in ^{47}Ca 8−13114
Ca(p,p), 30 MeV, A=40, 48, pick-up and inelastic scatt. contributions to p optical pot. 8−25182
^{59}Co+n, 8-31 MeV, spin-spin depend. of total cross section 8−17172
^{50}Cr(p,p) and (p,p′), E_p=6 MeV, cross sections, opt. pot. parameters 8−13086
^{52}Cr(p,p) and (p,p′), E_p=6 MeV, cross sections, opt. pot. parameters 8−13086
Cr(n,n), A=50, 52, 54, 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
Fe(p,p′), A=54,6, E=17.2, 20.4, 24.6 MeV, polarised protons, optical model, DWBA anal. 8−13094
Ge+^{12}C, 48 MeV, surface transparency of optical pots. 8−13146
Ge+^{16}O, 56 MeV, surface transparency of optical pots. 8−13146
Ge+^{18}O, 56 MeV, surface transparency of optical pots. 8−13146
^{3}He, optical pot., coupled reaction channel anal. 8−570
^{4}He, π^0 coherent photoprod., screening corrections and rescatt. *(Russian)* 8−41697
^{4}He(p,p), 560-1730 MeV, Dirac eqn. optical model anal. 8−29467
^{165}Ho(π^-,X), 175 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{6}Li(^{3}He,p)^{8}Be, 14 MeV, p-^{8}Be optical model parameters 8−25208
^{175}Lu(π^-,X), 230 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{20}Ne+^{12}C, 17 to 35 MeV, excitation functions, optical model anal. 8−41759
Ni+^{12}C, 48 MeV, surface transparency of optical pots. 8−13146
Ni+^{16}O, 56 MeV, surface transparency of optical pots. 8−13146
Ni+^{18}O, 56 MeV, surface transparency of optical pots. 8−13146
^{58}Ni(^{3}He,^{3}He), 27-84 MeV, energy depend. of optical model param. 8−41736
^{58}Ni(α,α), 139 MeV, optical model analysis 8−41737
Ni(p,p′), A=58,60,62, E=17.2, 20.4, 24.6 MeV, polarised protons, optical model, DWBA anal. 8−13094
^{16}O(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{207}Pb(p,p'), excitation of neutron-hole states, 61.2 MeV protons 8−8724
^{208}Pb+^{6}Li, Coulomb and nucl. excitation in ^{6}Li dissociation 8−41770
^{208}Pb(α,α), 104 MeV, optical model analysis 8−41737
^{208}Pb(n,n), (n,n′), 7-26 MeV, optical model anal. 8−37340
^{208}Pb(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{208}Pb(p,p), 30 MeV, pick-up and inelasti scatt. contribution to p optical pot. 8−25182
Pb(α,α), 104 MeV, A=204,206,208, neutron density RMS radii 8−17088
Pb(n,n), A=206,207,208, 0.6 to 1.0 MeV, optical model params. 8−21557
^{141}Pr+n, spherical optical model anal., fast neutron differential elastic scatt. and total cross sections 8−46051
^{34}S(d,d), elast. and inelast. scatt. of 11.8 MeV polarised deuterons 8−33191
^{117}Sb, levels studied via ^{116}Sn(^{16}O,^{15}N)^{117}Sb, ang. distrib. anal. of 64 MeV reacts. 8−8836
^{28}Si+^{12}C elastic scatt. ang. distribs., optical pot. 8−8855
^{28}Si+^{9}Be, ^{12}C, ^{14}N or ^{16,18}O, low energy elastic scatt., global optical model anal. 8−25229
^{28}Si(^{16}O,^{16}O), 45 to 63 MeV, energy depend. surface transparent optical pot. 8−46099
^{28}Si(α,α), elastic and inelastic scatt., compound nucleus contrib. anal. 8−37356
^{28}Si(d,p), 18 MeV, cross-sections calcs. from pseudopotentials, spectroscopic factors 8−572
^{116}Sn, levels studied via ^{116}Sn(^{16}O,^{16}O) and ^{116}Sn(^{16}O,^{16}O′), ang. distrib. anal. of 64 MeV reacts. 8−8836
^{122}Sn(d,d), 15 MeV, optical model calc. 8−41729
^{84}Sr(^{3}He,α)^{83}Sr, 18 MeV, ^{83}Sr levels, DWBA calcs. using optical model 8−41738
^{118}Te, levels studied in ^{116}Sn(^{16}O,^{14}C)^{118}Te, ang. distrib. anal. of 64 MeV reacts. 8−8836
Te(n,n′), A=124-130, scattering cross sections and optical model 8−4944
Ti, 20 to 50 MeV, total reaction cross sections, compared to optical model prediction 8−33174
^{46}Ti(d,d), 10 MeV, optical model calc. 8−41729
^{48}Ti(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{238}U(n,n′), cross section param. from optical model anal. 8−21557
^{51}V(^{3}He,d), (^{3}He,^{3}He), 15 MeV, ang. distribs. meas., optical model anal. 8−33192
^{68}Zn(α,α), 38 MeV, correls. of optical pot. parameters for elastic scatt. 8−13117
^{90}Zr(d,d), 10 and 15 MeV, optical model calc. 8−41729
Zr(α,α), A=90,2, E=40-120 MeV, form factors, optical model anal. 8−13123

nuclear orientation *see nuclear polarisation*

nuclear Overhauser effect
hydrocarbon chain, gauche-trans isomerisation, ^{13}C relax. times and nucl. Overhauser enhancement model 8−33520
MBBA, ^{13}C spin-lattice relax., Fourier-transform NMR, NOE 8−48064
polyfluorostyrene, para- and meta-, dil. soln., ^{19}F magnetic resonance 8−10792
$\mathrm{tRNA}_{\mathrm{yeast}}{}^{\mathrm{phe}}$, Fourier transform PMR in aq. soln., ^{1}H exchange and relax. rates meas. method 8−15049
tryptophan, Fourier transform PMR in aq. soln., ^{1}H exchange and relax. rates meas. method 8−15049
^{13}C, interacting with strongly irradiated proton system, longit. mag. relax., Overhauser enhancement 8−19377
K_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8−15051
^{15}N, interacting with strongly irradiated proton system, longit. mag. relax., Overhauser enhancement 8−19377
Na_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8−15051

nuclear particle track visualisation *see particle track visualisation*

nuclear photoeffect *see photon-nucleus reactions*

nuclear physics
see also fission; fission reactors; nuclear bombardment targets; nuclear decay theory; nuclear explosions; nuclear reactions and scattering; nuclear structure; radioactivity
astrophysics, recent developments 8−4100
conference, Mickolajki, Poland, 30 Aug.-11 Sep. 1976 8−21484
conference, Portoroz, Yugoslavia, 4-6 Nov 1976 8−12937
display for data output in phys. expts. 8−9046
laboratory course at Purdue University 8−4443

nuclear polarisation
see also dynamic nuclear polarisation; magnetic double resonance; nuclear polarisation in liquids and solids
actinide fission, statistical anal. of gamma emission 8−17255
atomic energy level isotopic shifts and nuclear polarisation *(Russian)* 8−13444
dipole polarisability sum rule, HF calc.,, ^{16}O, ^{40}Ca appl. 8−21504
eikonal approx., electron-oriented nucleus scatt., polarisation of e^-, nuclei and emitted γ rays 8−37331
isomeric A=48-50 nuclei, mag. moments and core polarisation 8−37274
laser induced nucl. orientation, at. and nucl. applications, review 8−37310
neutron excess nuclei, near equality of isoscalar and EM transition rates 8−8770
orientation with combined elec. and mag interactions 8−41633
particle spectra line shapes after γ emission in flight 8−41665
Skyrme interaction, mag. moments, polarisability, gyromag. factors 8−21501
^{105}Ag, high spin states γ-single spectra, $\gamma\gamma$ coincidence, excitation functions, ang. distrib., polarisation meas. 8−21519
^{12}B, produced in $^{12}\mathrm{C}(\mu^-,\nu_\mu\gamma)^{12}\mathrm{B}$, impulse approx. calc., nuclear polarisation 8−37315
^{12}B, spin polarisation in $^{100}\mathrm{Mo}(^{14}\mathrm{N},\ ^{12}\mathrm{B})$, semiclassical anal. 8−33212
$^{12}\mathrm{B}\rightarrow\mathrm{B}^-+{}^{12}\mathrm{C}$, second-class current search, alignment correlation meas. by Zeeman technique 8−37313
$^{12}\mathrm{B}\rightarrow\beta^-+{}^{12}\mathrm{C}$, alignment correlation meas. by Zeeman technique, vector currents and form factors 8−37312
^{206}Bi, nucl. orientation in ferromag. BiMn 8−13010
^{207}Bi, nucl. orientation in ferromag. BiMn 8−13010
^{12}C, $2_1{}^+$ state, rel. depend. of transient mag. field effect, recoil in Fe 8−37285
^{41}Ca, deorientation of highly stripped ions recoiling in vacuo 8−37325
^{107}Cd, heavy ion nucl. alignment, recoil in vac., time-differential meas. 8−37304
^{19}F, $5/2_1{}^-$ state, precession on recoil in Fe and Ni 8−37285
^{4}He muonic atom, nuclear polarisation corrections 8−22056
^{a}Hg, A=198-204, reorientation effect meas. on 2^+ states 8−37282
^{165}Ho, electron-oriented nucleus scatt., eikonal approx. calc. 8−37331
^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8−46059
^{20}Ne, strong polarisation of levels obs. in $^{16}\mathrm{O}(^{16}\mathrm{O},^{12}\mathrm{C})$ reaction 8−25213
^{16}O, 31^- state, precession in Fe foil, depend. on magnetisation 8−37285
^{17}O, mag. form factor, core polarisation and exchange current effects 8−46003

nuclear polarisation in liquids and solids
see also dynamic nuclear polarisation
antiferromagnet, nucl. orientation 8−43652
generalised spin precession eqn., elec. quadrupole interaction sign 8−43744
insulators, neutron activated β-emitters, hyperfine interactions 8−39070
metal, neutron activated β-emitters, hyperfine interactions 8−39070
orientation with combined elec. and mag interactions 8−41633
Ag-Mn, dil., nuclear orientation expts. 8−43713
Al-Y, dil., hyperfine interactions, $^{87}\mathrm{Y}^{\mathrm{m}}$ nuclear orientation meas. 8−43715
Au-Mn, dil., nuclear orientation of recoil implanted ^{52}Mn 8−43716
Au-Mn(Cr)(Fe), dil., spin glass state and Kondo effect, nucl. orientation of ^{54}Mn 8−6514
Au-Y, dil., hyperfine interactions, $^{87}\mathrm{Y}^{\mathrm{m}}$ nuclear orientation meas. 8−43715
BiMn, ferromag., nucl. orientation of Bi isotopes 8−13010
$Co_{80}P_{20}$, amorphous, sign and magnitude of ^{60}Co hyperfine field, nucl. orientation 8−48100
Fe, triple pulse reson. studies of ^{60}Co nuclei 8−43675
Fe-Ta, nucl. orientation of ^{178}Ta 8−39412
Fe-Y, dil., hyperfine interactions, $^{87}\mathrm{Y}^{\mathrm{m}}$ nuclear orientation meas. 8−43715
Ge, polarisation of implanted ^{12}B 8−43653
Ho-Au, dil., hyperfine interaction of Ho^{3+}, nuclear orientation expts. 8−43717
In_3Ce, nucl. orientation meas. 8−39415
$MnCl_2.4H_2O$, antiferromagn., nucl. orientation 8−43652
Pb_3Ce, nucl. orientation meas. 8−39415
Pt-Mn dilute alloy, cubic foil, Mn spin behaviour, nuclear orientation technique 8−27044
^{120}Sb, nuclear alignment in Sn, temp. depend. 8−41720

nuclear polarisation in liquids and solids continued
^{115}Te, nuclear alignment in Sn, temp. depend. 8−41720
$^{87}\mathrm{Y}^{\mathrm{m}}$ orientation meas. in Al and Au hosts, mag. moment of $9/2^+$ isomeric state 8−41632

nuclear power
air-scooping nuclear-electric propulsion for advanced orbital transportation missions 8−45188
ANS annual meeting, 1977 8−663
atomic energy and nonproliferation *(French)* 8−33303
benefit-cost analysis in nuclear fuel cycle 8−8957
breeder reactor development, survey *(German)* 8−5007
coal gasification plant, high-temp. alloy evaluation for nucl. process heating 8−13237
coal gasification plant using nuclear process heat, material corrosion 8−13348
conference in Salzburg report *(German)* 8−8896
Conference on Nuclear Power and the Public, September 1977, Geneva, brief report 8−29520
district heating systems, nuclear power appl. 8−37454
education, undergraduate course evaluation on radiation and the environment 8−1
fuel cycles, reactor types, future role of nuclear energy *(German)* 8−29579
fusion, economic and environmental consequences 8−33285
global problems and energy, nuclear power 8−45454
health hazards from alternative electricity generation fuel cycles 8−11791
heat supply from nuclear reactors and coal combustion, appl. study 8−37455
methanisation plant ADAM I, nuclear long-dist. energy circuit *(German)* 8−25335
nonproliferation treaty safeguards implementation, nuclear facilities in USA 8−820
nuclear engineering, teaching project management as part of international technology transfer 8−4428
plant safety systems, common mode, failures, investigation *(German)* 8−694
process heat system, material screening studies 8−13236
public health aspects of radiation 8−35895
radioactive releases and waste disposal, CEGB Research Division report 8−46145
space propulsion, nuclear-electric, Jupiter orbiter mission 8−45189
steam gasification of coal, test and development of heat-exchanger alloy 8−15589
thermal power outputs of small high-temp. power plants 8−738
United States nuclear industry, new energy policy, review 8−5061
US breeder reactor programme 8−731
value of reliability analysis 8−29619
U enrichment, market survey *(German)* 8−4999

nuclear power stations
see also power station control
accident dispersion model, direction depend. probability limits consistent with NRC practice 8−17372
AGR, future energy generation prospects 8−729
AGR system for nuclear process heat, primary circuit component materials 8−13233
aircraft impact on reactor containment structures 8−29660
aircraft impact problem, review 8−41875
B&W integrated control system improvement 8−8946
Babcock & Wilcox steam supply system, operating experience 8−21752
blast effects from accidental explosions, US regulatory requirements 8−41877
Bohunice A-1 power plant, nondestructive gamma-ray spectrometry method for fuel burn-up control *(Slovak)* 8−21672
breeder reactor development, survey *(German)* 8−5007
BWR, automatic protection system *(German)* 8−4989
BWR, Bilibino power station, internal power-distribution monitor system 8−17341
BWR, earthquake-proof component design, seismic analysis 8−21733
BWR, Fukushima Daiichi power station, preoperational test, start-up test, operating experience *(Japanese)* 8−29635
BWR, radioactive corrosion products behaviour 8−21661
BWR plant, LOCA capability code for utility appl. 8−21690
BWR plant diagnosis system, on line process computer appl. 8−46146
CANDU operation for electricity prod. and district heating 8−41835
Caorso plant, dynamic tests and seismic records of RHR building 8−41872
coolant piping, relative rupture probabilities 8−21632
corrosion product reduction program 8−21665
CTR central power station waste management 8−773
desalination by very low temp. nuclear waste heat 8−41850
digital radiation monitoring 8−816
district heating, duplex chemical system for storage and transport of heat from LWR 8−37460
district heating, safety evaluation 8−37422
district heating and electricity prod., economy and safety, heat output optimum 8−37459
district heating from Kaiseraugst nuclear power station 8−37462
district heating in Stockholm, nuclear power and oil-fired plant comparison 8−37458
district heating systems, combined generation by fossil fired and nuclear power plants 8−37457
double-wall piping welded joint residual stress study *(Russian)* 8−27541
earthquake response spectra 8−41871
earthquake simulator operational principles 8−5681
effluent discharge, atmospheric radioactivity inside buildings, absorbed dose estimation *(Spanish)* 8−8998
ELMO bumpy torus reactor reference design 8−803
environmental and safety aspects 8−766
environmental impact *(French)* 8−8994
failure probability of battery system following loss of AC power 8−17376
fault tree analysis, development of DICOMICS-TWIN self-adaptive algorithm for minimal cut sets determ. 8−17380
fault tree and reliability analysis, modular decomp., PL/1 program 8−17381
Federal radiological emergency response planning and preparedness activities 8−46147

nuclear power stations continued
FFTF, operator training simulator 8−5013
fire protection research 8−21710
fission reactor fuel UF_6 advantages 8−8912
fission-fusion electric energy supply system modelling 8−740
fission-fusion hybrid energy storage system, economic feasability 8−796
fission-fusion hybrid power plant economics 8−789
floating nuclear plant, shield design features 8−21777
floating plant, overview 8−21748
floating power plant, environmental and safety aspects 8−21750
floating power plant manufacture 8−21749
Fort Calhoun, operation with reduced complement of in-core detectors 8−21716
fuel, rod modelling, utility requirements 8−21747
fuel accounting practices at Duke Power Company 8−13244
fuel cycle economics, tutorial paper 8−17446
fuel handling system availability, minimum requirements 8−41820
fuel management reactor calcs., educational aspects 8−17298
fuel reprocessing programme in W.Germany *(German)* 8−8954
fuel reprocessing technology status, large plants 8−21735
fusion, recirculating power, unit costs, thermal pollution 8−29643
fusion plant design costs 8−791
fusion power plants, compact, magnetic mirror research 8−744
fusion power station economic anal. 8−788
fusion reactor costing methods 8−790
fusion reactor large magnet systems safety 8−770
fusion reactor second generation designs, safety anal. 8−771
fusion-fission hybrid reactor system, energetics assessment 8−797
fusion-fission hybrid system using divertored Tokamak, optimisation 8−798
gas phase cavity reactor design and operation with MHD generators and turbogenerators *(Russian)* 8−37435
gas turbine-HTGT system heat exchanger design 8−739
gaseous reactor wastes, dispersal forecasting *(French)* 8−8995
GCFR, development of PCRV steam generator cavity closure 8−41849
GCFR core and core support struct., seismic model test 8−41869
Hamaoka nuclear power station, operating experience *(Japanese)* 8−17333
heat discharge, agricultural uses *(French)* 8−5060
heat extraction from steam generators in nuclear plants 8−37465
heat recovery from nuclear plants for agriculture and pisciculture 8−37464
HTGR, Peach Bottom, decommissioning and component removal 8−21756
HTGR dual purpose plant for military installations 8−41855
HTGR U reprocessing by graphite fuel element and C fluidised bed combustion 8−13314
HTRs, current development and commercial advantages *(German)* 8−37433
human factors engineering 8−21711
industrial process heat charact., potential for solar and nuclear power systems 8−822
inertial confinement fusion reactor and generating station concepts 8−753
INSITE system for nuclear site data storage and retrieval 8−5109
large-scale, safety considerations 8−8961
laser fusion hybrid reactor, scoping studies for power generation 8−5026
laser fusion power stations, potential accidents 8−776
laser fusion-fission hybrid reactor design 8−802
liquid discharge, radionuclide isotopic anal. *(Spanish)* 8−13250
LMFBR, large EM induction pump for high-temp. appl. 8−17291
LMFBR commercial plant design 8−8877
low temp. heat extraction from nuclear power plants for district heating 8−37456
LWR, commercial, evaluation of human errors and operator reliability 8−17373
LWR, condenser tube failures 8−21715
LWR, heat supply for desalination, economics 8−41851
LWR fossil fired superheater technical and economic assessments 8−8966
LWR plant, decommisioning 8−29603
LWR utility, development of non-LOCA safety anal. methods 8−21691
LWR waste management, cf. fusion plant 8−773
main steam isolating valves, back pressure light, PWR appl. 8−29602
metalwork fault monitoring, US flaw detection system *(Russian)* 8−25302
modification during plant startup and operation 8−21758
off-site emergency monitoring systems 8−46178
offshore environmental monitoring program for proposed nuclear power plant in Islote, Puerto Rico 8−11917
optimal operating conditions 8−37427
performance analysis of power plants from operating experience data 8−21757
personnel dosimetry and access monitoring by process computers *(German, English)* 8−17440
personnel radiation minimisation in nuclear power plants 8−21663
Philippsburg power station, personnel dosimetry monitoring, use of evaluation device for rod and process computer *(German, English)* 8−17441
plan in Holland, critical review *(Dutch)* 8−13252
plant safety systems, common mode, failures, investigation *(German)* 8−694
Point Lepreau, radioactive waste management 8−29600
Point Lepreau, standard CANDU 600 MWe nuclear plant installation 8−29637
point model nuclear reactor heuristic approach to reinforcement learning control 8−46144
pollution resulting from release of Cu, impact and fate on aquatic environments 8−7665
power plant pathology 8−17345
pressure vessel testing, water pressure testing, test method and anal. *(German)* 8−25260
probabilistic methods for risk assessment and safety standard 8−21693
processed fission product wastes as heat source 8−41838
PWR, occupational radiation exposure 8−21664
PWR, Oconee, occupational exposures, radiation levels and waste levels during operation 8−21726

nuclear power stations continued
PWR, primary cct. leakage simulation, safety aspects *(German)* 8−33239
PWR, two-unit, modification feasibility for radwaste volume reduction equipment 8−17395
PWR and LWR local corrosion causes and preventive methods *(French)* 8−8963
PWR appl. to multi-stage-flash desalination, small performance plants 8−37461
PWR containment safety design margins *(German)* 8−717
PWR crosslinked polyethylene insulated low noise triaxial cable *(Japanese)* 8−670
PWR development in France *(French)* 8−8962
PWR nuclear steam supply system for district heating and elec. prod. 8−37466
PWR plant, dynamics, digital simulation 8−8882
PWR plant, LOCA capability code for utility appl. 8−21690
PWR power plant, assessment of underground siting as engineered safety factor 8−13316
radiation exposure and protection 8−25301
radiation monitoring, digital differential pulse rate meter 8−37451
radiation monitoring programmes at Point Lepreau 8−29552
radiation monitoring systems, review 8−33292
radiation protection optimisation in nuclear engineering, cost, risk *(Czech)* 8−33295
radioactive waste, high level, disposal in deep-sea bed, New Zealand 8−705
Rancho Seco Generating Station, LIDAR obs. of plume diffusion 8−11991
reactor noise diagnostics and surveillance, experience of Babcock and Wilcox company 8−17346
reference mirror hybrid fusion-fission reactor design 8−801
safety analysis, human errors in high stress situations, data and assessment 8−17374
safety strategy and principles in nuclear power station practice *(German)* 8−37410
safety system redundancy, cable routine inspection 8−735
seismic design, automated generation of spectrum compatible artificial time histories 8−29661
seismic floor response spectra 8−819
seismic input through rigid foundation filtering 8−29659
seismic qualification of systems, structures, equipment and components 8−41878
seismic testing of structures and components using two axial shaking table 8−44300
seismic trip system, risk assessment 8−17377
shutdown system reliability, effect of operator performance 8−29611
site selection, social aspects 8−5062
siting, appl. of remote sensor data 8−21744
soil warming, waste heat from nuclear power station 8−37463
spent fuel storage basins 8−725
spent LWR fuel, prospects for storage and reprocessing 8−5002
spray ponds as large ultimate heat sink, thermal performance 8−13214
stack effluents, radiation monitoring 8−46179
steam turbines for district heating in nucl. power plants 8−37437
steam turbines for power prod., district heating, desalination 8−37438
steel, AGR boilers, gas side corrosion, breakaway oxidisation treatment 8−48558
sulphonated cool, gamma radiation breakdown 8−693
surface- and ground-water quality near power plants 8−7679
Takahama power station, operation records *(Japanese)* 8−25304
tandem mirror fusion reactor, mechanical design 8−800
tandem mirror fusion reactor, parametric design 8−794
TFTR, physics/engineering interface 8−750
Tokamak fusion power plant, cost sensitivity anal. 8−17412
Tokamak fusion power reactors 8−21764
Tokamak fusion reactors, MAXAMAK and MULTIMAK approaches 8−804
Tokamak ignition test reactor, scoping studies 8−793
Tokamak power plants, impact of major design params. on economics 8−792
Tokamak reactors with elongated plasmas, parametric and economic anal. 8−795
tornado vortex model, appl. to nuclear plant design 8−17444
utility use of reactor physics core codes 8−17299
validated computer codes for nuclear electric utility 8−17403
vibration monitor for rotating machines, ave. frequency technique 8−13299
water supply, B determ. by flame photometry 8−45672
water-cooled water-moderated reactor cooling system faults, hybrid simulation *(Russian)* 8−5008
water-moderated water-cooled reactor operational mode anal. by computer *(Russian)* 8−21760
Westinghouse steam generators, operations update 8−21683
Westinghouse steam generators, operations update 8−21751
WWER reactors for district heating appl. 8−41854
U supply study in Western world *(German)* 8−8960

nuclear quadrupole moments *see nuclear electric moment*

nuclear quadrupole resonance
aminoarsines, NQR freq. of ^{14}N, ^{75}As, ^{35}Cl, N-As bonds 8−25566
aminoboranes, NQR freq. of ^{14}N, ^{75}As, ^{35}Cl, N-B bonds 8−25566
benzene-d_6, solubilization in hexadecyltrimethylammonium bromide aq. soln., D NMR 8−24015
bromides, MAl_2Br_7, (M=Li, Na, K, Cs, NH_4, and $(CH_3)_4N$), ^{81}Br NQR and ^{27}Al NMR meas. 8−6597
1-bromo-2, 4-dinitrobenzene, cryst., ^{79}Br NQR Zeeman effect 8−2765
bromobenzene, in EBBA, ^1H NMR and NQR of D, geometric struct. 8−17689
chloroacetanilides, NQR freqs., torsional vibr., temp. var. 8−2766
α-chloroacetic acid, ^{35}Cl and ^{37}Cl pure NQR, H bonding, isotope effects 8−27111
chloroacetoacetanilides, NQR freqs., torsional vibr., temp. var. 8−2766
chlorobenzene in EBBA, ^1H, D NMR and NQR, geometric struct. 8−17689
chloromethoxyyaniline, NQR freqs., torsional vibr., temp. var. 8−2766
crystal, spectra of quadrupole nuclei, separation of chem. shift and quadrupole interaction *(Russian)* 8−39440
cyclohexane-d_6, solubilization in hexadecyltrimethylammonium bromide aq. soln., D NMR 8−24015

nuclear quadrupole resonance continued
deuterated compounds, molecular order and conformation changes in phase transitions 8−47237
2,6-dichloroacetanilide, NQR, cryst. struct., band character 8−6596
p-dichlorobenzene, ^{35}Cl NQR spectrum using digital freq. modulation 8−21189
p-dichlorobenzene, nuclear dipole absorpt. signal, under quadrupole reson. saturation conditions 8−48082
element-halogen bond, field consts. of NQR freqs. 8−25568
ferroelectric, H-bonded, soft and central modes, mag. reson., review 8−15108
giant quadrupole reson. splitting in light deformed nuclei 8−4924
graphite intercalation compound, LiC$_6$, ^{7}Li NMR *(French)* 8−35050
Heisenberg ferromagnets, BCC, with K$_2$CuCL$_4$.2H$_2$O struct., ^{17}O transferred hyperfine interactions 8−39439
heteroorganic group III compounds, NQR expts., review 8−25565
liquid crystals, biaxial order parameters, NQR meas. 8−34432
liquid metals, quadrupolar relax. rate 8−48076
liquid metals and alloys, nuclear quadrupole relaxation 8−15050
molecular solid, effect of rigid-body vibrs. on NMR, quadrupole, chemical shift and dipole-dipole interactions 8−15056
nitrobenzenes, substituted ^{14}N-NQR, elec. field gradient of NO$_2$ 8−21944
PAA, liq. crystal, ^{14}N NQR freqs., double-reson. level crossing method 8−6602
pyrrole, liq. and nonaq. solns., ^{14}N NQR, ^{1}H line shape anal. 8−6598
N-salicylideneanilines, photo- and thermo-chromic, ^{14}N quadrupole resonance temp. depend. 8−48077
scanning NQR spectrometer freq. marker system 8−21191
spectrometer, scanning, improved super-regenerative oscillator and quench generator 8−8429
spectroscopy, lock-in amplifier and bidirectional square wave modulator 8−256
spin-lattice relaxation, quadrupole, in solids 8−39429
TCNQ salt, Rb-TCNQ, ^{14}N NQR, Zeeman perturbation study, charge transfer 8−39438
s-triazene, second order phase transition, mol. reorientation, ^{14}N NQR 8−48074
trichloroacetic acid-base H bonded complex, ^{35}Cl NQR meas. 8−25555
trichlorophosphazenes, ^{35}Cl NQR spectra and reorientational motion of PCl$_3$ group 8−25567
Ag$_2$SbS$_3$, order-disorder phase transition, NQR and spin-lattice relax. expts. 8−47523
β-Al$_2$O$_3$-Na$_2$O, nucl. double reson. interferometry, satellite spectrum 8−31123
BiCl$_3$.GaCl$_3$ complex, NQR of ^{209}Bi, ^{69,71}Ga and ^{35,37}Cl 8−25569
^{81}Br NQR in MAl$_2$Br$_7$ crysts. (M=Li, Na, K, Cs, NH$_4$, (CH$_3$)$_4$N), Zeeman effect 8−6597
C(NH$_2$)$_3$Al(SO$_4$)$_2$.6H$_2$O, temp. depend. quadrupole coupling const. for ^{27}Al^{3+} and ^{71}Ga^{3+} 8−19368
CaBr$_2$-H$_2$O, ^{79}Br NQR, cryst. struct. 8−27110
CaV$_2$O$_6$, elec. field gradient at ^{51}V, NMR meas. and ionic model calcs. 8−19370
Cl$_3$PNPO(CCl$_3$)$_2$, NQR spin-lattice relax. study of PCl$_3$ and CCl$_3$ group reorientation 8−2767
Cu$_2$O, ^{65}Cu NQR spectrum using digital freq. modulation 8−21189
Ga, NQR, press. depend. of elec. field gradient and Knight shift tensors 8−19366
HgCl$_2$, non-resonant impurity atom substitution effect on ^{35}Cl NQR reson. 8−5252
In liquid alloys, ^{117m}Sb nucl. spin relax. 8−39437
KClO$_3$-CsClO$_3$, NQR, mag. susceptibility meas. 8−35059
KReO$_4$, quadrupole coupling, cation electric field gradients 8−35060
LiNH$_4$SO$_4$, phase transitions, temp. depend. of NMR, spontaneous polarisation, birefringence and SHG 8−10191
MnSi, NMR and susceptibility above T$_c$ 8−43665
Mo complex, ^{97}Mo and ^{95}Mo nuclear elec. quadrupole moment, nuclear quadrupole double reson. spectra 8−10802
NH$_4$ ReO$_4$, explanation of ^{187}Re NQR freq. anomalous behaviour 8−48075
NH$_4$ReO$_4$, nuclear quadrupole coupling, NQR temp., press. depend., continuous phase transition 8−27109
NH$_4$ReO$_4$, quadrupole coupling, cation electric field gradients 8−35060
NaClO$_3$, shift of Na NQR freq. by nonreson. RF photon dressing 8−43674
NaClO$_3$-CsClO$_3$, NQR, mag. susceptibility meas. 8−35059
NaD$_3$(SeO$_3$)$_2$, ^{23}Na second-order quadrupole shift, temp. depend. 8−15055
NaNH$_4$SeO$_4$.2H$_2$O, ferroelectric phase transition mechanism 8−31162
NaNO$_2$, ^{14}N NQR, multiple spin echoes 8−19365
NaReO$_4$, quadrupole coupling, cation electric field gradients 8−35060
Nb$_3$Al:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8−19369
NbD, orthorhombic β phase, ^{93}Nb Knight shift and quadrupole coupling parameters 8−19352
Nb$_3$Ga:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8−19369
NbH, orthorhombic β phase, ^{93}Nb Knight shift and quadrupole coupling parameters 8−19352
Nd-Co alloys, NMR of ^{143}Nd and ^{145}Nd quadrupole interaction parameters 8−19343
PbI$_2$-piperidine intercalations rel. to NQR, spin-lattice relax. temp. depend. *(Russian)* 8−27108
RbReO$_4$, quadrupole coupling, cation electric field gradients 8−35060
SrBr$_2$-H$_2$O, ^{79}Br NQR, cryst. struct. 8−27110
SrO-B$_2$O$_3$, ^{11}B NMR lineshape, BO$_3$$^{-3}$ triangle, perfect trigonal symm. *(Korean)* 8−19367
ZrB$_2$, single cryst., quadrupole coupling const. of ^{12}B 8−37279

nuclear radius *see nuclear size*

nuclear reaction and scattering models
see also nuclear optical model
Amado model, quasi-three body calc. of ^{3}H(p,p) 8−25191
cascade evaporation model of shock wave formation in heavy ion collisions 8−33215
corelike potential between complex nuclei, resonating group anal. 8−4922
Coulomb-nuclear interference for high spin states 8−46097

nuclear reaction and scattering models continued
direct nucleon transfer reactions, model-independent spectroscopic information, use of spectroscopic factor and vertex constants 8−17168
exciton model, two particle reactions *(Russian)* 8−21536
exciton model of pre-equilibrium theory for nuclear reactions, master eqn. soln. 8−13050
few nucleon systems, resonating group model 8−29431
fireball model, pion and nucleon total differential cross-sections 8−17241
hadron-nucleus interaction, multiple particle prod., absorptive part of scatt. amplitude *(Russian)* 8−17164
hadron-nucleus interactions, secondary particle multiplicity, one-cluster model *(Russian)* 8−17165
heavy-ion peripheral fragmentation, direct reaction model 8−8847
high energy heavy ion collisions, comparison of models, appl. to U+Ne→p+X 8−46088
high-energy heavy-ion collision, model 8−33207
intranuclear, cascade model, anal. of 39 MeV reacts with ^{209}Bi and ^{56}Fe 8−33185
isobar model, pion induced deep inelastic reacts. 8−41779
large p$_t$ production off nuclei, parton tubes, coherent tube model 8−21392
multichannel nuclear reactions, connected kernel formalism 8−46038
nucleus+hadron, cluster model of hadronic interactions, intermediate energy secondary nucleons prod. *(Russian)* 8−17062
one-dimensional cascade model of interacting nuclei using Glauber theory 8−17233
opaque-nucleus model, B and Ti total proton reaction cross section predictions 8−33174
pairing vibration model with isospin, α-transfer reactions on A=40-62 nuclei 8−17242
parity dependent 8−29432
random matrix model anal. heavy ion deeply inelastic reacts. 8−33213
review, hadron-nucleus interactions at high energies, phenomenological models 8−8859
SU(6) boson model for two-nucleon transfer intensities, (t,p) appls. 8−25206
tube models of multiple prod. on nuclei 8−41680
unified model appl. to ^{12}C+n system 8−29437
^{12}C+π$^-$, 40 GeV/c, leading particle spectrum and bremsstrahlung model *(Russian)* 8−41781
p-nucleus interactions, 20 to 200 GeV/c, EFC model *(Russian)* 8−46065
π production, multiple-collision model in relativistic nucleus-nucleus collisions 8−37365
^{238}(e,e′), scatt. from octupole band, model for nuclear surface vibrations 8−37333
^{40}Ca photonuclear reactions, differential cross section calcs., direct-semi-direct model 8−33166
^{40}Ca+^{40}Ca, low impact parameters, energy dependence of fusion cross section 8−41751
^{162}Dy+^{16}O, Coulomb-nuclear interference for high spin states 8−46097
^{2}H breakup into Δ resonances, probability, isobar model, static NN-ΔΔ mixing pot. 8−29438
^{2}H(π,π), elastic scatt., charge exchange, deuteron disintegration, three-particle rel. eqns. 8−37381
^{3}Heπ$^-$→nd, ^{3}Heπ$^-$→n+n+p, two nucleon absorpt. model 8−41776
^{4}He(α,α), 5.05, 4.30 GeV/c, high energy multiple diffraction theory 8−29486
^{4}He(p,p′), high energy, nonlocal imaginary pot. in one channel approx. 8−592
^{64}Ni+^{40}Ca, 182 MeV, deep inelastic collisions, short lifetime and long lifetime regime 8−21597
^{238}U+^{40}Ar, Coulomb-nuclear interference for high spin states 8−46097
^{51}V(p,n), 1.56-5.53 MeV, total cross section, excitation functions, isobaric analogue resonance 8−4943

nuclear reaction and scattering theory
see also nuclear reaction and scattering models; statistical theory of nuclear reactions and scattering
adiabatic approximation for heavy ion scatt. 8−631
alpha-particle breakup on various nuclei at 140 MeV 8−46080
antisymmetrisation effects in nuclear collisions, projection operator techniques 8−46036
channel coupling nuclear scatt. scheme, N-particle transition operators 8−569
channel-coupling-array theory, bound-state approx. effect on DWBA and multistep processes 8−568
clusters of nuclei, quasielastic knocking on by hadrons, Young-Trayman angle *(Russian)* 8−33159
collisions and microscopic theory, conference 8−563
complex cross sections for prod. of resonant final states 8−37324
connected kernel formalism 8−4921
Coulomb interaction role intensification due to reaction mechanism 8−17174
Cr ^{130}Te+^{28}Si, diffusion model anal. of onset of friction 8−8848
cross section of deep inelastic collisions, general form using S-matrix theory 8−566
deep inelastic heavy ion reactions, doorway mechanism 8−632
deep inelastic reactions, energy dissipation and angular momentum transfer 8−41679
deformed even-even nuclei, specific form. of nucleon-nucleus interaction, low energy 8−13077
direct reactions, many particle final states, DWBA theory 8−21539
DWBA t-matrix, semi-classical approach 8−32706
eikonal approx., electron-oriented nucleus scatt., polarisation of e$^-$, nuclei and emitted γ rays 8−37331
eikonal approx. of electron scatt. by spherically symmetric nuclei 8−37330
electron quasielastic cross section calc., using momentum depend. pot. in Fermi gas model 8−21546
exchange effects in elastic scatt., DWBA calcs. 8−565
exchange effects in nuclar collisions, DWBA calcs. 8−46084
fluid dynamics of small finite systems, nuclear matter flow, time depend. Hartree Fock 8−46018
four body reactions, triple ang. correl. anal., sequential decay 8−17161
four nucleon system two dimens. integral-equation soln. 8−41650

nuclear reaction and scattering theory continued
four particle systems, eigenfunction/eigenvalue problem, effective Hamiltonians in paired channels 8−13037
fragmentation theory, two body breakup channels in fission, fusion, heavy ion scatt. 8−46037
friction and nucleus-nucleus interaction pot. 8−8850
fusion barrier of heavy ion collisions, penetrability calc. 8−41798
giant dipole resonance, role of compound nucleus levels *(Russian)* 8−25164
Glauber-Sitenko approx., fast hadron scatt. anal. *(Russian)* 8−25161
hadron+nucleus interactions, Fermilab energies, inclusive rapidity distribs., parton-cascade model 8−37252
hadron+nucleus reacts., high-energy, correlation between fast target protons and hadron+nucleon collisions 8−41681
hadron-nuclei interactions, universal descript. of ang. distrib. 8−17188
hadron-nucleus collisions, transverse momentum distrib. of secondary hadrons *(Russian)* 8−29444
hadron-nucleus high energy reactions, multiple prod., parton-hadron cascade model *(Russian)* 8−17066
hadron-nucleus reactions, quasi-elastic cluster knock-out, multiplicities 8−46042
hadron-nucleus scatt., corrections to Glauber amplitude *(Russian)* 8−41683
Hartree-Fock scatt. formalism, nonsymmetric nonlocal pots. 8−17126
heavy ion collisions, classical dynamical theory of transfer 8−41769
heavy ion deep inelastic collisions, microscopic descript., excitation of surface vibr. modes 8−46085
heavy ion deeply inelastic collisions, phenomena, transport theoretical approach 8−46086
heavy ion high energy reacts., shock wave formation, cascade evaporation model 8−33215
heavy ion reacts., coherent and statistical features 8−41771
heavy recoil effects on transfer of one nucleon *(French)* 8−33115
heavy-ion deep inelastic collisions, general form of cross-section 8−13131
high energy collisions of heavy nuclei, Glauber rescatt., Reggeon field theory 8−37369
high energy cosmic nuclei+emulsion nuclei collisions, cross sections, multiplicity distribs. 8−41744
inelastic form factors properties from energy weighted sum rules 8−37319
inelastic scattering, nuclear field theory 8−13043
intermediate structs. from heavy ion excitation functions 8−13147
ion-ion scattering, momentum dependence, in microscopic theory 8−41752
isovector correlations, π single charge exchange reactions, in light nuclei 8−29499
K-matrix theory, method for compensating for neglected open channels 8−13039
light nuclei, α transfer and knockout reactions, α clustering 8−41687
light nuclei high energy hadron scatt., complex ang. momentum theory *(Russian)* 8−46067
low-energy nucl. physics, test of elementary particle theory 8−21361
many-body scattering, coupled channel eqns. and off shell transforms. 8−402
microscopic calculations for ^{4}H, ^{4}Li continuum, appl. to ^{3}H(n,n), ^{3}He (p,p) 8−17114
microscopic ion-ion spin-orbit pot., appl. to ^{4}He+^{9}Be, and ^{40}Ca+^{13}C 8−17163
multi-channel scatt., microscopic R-matrix theory 8−13041
multichannel quasi-separable pot. approach to N-nucleus scatt. 8−37320
multiparticle final states and power behaviour, coherent state representation in deep scatt. 8−13047
multiple Coulomb excitation of deformed heavy nuclei, uniform semi-classical theory 8−8840
multiple Coulomb excitation of heavy ions, semiclassical S-matrix integral representation 8−630
multiple scatt. theory, spectator expansion of full Green's operator 8−17162
multiple scattering with three-body forces 8−63
n-body reaction calcs., integral transform applicability 8−4920
off-energy-shell T matrix, frame depend., relativistic pot. theory 8−25159
partial wave expansions for arbitrary spin, non-central forces 8−21535
Pauli correlations in high-energy heavy-ion collisions 8−21593
photospallation systematics, complementary study 8−17179
pion-nucleus scatt. lengths, multiple scatt. theory, binding corrections 8−651
proton size folding 8−29372
quark-parton model, hadron prod. in nucl. reaction 8−12868
R-matrix theory for heavy ion transfer reacts. 8−13150
reduced matrix eqn. for many-body scatt., symm. solns. 8−29433
relativistic nuclear physics, collisions of relativistic ions *(Rumanian)* 8−46104
resonance theory of potential scatt., phase shift parameters 8−16685
RGM variational method based on GCM kernel 8−564
Rutherford scattering formula, small-angle end, for teachers 8−16608
scaling behaviour in inclusive backward angle prod. 8−8791
semiclassical Coulomb excitation theory, classical-limit S-matrix, orbital dynamics 8−33205
single-particle resonances, numerical anal. 8−29436
spin polarisation analysing power in nuclear reactions, extreme values 8−37326
spin-polarisation analysing powers in nuclear reactors, M-matrix conditions 8−8787
supercritical pomeron, parton model interpretation, appl. to scatt. off nuclei 8−41497
superheavy element prod. in compound nucleus reaction, theoretical optimisation method 8−46103
TDHF, particles+core reduction 8−33135
thermonuclear reaction rate enhancement due to strong screening 8−13186
three-body breakup reacts., dynamics 8−13040
three-body scatt. amplitudes, appl. of contour rot. 8−567
three-particle scattering, subtraction techniques 8−24694
two cluster couplings, uniqueness of many-particle scatt. integral eqns. 8−25160
two-centre generator coordinate basis for microscopic theories 8−13038

nuclear reaction and scattering theory continued
two-nucleon transfer, centre-of-mass corrections tonoverlap factors 8−13042
unified description of fission and nuclear collisions *(Russian)* 8−33163
(α,2α) reacts., three-body anal. 8−13126
d stripping reactions, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
N-nucleus reacts., NN spin depend. t-matrix for intermediate energy 8−41682
(p,n) transitions to anti-analogue states, fluctuations in Lane pot. 8−8815
(p,p), knock-on exchange, local equivalent methods 8−33184
(p,p) 1 GeV, Glauber theory of spin-orbit interactions 8−37336
(p,p′), direct, and multistage processes, DWBA anal. *(German)* 8−25202
(π,π), cross section calc., comparison of factorisation approx. taking account of nucleon Fermi motion 8−29497
π-nucleus inelastic interaction, 200 GeV/c, two particle correlations *(Russian)* 8−46112
Ag+^{20}Ne, 175 MeV, γ-ray multiplicities and energies, primary fragment angular momenta 8−46093
^{9}Be+^{4}He, microscopic ion-ion spin-orbit pot. 8−17163
^{12}C (α,α), ang. distrib., microscopic anal., Pauli principle, excitation effects 8−33198
^{12}C, excitation cross sections induced by 1 GeV protons and electrons, Glauber theory *(Russian)* 8−41684
^{12}C+^{16}O inelastic scatt., microscopic coupled channel calc. 8−625
^{12}C(^{14}N, ^{12}C)^{14}N, 79 and 155 MeV, DWBA calcs., recoil and sequential transfer effects 8−46090
^{12}C(^{3}He,d), spectral line shape anal. 8−25203
^{12}C(d,n), spectral line shape anal. 8−25203
^{12}C(e,e′π^+)^{12}B, near threshold, equivalent photon approx., Kroll-Ruderman term 8−13065
^{12}C(p,p′)^{12}C, PWIA anal. and bound-state momentum distribs. 8−601
^{12}C(p,π^+)^{13}C, relativistic pion stripping formalism 8−41717
^{12}C(π,π) cross section calc., comparison of factorisation approx. taking account of nucleon Fermi motion 8−29497
^{13}C(π^+,π^0)^{13}N, 70-230 MeV, calc. of cross section, using multistep contributions within modified eikonal formalism 8−21609
^{40}Ca+^{13}C, microscopic ion-ion spin-orbit pot. 8−17163
^{40}Ca+^{40}Ca, 3D TDHF calcs. 8−626
^{40}Ca(^{16}O,^{15}N)^{41}Sc, DWBA anal. including nuclear wave function polarisation 8−629
^{40}Ca(p,π^+)^{41}Ca, relativistic pion stripping formalism 8−41717
^{48}Ca(^{3}He,t), finite-range formalism anal. of (^{3}He,α) (α,t) sequence 8−17229
^{116}Cd(^{3}He,n), second order processes in DWBA calcs. 8−46076
^{167}Er(d,d′), 12.1 MeV, excitation of Nilsson states, Coriolis coupling 8−33190
Gd(d,d'), A=155, 157, 12.1 MeV, excitation of Nilsson states, Coriolis coupling 8−33190
^{2}H, photonuclear sum rules and interaction effects, integrated cross-section determ. from double commutator 8−21542
^{2}H+p(d), 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
^{2}H+π, coupled channel theory 8−13157
^{2}H(α,α)^{2}H, three body calcs., Pade technique 8−46074
^{2}H(n,2n)p, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723
^{2}H(n,n), scattering in high-partial waves, on-shell theory 8−41565
^{2}H(p,2p)n, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723
^{3}H, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^{3}H, three-particle photodisintegration, hyperspherical functions method *(Russian)* 8−589
^{4}H(α,α) intermediate energies, Glauber analysis 8−46077
^{3}He, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^{3}He photoeffect to isospin 3/2, coupled hyperspherical harmonics 8−41696
^{3}He, three-particle photodisintegration, hyperspherical functions method *(Russian)* 8−589
^{4}He(d,d), Glauber theory at high energy *(Russian)* 8−41732
^{4}He(π^-,π^-), 51-260 MeV, dynamical and fixed scatterer approx. calcs. 8−25244
^{165}Ho, electron-oriented nucleus scatt., eikonal approx. calc. 8−37331
^{7}Li(α,α), low energy elastic and inelastic scatt., Pauli principle effect 8−4953
^{7}Li(d,αα)n, 2 MeV, quasi free reaction, ^{7}Li struct. 8−41727
^{7}Li(p,n)^{7}Be, microscopic multi-channel calcs. to 2.5 MeV c.m. 8−4934
^{7}Li(p,p)^{7}Li, microscopic multi-channel calcs. to 2.5 MeV c.m. 8−4934
^{64}Ni(^{16}O,^{14}C)^{66}Zn, 56 MeV, full recoil one and two-step DWBA anal. 8−46091
^{16}O+^{16}O, 3D TDHF calcs. 8−626
^{16}O+^{16}O system, strong damping of inner oscills., nuclear saturation props. 8−41749
^{16}O(^{6}Li,d)^{20}Ne, 19.8 to 32 MeV, reaction mechanism and excitation functions 8−41757
^{16}O(d,p)^{17}O, channel coupling array and coupled reaction channel methods 8−8831
^{16}O($\pi^\pm$,$\pi^\pm$), Coulomb-nuclear interference, new anal. method 8−21608
^{207}Pb(p,p′), 135 MeV, DWIA test 8−33186
^{208}Pb+^{16}O, microscopic model anal. of fragment yields at 20 MeV/A and 2100 MeV/A 8−33214
^{208}Pb(^{12}C,^{11}B)^{209}Bi, DWBA anal. including nuclear wave function polarisation 8−629
^{208}Pb(p,p′), sum rule anal. of inclusive cross section 8−33183
^{208}Pb(p,t)^{206}Pb, successive and simultaneous transfer processes, on-shell, DWBA methods 8−8812
^{122}Sn+^{120}Sn, 630 MeV, multipair transfer calcs. for superfluid ions, coupled channel WKB approx. 8−37373
^{238}U(^{136}Xe, ^{136}Xe), multiple Coulomb and nucl. excitation 8−21603
^{238}U(^{238}U, ^{238}U), multiple Coulomb and nucl. excitation 8−21603
^{238}U(Xe,f), depend. of Coulomb fission on nucl. struct. 8−13173
^{89}Y+^{40}Ar, 237 meV, γ-ray multiplicities and energies, primary fragment angular momenta 8−46093
^{90}Zr(^{3}He,n), second order processes in DWBA calcs. 8−46076
^{96}Zr(t,p), 20 MeV, short range correlations with Tabakin pot. 8−13115

nuclear reactions and scattering
see also alpha particle-nucleus reactions; alpha particle-nucleus scattering; chemical effects of nuclear reactions and scattering; cosmic ray-nucleus reactions; cosmic ray-nucleus scattering; deuteron-nucleus reactions; deuteron-nucleus scattering; direct nuclear reactions and scattering; electron-nucleus reactions; electron-nucleus scattering; fission; heavy ion-nucleus reactions; heavy ion-nucleus scattering; helium 3-nucleus reactions; helium 3-nucleus scattering; hyperon-nucleus reactions; hyperon-nucleus scattering; meson-nucleus reactions; meson-nucleus scattering; muon-nucleus reactions; muon-nucleus scattering; neutrino-nucleus reactions; neutrino-nucleus scattering; nuclear fusion; nuclear reaction and scattering theory; nuclear reactions involving few nucleon systems; nuclear resonance reactions and scattering; nuclear scattering involving few nucleon systems; nuclear spallation; nucleon-nucleus reactions; nucleon-nucleus scattering; nucleosynthesis; photon-nucleus reactions; photon-nucleus scattering; polarisation in nuclear reactions and scattering; triton-nucleus reactions; triton-nucleus scattering
collisions and microscopic theory, conference 8−563
energy of separation and nucl. reactions, 1977 at. mass evaluation tables 8−497
hadron+nucleus interactions, Fermilab energies, inclusive rapidity distribs., parton-cascade model 8−37252
hadron+nucleus interactions, yields of projectile fragments, quark model calcs., A-depend. 8−41499
hadron-nuclei interactions, universal descript. of ang. distrib. 8−17188
hadron-nucleus, absorptive part of scatt. amplitude, multiparticle prod., Glauber theory 8−37248
hadron-nucleus high energy reactions, multiple prod., parton-hadron cascade model *(Russian)* 8−17066
hadron-nucleus interaction, multiple particle prod., absorptive part of scatt. amplitude *(Russian)* 8−17164
hadron-nucleus interactions, secondary particle multiplicity, one-cluster model *(Russian)* 8−17165
high energy hadron-nucleus interactions, inclusive prod., quark-quark elastic scatt. model 8−45858
high energy hadronic collisions, similarities, universality prop., reaction mechanism 8−33090
high energy physics, conf., Schladming, Austria (Feb.-Mar., 1977) 8−8494
high-energy reactions in astrophysics, comparison of methods for cross sections calc. 8−28505
Isolde experiments, prod. of extreme neutron/proton ratio nuclei, nuclear props. study *(Danish)* 8−4972
nucleus+hadron, cluster model of hadronic interactions, intermediate energy secondary nucleons prod. *(Russian)* 8−17062
phenomenological equations for reacting fluids 8−15649
stellar nuclear reactions, possible non-thermal processes 8−20816
tandem accelerators and nuclear phys. conf. 8−13349
Be+hadron, 200 GeV, jets and single particle prod. at high $p_\perp$ 8−45975

nuclear reactions involving few nucleon systems
for nuclear inelastic scattering involving few nucleon systems see "nuclear scattering involving few nucleon systems"
coupling constants from dispersion anal. of N and d scatt. amplitudes, ^{6}Li-α-d, ^{4}He-d-d, ^{3}He-d-p, ^{3}H-d-n, ^{2}H-p-n 8−29399
four nucleon system two dimens. integral-equation soln. 8−41650
resonating group model for few nucleon problems 8−29431
review of reactions involving few-nucelon systems at intermediate energies 8−13054
H+p, 24 GeV, J/ψ prod. cross section 8−46055
D(p,p), 630 MeV, asymmetry in scatt. polarised protons *(Russian)* 8−46064
D(p,π^{+})T, 410, 605, 809 MeV, pion angular distrib. 8−29466
^{2}H+p(d), 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
^{2}H(d,2p2n), 80 MeV, PWBA, double spectator process 8−41731
^{2}H(d,n)^{3}He, total cross-section energy depend. 8−29477
^{2}H(n, γ), slow neutrons, mesic interaction current, isobaric resonance *(Italian)* 8−25179
^{2}H(n,2n)p, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723
^{2}H(p, dπ^{+})n, 585 MeV, d momentum spectra 8−41718
^{2}H(p,2p), 156 MeV $d^{3}\sigma$ and $d^{4}\sigma$ spectra for collinear nucleon system 8−17175
^{2}H(p,2p)n, 8.5 MeV, n-p final state interaction, cross section, ang. distrib. 8−21560
^{2}H(p,2p)n, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723
^{2}H(p,pn), 156 MeV $d^{3}\sigma$ and $d^{4}\sigma$ spectra for collinear nucleon system 8−17175
^{3}H-n(p) phase shift, below d+d threshold, from Alt-Grassberger-Sandhas eqns. 8−41650
^{3}H(n,n)^{3}H, possible anomaly in backward elastic scatt. cross section near 14 MeV 8−13088
^{3}H(t,2n)^{4}He, 30-160 keV, differential cross section measurement 8−17223
H(d,pp)n, 12.9 MeV, differential cross-sections meas. 8−13113
^{3}He(p,2p)d, 590 MeV, in noncoplanar geometry, two particle spallation, diffr. description *(Russian)* 8−33160
^{3}He(p,dp), (p,2p), and (p,pn), 156 MeV $d^{3}\sigma$ and $d^{4}\sigma$ spectra for collinear nucleon system 8−17175
^{4}He (α,n)^{7}Be, differential cross sections meas., 39 to 50 MeV 8−25207
^{4}He+p, 18.6 GeV/c, coherent prod. of low mass $p\pi^{+}\pi^{-}$ states 8−33175
^{4}He(α,n)^{7}Be, differential cross sections meas., 39 to 50 MeV 8−25207
^{4}He(α,p)^{7}Li, differential cross sections meas., 39 to 50 MeV 8−25207
^{4}He(d,p), 6.8 , 7.8 MeV, continuous proton spectra obs. 8−37352
^{4}He(p,d)^{3}He, 275-500 MeV, large angle meas. 8−41713
^{4}He(p,d)^{3}He, direct-reaction mechanisms 8−581
^{4}He(t,n)^{6}Li, cross section using var. calcs. in generator coordinate method 8−13122
^{4}He(t,t)^{4}He, cross section using var. calcs. in generator coordinate method 8−13122
^{4}He(t,t)^{4}He, elastic cross section from two-centre generator coordinate model functions 8−12994

nuclear reactor fuel *see fission reactor fuel*

nuclear reactor instrumentation
BWR, Bilibino power station, internal power-distribution monitor system 8−17341

nuclear reactor instrumentation continued
cables insulated with Al_2O_3 and MgO, resistance to high-temp. and intense gamma radiation 8−25332
calorimeters for in-core nucl. heating rates meas. 8−25279
CAMAC-controlled calibration system for nucl. reactor systems 8−37532
CANDU nuclear reactors, in-situ inspection of press. tubes, nonrotating device 8−25259
class 1E electronic instruments, ageing 8−8945
CRBRP ex-vessel transfer machine 8−8943
directional γ-ray detector for in-core fuel motion monitoring 8−37448
FFTF fuel failure, cover-gas monitoring system 8−4998
fission counters of high sensitivity for use, in high gamma fields 8−8883
flowmeter, flux distortion, tests using analogue rig to simulate flow with boundary layer 8−38420
flowmeter calibration, Na-cooled reactor, signal anal. method 8−38425
fuel cladding strain meas., microprocessor-controlled microwave extensometer 8−33240
gain stabilized NaI(Tl) γ-ray detector, electronics, disc-based minicomputer, power shape in LWR core 8−33284
gamma-ray spectrum meas. inside reactor, calorimetric method 8−17293
graphite radiation damage dosemeter, GAMIN, correlation data 8−29657
HTGR monitoring and control instrumentation, special needs 8−734
hydrodynamic testing equipment with gravitational channel for reactor core meas. *(Slovak)* 8−21625
IAEA safeguards, instruments and techniques for nondestructive assay 8−33302
in-core movable neutron flux mapping computerised console development 8−13308
installation for in-reactor study of creep and stress-to-rupture, plane stress mode 8−39996
ionic sensors for nuclear reactor in-core temp. meas. *(Czech)* 8−32820
LMFBR, acoustic surveillance of anomalous events 8−37397
LMFBR, boiling stability tests on THORS Na loop 8−37396
LMFBR, Clinch River, in-core instrumentation 8−29608
LMFBR core simulation, Na loop safety facility, P2 expt., LOCA, acoustic meas. 8−33264
LMFBR fuel pin plenum press. transducer 8−8884
LMFBR steam generators, safety alarm system, water leakage detection *(Czech)* 8−33268
magnetoacoustic rod position monitoring transducer system for nuclear power plant 8−33262
Magnox reactors, remote corrosion monitoring, laser based instrument 8−41822
microprocessor controlled reactivity meter for real time monitoring of reactors 8−33263
neutron and γ-ray spectra meas. on radial shielding model of KS-150 reactor *(Slovak)* 8−21624
neutron flux, density measurements for reactor control *(German, English)* 8−17335
nondestructive gamma-ray spectrometry method for fuel burn-up control *(Slovak)* 8−21672
nuclear engineering, process instrumentation meas. 8−17447
operation in adverse environments, conference, London (1976) 8−189
PBF, temp. sensitivity of Co self-powered neutron detectors under PWR conditions 8−33275
power measurement by continuous calorimetry, automated system 8−17336
pressure transducer response verification, testing unit and test methodology 8−13253
PWR, digital rod position indicator system for control rod drive line dynamic characts. study 8−33265
PWR, improved instrumentation and computer control systems 8−29601
PWR, power monitoring, direct charge detectors appl. 8−17344
PWR, Westinghouse, neutron flux mapping at low power 8−21703
PWR acoustic monitoring instrumentation 8−17309
PWR control and instrumentation *(Japanese)* 8−33271
reactivity determination, pulsed neutron source technique, ZR-4 reactor appl. *(Hungarian)* 8−21673
temperature sensors, response time testing by noise anal. 8−13300
thermal neutron radiography facility on IRT-2000 reactor 8−17286
Tokamak power reactor, position control and sensor requirements 8−5035
Tokamaks, magnetic divertors for impurity control 8−763
TREAT reactor, acoustic monitoring of IRT-10 test 8−8944
ultrasonic density meas., online system 8−718
US cross correlation flowmeter, HWR appl. 8−25283
vibration and pressure transducer design for nuclear reactor environment 8−823
vibration monitor for rotating machines, ave. frequency technique 8−13299
Ge on-line, hyperpure detector, radiation monitoring system 8−37493
^{3}He proportional counter for fast reactor neutron field spectral charact. *(Japanese)* 8−46222

nuclear reactor materials *see fission reactor materials*

nuclear reactor operation *see fission reactor operation*

nuclear reactor theory and design *see fission reactor theory and design*

nuclear reactors *see fission reactors*

nuclear resonance reactions and scattering
see also nuclear resonances
Breit-Wigner single-level formula for cross sections, multilevel correction 8−29441
complex cross sections for prod. of resonant final states 8−37324
duration of reactions for strongly overlapped resonance levels *(Russian)* 8−46044
giant multipole reson. fragmentation over two-phonon states in spherical nuclei 8−575
giant quadrupole resonances in light nuclei excited by α or p inelastic scatt. 8−624
neutron scatt. from parity violating pot. 8−25167
photo-nucleon spectra, shell and pre-equilibrium decay model of giant reson. decay *(Russian)* 8−579
pion deep inelastic reacts. in isobar model 8−41779
potential scattering parameters, determ. from reson. parameters 8−16685
single-particle resonances, numerical anal. 8−29436

nuclear resonance reactions and scattering continued

- unified model appl. to ^{12}C+n system 8−29437
- (n,α) resonance neutron reactions, α-widths from statistical relationships, deviations 8−33173
- (π$^+$,p) near (3,3) resonance region, isobar doorway model 8−41778
- ^{159}Tb, 58 keV level, nuclear reson. fluorescence 8−33121
- ^{27}Al+^{12}C, 83 MeV, giant resonance excitation 8−17235
- ^{10}B(^{10}B,α)^{16}O, excitation functions, resonance like structures 8−29496
- ^{10}B(d,α)^{8}Be(g.s.), excitation functions struct., isoscalar giant resonances in ^{12}C 8−46073
- ^{12}C+^{28}Si, 17.5 to 33 MeV, resonant backward angle elastic scatt. 8−46096
- ^{12}C(^{12}C,α)^{20}Ne, ^{24}Mg reson. J^π, rot.-vibr. coupling 8−491
- ^{12}C(^{12}C,α)^{20}Ne, resonances, existence of second J^π=0$^+$ reson. at high excitation energy in ^{24}Mg 8−25214
- ^{12}C(^{12}C,α)^{20}Ne, resonance anomaly anal. in fluctuation theory 8−25215
- ^{12}C(π$^+$,p)^{11}C near (3,3) resonance region, appl. of isobar doorway model 8−41778
- ^{13}C, giant reson. isospin splitting, photonuclear and e-scatt. cross-sections 8−577
- ^{13}C(d,γ$_0$)^{15}N, E$_{exc}$=17.7 MeV, 95° differential cross section resonance struct. 8−37351
- ^{13}C(γ,n$_{0,1}$)^{12}C, 98° diffr. cross-sections, reson. due to ^{13}C level struct. 8−586
- Cd(p,p)Cd, A=110, 112, 5-9 MeV, isobaric analogue reson., QRPA calc. 8−576
- Cd(π$^-$, X), 0 MeV, A=111, 112, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
- ^{140}Ce(n,γ), 6.2-15.6 MeV, gamma-ray spectra, cross-section meas. 8−33176
- ^{50}Cr(p,p) and (p,p′), E$_p$=6 MeV, cross sections, opt. pot. parameters 8−13086
- ^{52}Cr(p,p) and (p,p′), E$_p$=6 MeV, cross sections, opt. pot. parameters 8−13086
- ^{19}F(p,α)^{16}O, 1.5 to 2 MeV, [211] quartet state in ^{20}Ne 8−46006
- Fe+n, A=54, 56, 1-70 keV, total cross section, resonance parameters *(Russian)* 8−17210
- ^{54}Fe(p,p), 3.28-4.53 MeV, ^{55}Co IAR, J^π assignments 8−574
- ^{2}H(n, γ), slow neutrons, mesic interaction current, isobaric resonance *(Italian)* 8−25179
- ^{4}He+^{4}He, reson. excit., ^{8}Be α-cluster, coupled channel calcs. 8−529
- ^{4}He(^{3}He,n)^{6}Be, 38.61 MeV, ^{6}Be reson. search, solar neutrino flux importance 8−619
- ^{4}He(γ,π^0), impulse approx. for differential cross sections in resonance region *(Russian)* 8−41698
- ^{165}Ho(n,γ), <2 keV, spin depend. of s-wave neutron strength function 8−21562
- ^{6}Li(t,d)^{7}Li, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
- ^{6}Li(t,γ)^{9}Be, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
- ^{6}Li(t,p)^{8}Li, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
- ^{7}Li(t,γ)^{10}Be, excitation functions and resonant struct. for 17.79 MeV state 8−13110
- ^{24}Mg(p,p′), 22.5 to 28.5 MeV, giant reson. effects 8−4923
- ^{15}N(α,γ)^{19}F, 5.2 to 8.4 MeV, resonances and gamma decay schemes 8−37358
- ^{15}N(p,α) (p,αγ), 0.9-1.25 MeV, ^{16}O levels, J^π 8−509
- ^{15}N(p,α)^{15}N, 2.50-5.14 MeV, 3$^+$ ^{16}O reson. state excit. 8−580
- ^{15}N(p,p)^{15}N, 2.50-5.14 MeV, 3$^+$ ^{16}O reson. state excit. 8−580
- ^{58}Ni(p,γ)^{59}Cu, γ-decay of ^{59}Cu analogue resons. 8−13005
- ^{227}Np damage track detectors, effects of subthreshold fission on neutron dose meas. 8−33375
- ^{16}O(α,α′+charged particle), 155 MeV, α-decay dominance in ^{16}O isoscalar giant quadrupole resonance 8−46035
- ^{17}O, giant reson. isospin splitting, photonuclear cross-sections 8−577
- ^{17}O(e,e′), 65-168 MeV, giant resonance excitation 8−4930
- ^{31}P(p,γ)^{32}S, ang. distribs. of γ-rays from decay of ^{32}S reson. states 8−13085
- Pb+Kr, deep inelastic collisions, excitation of nuclear surface modes 8−37374
- ^{208}Pb(γ,n), 8 to 13 MeV, total cross section, resonance struct. 8−4928
- ^{208}Pb(p,p′), 40, 45 MeV, fine struct. in giant resonance region, collective dipole spin flip excitation 8−46056
- ^{241}Pu, evaluation of neutron cross sections in region 10^{-5} eV to 15 MeV 8−17254
- ^{32}S(γ,n), (γ,p), cross sections, ^{31}S, ^{31}P excited residual states 8−8795
- ^{45}Sc+n, total cross section, neutron resonances, thermal scatt. parameters 8−8821
- ^{82}Se(p,p) elastic, inelastic 4.5-77 MeV scatt., IAS, ^{83}Se low-lying states 8−573
- ^{28}Si+n, isobaric analogue resonances from total and differential elastic cross sections 8−41715
- ^{28}Si(p,p′γ)^{28}Si, 3.5-3.8 MeV, spin-flip probability in resonance region *(Russian)* 8−41725
- ^{122}Sn(K$^-$, X), 0 MeV, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
- ^{181}Ta(e,e′), giant monopole and quadrupole resonances excitation 8−17184
- ^{181}Ta(n,total), 15 to 2030 eV resonances, time of flight spectroscopy 8−41716
- ^{232}Th(n,γ), cross-section from 2.6-800 keV 8−8807
- ^{51}V(p,n), 1.56-5.53 MeV, total cross section, excitation functions, isobaric analogue resonance 8−4943
- ^{89}Y(n,γ), 6.2-15.6 MeV, gamma-ray spectra, cross-section meas. 8−33176
- ^{90}Zr(^{3}He,t)^{90}Nb, 130 MeV, giant Gamow-Teller resonance, T=4, T=5 components 8−46081
- ^{90}Zr(p,p′), polarised protons, compound nuclear contribs. to IAR inelastic decay 8−8813

nuclear resonances

- *see also isobaric analogue resonances; nuclear collective states and giant resonances*
- collision duration in presence of strong overlapping resonance levels 8−17169
- continuum shell model calcs. of particle emission threshold effects, cross section, line shape of resonances 8−46014

nuclear resonances continued

- decaying states, using Kapur-Peierls and Siegert resonant states and extended Hellmann-Feynman theorem 8−4503
- heavy ion molecular resonances 8−13148
- light nuclei, E1 transitions from reson. states, probability distribs. 8−13021
- neutron capture probabilities for thick samples at resonance energies 8−46123
- neutron evaluated nuclear data files in unresolved resonance region, data representation 8−29459
- particle-hole calc. of isobaric analogue and isovector monopole reson. 8−21537
- single-particle resonances, numerical anal. 8−29436
- unified model appl. to ^{12}C+n system 8−29437
- ^{6}Be reson. search in ^{4}He(^{3}He,n)^{6}Be at 38.61 MeV, solar neutrino flux 8−619
- ^{209}Bi, reson. parameters for s and p-wave levels 8−37322
- ^{12}C+^{16}O, 22 MeV, spins of reson. assigned 8−17236
- ^{12}C+^{16}O, resonance behaviour, similarity to that in ^{12}C+^{12} 8−33210
- ^{12}C+^{28}Si, 17 to 37 MeV, inelastic and elastic backward angle scatt., surface resonances 8−37367
- ^{12}C(^{3}He,d), spectral line shape anal. 8−25203
- ^{12}C(d,n), spectral line shape anal. 8−25203
- ^{40}Ca(γ,γ), 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8−13059
- Cd, A=110, 112, isobaric analogue resonances, QRPA anal. of (p,p) reactions 8−576
- ^{111}Cd, pionic, E2 nuclear resonance effects 8−29868
- ^{112}Cd, kaonic, E2 nuclear resonance effects 8−29868
- Cf, N=152 to 154, resonances, fission probabilities and thresholds 8−46119
- ^{245}Cm, neutron resonance parameters, neutron energies 1-30 eV range 8−17167
- ^{245}Cm(n,f), cross section, 0.01 to 35 eV 8−21612
- ^{55}Co, IAR, J^π via ^{54}Fe(p,p) 3.28-4.53 MeV 8−574
- ^{59}Co, neutron resonance spectroscopy, R-matrix anal. 8−21555
- ^{152g}Eu, neutron resonance obs. by time of flight spectroscopy, cf. ^{151}Eu and ^{153}Eu *(Russian)* 8−25120
- ^{54}Fe neutron capture, asymmetric s-wave reson., background interf. 8−21563
- ^{56}Fe(n,γ), resonance state, partial radiation widths of high energy transitions 8−13104
- ^{57}Fe, 14 keV state excitation by synchrotron radiation 8−25147
- ^{73}Ge, 13.3 keV Mossbauer resonance, dispersive interference effects 8−25145
- ^{4}He+n, separable pot. fits to reson. parameters 8−8822
- ^{140}La, s- and p-wave resonances, obs. in La(n, γ) 8−17186
- ^{140}La, spectra from ^{139}La(n, γ) 8−17185
- ^{6}Li resonance effects on d-α elastic scatt. 8−46074
- ^{176}Lu, reson. spins, secondary γ-transition intensity, from ^{175}Lu(n,γ) 8−21512
- ^{177}Lu, reson. spins secondary γ-transition intensity meas. in ^{176}Lu(n,γ) 8−21512
- ^{24}Mg, existence of second J^π=0$^+$ reson. at high excitation energy, study of ^{12}C(^{12}C,α)^{20}Ne reaction 8−25214
- ^{24}Mg, form. in ^{12}C+^{12}C reaction at 10.5 to 15 MeV, possible rot. band 8−13134
- ^{24}Mg, rot. band, reson. states, J^π via ^{12}C+^{12}C 8−491
- ^{24}Mg, rot. band obs. with ^{12}C(^{12}C,α)^{20}Ne 8−12951
- ^{24}Mg, rotational band fragmentation and rotation-vibr. model, ^{12}C+^{12}C appl. 8−25096
- ^{55}Mn, neutron resonance spectroscopy, R-matrix anal. 8−21555
- ^{15}N excited states, R-matrix anal. of n polarisation in ^{14}C(p,n)and ^{11}B(α,n) 8−4937
- ^{22}Na, resonance levels obs. in ^{20}Ne(d,p$_0$) 8−46072
- ^{20}Ne, 40 MeV excitation, ^{10}B(^{10}B,α)^{16}O, excitation functions, resonance like structures 8−29496
- Ni(n,γ), A=58, 60, resonance state, partial radiation widths of high energy transitions 8−13104
- ^{16}O, 3$^+$ reson. state, particle-hole component via (p,p) and (p,α) reactions 8−580
- ^{16}O, levels near 13 MeV via ^{15}N+p 0.9-1.25 MeV 8−509
- ^{16}O+^{28}Si, 17 to 37 MeV, inelastic and elastic backward angle scatt., surface resonances 8−37367
- ^{16}O(γ,γ), 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8−13059
- ^{208}Pb(e,e′), isospin fine struct., 8-12 MeV, multipole assignment of 8.9 MeV reson. 8−13071
- ^{208}Pb(γ,γ), 6.92, 7.12 MeV, reson. fluoresc. meas. 8−8797
- ^{32}S, decay of reson. states populated in ^{31}P(p,γ) 8−13085
- ^{43}Sc, resonance struct obs. in ^{42}Ca(p,γ)^{43}Sc below 2.75 MeV 8−13072
- ^{46}Sc, s- and p-wave radiative widths obs. in ^{45}Sc(n, γ) 8−17187
- ^{28}Si, excited levels populated in ^{27}Al(p,α)^{24}Mg at E$_p$=1540-2220 keV 8−17189
- ^{28}Si resonances obs. in ^{27}Al(p,α$_0$)^{24}Mg at 1.12-3.08 MeV 8−13091
- ^{122}Sn, kaonic, E2 nuclear resonance effects 8−29868
- ^{181}Ta(n,total), 15 to 2030 eV resonances, time of flight spectroscopy 8−41716
- ^{232}Th, quadrupole photofission and role of nucl. symm. *(Russian)* 8−17258
- ^{238}U+n, resolved resonance energies, 100 eV-170 keV 8−37339
- ^{51}V, neutron resonance spectroscopy, R-matrix anal. 8−21555
- ^{89}Y, high resolution neutron total cross section meas., 27-240 keV 8−25193
- ^{90}Zr, neutron reson. parameters below 300 keV 8−8805
- ^{91}Zr, high resolution neutron transmission and capture 8−8806

nuclear scattering *see nuclear reactions and scattering*

nuclear scattering involving few nucleon systems

- microscopic calculations for ^{4}H, ^{4}Li continuum, appl. to ^{3}H(n,n), ^{3}He (p,p) 8−17114
- three-body scatt. amplitudes, appl. of contour rot. 8−567
- d-α elastic scatt., three-body calc. 8−46074
- ^{2}H+p(d), 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
- ^{2}H+p($\bar{p}$), high energy cross section calc. complex ang. momentum theory *(Russian)* 8−46067
- ^{2}H(n,n), 8.05 MeV, elastic differential cross-section meas. by recoil technique 8−17207
- ^{2}H(n,n), elastic scatt., perturbation calcs., Faddeev eqns., Reid soft core pot. 8−33177

nuclear scattering involving few nucleon systems continued
^{2}H(n,n), scattering in high-partial waves, on-shell theory 8−41565
^{2}H(p,p), 10 MeV, differential cross section, p and d analysing powers 8−46063
^{3}H+α, elastic scatt., orthogonality condition model derived from parity energy surfaces 8−29432
^{3}H(p,p), 1-10 MeV, isospin splitting of 1p-1h excitation in ^{4}He 8−41622
^{3}H(p,p), 4-12 MeV, Amado model quasi-three body calc. 8−25191
^{3}H(p,p), 8 to 17.1 MeV, cf. neutron polarisation in ^{3}He(n,n) 8−25171
^{4}H(α,α) intermediate energies, Glauber analysis 8−46077
H(d,d), A=1, 2, E=52 MeV, polarised deuterons, vector analysing power 8−584
^{3}He(n,n), 8 to 17.1 MeV, cf. proton polarisations in ^{3}H(p,p) 8−25171
^{3}He(n,n), coherent scatt. length meas. by neutron interferometry 8−13098
^{3}He(p,p), 1.75 to 4.13 GeV/N, small angle scatt., Glauber model *(Russian)* 8−41726
^{4}He (p,p), 200, 350, 500 MeV, differential cross-section and analyzing power meas. 8−17195
^{4}He+n, elastic scatt., orthogonality condition model derived from parity energy surfaces 8−29432
^{4}He+p, interaction potential from inverse scatt. problem method *(Russian)* 8−46068
^{4}He+p($\bar{p}$), high energy cross section calc. complex ang. momentum theory *(Russian)* 8−46067
^{4}He(^{3}He,^{3}He), 18-22 MeV, analysing power ang. distrib., differential cross sections, ^{7}Be excited state 8−46078
^{4}He(α,α), 5.05, 4.30 GeV/c, high energy multiple diffraction theory 8−29486
^{4}He(d,d), Glauber theory at high energy *(Russian)* 8−41732
^{4}He(p,p′), high energy, nonlocal imaginary pot. in one channel approx. 8−592
^{4}He(p,p)^{4}He, 0-18 MeV, statistical anal., data fluctuations, error estimation 8−25196
H(n,p)n, 25.8, 50.9 MeV, differential cross-sections 8−600

nuclear screening
atom, X-ray spectra, Z=13 to 103, Sommerfeld screening parameter σ_1 8−25463
atomic ions, electron impact, 1 to 100 keV, bremsstrahlung emission, theory 8−22005
benzene, ^{1}H chem. shift tensor, proton mag. shielding anisotropy 8−19348
diamagnetic molecule, mag. susceptibility, nucl. mag. shielding, calc. methods *(German)* 8−33448
diatomic molecules, electronic states, variable-screening method 8−25410
p-diethoxybenzene, ^{13}C shielding tensors determ., by NMR from powder patterns 8−25556
dihydromuconic acid, C=C bond, ^{13}C shielding tensor, NMR meas. 8−1005
p-dimethoxybenzene, ^{13}C shielding tensors determ., by NMR from powder patterns 8−25556
energy levels of screened Coulomb potential, perturbation theory appl. 8−25406
hydrogenic atom, Coulomb excitation, by heavy projectile, nucl. screening effect 8−17777
metallic elements, core elections, Sternheimer antishielding factors calcs. 8−21862
methane, ^{1}H and ^{13}C mag. shielding, He and methane intermol. effects 8−37571
methane, proton mag. shielding const., HF perturbation theory 8−46258
methane+Kr(Xe), ^{13}C-mag. shielding density depend. 8−9173
methyl iodide, rot. microwave spectra, nucl. quadrupole, spin-rot. and nucl. shielding tensors 8−42040
molecule, mag. shielding, shielding anisotropies, INDO calcs. 8−21851
NMR shielding constant, cusp-type anomaly in fluid crit. region 8−39411
tetrafluoromethane, ^{19}F chem. shielding, depend. on internal coords. 8−5249
thermonuclear reaction rate enhancement due to strong screening 8−13186
Al, static quadrupole polarisability and shielding factor, Hartree-Fock calc. 8−41950
Ar, atomic polarisabilities and shielding factors, coupled HF approx. 8−22048
B^{2+}, multipole polarizabilities and shielding factors, calcs. on open shell ions 8−46263
BF$_3$, ^{19}F chem. shielding, depend. on internal coords. 8−5249
Ba II, ab initio calc. of isotope shifts 8−37555
Be$^+$, multipole polarizabilities and shielding factors, calcs. on open shell ions 8−46263
Br$^-$, nuclear quadrupole interaction , second-order Stark effect 8−21879
^{81}Br, nucl. screening tensor from SiH$_3$Br microwave spectrum, 8-40 GHz 8−21916
CO, chemical shielding temp. depend. 8−5250
CO$_2$+Kr(Xe), ^{13}C-mag. shielding density depend. 8−9173
C=C bond, ^{13}C shielding tensor, NMR meas. 8−1005
Cd, nuclear quadrupole antishielding effects, ab initio theory 8−34814
Cl, static quadrupole polarisability and shielding factor, Hartree-Fock calc. 8−41950
ClF, chemical shielding temp. depend. 8−5250
^{133}Cs$^+$/Cs g-factor ratio, NMR and zeeman transition freqs. 8−17817
F$_2$, chemical shielding temp. depend. 8−5250
H$_2$, nucl. mag. shielding, elec. field, accurate coupled Hartree-Fock 8−25434
HBr, chemical shielding temp. depend. 8−5250
HCl, chemical shielding temp. depend. 8−5250
H$_2$O powder, PMR chem. shift anisotropy, nucl. mag. screening tensor 8−17687
H$_2$O, proton mag. shielding const., HF perturbation theory 8−46258
H$_2$S, powder, PMR chem. shift anisotropy, nucl. mag. screening tensor 8−17687
He, atomic polarisabilities and shielding factors, coupled HF approx. 8−22048
HeH$^+$, electronic states, variable-screening method 8−25410
ICN, microwave spectrum, mag. hyperfine struct., I nucl. shielding tensor 8−17661

nuclear screening continued
N containing molecules, N NMR, nuclear mag. shielding, X-ray photoelectron spectra 8−17695
N$_2$, cryst., screened nucl. pot. and lattice dynamics, pseudo-atom approx. 8−34575
NH$_3$, proton mag. shielding const., HF perturbation theory 8−46258
^{14}N NMR chemical shift, external neat nitromethane scale 8−24834
^{14}N screening, absolute scale 8−2762
Ne, atomic polarisabilities and shielding factors, coupled HF approx. 8−22048
P(P$^+$)(P^{2+}), static quadrupole polarisability and shielding factor, Hartree-Fock calc. 8−41950
Pr^{3+}, nuclear quadrupole screening parameter, many-body perturbation theory calcs. 8−47751
SiF$_4$, ^{19}F chem. shielding, depend. on internal coords. 8−5249
Si(Si$^+$), static quadrupole polarisability and shielding factor, Hartree-Fock calc. 8−41950
Zn, nuclear quadrupole antishielding effects, ab initio theory 8−34814

nuclear shape
see also nuclear collective states and giant resonances; nuclear energy levels; nuclear resonances
A>228 odd mass nuclei, single particle states, nuclear deform. 8−12952
actinide nuclei quadrupole and hexadecapole deforms., model independ. parameters using Fermi distrib. 8−17096
cranking model anal. of nuclear inertia in fission and heavy ion reacts. 8−41656
deformation energy of nuclei, one particle spectrum, self consistent calcs., Hartree Fock variational method 8−12957
deformation of neutron-density in inelastic scatt. 8−46000
deformed even nuclei, level energies, γ transitions, moment of inertia, collective Hamiltonian 8−25133
deformed even-even nuclei, specific form. of nucleon-nucleus interaction, low energy 8−13077
deformed nuclei, gaps in single-particle level scheme and backbending 8−17072
deformed nuclei, giant quadrupole reson splitting 8−4924
deformed nuclei, heavy-ion scatt., generator coord. method 8−12960
deformed nuclei, HF approach to mag. moments 8−12967
deformed nuclei, splitting of giant multipole states, vibr. pot. model 8−4893
deformed nuclei, transition densities for electroexcitation 8−17183
deformed single-particle basis for pot. energy surfaces and spectra 8−8735
even-even deformed nuclei, aligned rot. of octupole vibrational states 8−12955
even-even deformed nuclei, multiphonon $K^\pi=0^+$ states, matrix elements of general Hamiltonian 8−41621
even-even deformed nuclei, multiphonon $K^\pi=0^+$ states, norms 8−17089
even-even deformed nuclei, nonadiabatic effects 8−528
fission, most probable charge, shell and deform. effects 8−29440
fp-shell nuclei, high-spin states 8−12946
heavy ion deeply inelastic collisions, shape deformation and viscosity 8−25234
heavy-ion reactions, collective pot. energy surfaces, appl. to Ar+Ag, Kr+Cu, and Xe+Bi 8−41748
high spin effects in nuclei with proton no. 40-60, shape, deforms. 8−503
high-spin states of transitional and spherical nuclei, decoupled and strongly coupled bands 8−12939
independent particle model, forces between heavy nuclei, neck formation 8−635
intermediate atomic weight nuclei, 6 MeV proton scatt. anal., quadrupole deform. 8−13076
intrinsic multipole moments in deformed nuclei, correls. effects 8−29385
liquid drop energy, shell correction determ. 8−12992
Nilsson model, group theoretical treatment, deformation, pot-energy surface, oscillator shell coupling 8−33129
nuclear potentials in deformed nuclei 8−46097
oblate high spin isomers, pairing Hamiltonian anal. by RPA 8−12996
one body nuclear dynamics, classical theory for collective motion 8−8755
polarised nuclear matter, deform. of Fermi surface 8−12998
rapidly rotating nuclei, density distrib. 8−8734
rare-earth nuclei transition density, ang. momentum projection corrections to rot. model 8−500
rotating nuclei, two-phase model 8−33113
rotating nuclei of high and v.high nucl. spin *(German)* 8−25102
rotating toroidal nuclei, ang. mom. thresholds 8−41629
rotation, zero point energy 8−25101
rotation effects on collective props. review *(Russian)* 8−37299
self shape of nuclei *(Russian)* 8−29381
shape meas. and collective model validity for N≠Z nuclei 8−45999
single particle realistic level schemes, nuclear shell correction energies, temp. smearing method 8−17118
spherical nuclei, low lying states, effects of particle-particle channel residual interaction 8−12978
supercritical nuclear composites, spontaneous vacuum decay 8−25235
superheavy element prod. in compound nucleus reaction, theoretical optimisation method 8−46103
Thomas-Fermi approach to rotating nuclei 8−41657
triaxial nuclei, Hartree Bogoliubov predictions 8−33116
yrast traps, island of high spin isomers near N=82 8−8844
yrast traps, struct., nuclear deform. 8−21486
np interaction and nucl. deformation 8−8748
^{227}Ac, 7 to 16 MeV photofission, giant resonance and nuclear deformation *(Russian)* 8−41795
^{27}Al, analogue-antianalogue M1 transitions, nucl. shape change influence 8−13006
Au, isotopes near A=186, competition of nucl. shape 8−17094
^{187}Au energy states from ^{187}Hg decay, parities γ-spectra, triaxial nuclear deform. *(French)* 8−33143
^{12}C+^{28}Si, 17 to 37 MeV, inelastic and elastic backward angle scatt., surface resonances 8−37367
^{40}Ca, excitation of low lying collective states by (n,n′) scatt. 8−17205
Cd, even-mass, shape coexistence, quasi-rot. band 8−496
^{140}Ce, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097

nuclear shape continued
Dy(α,α'), A=156,8, E=12-13 MeV, E2, E4 transition matrix elements determ. 8−33202
^{156}Er, nonaxial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
^{160}Er, produced in ^{124}Sn+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
^{166}Er, non axial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
Er(α,α'), A=162, 4, E=12-13 MeV, E2, E4 transition matrix elements determ. 8−33202
^{54}Fe, surface structure analysis using Blair phase shifts 8−12959
^{56}Fe, surface structure analysis using Blair phase shifts 8−12959
^{56}Fe yrast band, coexistence of prolate and oblate shapes 8−12947
^{58}Fe, surface structure analysis using Blair phase shifts 8−12959
^{154}Gd(α,α'), 11.8 MeV, charge deform. parameter determ. 8−33201
^{2}H deformation effects in nuclear interaction, DWBA anal. *(Japanese)* 8−21575
^{180}Hf, nonrotational interpretation of E_4 matrix element 8−33111
Hg, isotopes near A=186, competition of nucl. shape 8−17094
^{a}Hg, A=198-204, reorientation effect meas. on 2^+ states 8−37282
^{186}Hg from ^{186}Tl decay, γ, conversion electron spectra and coincidences, shape coexistence 8−25156
^{198}Hg, static quadrupole moment of 1st excited state 8−17095
^{84}Kr+^{209}Bi, 712 MeV, deform. and transfer in strongly damped collisions 8−21601
^{24}Mg+^{12}C(^{16,18}O) scatt., ^{24}Mg pot. quadrupole deform. length determ. 8−12963
^{20}Ne, one-body density matrix determ. by iterative steepest descent approach 8−17125
^{60}Ni, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097
^{16}O+^{28}Si, 17 to 37 MeV, inelastic and elastic backward angle scatt., surface resonances 8−37367
^{18}O, neutron deform. param. determ. from (π,π') scatt. 8−29502
^{192}Os(^{12}C,^{14}C)^{190}Os, 70 MeV, shape transition effect on quadrupole transfer strength 8−644
^{31}P, analogue-antianalogue M1 transitions, nucl. shape change influence 8−13006
Pb, A=204,6, quadrupole moments of first excited state meas. 8−21491
^{208}Pb, neutron and nuclear matter space distribs. from (p,p) 1 GeV scatt. *(Russian)* 8−502
^{208}Pb, excitation of low lying collective states by (n,n′) scatt. 8−17205
Pd, even-mass isotopes, collective model with deform., vibr., rot. energy levels, B(E2) ratios 8−17120
Pt, isotopes near A=186, competition of nucl. shape 8−17094
^{28}Si+^{12}C(^{16,18}O) scatt., ^{28}Si pot. quadrupole deform. length determ. 8−12963
^{144}Sm, produced in ^{100}Mo+^{48}Ca 8−37260
^{98}Sr, onset of deform. anal. from ^{98}Rb decay 8−12961
^{118}Te, produced in ^{82}Se+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
^{236}U fission isomer produced in ^{238}U(γ,2n) prod. cross sections, half life 8−46045
^{238}U(^{136}Xe, ^{136}Xe), multiple Coulomb and nucl. excitation 8−21603
^{238}U(^{238}U, ^{238}U), multiple Coulomb and nucl. excitation 8−21603
^{130}Xe+^{209}Bi, 1130 MeV, deform. and transfer in strongly damped collisions 8−21601
^{168}Yb(α,α'), 12-13 MeV, E2, E4 transition matrix elements determ. 8−33202
^{90}Zr, neutron and nuclear matter space distribs from (p,p) 1 GeV scatt. *(Russian)* 8−502

nuclear shell model
^{90}Y, 1^+ and 0^+ states populated in ^{88}Sr(^{3}He,p) 8−25116
A=18 nuclei, negative parity spectra, phonon dynamic interaction propagator approach 8−8739
A=18 shell model spectra and 3 nucleon force 8−25124
analogue resonances, finite Fermi systems, polarisation effects *(Russian)* 8−46041
broken-pair approx., spectra of ^{90}Zr, ^{92}Mo, ^{94}Ru, ^{96}Pb 8−29408
compound nucleus, giant resonances, force functions for partial E1-transitions 8−12985
compound nucleus formation cross section in heavy ion reactions, shell model calcs. 8−13132
configuration mixing, Coulomb energy anomaly, inmirror nuclei 8−25099
continuum, alternative approach to R-matrix 8−523
continuum, thermodynamical calc. of shell correction in nuclei *(Russian)* 8−29409
continuum shell model, recoil corrections for nucleon-nucleus scattering 8−8751
continuum shell model calcs. of particle emission threshold effects, cross section, line shape of resonances 8−46014
Coulomb displacement energies, charge and mass number depend. in isotope shifts 8−8729
Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8−25216
decoupled bands, perturbative anal. level energies 8−41623
deep nuclear levels, practicability of kaon probe 8−25237
deformation energy of nuclei, one particle spectrum, self consistent calcs. shell corrections 8−12957
deformed nuclei, gaps in single-particle level scheme and backbending 8−17072
effective interactions, folded diagram expansion, self consistent and oscillator sd shell model spaces 8−21502
effective interactions in s-d shell, correl. coeffs. 8−4904
effective operators in nuclei 8−12990
effective three-body interaction in ^{93}Tc, ^{93}Mo, ^{94}Ru 8−524
energy dependent radial functions formalism of continuum shell model, appl. to ^{16}O+p, ^{40}Ca+p 8−25185
extended basis shell model, two-nucleon transfer 8−29406
finite well potentials, shell correction method, appl. to ^{240}Pu nucleus 8−37298
fission isomer properties investigation using Nilsson pot. 8−29403
folded diagram calculation of effective charges, valence nucleon in 1s0d shell 8−4905
form factors, elastic and dynamic, with correction for motion of centre of mass *(Russian)* 8−8753
geometry, effect on the observed dependences in nucl. pot. 8−4900

nuclear shell model continued
giant dipole resonance, role of compound nucleus levels *(Russian)* 8−25164
harmonic oscillator brackets, derivation of new expression 8−20997
heavy nuclei collision, independent particle model, forces between heavy nuclei 8−635
heavy spherical nuclei, choice of density depend. interaction and α-decay *(Russian)* 8−46010
high-spin nuclear rotations, single particle Nilsson model 8−12943
high-spin states in N=28 nuclei 8−29407
liquid drop energy, shell correction determ. 8−12992
magnetic moment dependence on shell-model wave function in light nuclei 8−17100
mass depend. of spin-orbit splitting in A=176-208 region 8−29405
mass formula and mass relationships 8−25108
neutron excess nuclei, near equality of isoscalar and EM transition rates 8−8770
Nilsson model, group theoretical treatment, deformation, pot-energy surface, oscillator shell coupling 8−33129
non-normal parity states, 1p shell nuclei, $1\hbar\omega$ spectra 8−12977
photo-nucleon spectra, shell and pre-equilibrium decay model of giant reson. decay *(Russian)* 8−579
radial depend. of shell model pot. *(Russian)* 8−41655
renormalised shell model matrix elements from nucleon-nucleon phase shifts 8−12991
sd shell nuclei, effective interaction between nucleons 8−17117
self shape of nuclei *(Russian)* 8−29381
shell model calcs. A=24, mass, spectra and β decay 8−4903
single particle realistic level schemes, nuclear shell correction energies, temp. smearing method 8−17118
single-particle energy levels, shell-model anal. 8−17071
single-particle resonances, numerical anal. 8−29436
space truncation using spectral strength distrib. 8−29404
strangeness exchange reactions producing hypernuclei, shell model calcs. 8−17130
superheavy nuclei, lifetime, theoretical prediction of nonoccurrence in nature 8−662
teaching, from Compton effect to quarks, at., proton, and nucl. struct. 8−24596
thermal neutron scatt., shell model formalism 8−13095
unified model appl. to ^{12}C+n system 8−29437
wave functions from shell and cluster model 8−29412
yrast traps, struct., nuclear deform. 8−21486
α-nucleus separation energies, Woods-Saxon pot., A depend., closed shell effects 8−25107
(p,p), isobaric analogue resonances, microscopic and phenomenological parameters, S-matrix eval. methods 8−13045
π-nucleus scattering, binding effects in optical pot. of pion in nucleus 8−41685
A=16, capture rates calc. for (π^-, γ) and (μ^-, ν_μ) reactions on ^{16}O 8−17105
^{125}Ba, $7/2^{\pm}$ states, populated in ^{116}Sn(^{12}C, 3n), explained by triaxial core model 8−37258
^{9}Be, molecular model, n and α-particle decay widths, charge form factors 8−46015
^{12}C(p,^{6}Li)^{7}Be, 51.9 MeV, cluster coupling shell model 8−46058
^{40}Ca, 1^-, T=0 state at 6.95 MeV, isospin forbidden electroexcitation 8−25177
^{40}Ca, ground state energy 8−29389
^{40}Ca structure, supersoft-core pot., HF approx., ground state props. 8−533
^{40}Ca+^{16}O, single-particle polarisation, two-centre shell model 8−13142
^{34}Cl, ground and excited states, shell model verification by ^{32}S(^{3}He,p)^{34}Cl cross section meas. 8−13119
^{167}Er(d,d′), 12.1 MeV, excitation of Nilsson states, Coriolis coupling 8−33190
Gd(d,d′), A=155, 157, 12.1 MeV, excitation of Nilsson states, Coriolis coupling 8−33190
^{4}He harmonic oscillator sum rules for photonuclear reactions, shell model, perturbative corrections 8−41692
^{4}He, structure in the translation-invariant oscillator basis *(Russian)* 8−25123
^{6}He β-decay from three body model of A=6 system, α-N, N-N interactions 8−46032
^{15}N, photoabsorption, shell-model anal. of giant dipole state 8−29447
Nb and Tc doubly odd isotopes, multiplet struct., ^{96}Tc nuclear struct. 8−46024
^{20}Ne, 0g orbit mixing via (e,e′), one-step forbidden transition anal. 8−493
^{16}O, charge distribution, orthogonal scheme model *(Russian)* 8−29382
^{18}O, two-body surface correls. in extended basis shell model 8−532
Pb, A=200, 202, 204, seniority four admixtures in low lying 0^+ states 8−8741
^{207}Pb(p,p′), excitation of neutron-hole states, 61.2 MeV protons 8−8724
^{208}Pb(^{12}C,^{11}B)^{209}Bi, single-particle polarisation, two-centre shell model 8−13142
^{209}Pb unbound high spin shell model states, single nucleon states 8−25126
^{133}Sb, level scheme of one proton and doubly closed shell core 8−37291
Sc, A=43, 47, $d_{3/2}$ hole states, wave functions mag. moment, M2 transitions, shell model 8−17116
^{28}Si, level props. and moment of inertia 8−29390
Sn, A=104, 106, 108, seniority four admixtures in low iying 0^+ states 8−8741
^{116}Sn particle-hole states, strength decoupling form giant dipole resonance, Gaussian force, δ-force diagonalisation 8−25125
^{45}Ti $d_{3/2}$ hole states, wave functions, mag. moment, M2 transitions, shell model 8−17116
^{50}Ti, shell model calcs. using surface delta interaction 8−37290
V, A=47,59,51, spectra, e.m. moments, B(E2) and B(M1) values calc. 8−8745
^{51}V, shell model calcs. using surface delta interaction 8−37290
$_{126}^{228}$X, primordial and other nuclei, shell model calc. 8−8752

nuclear size
charge RMS radii mass number depend., fine struct. 8−501
Isolde experiments, prod. of extreme neutron/proton ratio nuclei, nuclear props. study *(Danish)* 8−4972

nuclear size continued
linearised Hartree Fock model, effective charge, isoscalar nuclear shifts, rms radius ^{208}Pb, ^{90}Zr 8-25138
statistical description of nuclear compound states, temp. Green's functions method *(Russian)* 8-17115
three-body forces in 3- and 4-nucleon systems 8-29400
^{48}Ca, neutron radius determ., charge symm. 8-29380
Ca($\pi^{\pm},\pi^{\pm}$), 130 MeV, A=40,48, π^{+}, π^{-} cross sections, neutron radius 8-25240
^{4}He, structure in the translation-invariant oscillator basis *(Russian)* 8-25123
^{18}O, neutron deform. param. determ. from (π,π') scatt. 8-29502
Ti, A=46,50, neutron radius determ., charge symm. 8-29380

nuclear spallation
bremsstrahlung-induced reactions in nuclei with A=27-238, 450 MeV to 2.2 GeV *(German)* 8-33164
emulsion nuclei, cosmic ray nuclei collisions, spallations produced by 0.1 to 1 GeV/nucleon nuclei, low energy particles *(Russian)* 8-33234
fission products, transmutation by spallation and neutron reactions using linear accelerator 8-13268
high-energy fission in astrophysics, comparison of methods for cross sections calc. 8-28505
mass yield formula for intermediate energy photospallation of medium weight nuclei 8-29445
photospallation systematics, complementary study 8-17179
reactor fuel breeding using proton linear accelerator 8-29630
$\nu(\bar{\nu})d\rightarrow np\nu(\bar{\nu})$, weak neutral currents, (V, A) and (S,T,P) theories 8-12893
C stars, low-energy spallation rel. to ^{6}Li/^{7}Li ratio 8-40927
c+n in cellulose nitrate plastic detector, spallation products 8-17198
^{59}Co, spallation by 0.3-1.0 GeV photons, cross-sections 8-41691
Fe, spallation by 0.3-1.0 GeV photons, cross-sections 8-41691
^{56}Fe, hadron generated cascades, energy flux absorption length, 1-20 TeV *(Russian)* 8-28468
^{3}He(p,2p)d, 590 MeV, in noncoplanar geometry, two particle spallation, diffr. description *(Russian)* 8-33160
^{172}Hf production, recovery and purification for nucl. medicine use as ^{172}Lu generator 8-48893
^{127}I(p,5n)^{123}Xe$\rightarrow(\beta)\rightarrow^{123}$I, yield curves for cyclotron prod. of ^{123}I 8-44611
^{52}Mn, 2-5 GeV photospallation, ratios of isomeric yields *(Russian)* 8-46047
^{55}Mn, spallation by 0.3-1.0 GeV photons, cross-sections 8-41691
Mo+α, A=92,96,100, isobaric yield curves at A=72 from high energy spallation 8-25211
N+n in cellulose nitrate plastic detector, spallation products 8-17198
O+n in cellulose nitrate plastic detector, spallation products 8-17198
^{44}Sc, 2-5 GeV photospallation, ratios of isomeric yields *(Russian)* 8-46047
^{238}U, deuteron and proton bombardment, excitation function determ. 8-41709
^{51}V, spallation by 0.3-1.0 GeV photons, cross-sections 8-41691

nuclear spin and parity
^{22}Na, resonance levels obs. in ^{20}Ne(d,p$_0$) 8-46072
^{239}U vibr. states, obs. in ^{238}U(n,γ) 8-41627
A=16, (π^{-}, γ) and (μ^{-}, ν_{μ}) capture reactions on ^{16}O, positive and negative parity states construction 8-17105
A=18 nuclei, negative parity spectra, phonon dynamic interaction propagator approach 8-8739
angular correlation method for parity assignments, model independ. technique 8-21827
compound nucleus reactions, consequences of isospin mixing 8-25168
deep inelastic reactions, energy dissipation and angular momentum transfer 8-41679
deuteron disintegration reactions on zero-isospin nuclei, strong nonconservation of isospin 8-13106
dipole moment of nuclear state using transient mag. field from ion passing through ferromag. *(Dutch)* 8-29386
double crossing of ground rotational band and super band 8-45996
even-even deformed nuclei, aligned rot. of octupole vibrational states 8-12955
exchange current contribs. to parity violating elec. transitions 8-29383
fission, spatial parity nonconservation *(Russian)* 8-25170
fp-shell nuclei, high-spin states 8-12946
heavy ion scattering, parity depend. 8-4957
heavy-ion induced reactions, dynamically deformed rot. nucleus calcs. of polarisation effects 8-25222
high spin effects in nuclei with proton no. 40-60, shape, deforms. 8-503
high-spin nuclear rotations, single particle Nilsson model 8-12943
high-spin states of transitional and spherical nuclei, decoupled and strongly coupled bands 8-12939
hot nuclei with high angular momenta, γ-ray emission in heavy ion reactions, rot. bands 8-13133
hypernuclei, produced by strangeness exchange reactions, spin-orbit term 8-17130
Isolde experiments, prod. of extreme neutron/proton ratio nuclei, nuclear props. study *(Danish)* 8-4972
light nuclei, expts. on parity mixing 8-12965
light nuclei inelastic form factors for abnormal parity states, K-harmonic method *(Russian)* 8-25113
low energy positive parity spectra, 2$\hbar\omega$ excitations, ang. momentum projected deformed particle-hole model calcs. 8-25119
negative parity band crossing in even-even nuclei, ^{150}Sm, ^{152}Gd, ^{156}Er, ^{238}U, Dy (A=154, 156) 8-21488
neutron scatt. from parity violating pot. 8-25167
neutron scattering theory, parity violating interaction 8-25166
neutron strength function, spin depend. *(Russian)* 8-17069
odd-odd man nuclei, decoupled and strongly coupled particles system 8-8727
optical potential of deuteron-nucleus elastic scatt., Z.S interaction 8-41729
orthogonality condition model derived from parity energy surfaces, n+α, ^{3}H+α appl. 8-29432
partial wave expansions for arbitrary spin, non-central forces 8-21535
photonuclear reactions, differential polarisation coeffs. 8-4926
polarization in nuclear reactions, review of research at low energies *(Russian)* 8-33162
projection of wave functions on states with definite ang. momentum 8-12590

nuclear spin and parity continued
quadrupole pairing forces influence on backbending, cranked Hartree Fock Bogoliubov approach 8-29401
rotating nuclei of high and v.high nucl. spin *(German)* 8-25102
rotation effects on collective props. review *(Russian)* 8-37299
shell model study, high-spin states in N=28 nuclei 8-29407
spin, parity and spectroscopic factors of excited states populated in ^{24}Mg(d,p) 8-8826
spin assignments using polarised neutrons and oriented target nuclei in (n,γ) reacts. 8-29724
spin-polarisation analysing powers in nuclear reactors, M-matrix conditions 8-8787
symmetry breaking in ground state region, statistical meas. 8-8737
three nucleon clusters in nuclear matter, two-body force spin structure 8-17112
two-quasi particle excitations, high-spin rot. state, ang. momentum projection 8-41615
wave functions, matrix elements, cranked deformed harmonic oscillator, high spin nucleus appl. 8-25131
yrast traps, island of high spin isomers near N=82 8-8844
yrast traps, struct., nuclear deform. 8-21486
^{20}Ne, rotational bands 8-45993
^{105}Ag, high spin states γ-single spectra, $\gamma\gamma$ coincidence, excitation functions, ang. distrib., polarisation meas. 8-21519
^{111}Ag, 376.7 keV level lifetime, shape coexistence, γ-branching 8-551
^{27}Al, coherence widths from ^{12}C(^{15}N,α) 8-41619
^{27}Al, low lying states, band mixing effects, quadrupole moment 8-490
^{27}Al, spins of p-h states from analysing powers of (d,τ) reacts. 8-25111
^{28}Al, spectroscopic meas. in ^{30}Si(d,α) react. with polarised deuterons 8-41728
^{38}Ar high spin states from ^{27}Al(^{14}N,2pn), decay scheme 8-25232
^{39}Ar low lying states from ^{37}Cl(α,d), spectra, ang. distribs., spins 8-25212
^{40}Ar+^{58}Ni, deep inelastic collision at 280 MeV, fragment energy and spin 8-21599
^{78}As, level struct. determ. in ^{80}Se(d,α) at 16 MeV 8-8827
Au, spin and mag. moment, trends in neutron deficient nuclei 8-37261
^{a}Au, A=193-199, positive parity states, particle-asymmetric rotor description 8-46005
^{185}Au, high-spin states anal. h$_{9/2}$ and i$_{13/2}$ bands 8-25117
^{187}Au energy states from ^{187}Hg decay, parities γ-spectra, triaxial nuclear deform. *(French)* 8-33143
^{196}Au, studied via ^{197}Au(n,2n), isomeric cross-section ratio and spin-cut-off factor 8-13096
^{12}B, aligned, existence of G-parity irregular induced tensor current 8-29384
^{12}B, spin polarisation in ^{100}Mo(^{14}N, ^{12}B), semiclassical anal. 8-33212
^{125}Ba, 7/2$^{\pm}$ states, populated in ^{116}Sn(^{12}C, 3n), explained by triaxial core model 8-37258
^{129}Ba, excitation and props. of high-spin levels using ^{120}Sn(^{12}C,3nγ) 8-17104
^{7}Be excited state from ^{4}He(^{3}He,^{3}He) polarised scatt. study 8-46078
^{10}Be, form. in ^{7}Li(t,γ) reaction, excitation functions and resonant struct. for 17.79 MeV state 8-13110
^{203}Bi high spin states from ^{203}Tl(α,4n), lifetimes meas. 8-29485
^{209}Bi coherent scattering of polarised thermal neutrons, parity violating effects 8-29461
^{80}Br, level struct. determ. from thermal (n,γ) meas. 8-41667
^{80}Br spin states from γ-spectra obs. in ^{80}Se(p,nγ) and ^{79}Br(n,γ) *(French)* 8-29393
^{82}Br, level struct. determ. from thermal (n,γ) meas. 8-41667
^{82}Br spin states from γ-spectra obs. in ^{82}Se(p,nγ) and ^{81}Br(n,γ) *(French)* 8-29393
^{83}Br, levels assignment, ^{83m}Se decay scheme obs. 8-17147
^{12}C, spin flip transition after ^{12}C(e,e$'\pi^{+}$)^{12}B, near threshold 8-13065
^{12}C$_{2+}$ spin alignment using γ-decay in flight in ^{16}O(^{12}C,^{12}C$_{2+}$)^{16}O and ^{12}C(^{16}O,^{12}C$_{2+}$)^{16}O interactions 8-41767
^{12}C+^{16}O, 22 MeV, spins of reson. assigned 8-17236
^{12}C(^{16}O,α)^{24}Mg, low energy, spin and parity assignments 8-21602
^{12}C(^{6}Li,α)^{14}N(2.31 MeV), 9 to 20 MeV, isospin violation 8-41763
^{13}C, reson. struct. anal. from ^{13}C(γ,n$_0$)^{12}C 8-586
^{14}C, populated by ^{12}C(t,p)^{14}C, spin and parity of states near 10 MeV excitation in ^{14}C 8-37263
^{16}C levels populated in ^{14}C(t,pγ), spin assignments 8-8830
^{43}Ca high spin positive parity states, struct., from ^{40}Ar(α,nγ) 8-46025
^{47}Ca, low-lying levels anal. in ^{48}Ca(d,t) reactions 8-13114
^{48}Ca, zz 8-12964
Cd, A=105 to 109, parity assignments from (^{16}O,xnγ) obs. 8-41630
Cd, isotopes A=109, 106, 105, 104, high spin states excited by (α,xnγ) *(French)* 8-29394
^{109}Cd, 11 μs isomeric level, spin and parity determ. by ^{108}Pd(α,3n) *(French)* 8-8738
^{114}Cd proton hole states populated in ^{115}In(d,^{3}He), DWBA anal. 8-8829
Ce band structures populated in ^{116,118}Sn(^{16}O,3n), high spin levels, yrast cascade 8-8842
^{37}Cl, in-beam γ-ray spectroscopy via ^{3}H(^{35}Cl,pγ) 8-13013
^{59}Co, neutron resonance spectroscopy, R-matrix anal. 8-21555
^{60}Co low lying states from ^{57}Fe(α,pγ), spin constraints, γ mixing ratios 8-29487
^{49}Cr energy levels, spins, parities, spectroscopic factors, from ^{50}Cr(τ,α) 8-33199
^{52}Cr, total photoneutron cross section, high resolution meas., isospin effects 8-8792
Cs isotopes, nucl. spins and mag. moments, atomic-beam mag. reson. expt. 8-17097
Cs isotopes, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8-37262
Cs, spin and mag. moment, trends in neutron deficient nuclei 8-37261
^{119}Cs, spin of neutron deficient nucleus by β radiation detected optical pumping 8-8782
^{62}Cu high spin states populated in ^{60}N+α, ^{63}Cu+p, ^{52}Cr+^{14}N, level scheme *(French)* 8-21496
^{62}Cu, yrast states obs. in ^{60}Ni(α,pnγ) and ^{63}Cu(p,pnγ) 8-12945
^{63}Cu, decay of analogues, γ-ray ang. distribs. and spins of resons. 8-13002
^{156}Dy, prompt transitions multipolarities, γ and conversion electron spectra, energy level bands, spin, parity 8-8768

nuclear spin and parity continued
- ^{162}Dy+^{16}O, Coulomb-nuclear interference for high spin states 8−46097
- Er, A=161,162, high ang. momentum states from Nd+^{16,18}O, γ decay modes from multiplicity meas. 8−29419
- ^{154}Er, high-spin states 8−29373
- ^{156}Er, negative parity yrast states, microscopic calc. 8−495
- ^{160}Er, produced in ^{124}Sn+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
- ^{163}Er, excited states populated in ^{163}Tm decay 8−17146
- ^{170}Er level struct. obs. in ^{170}Ho β^--decay 8−41675
- ^{149}Eu level structure populated in ^{150}Sm(p,2nγ), spin, parity 8−21561
- ^{18}F, 5603 keV level, isospin mixing via (α,γ) and (p,γ) reactions 8−543
- ^{18}F, spin-parity assignment from ^{17}O(p,p)^{17}O, at 1.4-3.0 MeV 8−29391
- ^{18}F, trinucleon cluster states, low lying negative parity states 8−29387
- ^{19}F, produced in ^{15}N(α,γ)^{19}F, 5.2 to 8.4 MeV, resonances and gamma decay schemes 8−37358
- ^{20}F energy levels populated in ^{14}N(^{7}Li,p), spin, parity 8−21596
- ^{56}Fe yrast band, coexistence of prolate and oblate shapes 8−12947
- ^{58}Fe high spin states from ^{55}Mn(d,pγ), decay props., γ-γ coincidence 8−21515
- Fr, spin and mag. moment, trends in neutron deficient nuclei 8−37261
- ^{146}Gd, 1579 keV state, assignment of isospin and parity, using γ-ray ang. distrib. 8−21489
- ^{146}Gd, 3^- 1579 keV first excited state 8−41670
- ^{150}Gd, vibr. levels anal. from ^{150}Tb decay 8−8772
- Ge excited states from ^{72,74,76}Ge(p,t), spins, parities 8−25194
- ^{68}Ge, lifetimes of excited states populated in ^{58}Ni(^{12}C,2p), spins and parities of levels 8−13020
- ^{69}Ge, J^π assignments from (d,t) and (d,p) reacts. with polarised deuterons 8−17221
- ^{71}Ge, J^π assignments from (d,t) and (d,p) reacts. with polarised deuterons 8−17221
- ^{71}Ge, levels, studied via ^{68}Zn(α,nγ), 8 to 10 MeV, comparison with coupling model calcs. 8−8742
- ^{4}He isospin splitting of 1p-1h excitation, obs. in ^{3}H(p,p) 8−41622
- ^{6}He, form. in ^{7}Li(t,α) reaction, spin assignments 8−13110
- ^{172}Hf, decoupled two-quasiparticle bands, backbending 8−4890
- ^{172}Hf rotation bands from ^{160}Gd(^{16}O,4n), high spin states, halflives 8−25217
- ^{176}Hf yrast traps, cranking Hartree Fock Bogoliubov calcs. 8−25100
- ^{197}Hg energy levels from ^{195}Pt(α,2n), γ and conversion electron spectra, spins, parities 8−25149
- ^{165}Ho+n, polarised projectile and target, spin depend. of total cross section *(Russian)* 8−17211
- ^{165}Ho(n,γ), <2 keV, spin depend. of s-wave neutron strength function 8−21562
- I energy levels, collective excitations, spin,parity, populated in ^{121,123}Sb(α,2n), γ spectra 8−4891
- ^{39}K high spin states from ^{24}Mg(^{18}O, p2nγ), decay scheme 8−25232
- ^{39}K, spins of p-h states from analysing powers of (d,τ) reacts. 8−25111
- ^{40}K excitation energy, γ decay, of lowest T=2 state populated in ^{40}Ar(p,n) 8−8769
- ^{42}K, levels, studied by ^{44}Ca(d,α)^{42}K reactions, 11 MeV, DWBA analysis 8−8723
- ^{84}Kr, 1.84 μs isomeric state, g-factor meas. 8−17101
- ^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8−46059
- ^{176}Lu, reson. spins, secondary γ-transition intensity, from ^{175}Lu(n,γ) 8−21512
- ^{177}Lu, reson. spins secondary γ-transition intensity meas. in ^{176}Lu(n,γ) 8−21512
- ^{24}Mg, existence of second $J^\pi=0^+$ reson. at high excitation energy, study of ^{12}C(^{12}C,α)^{20}Ne reaction 8−25214
- ^{24}Mg, form. in ^{12}C+^{12}C reaction at 10.5 to 15 MeV, possible rot. band 8−13134
- ^{24}Mg, identification of 10^+ levels using ^{12}C(^{16}O,α) at 26.7 MeV 8−33119
- ^{24}Mg, population of high spin unnatural parity states 8−37334
- ^{24}Mg, rot. band, reson. states, J^π via ^{12}C+^{12}C 8−491
- ^{26}Mg(p,p′), 6 MeV, spin-flip probability, ang. distrib., energy depend. 8−13078
- ^{55}Mn, neutron resonance spectroscopy, R-matrix anal. 8−21555
- ^{94}Mo, level spins and multiple mixing ratios from γ-γ correlation meas. 8−21517
- ^{12}N, aligned, existence of G-parity irregular induced tensor current 8−29384
- ^{14}N 9.13 MeV state, obs. in ^{13}C(p,γ) 8−41641
- ^{15}N, obs. of high spin states in ^{12}C(^{6}Li,t) and ^{12}C(^{6}Li, ^{3}He) 8−13015
- ^{15}N, spins of p-h states from analysing powers of (d,τ) reacts. 8−25111
- ^{15}N-^{15}O, study of excited states, spin and parity *(French)* 8−33158
- ^{97}Nb level structure from ^{97}Zr decay, spins, parities γ ang. correls. 8−29418
- ^{147}Nd, spin by vector analysing powers of ^{148}Nd(d,t)^{147}Nd 8−609
- ^{148}Nd(d,t)^{147}Nd, vector analysing powers, spin determ. of ^{147}Nd 8−609
- ^{20}Ne, form. in ^{19}F(p,γ) reaction, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8−17191
- ^{21}Ne-^{21}Na, study of excited states, spin and parity *(French)* 8−33158
- ^{64}Ni, zz 8−12964
- Ni(n,γ), A=58, 60, resonance state, partial radiation widths of high energy transitions 8−13104
- ^{15}O, obs. of high spin states in ^{12}C(^{6}Li,t) and ^{12}C(^{6}Li, ^{3}He) 8−13015
- ^{16}O, 3^+ reson. state, particle-hole component via (p,p) and (p,α) reactions 8−580
- ^{16}O, inelastic form factors for abnormal parity states, K-harmonic method *(Russian)* 8−25113
- ^{16}O, levels near 13 MeV via ^{15}N+p 0.9-1.25 MeV 8−509
- ^{18}O, trinucleon cluster states, low lying negative parity states 8−29387
- ^{18}O-^{18}F, study of excited states, spin and parity *(French)* 8−33158
- ^{19}O high spin states populated in ^{13}C(^{7}Li,p) 8−21595
- ^{32}P, spin-parity assignments from ^{34}S(d,α)^{32}P 8−17219
- Pb, A=200, 202, 204, seniority four admixtures in low lying 0^+ states 8−8741
- ^{201}Pb, nuclear spin, metastable atomic states, hyperfine struct. meas. 8−25110
- ^{203}Pb, nuclear spin, metastable atomic states, hyperfine struct. meas. 8−25110

nuclear spin and parity continued
- ^{204}Pb yrast levels populated in ^{204}Hg (α,4n), spin, parity, γ spectra 8−12954
- ^{208}Pb, zz 8−12964
- ^{209}Pb unbound high spin shell model states, single nucleon states 8−25126
- Pb(p,t), A=204,6,8, E=35 MeV, spectra and ang. distribs. meas. DWBA anal., sum rules 8−13101
- ^{104}Pd levels populated in ^{104m,g}Ag β^+ decay , spins, parities 8−13018
- ^{105}Pd, from decay of ^{105m,g}Ag 8−37306
- ^{147}Pm, level struct. via ^{148}Nd(p,2nγ) 12.1-20.2 MeV 8−510
- ^{152}Pm decay, β and γ rays, spins, half lives, ^{152}Sm levels 8−542
- ^{188}Pt side band, low lying and high spin states populated in ^{191}Ir(p,4nγ) 8−4936
- ^{191}Pt energy levels, γ and conversion electron spectra, spins, parities 8−25149
- Pt(p,d)^{193,195,197}Pt, l-assignments, spectroscopic factors 8−8810
- ^{239}Pu(n,f), polarised thermal neutrons, parity nonconservation *(Russian)* 8−33232
- Rb isotopes, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
- Rb, spin and mag. moment, trends in neutron deficient nuclei 8−37261
- ^{76}Rb, spin of neutron deficient nucleus by β radiation detected optical pumping 8−8782
- ^{105}Ru, γ-γ ang. correl. meas., spin and γ-ray mixing ratios 8−21516
- ^{133}Sb, level scheme of one proton and doubly closed shell core 8−37291
- ^{42}Sc, β^+ decay, isospin symm. hindered, branching fraction 8−21526
- ^{72}Se, high spin and excitation regions anal., ^{58}Ni(^{16}O,2pγ) 8−25226
- ^{83}Se, IAS, J^π via ^{82}Se(p,pγ) 4.5-7.7 MeV 8−573
- ^{27}Si, γ-branchings and mixing ratios determ. from ^{24}Mg(α,nγ) 8−17224
- ^{28}Si, excited levels populated in ^{27}Al(p,α)^{24}Mg at E_p=1540-2220 keV 8−17189
- ^{28}Si, population of high spin unnatural parity states 8−37334
- ^{28}Si resonances obs. in ^{27}Al(p,α_0)^{24}Mg at 1.12-3.08 MeV 8−13091
- ^{144}Sm, produced in ^{100}Mo+^{48}Ca 8−37260
- Sn, A=104, 106, 108, seniority four admixtures in low lying 0^+ states 8−8741
- ^{114}Sn, zz 8−12964
- ^{115}Sn, levels, J^π via ^{116}Sn(d,t)^{115}Sn 23 MeV 8−612
- ^{117}Sn(n,γ)^{118}Sn, parity violation obs. 8−8820
- ^{124}Sn, zz 8−12964
- Sn(d,t)Sn, even A=112 to 124, deeply bound hole states of odd A Sn 8−8725
- ^{182}Ta, levels, J^π, via 2-3 eV neutron capture γ-spectra 8−602
- ^{95}Tc, high momentum states band structs. obs. in (α,2nγ) 8−33109
- ^{96}Tc low lying states, level scheme, parities, from conversion electron, γ spectra 8−46024
- ^{98}Tc energy levels from ^{99}Tc(p,d), l-values, spectrocopic factors, parities 8−25183
- ^{99}Tc level structure, spin-parity, from inelastic scatt. and proton stripping studies 8−8743
- ^{118}Te, produced in ^{82}Se+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
- ^{232}Th+^{86}Kr, Coulomb-nuclear interference for high spin states 8−46097
- Tl, A=208,206,204, high-spin states, α-spectra via (d,α) 80 MeV 8−504
- ^{163}Tm, high spin rot. levels, studied via ^{165}Ho(^{3}He,5n) and ^{165}Ho(α,6n) reactions 8−8722
- ^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S′γ), EM props. of ground state rot. band 8−8726
- ^{233}U, high-energy spin state obs. using Coulomb excitation 8−17102
- ^{233}U(n,f) polarised thermal neutrons, P-odd asymm. *(Russian)* 8−33231
- ^{235}U, levels, J^π, multipolarities via (n,γ) 5-49 MeV 8−512
- ^{235}U(n,f), polarised thermal neutrons, parity nonconservation *(Russian)* 8−33232
- ^{238}U+^{40}Ar, Coulomb-nuclear interference for high spin states 8−46097
- ^{238}U(^{136}Xe, ^{136}Xe), multiple Coulomb and nucl. excitation 8−21603
- ^{238}U(^{238}U, ^{238}U), multiple Coulomb and nucl. excitation 8−21603
- ^{48}V, $K^\pi=4^-$ rotational band 8−12944
- ^{51}V, neutron resonance spectroscopy, R-matrix anal. 8−21555
- ^{174}W, decoupled two-quasiparticle bands, backbending 8−4890
- ^{179}W, backbending, high spin isomer decay 8−45997
- ^{89}Y, high resolution neutron total cross section meas., 27-240 keV 8−25193
- ^{64}Zn, γ-ray spectroscopy from ^{61}Ni(α,nγ)^{64}Zn 8−21514
- ^{65}Zn, high spin states obs. in (α,nγ), and (^{16}O,np) 8−13016
- ^{67}Zn, high spin states obs. in (α,nγ) 8−13016
- Zr, A=90-95, levels, J^π, neutron-hole struct., ^{95}Zr IAS 8−508
- ^{89}Zr, IAS and bound hole states via ^{90}Zr(^{3}He, ^{4}He)^{89}Zr 39 MeV 8−492
- ^{90}Zr, zz 8−12964

nuclear spin-lattice relaxation
- ^{13}C NMR, proton-decoupled, spin-echo determ. of short T_2 values, errors, appl. to protein mobility 8−2769
- acetyl chloride, liq., proton spin-lattice relax., temp. depend. 8−39435
- alcohol homologous series, ^{1}HT_1-relax. time, paramagnetic, diamagnetic shift reagent effects *(German)* 8−43673
- alkali halides, doped, impurities effect 8−19362
- alkali silicate and borate glasses, ionic motion, ^{7}Li NMR obs. 8−27107
- alkane chain internal rot. correlation times, from ^{13}C T_1 data 8−17688
- p-alkoxybenzoic acids, nematic liq. cryst., proton spin lattice relax., mol. dynamics 8−34425
- amino acids, polycryst., proton mag. relax. and mol. motion 8−20139
- amniotic fluid, human proton relax. times in low field range, appl. to nucl. magnetography *(French)* 8−3574
- anisotropic overall reorientation parameters. determ. in liquid phase *(German)* 8−31121
- anthraquinone, in Shpolskii matrices, triplet state spin-lattice relax. rates 8−21952
- antiferromagnet nucl. spin lattice relax., field depend. of dipolar-induced two-magnon process 8−6593
- Brownian motion and NMR spin relax., book 8−15054
- chlorobenzene-d_0, -d_1, mol. reorientation and D nucl. relax. time, temp. depend. 8−39424

nuclear spin-lattice relaxation continued
3-chlorodiphenyl, in dipolar aprotic solvent, internal rot. barrier, ^{13}C T_1, obs. 8−29860
chloroform, liq., crit. fluctuations, proton spin relax. obs. 8−19358
chloromethylgermane, polycryst., proton spin-lattice relax. times meas. 8−39430
chloromethylsilane, polycryst., proton spin-lattice relax. times meas. 8−39430
chloromethylstannane, polycryst., proton spin-lattice relax. times meas. 8−39430
2-chloropyrimidine, CS_2 soln., mol. reorientation, ^{1}H, ^{13}C nucl. mag. relax. 8−27105
computation of T_1 from pulsed NMR data, least-squares formula 8−24837
copper benzoate, spin 1/2 system, one-dimensional nucl. relax. 8−39427
cyclohexane, plastic-phase, NO-doped, heterogeneous solid soln., mag. reson. evidence 8−34449
decanol, dynamic mol. struct. in cyclohexane-d_{12}, ^{13}C NMR 8−33519
di-t-butyl nitroxide radical, in soln., proton relax., meas. of H-bonding 8−27103
dipolarly coupled spin pairs, correlation function and relaxation time, group theory approach 8−48068
dislocation dynamics investigation, theory 8−34512
ethylene bromide, liq., proton spin-lattice relax., temp. depend. 8−39435
ferroelectric, disorder excitation relaxation effects, phonon-excitation coupled model 8−10852
n-hexylamine-nickel di-acetylacetonate, ^{13}C nucl. spin relax., electron spin delocalisation 8−5248
hydrocarbon chain, gauche-trans isomerisation, ^{13}C relax. times and nucl. Overhauser enhancement model 8−33520
liquid crystals, nematic and smectic, EPR and NMR relax., first-rank tensor component effects 8−14275
liquid metals and alloys, nuclear quadrupole relaxation 8−15050
liquid metals and alloys, review 8−2755
lithium acetate, proton relax. study of nearly free methyl rotors 8−39428
MBBA, ^{13}C spin-lattice relax., Fourier-transform NMR, NOE 8−48064
MBBA, partially deuterated, D spin-lattice relax. 8−48070
metal, non-Arrhenius diffusion and NMR relax. relationship 8−47568
metal tritides, ^{3}He NMR and distrib. 8−30661
methyl acetate, liq., proton spin-lattice relax., temp. depend. 8−39435
methyl bromide, liq., NMR relax., anisotropic mol. reorientation 8−2764
methyl group, ^{2}H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methyl group, NMR relax., spin rot. and chem. shift anisotropy effects 8−31117
methyl group, proton spin relax. due to intermol. proton coupling, reorientation 8−25564
methyl groups, detection of proton NMR at arbitrary temps. of tunnelling system 8−39432
methyl groups, reorientation in solids, nonexponential Zeeman relax. 8−6589
methylene chloride, liq., proton spin-lattice relax., temp. depend. 8−39435
microemulsions, PMR spin-lattice relax. time meas., inversion recovery method *(French)* 8−48066
molecular groups in solids, effect of symm.-restricted spin diffusion 8−39431
molecular medium, decay of two $^1/_2$ spins, Nakajima-Zwanzig technique 8−23361
trans,trans-mucodinitrile solid, NMR relax., mol. motions between unequal pot. wells 8−19353
multiplet relaxation in anisotropic media, mag. recovery rate 8−43662
muscle water transverse and longit. NMR relax. rates 8−35810
nematic liquid crystal, low-temp., temp. depend. minima of binary mixture 8−26427
nematic liquid crystal, nuclear spin relax., translational self-diffusion 8−43670
nitromethane, liq., proton spin-lattice relax., temp. depend. 8−39435
nonadecane, mol. motion in solid, ^{1}H spin relax. 8−15048
one-dimensional charge transfer conductors, press. effects on mag. props., review 8−6505
paramagnetic complexes, nucl. spin-lattice relax., electron spin density matrix theory 8−13521
paramagnetic impurities in solids and liqs., theory of spin-lattice relax. due to diffusion 8−10794
paramagnetic material effect on chem. shift and relax. times, mol. struct. effect 8−46373
perdeuterobenzene, liquid, reorientation and spin-rotation interaction 8−39423
perfluorocyclohexane, spin-lattice relax. during pulsed spin locking 8−39425
periodically irradiated system, master eqn. 8−43664
4-phenyl n-pentyl ester, Nematel 105, nematogen, isotropic phase, Rayleigh scatt. and mol. reorientation 8−34429
phosphatidylcholine hydration, adsorpt.-desorpt. isotherm and PMR 8−15781
polyethylene, molecular motion and spin-lattice relaxation 8−48071
polyethylene, solid, multicomponent decay of nucl. magnetisation, in rot. coord. system, anal. *(Russian)* 8−27106
polyfluorostyrene, para- and meta-, dil. soln., ^{19}F magnetic resonance 8−10792
proteins, PMR spin-lattice relax. time, role of cross-relax. 8−35800
pulsed spin locking, RF, spin-lattice relax. calc. model 8−39425
quadrupolar, in solids 8−39429
rare earth dil. alloy, nucl. spin-lattice relax. of ^{165}Ho 8−48069
$tRNA_{yeast}^{phe}$, Fourier transform PMR in aq. soln., ^{1}H exchange and relax. rates meas. method 8−15049
ruthenium acetylacetonate, nucl. spin-lattice relax., electron spin density matrix theory 8−13521
semiconductor, relaxation of nuclear spins interacting with holes 8−48073
spin diffusion, influence on nucl. spin-lattice relax. due to impurity nuclei under magic angle conditions 8−15061
spin diffusion under magic angle conditions, calc. 8−19363
spin system kinetics for spin quantisation by strong acoustic field 8−15052

nuclear spin-lattice relaxation continued
superconductor, nuclear spin relaxation rate fluctuation growth, mag. field effect 8−10606
superimposed exponentially decaying signals, computer-aided anal. technique 8−23360
TBBA, smectic, spin-lattice relax., self-diffusion, mol. rot. 8−35055
TCNQ complexes with dipyranylidene and dithiadipyranylidene, high cond. investigs. and related props. 8−6368
TCNQ salt, $Qn(TCNQ)_2$, temp. and freq. depend. of nucl. relax. rate 8−6594
TCNQ-HMTSeF, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
1,2,4,5-tetrachlorobenzene, in durene host, phosphoresc., cross-relax. between spin levels 8−9186
tetrafluoromethane, compressed fluid ang. momentum relax., NMR 8−19354
tetrafluoromethane-inert gas, compressed fluids, ang. momentum relax., NMR 8−19355
TGS, proton spin-lattice relax. time, temp. depend., near transition pt. 8−43668
TMMC, linear antiferromag., 3D ordering and spin correlations, mag. field effect 8−19262
toluene-d_0, -d_1, mol. reorientation and D nucl. relax. time, temp. depend. 8−39424
trichlorophosphazenes, ^{35}Cl NQR spectra and reorientational motion of PCl_3 group 8−25567
trimethylphosphate, plastic and hard crysts., liq., nucl. spin-lattice relax. mol. motion 8−48065
tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8−26681
tryptophan, Fourier transform PMR in aq. soln., ^{1}H exchange and relax. rates meas. method 8−15049
TTF-TCNQ, electron-electron interaction strength, electron scatt. and spin-lattice relax. data 8−30878
TTF-TCNQ, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
TTF-TCNQ electronic props., PMR 8−2763
tumour detection, spectrum anal. of multiple components data 8−48851
β-AgI, ion dynamics and transition to superionic state, nucl. spin-lattice relax. meas. 8−43179
Ag_2SbS_3, order-disorder phase transition, NQR and spin-lattice relax. expts. 8−47523
Au-V, dil., ^{51}V CW NMR line width anal., RKKY broadening 8−15033
BaF_2, NMR relax., ionic cond. and self-diffusion 8−23362
^{13}C pulsed NMR, simultaneous T_1 and T_2 meas., Fourier transform. visualization 8−24838
CaF_2, spin diffusion under magic angle conditions, calc. 8−19363
Cd complex, aminoacetate, proton spin-lattice relaxation, temp. depend. 8−31119
$Cl_3PNPO(CCl_3)_2$, NQR spin-lattice relax. study of PCl_3 and CCl_3 group reorientation 8−2767
$Cr_{1-x}Mo_xCo$, $x \leq 0.25$, antiferromag., nucl. mag. relax. 8−6590
$Cr_{1-x}V_xCo$, mag. state of Co impurity, NMR exam. 8−27100
$Cr_{1-x}V_xCo$, $x \leq 0.5$, antiferromag., nucl. mag. relax. meas. 8−6590
Cs_2SO_4-$(NH_4)_2SO_4$ mixed cryst., ferroelec. transition, structural and dielec. props., proton spin-lattice relax. 8−39512
Cu complex, $CuCl_2.2NC_5H_5$, spin 1/2 system, one-dimensional nucl. relax. 8−39427
Cu-Mn, dil., spin-glass dynamics, NMR meas. 8−31120
$CuSeO_4$, $S=^1/_2$ Heisenberg antiferromag. linear chain, proton spin-lattice relax. 8−39433
Fe III low-spin complexes, nucl. spin-lattice relax., electron spin density matrix theory 8−13521
$FeBO_3$, dynamic NMR frequency shift for ^{57}Fe *(Russian)* 8−43677
Ga, liq., nucl. acoustic reson. Knight shift, rel. to spin-lattice relax. 8−19351
H_2, solid, NMR, pulsed, linewidth transition, T_1, low ortho conc. 8−43667
$H_{1.6}MoO_3$ bronzes, proton mobility 8−39426
^{3}He adsorbed on graphite, NMR relax. times below 4.2K 8−38898
^{3}He adsorbed on graphite, mag. props., 2-D gas behaviour 8−47631
^{3}He, BCC, Zeeman exchange cross relax. time 8−22930
^{3}He liquid in contact with magnetic substrate nuclear spin relaxation 8−43200
^{3}He-^{4}He solid mixture, ^{3}He-^{3}He and ^{3}He-^{4}He tunnelling motions, NMR meas. 8−38908
$Hg_{2.86}AsF_6$, linear chain compound NMR exam. 8−19359
KCl:NH_4Cl, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
$KCr(SO_4)_2.12H_2O$, spin lattice relaxation, in liquid He and in vacuum 8−39434
$KH_3(SeO_3)_2$, temp. and mag. field dependence of proton spin-lattice relax. time 8−23363
K_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8−15051
K_2TeO_3, D_2O soln., ^{123,125}Te Fourier transform NMR 8−15046
$(La_{1-n}Ce_n)_3Al$, mag. impurity effects in normal and supercond. state, NMR 8−2622
$(La_{1-n}Gd_n)_3Al$, mag. impurity effects in normal and supercond. state, NMR 8−2622
La_3In, mag. susceptibility and normal state NMR meas. 8−31118
$LaNi_5H_{6.6}$, $LaNi_5H_{6.2}$, H diffusion NMR spectra *(Russian)* 8−2287
La_3Tl, mag. susceptibility and normal state NMR meas. 8−31118
Li, thermal mixing rate calc. 8−10795
$LiIO_3$, ^{7}Li nuclear spin-lattice relax. meas. 8−10796
MnSi, NMR and susceptibility above T_c 8−43665
$Mo_{1-x}Re_xCo$, mag. state of Co impurity, NMR exam. 8−27100
$(ND_4)_2PbCl_6$-ND_4Cl polycryst. mixture, D spin-lattice relax. times, ND_4^+ reorientation activation energies 8−6587
$(NH_4)_2Ce(NO_3)_6$, proton relax. by tunnelling at low temp. 8−43666
NH_4ClO_4, proton relax. by tunnelling at low temp. 8−43666
NH_4ClO_4, proton tunnelling frequencies from nuclear spin-lattice relaxation 8−6591
NH_4ClO_4, with 0.015% and 0.1% D, proton Zeeman relaxation 8−6592
$(NH_4)_2Cr_2O_7$, proton tunnelling frequencies from nuclear spin-lattice relaxation 8−6591
NH_4ReO_4, PMR, NH_4^+ tunnelling, ground torsional level struct. 8−27097

nuclear spin-lattice relaxation continued
NH_4ReO_4, proton absorpt. lineshape and spin-lattice relax., ^{187}Re anomalous temp. depend. 8-48067
$(NH_4)_2SiF_6$, cubic and trigonal, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591
$(NH_4)_2SiF_6$, proton relax. by tunnelling at low temp. 8-43666
$(NH_4)_2SnCl_6$, proton relax. by tunnelling at low temp. 8-43666
$(NH_4)_2SnCl_6$, proton tunnelling frequencies from nuclear spin-lattice relaxation 8-6591
$NaNO_3$, ^{23}Na spin-lattice relax., orientation depend. 8-23372
Na_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8-15051
Na_2TeO_3, D_2O soln., ^{123,125}Te Fourier transform NMR 8-15046
Nb_3Al:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8-19369
$NbSe_2$ (2H), charge density waves state, NMR meas. 8-39421
Ni complex, hexamethylphosphorotriamide Ni (II), paramagnetic, pulsed NMR, substitution reaction *(French)* 8-10793
Ni, hyperfine interactions on implanted ^{12}B, crit. behaviour near T_c 8-43663
PbI_2-piperidine intercalations rel. to NQR, spin-lattice relax. temp. depend. *(Russian)* 8-27108
PdCo, dil., ferromag., nucl. mag. relax. meas. 8-6590
$PdH_{0.76}$, ^{1}H spin-lattice relax. meas. 8-43672
PdH(D), superconducting, electronic spin density, isotope effects 8-39262
RbCl:NH_4Cl, PMR, $NH_4{}^+$ ion proton spin-lattice relax. time temp. depend. 8-27104
Rb_2SO_4-$(NH_4)_2SO_4$ mixed cryst., ferroelec. transition, structural and dielec. props., proton spin-lattice relax. 8-39512
Sc_3In, itinerant electron ferromag., NMR and relax. 8-6586
Si, optically pumped, dynamic polarisation and mag. relax. of ^{29}Si 8-48081
TTF.$CuS_4C_4(CF_3)_4$, spin-Peierls system, nucl. spin-lattice relax. process 8-19361
Ti-H, H diffusion and phase consistution, V influence, proton spin-lattice relax. meas. 8-27484
$TiSe_2$, electronic instability, ^{77}Se NMR 8-10790
$^{205}Tl^+$, NMR in aq. soln., dissolved O_2 on nuclear spin relax. rate 8-19356
V_3Ga(Si), high T_c supercond., rel. to density of states sharp struct. effect on electron-phonon coupling 8-14877
Zn complex, aminoacetate, proton spin-lattice relaxation, temp. depend. 8-31119

nuclear spin-spin relaxation *see spin-spin relaxation*

nuclear structure
see also nuclear binding energy; nuclear charge; nuclear density; nuclear energy level transitions; nuclear energy levels; nuclear forces; nuclear isomerism; nuclear matter; nuclear moments; nuclear polarisation; nuclear shape; nuclear size; nuclear spin and parity; nuclear structure theory
A=198 nuclei, struct., level props., decay, review 8-17077
A=214 nuclei, struct. info., energy levels, spin, parity, decay 8-17078
A=218 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8-17079
A=222 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8-17080
A=234 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8-17081
A=238 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8-17082
A=242 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8-17083
A=53 nuclei, struct., level props., ENSDF data 8-17076
anomalous nuclei, crit. charge *(Russian)* 8-8736
Evaluated Nuclear Structure Data File for basic and applied research 8-17544
hyperfine interactions, conference, Madison, NJ, USA (Jun 1977) 8-39076
neutral nuclei, search for existence in W+p interactions *(Czech)* 8-29454
nucleus as many body field system and a system with abnormal mass, charge, density and energy 8-12938
relativistic nuclear physics, collisions of relativistic ions *(Rumanian)* 8-46104
π scattering by few-nucleon nuclei, diffractional approx. *(Russian)* 8-650
Ag, A=107, 9, +^{86}Kr, 618 MeV, γ-ray multiplicities and angular momentum fractionation 8-37370
^{197}Au +^{86}Kr, 618 MeV, γ-ray multiplicities and angular momentum fractionation 8-37370
^{9}Be, molecular model, n and α-particle decay widths, charge form factors 8-46015
^{9}Be, neutron spectroscopic factor from (^{9}Be,^{8}Be) reacts. 8-17098
^{59}Co, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8-41707
Cu, A=63, 65, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8-41707
^{4}He, struct. effects on α-decay of superheavy nuclei 8-17158
^{165}Ho +^{86}Kr, 618 MeV, γ-ray multiplicities and angular momentum fractionation 8-37370
^{26}Mg(p,$\pi^\pm$), 180 MeV, effect of Δ^{++} components in nuclei 8-33181
^{99}Nb, fission product of ^{235}U *(German)* 8-29395
^{60}Ni, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8-41707
^{16}O(π^+,π^-), 140 MeV, nuclear structure effects on cross section 8-17246
^{18}O(π^+,π^-), 140 MeV, nuclear structure effects on cross section 8-17246
^{18}O(π^+,π^-)^{18}Na, nuclear struct. effects 8-37380
^{97}Sr, fission product of ^{235}U *(German)* 8-29395
^{97}Y, fission product of ^{235}U *(German)* 8-29395
^{99}Y, fission product of ^{235}U *(German)* 8-29395
^{97}Zr, fission product of ^{235}U *(German)* 8-29395
^{99}Zr, fission product of ^{235}U *(German)* 8-29395

nuclear structure theory
see also generator coordinate method; HF calculations; nuclear models; nuclear reaction and scattering theory; RPA calculations
actinide nuclei, quadrupole and hexadecapole deforms., model independ. parameters using Fermi distrib. 8-17096

nuclear structure theory continued
alternating layer spin structure, one-dimensional, localised, in nuclear system, and π^0 condensation 8-4902
analogue resonances, finite Fermi systems, polarisation effects *(Russian)* 8-46041
antisymmetrized n-nucleon problems, refined resonating group calcs., reduction to cluster modes 8-17123
bound three and four particle systems, two particle resonance poles and energy spectra 8-41204
Brueckner's theory of nuclear matter, external field 8-33137
compound nucleus, giant resonances, force functions for partial E1-transitions 8-12985
compressibility of nuclear matter, density depend. of binding energy, hyperspherical functions method *(Russian)* 8-17093
configuration mixing, Coulomb energy anomaly, inmirror nuclei 8-25099
constrained Hartree-Fock Hamiltonian, simple cure to breakdown 8-536
convergent algorithm, gradient method appl. 8-12987
core-quasiparticle model, odd transitional nuclei 8-12988
deformation of neutron-density in inelastic scatt. 8-46000
deformed nuclei, one-particle state fragmentation, general regularities *(Russian)* 8-494
density matrix approx. 8-33128
dipole giant resonance in fissioning nuclei, microscopic calcs., excitation energies, dipole strengths, transition densities 8-29442
double crossing of ground rotational band and super band 8-45996
EM field inside the nucleus, Salam-Strathdee phase transitions, vanishing Cabibbo angle 8-37296
even-even N=Z nuclei, generalised BCS calcs. for 2s-1d shell 8-522
exchange effects, trace of energy-momentum tensor, in weakly bound states 8-37293
field theory, renormalisation of single particle states 8-24926
four-body problem, configuration space approach 8-46012
giant resonance simple microscopic model *(Russian)* 8-578
Hartree Fock theory, ambiguities, auxiliary pot. 8-25137
heavy ion deep inelastic collisions, microscopic descript., excitation of surface vibr. modes 8-46085
heavy ion deeply inelastic collisions, phenomena, transport theoretical approach 8-46086
heavy spherical nuclei, choice of density depend. interaction and α-decay *(Russian)* 8-46010
high-spin states of transitional and spherical nuclei, decoupled and strongly coupled bands 8-12939
hypermomentum in hadron dynamics and gravit. 8-41487
hypernuclei, symmetry classification for excited states, appl. to Be isotopes *(Chinese)* 8-25144
hypernuclei excitation of unitary analogue states 8-17131
hyperspherical harmonics method, eqn. soln. *(Russian)* 8-41659
intrinsic multipole moments in deformed nuclei, correls. effects 8-29385
isobar configurations in few nucleon systems, review 8-37294
Isolde experiments, prod. of extreme neutron/proton ratio nuclei, nuclear props. study *(Danish)* 8-4972
K-harmonics method for nuclear many body problem with two-body interaction 8-33125
light nuclei, inelastic form factors for abnormal parity states, K-harmonic method *(Russian)* 8-25113
macroscopic nuclear dynamics 8-12993
many-body charge density operators, breakdown of Siegert theorem 8-29379
mean field theory of nuclear dynamics, time depend. 8-12986
microscopic calculations for ^{4}H, ^{4}Li continuum, appl. to ^{3}H(n,n), ^{3}He (p,p) 8-17114
mode coupling and Dyson's finite boson expansion 8-520
n-fermion problem, new boson expansion, appl. to ^{4}He 8-511
neck rupture in nuclear fission, fragment kinetic energies 8-25169
neutron strength function, spin depend. *(Russian)* 8-17069
nonlocal continuous potentials, theory of integral operators and eigenvalue anal. 8-8274
nucleon, bound in harmonic oscill. pot., coupled to pion field, EM struct. 8-8732
nucleon self-energy in finite nuclei; renormalisation, nucleon-meson interaction, ^{16}O calcs. 8-17110
one-hole states, in double magic nuclei, form factors, spectroscopic factors, centroid energies 8-17090
pairing collective degrees of freedom, Dyson-like representation of fermion space 8-25134
pairing Hamiltonian, charge-independ., conservation laws 8-29402
pairing motion, large amplitude, time-dependent Hartree-Fock method 8-4908
pairing-force interaction many-fermion system, energy calc. 8-8339
preequilibrium processes in atomic nuclei, statistical description 8-13048
projection of wave functions on states with definite ang. momentum 8-12590
propagation by pairing and surface excitations, nuclear states description 8-46007
proton size folding 8-29372
renormalised shell model matrix elements from nucleon-nucleon phase shifts 8-12991
rotation, zero point energy 8-25101
schematic model, propagation of elementary excitations 8-33127
Schwinger variational principle for bound states and scatt. problems 8-16932
single particle states in 1f 2p shell, energy calcs. 8-25098
single-particle density, decomposition in time-even and time-odd parts 8-17074
Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations in light nuclei 8-29435
statistical description of nuclear compound states, temp. Green's functions method *(Russian)* 8-17115
strength function of deeply bound hole states 8-17113
symmetry breaking in ground state region, statistical meas. 8-8737
TDHF, particles+core reduction 8-33135
thermodynamic functions of nuclei *(Russian)* 8-539
total single particle energy, asymptotic form of smooth part 8-4892
translational nuclei, ang. momentum projected quasiboson states 8-41637
triton, momentum space calculations, Faddeev bound-state eqns., binding energy 8-25122

nuclear structure theory continued
two-particle density matrix, for U(3(n−1)) states with $E_{min}+1$ in nuclei with n≤16 8−41624
vertex constants *(Russian)* 8−33155
vibrational transitional nuclei, quasirotational states 8−12942
yrast level spacing discontinuity, rotation alignment mechanism 8−17085
Yukawa pot., superposition, off-shell Jost function 8−29415
α-nucleus separation energies, Woods-Saxon pot., A depend., closed shell effects 8−25107
π prod. and absorpt. in nucl. reactions, vertex function anal. 8−12989
Ba isotopes, ang. momentum projected quasiboson states 8−41637
Ba isotopes, microscopic dynamic calc. of collective states 8−17075
^{209}Bi, effect of pairing modes in multiplet struct. 8−12973
^{12}C, bound-state momentum distribs. and (p,p′) PWIA anal. 8−601
^{12}C, EM and allowed weak transitions, improved impulse approx. treatment 8−41662
^{40}Ca structure, supersoft-core pot., HF approx., ground state props. 8−533
^{156}Er, negative parity yrast states, microscopic calc. 8−495
^{2}H D-state, asymptotic normalisation 8−41653
^{2}H, NN realistic nonlocal pots. from inverse scatt. theory for $^{3}S_{1}$-$^{3}D_{1}$ interaction 8−41651
^{180}Hf, nonrotational interpretation of E_4 matrix element 8−33111
^{7}Li, ang. momentum eigenstates projection from two-centre generator coordinate model functions 8−12994
^{8}Li scattering system, microscopic multichannel cluster model calc., resonating group calc. 8−4906
^{16}O, inelastic form factors for abnormal parity states, K-harmonic method *(Russian)* 8−25113
^{16}O, longit. isoscalar electroexcitation, sum rules and mean excitation energy 8−521
^{16}O, π bound states in finite nuclei 8−46013
^{17}O, M3 suppression in HF theory 8−33134
^{17}O, mag. form factor, core polarisation and exchange current effects 8−46003
^{208}Pb, longit. isoscalar electroexcitation, sum rules and mean excitation energy 8−521
^{208}Pb region, finite Fermi systems, review 8−537
^{196}Pt struct., O(6) limit, levels fed in ^{195}Pt(n,γ) 8−33110
^{41}Sc-^{41}Ca Coulomb energy shift of mirror nuclei, 2p-2h core excitations influence 8−12953
Sn, even isotopes A=116-124, 0^+, 2^+ 4^+ states, Tamm Dancoff approx. 8−37297
^{122}Sn+^{120}Sn, 630 MeV, multipair transfer calcs. for superfluid ions, coupled channel WKB approx. 8−37373
^{48}Ti, (A+2)particles-2 holes excitations, interaction renormalisation 8−29375
Xe isotopes, microscopic dynamic calc. of collective states 8−17075
Zn, even isotopes, effect of particle-vibr. coupling in nucl. struct. 8−12940
^{90}Zr, anal. of spectrum of transitions to low-lying 2^+ states 8−17138

nuclear track emulsions
400 GeV/c proton interactions, charged particle multiplicity 8−21558
alpha naphtol, developer, use in nuclear photograpiy 8−17490
autoradiography, increasing detect. power of type M nucl. emulsion gel 8−20269
cellulose nitrate, detect. of ion beam in HV electron microscope 8−45755
cellulose nitrate emulsion, sensitivity and efficiency for α-particle detection 8−13380
cellulose nitrate emulsion for α-particle track relocalisation 8−17480
cellulose nitrate track detectors, CA80-15 and LR-115, etch pits due to Rn and Tn alpha particles 8−855
charged particle detection by photographic recording systems, appls. 8−17527
cosmic particle dosimetry for Apollo and Apollo-Soyuz Biostack expts. 8−20288
cosmic ray high energy interactions in emulsion stack combined with ionisation calorimeter 8−49263
diffusion of $^{241}Am^{3+}$ ions in ion-exchange membrane, autoradiographic method 8−35721
dosimeter, latent image fading, effect of dry N_2 desiccation 8−15903
dosimetry film exposure determ., comparison of X-ray fluoresc. and optical density 8−24137
emulsion stack connected with ionis. calorimeter for high energy cosmic ray obs. 8−25386
film badge, underestimation of exposure from Am-Be neutron probe 8−15900
film dosimeter, K emulsion, characts. 8−20290
gelatin in nuclear photoemulsion, effect of pulsed elec. field on physical and mech. props. *(Russian)* 8−869
heavy ion tracks, separation from background by pulsed electric field 8−17491
heavy particle track grain counting for nucl. charge determ. 8−17528
high energy physics, appl. of solid state nuclear track detector, emulsion technique 8−17501
Ilford G-5, Ne, N tracks, width meas. 8−17488
neutrino interaction detection and analysis in photoemulsion *(Russian)* 8−41900
nitrocellulose, radiography of geological specimens for determ. of α- and fission-activity 8−20540
phosphates, uranium content, fluorimetry, comparison of results 8−20414
pion⁻, sensitivity of personnel monitoring film 8−28079
recording possibilities in electron microscopic autoradiography conditions 8−17489
solid state nuclear track detectors, conf., Neuherberg/Munich, (Oct. 1976) 8−17513
superheavy elements, synthesis and identification 8−46239
supralinearity, mimicking response of biological systems 8−20233
ultra heavy cosmic ray nuclei meas. 8−20596
K^- tracks, 1.5 GeV/C, fast stable particles from light emulsion nuclei, emission probabilities 8−17245
K^-+light emulsion nuclei, 1.5 GeV/c, K^-p and K^-n channels, probability distrib. 8−13161
K^-+photonuclear emulsion nuclei, hypernuclei in hammer-like events 8−13162
p+nuclear emulsion, 400 GeV nonwhite stars 8−13097

nuclear track emulsions continued
π^- interactions, 65 GeV/C, γ quanta production 8−13160
π^--emulsion interaction, 50 GeV/c , charge particle multiplicity 8−46109

nucleation
see also crystal growth; crystallisation
aerosol particle size distrib., dynamic behaviour, coagulation, condensation, nucleation and removal 8−35726
atmospheric gases condensation on cold metal surfaces, nucleation barrier 8−22838
binary mixture supersaturated vapour condensation, homogeneous nucleation 8−2247
boiling, heat transfer enhancement 8−9530
boiling, nucleation centres interaction, obs. technique 8−14065
boiling, of liq. film, bubble nucleation and venting 8−30153
boiling heat transfer, surface roughness effect 8−9534
bone, hydroxyapatite nucleation energetics 8−40127
bubble growth in combined gravitational and non-uniform temp. fields 8−22249
calcium phosphates, seeded growth, effect of solid/soln. ratio, calcification 8−15303
clouds, minimum particle size for nucleation 8−44939
cordierite glass ceramics, effect of TiO_2 and ZrO_2 content on phase sequence during heat treatment 8−48381
cryogenic liquid, boiling, heat transfer coeffs. 8−9539
crystallization centres, low frequency vibration effects on rate *(Russian)* 8−15383
cubic Kossel crystal, simple, two-dimensional nucleation rate calc. *(Italian)* 8−22675
dense fluid systems, spatial correls. effect on steady state nucleation kinetics 8−11500
diffusion-controlled, time lag 8−47497
FCC crystal formation, soft-core model, geometrical anal. of crystallisation 8−42939
film, microporosity induced by nucleation and growth processes, TEM expt. 8−10303
film deposition, adatom diffusion and capture by clusters, random-walk problem 8−2385
fluor-richterite crystal, habit, growth in oxide-fluoride mixtures, statistical study *(German)* 8−38639
glass-forming melts, nucleation and cryst. growth 8−2016
grain formation by nucleation, astrophysical environment 8−16501
HOAOB, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8−42896
homogeneous nucleation and growth processes, computer simulation 8−30764
ice, two-step nucleation 8−49094
ice nucleating materials 8−49093
ice nuclei, probability of formation in supercooled water 8−3909
ice-forming nuclei and atmospheric aerosols, elemental comp. 8−3882
ice-forming nuclei surfaces, elemental comp. 8−3881
instability zone rel. to new phase preformation and nucleation 8−10169
ion clusters in heteromolecular nucleation, steady state thermodynamic model 8−48687
ion plating, mechanisms and theory 8−11130
kinetic characteristics of crystal nucleation, two-barrier thermodynamic pot., nuclei size distrib. 8−10300
kinetics of new phase generation resulting from chemical interaction of components in soln. *(Russian)* 8−19707
liquid film, with nucleate boiling, heat transfer and film breakdown 8−34122
liquid microclusters, thermodynamics, size effects, theory 8−22935
liquid-liquid interface, nucleate boiling 8−2342
magnetic transitions of first kind, nucleation centre formation 8−2683
martensite, nucleation and streaming 8−39774
materials processing in space 8−35296
metal, solidifying, heterogeneous nucleation 8−39754
metal condensation on alkali halide, nucleus saturation density and epitaxy 8−18928
metal silicide growth on Si 8−10230
methanol, enantiomers, racemic mixture nucleation 8−26677
microlayer, formation and evaporation, theory 8−9536
molecular dynamics of clustering near gas-liq. phase transition 8−47509
new phase, role of fluctuations *(Russian)* 8−18563
nucleate to film boiling transition collective phenomena, Nukiyama curve 8−9531
Ostwald ripening kinetics 8−2047
PAA, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8−42896
n-pentane-water interface, nucleate boiling 8−2342
polyethylene, extended chain crystal, fine structure and nucleation mechanism 8−14287
polymer, row nucleation, phenomenological model 8−14301
polypropylene, isotactic, epitaxial crystn. on alkali halide surface 8−26787
porous anodic films on Al, nucleation and growth 8−44273
review, fundamentals of nucleation theory *(Spanish)* 8−43101
rotating thin-ring electrode, bubble nucleation 8−48664
salt nuclei, size rel. to critical supersaturation 8−44940
secondary nucleation, influence of crystal brittleness and degree of supersaturation using in growth *(Italian)* 8−23836
SEM with ultrahigh vacuum system for surface physics expts. 8−38925
size dependent crystal growth, new empirical kinetic equation 8−38637
steel, ferrite nucleation, appl. to B hardenability 8−27505
supercooled fluid states, soft core system, mol. dynamics method 8−18565
supersaturated cooling gas, time depend. nucleation theory 8−6151
unstable heat transfer conditions, free convection-film boiling transition 8−14006
vacuum condensation, saturation density of nuclei, substrate temp. depend. 8−18932
volatile liquid, statistical thermodynamics of new phase form. *(Russian)* 8−18739
Ag, crystal (100) faces, polynuclear growth mechanism during electrocrystallisation *(German)* 8−18562
Ag, film growth on Si (111) 7×7, LEED, AES and UPS expts. 8−38988

nucleation continued
Al, deformed, nucleation and recrystallisation at second phase particles 8−6941
AlN, precipitation from gas phase 8−6025
Al_2O_3, influence of cooling rate on nucleation *(German)* 8−38638
Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
Ar, nucleation, thermodynamics 8−14454
Au clusters, coalescence on NaCl substrates at room temp. 8−18935
Au, film growth on mica substrate, surface defects and heterogeneous nucleation 8−47684
Au, stacking fault tetrahedra, critical nucleation temp. 8−26581
Au vacuum condensation on KCl, spatial distribution of nuclei 8−18931
$Ca(NO_3)_2$-H_2O solns., ice I homogeneous nucleation temp., slow vitrification mechanism 8−26666
CdS, cryst. growth from vapour by one-dimens. nucleation on (110) singular surface, model 8−2048
Fe, epitaxy on Au, growth processes, ultra high vac. in situ electron microscopy 8−30842
Fe-C (0.25 wt.%), austenitising temp. effect on proeutectoid ferrite reaction kinetics, scanning Auger microprobe exam. 8−44144
Fe-Ni-Ti alloys, high pressure effect on martensite crystal nucleation and growth *(Russian)* 8−39769
$Ga_{0.9}Al_{0.1}As$, nucleation morphologies on $Ga_{0.65}Al_{0.35}As$ surfaces grown by LPE 8−15323
GaN:Zn epilayers, growth parameters effect on props., device struct. 8−26975
GaSe, growth of crysts. with natural facets at large angles to layers 8−15305
Ge alloys, amorphous film, crystn. transform. kinetics 8−22653
Ge, amorphous film, post nucleation growth, computer simulation 8−34729
Ge, exciton drops nucleation centres under conditions of inhomogeneous strain *(Russian)* 8−2429
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
H_2SO_4-H_2O, aerosol form., nucleation calcs. 8−31709
He, boiling on surfaces, heat transfer coeff. 8−9545
^3He-^4He, dilute, nucleation and stratification induced by press. at low temp. *(Russian)* 8−34672
^3He-^4He liquid mixture, nucleation of superfluidity and phase separation 8−43204
KCl crystallites, nucleation, oriented growth on amorphous SiO_2 using square-wave surface relief grating 8−47672
MgO, precipitation from gas phase 8−6025
Mo, damage profile resulting from Ni^{2+} and He^+ ion bombardment 8−10100
N_2, liq., nucleate boiling heat transfer from PTFE coated surface 8−34000
NaCl:Pb, precipitation of Pb impurity 8−48415
$Na_2O.2SiO_2$, nucleation kinetics, temp. depend. 8−26467
NbC particles, growth and dissolution, in aged and deformed austenitic stainless steel 8−39782
Ni-Cr, ordering by nucleation and growth and by spinodal decomposition *(French)* 8−27471
Ni-Mn, ordering by nucleation and growth and by spinodal decomposition *(French)* 8−27471
Ni_3Fe, Mossbauer spectra, order-disorder transition 8−10811
PbTe, continuous epitaxial film, grain size, growth cond. depend. 8−26786
SF_6, condensation in supersonic nozzle flow 8−34611
Si, heteroepitaxial early growth island morphology rel. to deposition conditions 8−6245
Si single crystal growth by heat-exchanger casting 8−11104
SiC, cryst. growth on oriented seeds by sublimation 8−35279
Sn, α→β transform., α-Sn nucleation and growth in β-Sn 8−38838
Te evaporated film nucleation on Au oriented islands, grain growth 8−2388
TiC, W_6Co_6C cemented carbide substrates, structure, composition and hardness exam. 8−11425
UO_2, condensed vapour following core disruptive accident, particle-size distribs. using first-generation model 8−13295
ZnO, precipitation from gas phase 8−6025
ZnS(Se)(Te) film, on semicond. substrates, early stages of growth, electron microscope obs. *(Russian)* 8−38976

nuclei *see nucleus*

nuclei with mass number 1 to 5
A=3 nuclei, charge asymm. from EM contribution to ^3He-^3H binding energy difference 8−29378
isobar configurations in few nucleon systems, review 8−37294
microscopic calculations for ^4H, ^4Li continuum, appl. to $^3H(n,n)$, $^3He(p,p)$ 8−17114
origin, abundances in matter-antimatter model of universe 8−45439
review of reactions involving few-nucelon systems at intermediate energies 8−13054
three body systems in nuclear physics, review 8−517
three- and four-body interaction props., hyperspherical expansion convergence *(Russian)* 8−518
two-nucleon system, Δ resonance, excitation spectrum 8−41649
$^1H(n,n)^1H$ at 16.9 MeV, analysing power meas. 8−4941
H+p, 24 GeV, J/ψ prod. cross section 8−46055
π scattering by few-nucleon nuclei, diffractional approx. *(Russian)* 8−650
D, NMR in $(ND_4)_2PbCl_6$-ND_4Cl polycryst. mixture 8−6587
D, NMR of benzene and cyclohexane solubilised in hexadecyltrimethylammonium bromide 8−24015
D, prod. by cosmological cosmic rays 8−12436
^2D, in electrolyte solns., NMR relax. *(Russian)* 8−15053
D(p,p), 630 MeV, asymmetry in scatt. polarised protons *(Russian)* 8−46064
$D(p,\pi^+)T$, 410, 605, 809 MeV, pion angular distrib. 8−29466
H, ^2H, ^3H, muon capture theory 8−553
H, d-n or p-n, coupling constants from dispersion anal. of N and d scatt. amplitudes 8−29399
^1H coupled with ^{13}C, spinor character for spin $^1/_2$ nucleus via NMR interferometry 8−17699
^1H, in electrolyte solns., NMR relax. *(Russian)* 8−15053
^1H+d, 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
$^1H(n,\gamma)^2H$, exchange current contribs. to parity violating elec. transitions 8−29383

nuclei with mass number 1 to 5 continued
$^1H(p,p)^1H$, E_p=1 MeV, cross section meas. 8−13089
^2H D-state, asymptotic normalisation 8−41653
^2H, D-state wave function calc. 8−8740
^2H deformation effects in nuclear interaction, DWBA anal. *(Japanese)* 8−21575
^2H, elastic scatt. of protons and α-particles *(Russian)* 8−21566
^2H, muon capture, kinematics and dynamics 8−33151
^2H, NN realistic nonlocal pots. from inverse scatt. theory for $^3S_1$-$^3D_1$ interaction 8−41651
^2H, photonuclear sum rules and interaction effects, integrated cross-section determ. from double commutator 8−21542
^2H+d, 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
$^2H+p(\bar{p})$, high energy cross section calc. complex ang. momentum theory *(Russian)* 8−46067
$^2H+\pi$, coupled channel theory 8−13157
$^2H+\pi^+$, proton spectra, cross section, π. absorpt. mechs. 8−25239
$^2H(d,2p2n)$, 80 MeV, PWBA, double spectator process 8−41731
$^2H(d,n)^3He$, total cross-section energy depend. 8−29477
$^2H(d,p)^3H$, $^2H(d,n)^3H$, analysing power meas. 8−25204
$^2H(\gamma, NN\pi)$, threshold to Δ(1236) region, EM props. of NNπ system 8−41694
$^2H(\gamma,np)$, <800 MeV, proton polarisation in $\gamma n\to\pi^-p$ *(Russian)* 8−41700
$^2H(\gamma,\pi^-p)^1H$, 250-500 MeV, Δ(1236) region, cross section 8−41693
$^2H(\gamma,\pi^0)^2H$, threshold and Δ(1236) region, EM props. of πNN system 8−41695
$^2H(\gamma,\pi^+)$, 1-4 MeV, cross-section meas. 8−21544
$^2H(n,\gamma)$, slow neutrons, mesic interaction current, isobaric resonance *(Italian)* 8−25179
$^2H(n,n)$, 8.05 MeV, elastic differential cross-section meas. by recoil technique 8−17207
$^2H(n,n)$, elastic scatt., perturbation calcs., Faddeev eqns., Reid soft core pot. 8−33177
$^2H(n,n)$, scattering in high-partial waves, on-shell theory 8−41565
$^2H(n,n)^2H$, 12 MeV, polarised neutrons, analysing power meas. 8−33193
$^2H(p,d\pi^+)n$, 585 MeV, d momentum spectra 8−41718
$^2H(p,2p)$, 156 MeV $d^3\sigma$ and $d^4\sigma$ spectra for collinear nucleon system 8−17175
$^2H(p,2p)n$, 8.5 MeV, n-p final state interaction, cross section, ang. distrib. 8−21560
$^2H(p,p)$, 10 MeV, differential cross section, p and d analysing powers 8−46063
$^2H(p,p)^3He$, four-body problem calc. 8−516
$^2H(p,pn)$, 156 MeV $d^3\sigma$ and $d^4\sigma$ spectra for collinear nucleon system 8−17175
$^2H(\pi,2n\gamma)$, final state interactions, n+n scatt. parameters 8−25245
$^2H(\pi,\pi)$, elastic scatt., charge exchange, deuteron disintegration, three-particle rel. eqns. 8−37381
$^2H(\pi,\pi)$, exchange of ρ-mesons 8−21610
$^2H(\pi,\pi)$, multiple scatt. calc. 8−29506
$^2H(\pi,\pi)$, NΔ interaction anal., D* model 8−29503
$^2H(\pi,\pi)$ 142 MeV, three-body calc. 8−37378
$^2H(t\mu,n\mu^-)^4He$, fusion reaction, 2 GeV energy release 8−17250
^3H, binding energy, unitary pole and Adhikari-Sloan expansions 8−499
^3H, binding energy calc., realistic nonlocal pots. from inverse scatt. theory for $^3S_1$-$^3D_1$ interaction 8−41651
^3H, β-spectrum meas., refining of upper limit of $\bar{\nu}$ rest mass 8−17144
^3H, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^3H, muon capture 8−37314
^3H, one-boson exchange pot., binding energy calc. 8−41652
^3H, one-hole states, in double magic nuclei, form factors, spectroscopic factors, centroid energies 8−17090
^3H, three-particle photodisintegration, hyperspherical functions method *(Russian)* 8−589
$^3H_\Lambda$, charge symm. breaking, Λ separation energy in hypertriton 8−17132
$^3H_\Lambda$, charge symm. breaking considerations for hypertriton 8−17133
$^3H+\alpha$, elastic scatt., orthogonality condition model derived from parity energy surfaces 8−29432
$^3H(^3He,^3He)$, 20-33 MeV, analysing power, differential cross section meas. 8−17227
$^3H(\alpha,^6Li)n$, 11.3-12.0 MeV, excitation functions 8−621
$^3H(\alpha,t)^4H$, 11.3-12.0 MeV, excitation functions 8−621
$^3H(\alpha,t)n$, 11.3-12.0 MeV excitation 8−621
$^3H(e,e')nd$, three-body calc. 8−33170
$^3H(e,e)$, many-body exchange effects, charge form factors calc. 8−33169
$^3H(n,n)^3H$, possible anomaly in backward elastic scatt. cross section near 14 MeV 8−13088
$^3H(p,p)$, 1-10 MeV, isospin splitting of 1p-1h excitation in ^4He 8−41622
$^3H(p,p)$, 4-12 MeV, Amado model quasi-three body calc. 8−25191
$^3H(p,p)$, 8 to 17.1 MeV, of neutron polarisation in $^3He(n,n)$ 8−25171
$^3H(t,2n)^4He$, 30-160 keV, differential cross section measurement 8−17223
^4H, cluster model, energy levels by interaction set anal. 8−25136
$^4H(\alpha,\alpha)$ intermediate energies, Glauber analysis 8−46077
H(d,d), A=1, 2, E=52 MeV, polarised deuterons, vector analysing power 8−584
H(d,pp)n, 12.9 MeV, differential cross-sections meas. 8−13113
He (A=3, 4), energy spectroscopy, plastic solid state nuclear track detectors 8−13377
He, A=3, 5, BE, level calcs. using new boson expansion to n-fermion problem 8−511
He, d-d or d-p, coupling constants from dispersion anal. of N and d scatt. amplitudes 8−29399
He+nuclear emulsion, 1.05 GeV/amu, scatt. const. 8−13151
^3He, charge form factor one-boson exchange pot. 8−41652
^3He, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^3He, muon capture 8−37314
^3He, muon capture theory 8−553
^3He photoeffect to isospin 3/2, coupled hyperspherical harmonics 8−41696
^3He, prod. by cosmological cosmic rays 8−12436
^3He, three-particle photodisintegration, hyperspherical functions method *(Russian)* 8−589

nuclei with mass number 1 to 5 continued
^{3}He(e,e$'$)pd, three-body calc. 8−33170
^{3}He(e,e), charge density distrib., charge form factor, of ^{3}He 8−29453
^{3}He(e,π^{+})e$'$t, (e,t)e$'\pi^{+}$ cross-sections and ang. distribs. calc. 8−21545
^{3}He(n,n), 8 to 17.1 MeV, cf. proton polarisation in ^{3}H(p,p) 8−25171
^{3}He(n,n), coherent scatt. length meas. by neutron interferometry 8−13098
^{3}He(p,2p)d, 590 MeV, in noncoplanar geometry, two particle spallation, diffr. description *(Russian)* 8−33160
^{3}He(p,dp), (p,2p), and (p,pn), 156 MeV $d^{3}\sigma$ and $d^{4}\sigma$ spectra for collinear nucleon system 8−17175
^{3}He(p,p), 1.75 to 4.13 GeV/N, small angle scatt., Glauber model *(Russian)* 8−41726
^{3}He(p,p)^{3}He, four-body problem calc. 8−516
^{3}He(p(polarised),p)^{3}He, nuclear force and T-violation effects 8−4797
^{3}He(π^{-},n)^{2}H, 100, 200 and 290 MeVs differential cross sections 8−33223
^{3}He(π^{-},π^{-}), 68 MeV, differential cross section 8−33221
^{3}He(t,d)^{4}He, 9-17 MeV, polarised tritons, analysing-power ang. distrib. meas. 8−29481
^{3}He$\pi^{-}\to$nd, ^{3}He$\pi^{-}\to$n+n+p, two nucleon absorpt. model 8−41776
^{4}He (p,p), 200, 350, 500 MeV, differential cross-section and analyzing power meas. 8−17195
^{4}He binding energy, unitary pole approx. 8−25103
^{4}He, binding energy calc. using Alt-Grassberger-Sandhas eqns. 8−41650
^{4}He, coupled channel anal. of $\Lambda'(1405)$ in kaonic atoms 8−540
^{4}He, four-body problem unitary pole approx. calc. 8−516
^{4}He harmonic oscillator sum rules for photonuclear reactions, shell model, perturbative corrections 8−41692
^{4}He isospin splitting of 1p-1h excitation, obs. in ^{3}H(p,p) 8−41622
^{4}He, multiple scatt. effects in fast neutron polarisation expts., Monte Carlo anal. 8−13052
^{4}He muonic atom, nuclear polarisation corrections 8−22056
^{4}He, n-fermion problem new boson expansion technique 8−511
^{4}He, π^{0} coherent photoprod., screening corrections and rescatt. *(Russian)* 8−41697
^{4}He, struct. effects on α-decay of superheavy nuclei 8−17158
^{4}He, structure in the translation-invariant oscillator basis *(Russian)* 8−25123
^{4}He+^{4}He, Hill-Wheeler eqn. direct soln. 8−4956
^{4}He+^{4}He, reson. excit., ^{8}Be α-cluster, coupled channel calcs. 8−529
^{4}He+U, relativistic ions, product spectra, statistical models 8−638
^{4}He+n, elastic scatt., orthogonality condition model derived from parity energy surfaces 8−29432
^{4}He+n, separable pot. fits to reson. parameters 8−8822
^{4}He+p, 18.6 GeV/c, coherent prod. of low mass $p\pi^{+}\pi^{-}$ states 8−33175
^{4}He+p, interaction potential from inverse scatt. problem method *(Russian)* 8−46068
^{4}He+p($\bar{p}$), high energy cross section calc. complex ang. momentum theory *(Russian)* 8−46067
^{4}He+$\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{4}He(^{3}He,^{3}He), 18-22 MeV, analysing power ang. distrib., differential cross sections, ^{7}Be excited state 8−46078
^{4}He(^{3}He,n)^{6}Be, 38.61 MeV, ^{6}Be reson. search, solar neutrino flux importance 8−619
^{4}He(α,α), 5.05, 4.30 GeV/c, high energy multiple diffraction theory 8−29486
^{4}He(d,d), Glauber theory at high energy *(Russian)* 8−41732
^{4}He(d,p), 6.8 , 7.8 MeV, continuous proton spectra obs. 8−37352
^{4}He(d,pn)^{4}He, Faddeev eqns., separable pots., total cross sections 8−21571
^{4}He(e,e), cross section anal., nuclear charge form factor, short range correl. 8−8746
^{4}He(γ,π^{0}), impulse approx. for differential cross sections in resonance region *(Russian)* 8−41698
^{4}He(p,d)^{3}He, 275-500 MeV, large angle meas. 8−41713
^{4}He(p,d)^{3}He, direct-reaction mechanisms 8−581
^{4}He(p,p$'$), high energy, nonlocal imaginary pot. in one channel approx. 8−592
^{4}He(p,p), 560-1730 MeV, Dirac eqn. optical model anal. 8−29467
^{4}He(p,p), ($\bar{p}$,$\bar{p}$), 24, 50 GeV quasieikonal model, complex momenta theory *(Russian)* 8−29473
^{4}He(p,p)^{4}He, 0-18 MeV, statistical anal., data fluctuations, error estimation 8−25196
^{4}He(π,π), 60-260 MeV, energy-independ. phase shift anal. 8−41773
^{4}He(π,π), dispersion relations for forward scatt. logarithm 8−17243
^{4}He(π,π), exchange of ρ-mesons 8−21610
^{4}He(π^{-},n)^{3}H, 100, 200 and 290 MeVs differential cross sections 8−33223
^{4}He(π^{-},π^{-}), 51-260 MeV, dynamical and fixed scatterer approx. calcs. 8−25244
^{4}He($\pi^{\pm}$,$\pi^{\pm}$), differential cross section 8−33221
^{4}He(t,n)^{6}Li, cross section using var. calcs. in generator coordinate method 8−13122
^{4}He(t,t)^{4}He, cross section using var. calcs. in generator coordinate method 8−13122
^{4}He(t,t)^{4}He, elastic cross section from two-centre generator coordinate model functions 8−12994
He(e,e), A=3,4, many-body exchange effects, charge form factors calc. 8−33169
H(γ,π^{0}), near threshold photoprod. on ^{1}H and ^{2}H, cross section calcs. 8−25174
H(n,p)n, 25.8, 50.9 MeV, differential cross-sections 8−600
^{20}Ne+U, relativistic ions, product spectra, statisical models 8−638

nuclei with mass number 6 to 19
^{10}B(π^{-},2n), stopped pion absorption 8−25243
^{12}C(^{16}O,^{16}O), anomaly at 13.7 MeV, optical model anal. 8−21587
^{16}O(π^{+},π^{+}), 50 MeV, Lorentz-Lorenz effect 8−17247
^{9}Be(π^{-},2n), stopped pion absorption 8−25243
A=18, 19, sd shell nuclei, effective interaction between nucleons 8−17117
A=18 nuclei, negative parity spectra, phonon dynamic interaction propagator approach 8−8739
A=6 to 14 nuclei, muon capture rate calcs. 8−33150
heavy-ion α-transfer reactions on targets A=10, 12, 14, 16 *(Japanese)* 8−4962
non-normal parity states, 1p shell nuclei, 1$\hbar\omega$ spectra 8−12977
C+p, 24 GeV, J/ψ prod. cross section 8−46065

nuclei with mass number 6 to 19 continued
^{6}Li, d+α clusters, break up in nuclear field, ^{118}Sn+^{6}Li study 8−46092
(p,p) scatt. on light nuclei, 6 MeV, optical model anal. *(Russian)* 8−25200
^{12}(α, α), 1.37 GeV, microscopic anal. using modified Glauber model 8−617
Am-Be neutron probe, underestimation of radiation exposure by film badges 8−15900
B, 20 to 50 MeV, total reaction cross sections compared to opaque-nucleus model 8−33174
B isotopes, separation using anion exchange resin *(Japanese)* 8−33625
B, NQR in heteroorganic group III compounds, summary 8−25565
^{9}B, energy levels anal. in ^{9}Be(p,pn)^{8}Be 8−21550
^{10}B, form. in ^{11}B(t,α) reaction, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−17216
^{10}B, four-body breakup induced by 18 MeV neutrons, double final state interaction 8−17192
^{10}B+^{7}Li, 24 MeV, charged particle reaction channels, reaction mech. 8−8841
^{10}B(^{10}B,α)^{16}O, excitation functions, resonance like structures 8−29496
^{10}B(^{14}N,α)^{20}Ne, highly-excited rot. band obs. in Mg 8−33218
^{10}B(d,3α), 360 keV, sequential decay, absolute three-particle cross section meas. 8−17220
^{10}B(d,α)^{8}Be(g.s.), excitation functions struct., isoscalar giant resonances in ^{12}C 8−46073
^{10}B(d,$\alpha\alpha$)^{4}He, Q=17.88 MeV, quasi-free effect search 8−4947
^{10}B(d,$\alpha\alpha$)α, ^{12}C excited states between 29 and 34 MeV 8−21494
^{10}B(e,e$'$p), 700 MeV, proton spectral functions, momentum distribs., DWIA anal. 8−41701
^{10}B(n,α)^{7}Li, for neutron activation anal. of Si:B, range distrib., IBR-30 expts. 8−11585
^{10}B(n,n), cross sections for neutrons of 4 to 8 MeV 8−21553
^{10}B(π^{-},2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{10}B(t,α)^{10}B, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−17216
^{10}B(t,α)^{9}Be, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−17216
^{10}B(t,p)^{12}B, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−13109
^{11}B, NMR, for senior level inorganic courses 8−4424
^{11}B, NMR in borate glass, fast stable analysis technique 8−6585
^{11}B, NMR lineshape in SrO-B$_{2}$O$_{3}$, BO$_{3}^{-3}$ triangle, perfect trigonal symm. *(Korean)* 8−19367
^{11}B, NMR obs. of Na$_{2}$O-B$_{2}$O$_{3}$-SiO$_{2}$ glass struct. 8−38625
^{11}B(^{16}O,^{15}N)^{12}C, exchange effects on ang. distribs. 8−627
^{11}B(α,n)^{14}N, n polarisation ang. distrib., R-matrix anal., ^{15}N excited states 8−4937
^{11}B(α,p)^{14}C, 4.4-6.7 MeV, absolute differential cross-section meas. 8−46054
^{11}B(d,p)^{12}B reactions, 1.3 to 3.0 MeV, DWBA analysis of magnetic substate populations of residual nucleus 8−29480
^{11}B(γ,p)^{10}Be, 18 to 31 MeV, photoproton spectra and ang. distrib., excited state transitions 8−13056
^{11}B(n,α)^{8}Li, 14.4 MeV, spectra and ang. distribs., recoil nucl. transitions 8−17193
^{11}B(p,3α), E$_{p}$=2 to 4 MeV, energy depend. of interference phenomena 8−13084
^{11}B(p,$\alpha\alpha$)^{4}He, Q=8.68 MeV, quasi-free effect search 8−4947
^{11}B(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8−13075
^{12}B, aligned, existence of G-parity irregular induced tensor current 8−29384
^{12}B, β-ray branching and T$_{1/2}$ 8−41674
^{12}B, form. in ^{10}B(t,p) reaction, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−13109
^{12}B, implanted in Ni, hyperfine interactions, crit. behaviour near T$_{c}$ 8−43663
^{12}B, meas. of weak magnetism term in β spectra 8−4917
^{12}B, produced in ^{12}C(μ^{-},$\nu_{\mu}\gamma$)^{12}B, impulse approx. calc. 8−37315
^{12}B, quadrupole coupling const. in ZrB$_{2}$ single cryst. 8−37279
^{12}B, quadrupole interaction in Be, Mg and Zn 8−47750
^{12}B, spin polarisation in ^{100}Mo(^{14}N, ^{12}B), semiclassical anal. 8−33212
^{12}B$\to$B^{-}+^{12}C, second-class current search, alignment correlation meas. by Zeeman technique 8−37313
^{12}B$\to\beta^{-}$+^{12}C, alignment correlation meas. by Zeeman technique, vector currents and form factors 8−37312
Be, hypernuclei, symmetry classification for excited states *(Chinese)* 8−25144
Be+hadron, 200 GeV, jets and single particle prod. at high p$\perp$ 8−45975
Be+p, 400 GeV/c, dihadron prod., A depend. of prod. cross sections for massive dihadron states 8−33180
Be+p, 400 GeV/c, two hadron correlation at large transverse momenta 8−46060
Be+p collisions 400 GeV, meas. of dihadron mass continuum and search for narrow resonances 8−33178
^{6}Be reson. search in ^{4}He(^{3}He,n)^{6}Be at 38.61 MeV, solar neutrino flux 8−619
^{7}Be excited state from ^{4}He(^{3}He,^{3}He) polarised scatt. study 8−46078
^{7}Be, prod. by cosmological cosmic rays 8−12436
^{7}Be, prod. in ^{4}He(α,n) reactions, differential cross sections meas., 39 to 50 MeV 8−25207
^{7}Be$\to^{7}$Li, total electron capture decay energy from inner bremsstrahlung spectrum, student experiment 8−24611
^{8}Be, α-cluster excitation via α-α-scatt., coupled channel calcs. 8−529
^{8}Be, cluster formation, multicentre variational model *(Chinese)* 8−25128
^{8}Be, ΔT=1 γ-decay from 16.6-16.9 MeV states 8−8771
^{8}Be, isospin mixing in nuclei, matrix elements explained by Coulomb interaction 8−37264
^{8}Be, Pauli-principle effects, simulation 8−8756
^{9}Be, α-cluster behaviour via ^{9}Be(α,α) anomalous 40 MeV effects 8−615
^{9}Be, α-cluster struct., binding energy determ., Faddeev eqn. soln. 8−41640
^{9}Be, break-up and spectroscopic factors from DWBA anal. of (^{9}Be,^{8}Be) 8−17239
^{9}Be, form. in ^{10}B(t,α) reaction, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−17216

nuclei with mass number 6 to 19 continued
^{9}Be, form. in ^{6}Li(t,γ) reaction, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
^{9}Be, molecular model, n and α-particle decay widths, charge form factors 8−46015
^{9}Be, neutron spectroscopic factor from (^{9}Be,^{8}Be) reacts. 8−17098
^{9}Be, quasielastic elec. scatt., final state interaction effects *(Russian)* 8−41708
^{9}Be, reactions with ^{16}O, ^{19}F, C^{12}, cross sections and optical model calcs. 8−8838
^{9}Be+^{12}C, 2.8-6.3 MeV, fusion and neutron transfer cross-sections 8−41746
^{9}Be(^{3}He,$\alpha\alpha$)α, ^{12}C excited states between 29 and 34 MeV 8−21494
^{9}Be(α,α)^{9}Be, 40 MeV, anomalous effects and cluster behaviour 8−615
^{9}Be(e,e′p), 700 MeV, proton spectral functions, momentum distribs., DWIA anal. 8−41701
^{9}Be(γ,α_0)^{5}He, 18 to 26 MeV, integrated cross section 8−37327
^{9}Be(γ,n)^{8}Be, 18 to 26 MeV, integrated cross section 8−37327
^{9}Be(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8−13075
^{9}Be(p,pn)^{8}Be, kinematically complete exam. of ^{9}B and ^{9}Be levels 8−21550
^{9}Be(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{9}Be(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{9}Be(t,t)^{9}Be, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8−41730
^{10}Be, abundance in galactic cosmic rays rel. to age 8−12060
^{10}Be, form. in ^{11}B(γ,p) reaction, 18 to 31 MeV, photoproton spectra and ang. distrib., excited state transitions 8−13056
^{10}Be, form. in ^{7}Li(t,γ) reaction, excitation functions and resonant struct. for 17.79 MeV state 8−13110
Be(α,n), neutron spectrum of ^{228}Ra-Be source 8−41882
Be(γ,p), intermediate energy bremsstrahlung, cross sections 8−13061
Be(π^-, Ψ), 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983
C, absorpt. of stopped π^-, charged particle energy spectra meas. 8−33224
C, laser-injector-generated, acceleration in synchrophasotron 8−29675
C, photonuclear cross sections in giant reson. region 8−17178
c+n in cellulose nitrate plastic detector, spallation products 8−17198
C+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
C+π^-, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
C+π^+, 40 GeV/c, two-particle correls., rapidities, ang. distribs. *(Russian)* 8−17251
C(^{3}He,^{4}He)C, A=12, 13, differential cross-sections at 18, 20 and 24.5 MeV *(Russian)* 8−623
C(K$_l^0$, K$_s^0$), 10-50 GeV/c, regeneration, coherent production model 8−33220
^{11}C isotopes, production and transport system 8−46200
^{12}C, 2$_1^+$ state, rel. depend. of transient mag. field effect, recoil in Fe 8−37285
^{12}C, 3-α struct. in boson model 8−17124
^{12}C (α,α), ang. distrib., microscopic anal., Pauli principle, excitation effects 8−33198
^{12}C, α-cluster struct., binding energy determ., Faddeev eqn. soln. 8−41640
^{12}C, bound-state momentum distribs. and (p,p′) PWIA anal. 8−601
^{12}C, coupled channel anal. of Λ′(1405) in kaonic atoms 8−540
^{12}C, EM and allowed weak transitions, improved impulse approx. treatment 8−41662
^{12}C, exchange current corrections for muon partial capture rates 8−33152
^{12}C, excitation cross sections induced by 1 GeV protons and electrons, Glauber theory *(Russian)* 8−41684
^{12}C excited states between 29 and 34 MeV, obs. in ^{10}B(d,$\alpha\alpha$)α, and ^{9}Be(^{3}He,$\alpha\alpha$)α 8−21494
^{12}C, four-body breakup induced by 18 MeV neutrons, double final state interaction 8−17192
^{12}C giant electric and magnetic multipole resonances, microscopic descript. 8−538
^{12}C isoscalar giant resonance from ^{10}B(d,α)^{8}Be(g.s.) excitation functions struct. 8−46073
^{12}C, isospin mixing in nuclei, matrix elements explained by Coulomb interaction 8−37264
^{12}C, isospin mixing of 1$^+$ states 8−4898
^{12}C, K$^+$ interaction with nuclei 8−13165
^{12}C, mixed T=0 and 1 states, isospin mixing matrix elements 8−37289
^{12}C, muon capture theory 8−553
^{12}C, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{12}C, p$\pi\alpha$ penetration range, 200 MeV to 2 GeV *(French)* 8−4964
^{12}C, π^+ induced two nucleon removal 8−25242
^{12}C struct. calcs. via 3α system resonating group method 8−531
^{12}C structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{12}C to ^{22}Ne induced nucleon transfer reactions 8−41768
^{12}C+^{12}C, 2.1 GeV/n elastic scatt., correlations 8−41761
^{12}C+^{12}C, partial widths of molecular resonances 8−46094
^{12}C+^{12}C system, quasimolecular states, coupled channel anal. 8−33217
^{12}C+^{14}N fusion, 248 MeV, cross-section meas. liquid-drop limit for ^{26}Al 8−4959
^{12}C+^{16}O, 22 MeV, spins of reson. assigned 8−17236
^{12}C+^{16}O, light- and heavy-ion emission comparison 8−641
^{12}C+^{16}O, resonance behaviour, similarity to that in ^{12}C+^{12} 8−33210
^{12}C+^{16}O inelastic scatt., microscopic coupled channel calc. 8−625
^{12}C+^{16}O resonances, microscopic double folded model 8−41754
^{12}C+^{17,18}O, 12.6-14.0 MeV elastic scatt., ang. distribs. 8−37361
^{12}C+^{28}Si, 17 to 37 MeV, inelastic and elastic backward angle scatt., surface resonances 8−37367
^{12}C+^{28}Si, 17.5 to 33 MeV, resonant backward angle elastic scatt. 8−46096
^{12}C+d, 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
^{12}C+p, 50 MeV, three particle final state *(Russian)* 8−29471
^{12}C+π^-, 40 GeV/c, multiplicity distribs. of secondary charged particles, Glauber model calcs. *(Russian)* 8−17252
^{12}C+π^+, 50 MeV, off-shell ambiguities and phenomenological optical potentials 8−37379
^{12}C+$\pi^\pm$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{12}C(^{10}B,d), 20-20.5 MeV, possible selectivity 8−41764

nuclei with mass number 6 to 19 continued
^{12}C(^{12}C,α)^{20}Ne, ^{24}Mg reson. J$^\pi$, rot.-vibr. coupling 8−491
^{12}C(^{12}C,α)^{20}Ne, 6.85-15 MeV, rot. band in ^{24}Mg obs. 8−12951
^{12}C(^{12}C,α)^{20}Ne, evidence for rot. band in ^{24}Mg at 10.5 to 15 MeV 8−13134
^{12}C(^{12}C,α)^{20}Ne, resonance anomaly anal. in fluctuation theory 8−25215
^{12}C(^{14}N, ^{12}C)^{14}N, 79 and 155 MeV, DWBA calcs., recoil and sequential transfer effects 8−46090
^{12}C(^{14}N,^{13}N)^{13}C, exchange effects on ang. distrib. 8−627
^{12}C(^{14}N,^{6,7}Li), (^{14}N,^{7,9}Be), E=86.9, 157 MeV, spectra, ang. distribs. meas. 8−33216
^{12}C(^{16}O,^{12}C$_{2+}$)^{16}O, ^{12}C$_{2+}$ spin alignment using γ-decay in flight 8−41767
^{12}C(^{16}O,^{20}Ne)^{8}Be, 12.25 to 15.07 intermediate struct. effects 8−620
^{12}C(^{16}O,α)^{24}Mg, anomaly at 13.7 MeV, optical model anal. 8−21587
^{12}C(^{16}O,α)^{24}Mg, low energy, spin and parity assignments 8−21602
^{12}C(^{3}He,^{3}He), 20.5-33.0 MeV, energy depend. of analysing power optical model 8−17226
^{12}C(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{12}C(^{3}He,α)^{11}C, 11 MeV, multistep mechanism, CCBA calcs. 8−41734
^{12}C(^{3}He,d), spectral line shape anal. 8−25203
^{12}C(^{6}Li,α)^{14}N, 33 MeV, multiple reaction mech., exact finite range DWBA calcs. 8−25231
^{12}C(^{6}Li,α)^{14}N, α-particle spectrum sharp lines observation, originating from ^{16}O decay *(Russian)* 8−29495
^{12}C(^{6}Li,α)^{14}N(2.31 MeV), 9 to 20 MeV, isospin violation 8−41763
^{12}C(^{6}Li,d), ^{12}C(^{6}Li,α), 20 MeV, analysing powers 8−46098
^{12}C(^{7}Li,t)^{26}O, Goldfarb-Buttle method *(Chinese)* 8−8834
^{12}C(K$_l^0$, K$_s^0$)^{12}C, elastic regeneration, 10-50 GeV/c, differential cross section slope 8−646
^{12}C(α,α), 1.37 GeV, modified eikonal multiple scattering theory 8−21576
^{12}C(α,α), 2.8-6.5 MeV, anal., global pot. 8−21577
^{12}C(α,α), forward differential cross sections determ. using Feynman diags. 8−25210
^{12}C(α,α), generator coord. method anal. 8−12960
^{12}C(d,n), spectral line shape anal. 8−25203
^{12}C(e,e′) excitation of 2$^+$ T=1 state at 16.11 MeV, radiative width, magnetisation density 8−25176
^{12}C(e,e′p), p-shell nucleon momentum distrib. determ. 8−17182
^{12}C(e,e′p)^{11}B, energy spectra calc. in terms of dynamic collective model *(Russian)* 8−8804
^{12}C(e,e′π^+)^{12}B, 195 MeV, photopion cross-section determ. 8−13066
^{12}C(e,e′π^+)^{12}B, near threshold, equivalent photon approx., Kroll-Ruderman term 8−13065
^{12}C(γ,P), up to 4.5 GeV, ang. depend. of normalised invariant cross section parameters *(Russian)* 8−17180
^{12}C(γ,γ) scatt. study of electron prod. high energy synchrotron radiation spectrum struct. 8−13062
^{12}C(γ,p), p-shell nucleon momentum distrib. determ. 8−17182
^{12}C(γ,p)^{11}B, threshold to 120 MeV, cross section meas. *(Russian)* 8−41699
^{12}C(μ^-,$\nu_\mu\gamma$)^{12}B, impulse approx. calc., photon asymmetry and daughter nucleus polarisation 8−37315
^{12}C(n,n), 8 to 14.5 MeV, differential elastic and inelastic cross-sections 8−29455
^{12}C(p,^{6}Li)^{7}Be, 51.9 MeV, cluster coupling shell model 8−46058
^{12}C(p,α) for energy calib. of 14UD Pelletron accelerator at ANU 8−17449
^{12}C(p,α)^{9}B, knockout mechanism 8−29474
^{12}C(p,d)^{11}C, 700 MeV, transitions confirm multistep processes 8−46110
^{12}C(p,γ), precise determ. of Q-value 8−17200
^{12}C(p,p′), pair decay of 7.65 MeV level meas. 8−29469
^{12}C(p,p′), single proton distrib. anal. 8−603
^{12}C(p,p′), spin flip excitation of 1$^+$ T=0 state 8−8817
^{12}C(p,p′)^{12}C, PWIA anal. and bound-state momentum distribs. 8−601
^{12}C(p,p′)X, 316, 516 MeV, analysing powers at backward angles 8−46062
^{12}C(p,p), 0.8 GeV, ang. distrib. meas. 8−25186
^{12}C(p,pd)^{10}B, quasi-elastic cluster knock out, cross section calc. 8−46042
^{12}C(p,pt)^{9}B, quasi-elastic cluster knock out, cross section calc. 8−46042
^{12}C(p,π^+)^{13}C, 185 MeV, DWBA with Kisslinger type optical pot. 8−4938
^{12}C(p,π^+)^{13}C, relativistic pion stripping formalism 8−41717
^{12}C(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{12}C(π,π) cross section calc., comparison of factorisation approx. taking account of nucleon Fermi motion 8−29497
^{12}C(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{12}C(π^-,2n), stopped pion absorption 8−25243
^{12}C(π^-,nn) or ^{12}C(π^-,pn), rescatt. effects in stopped pion absorpt. 8−29498
^{12}C(π^+, π^+), 28.4, 38.6, 48.9 MeV, ang. distribs. meas. 8−41775
^{12}C(π^+,d)^{10}C, transitions to low lying states in ^{10}C 8−46110
^{12}C(π^+,p)^{11}C, 49.3 MeV, transitions confirm multistep processes 8−46110
^{12}C(π^+,p)^{11}C near (3,3) resonance region, appl. of isobar doorway model 8−41778
^{12}C(π^+,π^++p)^{11}B, 100 MeV, cross-section meas. 8−29510
^{12}C($\pi^\pm$, $\pi^\pm$), 162, 226 MeV, elastic cross sections around πN (3,3) resonance region 8−13164
^{12}C($\pi^\pm$,πN)^{12}C(4.44 and 15.11 MeV), test of outgoing nucleon analogue charge exchange 8−25238
^{12}C(t,t)^{12}C, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8−41730
^{13}C, nucl. mag. relax. in 2-chloropyrimidine, CS$_2$ soln., mol. reorientation 8−27105
^{13}C, ^{17,18}O, 12.6-14.0 MeV elastic scatt., ang. distribs. 8−37361
^{13}C coupled with ^{1}H, spinor character for spin $^1/_2$ nucleus via NMR interferometry 8−17699
^{13}C, giant reson. isospin splitting, photonuclear and e-scatt. cross-sections 8−577
^{13}C, in methane-d$_n$, NMR chem. shifts, coupling consts. 8−37657
^{13}C, interacting with strongly irradiated proton system, longit. mag. relax., Overhauser enhancement 8−19377

nuclei with mass number 6 to 19 continued
^{13}C NMR, combined ^{2}H NMR T_1 relax. times, methyl group ^{2}H quadrupole coupling const. 8−25563
^{13}C, NMR in polymethinecyanines, 8−13516
^{13}C, NMR in tristearin, liq.-liq. phase transition 8−26681
^{13}C NMR obs., radiation-induced degradation of glycine polycryst. 8−15775
^{13}C, NMR of 2,2,6,6-tetramethylpiperidine nitroxide radical.alcohol complex, chem. shift 8−46366
^{13}C, NMR of peptides and proteins, review 8−24023
^{13}C NMR relax. times, model, gauche-trans isomerising hydrocarbon chain 8−33520
^{13}C, NMR selective population transfer, CH fragment, appl. of density matrix formalism 8−15059
^{13}C NMR T_1 for 3-chlorodiphenyl soln., internal rot. barrier 8−29860
^{13}C NMR with off-reson. proton spin decoupling, proton chem. shift calc. methods 8−27101
^{13}C, proton-coupled J-NMR spectra of pyridine 8−17691
^{13}C proton-coupled NMR spin echo two dimensional J spectroscopy, suppression of ghosts 8−15057
^{13}C, proton-enhanced NMR of adamantane, magic-angle spinning, polarisation transfer 8−19349
^{13}C pulsed NMR, simultaneous T_1 and T_2 meas., Fourier transform. visualization 8−24838
^{13}C relaxation; data estimates of C-H rot. barriers, geometry effect, appl. to Δ^5-steroids 8−13626
^{13}C, resonances analogue to states ^{13}N level reached in ^{12}C(p,p) 8−13046
^{13}C shielding tensors in dimethoxybenzene, diethoxybenzene, powder pattern NMR exam. 8−25556
^{13}C spin-lattice relax., alkane chain internal rot. correlation times 8−17688
^{13}C-^{1}H coupling constant, in cyclohexane 8−13519
^{13}C-^{1}H spin-spin coupling consts. for pyridine 8−25562
^{13}C(^{14}N, ^{14}C)^{13}N, sub-Coulomb charge exchange *(Russian)* 8−46106
^{13}C(^{3}He,p), 20 MeV, p ang. distrib., ^{15}N energy levels 8−21581
^{13}C(^{6}Li,α)^{15}N, 32 MeV, ang. distrib. meas., zero-range DWBA calc. 8−13155
^{13}C(^{7}Li,p), 16 MeV, ^{19}O high spin states 8−21595
^{13}C(α,α), forward differential cross sections determ. using Feynman diags. 8−25210
^{13}C(d,γ_0)^{15}N, E_{exc}=17.7 MeV, 95° differential cross section resonance struct. 8−37351
^{13}C(γ,$n_{0,1}$)^{12}C, 98° diffr. cross-sections, reson. due to ^{13}C level struct. 8−586
^{13}C(p,γ), Doppler shift attenuation anal., ^{14}N unbound states 8−25184
^{13}C(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{13}C(π^+,π^0)^{13}N, 70-230 MeV, calc. of cross section, using multistep contributions within modified eikonal formalism 8−21609
^{13}C(π^+,π^0)^{13}N, DWIA, isovector correls. 8−29499
^{14}C β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{14}C liquid scintillation counting using thick-walled vials 8−857
^{14}C, populated by ^{12}C(t,p)^{14}C, spin and parity of states near 10 MeV excitation in ^{14}C 8−37263
^{14}C(^{16}O,^{17}O)^{13}C, exchange effects on ang. distribs. 8−627
^{14}C(p,n)^{14}N, n polarisation ang. distrib., R-matrix anal., ^{15}N excited states 8−4937
^{14}C(t,p)^{16}C, 3.02-6.1 MeV, spectroscopy of ^{16}C 8−613
^{14}C(t,pγ), 12 MeV, ang. correls., ^{16}C levels, spin assignments 8−8830
^{14}C→^{14}N $e^-\bar{\nu}_e$, rate calcs. using elementary particle and macroscopic treatments 8−29429
^{16}C levels populated in ^{14}C(t,pγ), spin assignments 8−8830
^{16}C, spectroscopy with ^{14}C(t,p)^{16}C at 3.02-6.1 MeV 8−613
^{17}C populated in ^{48}Ca(^{18}O, ^{17}C), mass excess, low lying level struct. 8−8744
C(π^+,2p), 112 MeV, reaction mechanism *(Russian)* 8−29508
^{16}F levels populated in ^{19}F(^{3}He,^{6}He) and ^{16}O(^{3}He,t) 8−17231
^{17}F, effective charges and radial integrals calc. 8−4897
^{17}F, mag. moments, configuration mixing and meson exchange contrib. 8−17100
^{17}F-^{17}O mirror nuclei, configuration mixing, Coulomb energy anomaly 8−25099
^{18}F, 1.08 MeV γ transition, circular polarisation affected by neutral weak currents 8−41663
^{18}F, 5603 keV level, isospin mixing via (α,γ) and (p,γ) reactions 8−543
^{18}F alpha particle cluster states, rot. bands in ^{14}N+α model 8−8757
^{18}F ions recoiling in vacuum, mag. decoupling of hyperfine interaction 8−37270
^{18}F production and yield from ^{16}O(^{3}He,p)^{18}F reaction in water 8−28065
^{18}F, spin-parity assignment from ^{17}O(p,p)^{17}O, at 1.4-3.0 MeV 8−29391
^{18}F, study of excited states, spin and parity *(French)* 8−33158
^{18}F, trinucleon cluster states, low lying negative parity states 8−29387
^{19}F, $5/2_1^-$ state, precession on recoil in Fe and Ni 8−37285
^{19}F, and ^{7}Li double NMR in LiF, existence of single nuclear dipolar spin temp. 8−35065
^{19}F, chem. shift in solids, multiple pulse zero crossing NMR technique 8−37041
^{19}F ENDOR, obs. of F distortion in $KCdF_3$:Mn^{2+} 8−23369
^{19}F, in $K_2Mn_{1-x}Ni_xF_4$, NMR exam. of magnetizations 8−10800
^{19}F, in KEL-F, spectrum using multiple pulse decoupling-magic angle spinning NMR probe 8−12735
^{19}F line standard, for NMR freq. sweep calibration 8−24836
^{19}F, low-lying excited states calc. by generator coordinate method 8−12974
^{19}F, mag. moments, configuration mixing and meson exchange contrib. 8−17100
^{19}F NMR imaging for biomedical application 8−20240
^{19}F, NMR in lithium perfluoro-octanoate-water system, liq. cryst. struct., self-diffusion 8−15036
^{19}F, NMR in MHF_2 (M=alkali metal), $TlHF_2$, $SrFHF_2$, $BaFHF_2$ 8−2753
^{19}F, NMR in NH_4HF_2 and (substituted) phenylamine salts 8−2754
^{19}F, NMR in UF_6, isotope enrichment 8−23364
^{19}F, paramag. shifts at O in CoO in NiO 8−43719
^{19}F, produced in ^{15}N(α,γ)^{19}F, 5.2 to 8.4 MeV, resonances and gamma decay schemes 8−37358
^{19}F spin-lattice relax., obs. of diffusion in LaF_3 8−6180

nuclei with mass number 6 to 19 continued
^{19}F, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{19}F+^{12}C, 92 MeV, fusion and direct reactions anal. 8−21591
^{19}F(^{3}He,^{6}He), 70 MeV, ^{16}F energy levels 8−17231
^{19}F(^{3}He,d)^{20}Ne(4_1^+), 0g orbit mixing and one-step forbidden transition 8−493
^{19}F(p,α)^{16}O, 1.5 to 2 MeV, [211] quartet state in ^{20}Ne 8−46006
^{19}F(p,γ)^{20}Ne, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8−17191
^{19}F(π^-, π^-n) and (π^-, π^-p+π^0n) knockout reactions, cross sections, nucleon charge exchange model 8−25246
^{19}F(t,p)^{21}F, 0.9 and 1.1 MeV, proton ang. distribs., possible compound nucl. form. 8−17218
^{20}F energy levels populated in ^{14}N(^{7}Li,p), spin, parity 8−21596
^{6}He, β-decay, recoil ion energy spectrum anal. 8−21525
^{6}He β-decay from three body model of A=6 system, α-N, N-N interactions 8−46032
^{6}He, form. in ^{7}Li(t,α) reaction, possible resonant struct. 8−13110
^{6}He, G-parity nonconservation, ev ang. correlation for allowed beta-decay 8−17151
^{6}He, mass meas. from ^{7}Li(d,^{3}He)^{6}He and ^{19}F(d,^{3}He)^{18}O* reactions 8−41628
^{8}He, mass determ. from spectra of ^{64}Ni(^{4}He,^{8}He)^{60}Ni, and ^{64}Ni(^{4}He,^{6}He)^{62}Ni 8−25106
^{6}Li, α-d, coupling constants from dispersion anal. of N and d scatt. amplitudes 8−29399
^{6}Li, ^{7}Li, prod. by cosmological cosmic rays 8−12436
^{6}Li, ^{7}Li, spallation prod. and ratio in C stars atmospheres 8−40927
^{6}Li, absolute cross section for (d,p), (d,α) and (d,n), $E<1$ MeV 8−25205
^{6}Li, cluster formation, multicentre variational model *(Chinese)* 8−25128
^{6}Li dissociation in ^{208}Pb field 8−41770
^{6}Li, EM form factors and vertex consts. 8−12958
^{6}Li, levels anal. from ^{3}H(^{3}He,^{3}He), 20-33 MeV 8−17227
^{6}Li, quasi α-particle photodisintegration at 35-55 MeV *(Russian)* 8−46046
^{6}Li, quasielastic elec. scatt., final state interaction effects *(Russian)* 8−41708
^{6}Li resonance effects on d-α elastic scatt. 8−46074
^{6}Li, three-body model using hyperspherical harmonics 8−29411
^{6}Li+d, three body reactions, low energy, reaction mechanisms 8−13111
^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8−46059
^{6}Li(^{3}He,p)^{8}Be, 14 MeV, p-^{8}Be optical model parameters 8−25208
^{6}Li(α,α)^{6}Li, cross section using var. calcs. in generator coordinate method 8−13122
^{6}Li(d,n_1)^{7}Be*, 0.6-1.0 MeV polarised deuterons, vector and tensor analysing powers 8−4925
^{6}Li(d,n)^{7}Be, low energy cross section, 100-180 keV 8−4949
^{6}Li(d,p_0)^{7}Li, 0.6-1.0 MeV polarised deuterons, vector and tensor analyzing powers 8−4925
^{6}Li(d,p_1)^{7}Li*, 0.6-1.0 MeV polarised deuterons, vector and tensor analyzing powers 8−4925
^{6}Li(d,tp)^{4}He, 0.465 MeV, quasi-free contribs. 8−614
^{6}Li(γ,π^+), cross-section calc. 8−17248
^{6}Li(t,d)^{7}Li, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
^{6}Li(t,γ)^{9}Be, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
^{6}Li(t,p)^{8}Li, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
^{7}Li, abundance as constraint on universal baryon density 8−4420
^{7}Li, and ^{19}F double NMR in LiF, existence of single nuclear dipolar spin temp. 8−35065
^{7}Li, ang. momentum eigenstates projection from two-centre generator coordinate model functions 8−12994
^{7}Li, form. in ^{6}Li(t,d) reaction, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
^{7}Li, NMR in glasses 8−27107
^{7}Li, NMR in Li metal, thermal mixing rate calc. 8−10795
^{7}Li, NMR meas. dehydration of lithium formate cryst., influence of hydrostatic press. 8−2758
^{7}Li, nucl. spin-lattice relax. time meas. in $LiIO_3$ 8−10796
^{7}Li, Pauli-principle effects, simulation 8−8756
^{7}Li, prod. in ^{4}He(α,p) reactions, differential cross sections meas., 39 to 50 MeV 8−25207
^{7}Li, quasi α-particle photodisintegration at 35-55 MeV *(Russian)* 8−46046
^{7}Li, quasielastic elec. scatt., final state interaction effects *(Russian)* 8−41708
^{7}Li, two-centre molecule-like states, generator coordinate wave function projection 8−12995
^{7}Li(^{3}H,γ)^{10}Be, 0.4-1.1 MeV, excitation curves, ang. distribs. 8−33200
^{7}Li(K^-,$\pi^-\gamma$), hypernuclear γ-ray line 8−37377
^{7}Li(α,α), low energy elastic and inelastic scatt., Pauli principle effect 8−4953
^{7}Li(d,$\alpha\alpha$)n, 2 MeV, quasi free reaction, ^{7}Li struct. 8−41727
^{7}Li(γ, n)^{6}Li* (3.56 MeV), integral reaction cross section *(Russian)* 8−46048
^{7}Li(p,n)^{7}Be, activation and ang. distrib. meas., absolute neutron yield determ. 8−17199
^{7}Li(p,n)^{7}Be, microscopic multi-channel calcs. to 2.5 MeV c.m. 8−4934
^{7}Li(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8−13075
^{7}Li(p,p)^{7}Li, microscopic multi-channel calcs. to 2.5 MeV c.m. 8−4934
^{7}Li(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{7}Li(π^+,π^0), 90 to 210 MeV, ^{7}Be 429 keV $1/2^-$ excited state, cross section 8−647
^{7}Li(π^+,π^0)^{7}Be, DWIA isovector correls. 8−29499
^{7}Li(t,α)^{6}He, possible resonant struct. in excitation functions 8−13110
^{8}Li, form. in ^{11}B(n,α) reaction, 14.4 MeV, spectra and ang. distribs., recoil nucl. transitions 8−17193
^{8}Li, form. in ^{6}Li(t,p) reaction, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
^{8}Li, produced by K^- interactions with emulsion nuclei 8−17244
^{8}Li scattering system, microscopic multichannel cluster model calc., resonating group calc. 8−4906
Li(d,n), neutron spectra from thick target bombardment for therapy 8−28049

nuclei with mass number 6 to 19 continued
Li(e,e′p), A=6,7, 700 MeV, proton spectral functions, momentum distribs., DWIA anal. 8−41701
Li(p,n), neutron spectra from thick target bombardment, for therapy 8−28049
N, NMR in mols., nuclear mag. shielding 8−17695
N+n in cellulose nitrate plastic detector, spallation products 8−17198
n+nuclear emulsion, 2.1 GeV/amu, scatt. const. 8−13151
^{12}N, aligned, existence of G-parity irregular induced tensor current 8−29384
^{12}N, β-ray branching and $T_{1/2}$ 8−41674
^{12}N, meas. of weak magnetism term in β spectra 8−4917
^{12}N, quadrupole interaction in Be, Mg and Zn 8−47750
^{14}N 9.13 MeV state, obs. in ^{13}C(p,γ) 8−41641
^{14}N, DSA lifetimes determ. from exptl. stopping powers 8−17142
^{14}N, four-body breakup induced by 18 MeV neutrons, double final state interaction 8−17192
^{14}N, meas. of nucl. g-factor of 5.11 MeV 2^- state by recoil distance technique 8−37268
^{14}N, multiple spin echoes in pure NQR in $NaNO_2$ 8−19365
^{14}N, NMR and quadrupole splitting of NH_4^+, ND_4^+, lyotropic mesophase 8−17690
^{14}N NMR chemical shift, external neat nitromethane scale 8−24834
^{14}N, NQR freq. in aminoarsines, aminoboranes, N-As and N-B bonds 8−25566
^{14}N NQR in pyrrole, ^{1}H lineshape anal. 8−6598
^{14}N, NQR in rubidium-TCNQ, Zeeman perturbation study, charge transfer 8−39438
^{14}N, NQR of substituted nitrobenzene mols., elec. field gradient of NO_2 8−21944
^{14}N screening, absolute scale 8−2762
^{14}N unbound 4_1^+, 5_1^+, 3_2^+ states from ^{13}C(p,γ), lifetimes, branching ratios 8−25184
^{14}N+^{16}O, 20-60 MeV, compound nucl. form. 8−4954
$^{14}N+\mu^-\rightarrow{}^{14}C+\nu_\mu$, rate calcs. using elementary particle and macroscopic treatments 8−29429
^{14}N+p, 50 MeV, three particle final state *(Russian)* 8−29471
^{14}N(^{7}Li,p), 16 MeV, cross section, ^{20}F energy levels, spin, parity 8−21596
^{14}N(α,α), 23.7 MeV, cross sections, 20 to 170° 8−13118
^{14}N(α,γ), 1.51-1.62 MeV, populating ^{18}F 5603 keV level, isospin mixing 8−543
^{14}N(d,n)^{15}O, non-linear behaviour of gas targets for isotope prod. 8−25361
^{14}N(p,pd)^{12}C, quasi-elastic cluster knock out, cross section calc. 8−46042
^{14}N(p,pt)^{11}C, quasi-elastic cluster knock out, cross section calc. 8−46042
^{14}N(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{15}N chemical shifts in pyridenes, paramag. relax. reagent effect 8−15042
^{15}N energy levels populated in ^{13}C(^{3}He,p), p ang. distrib. 8−21581
^{15}N excited states, R-matrix anal. of n polarisation in ^{14}C(p,n)and ^{11}B(α,n) 8−4937
^{15}N, interacting with strongly irradiated proton system, longit. mag. relax., Overhauser enhancement 8−19377
^{15}N low-lying states, obs. in (e,e′) scatt. 8−12976
^{15}N, mag. moments, configuration mixing and meson exchange contrib. 8−17100
^{15}N NMR chem. shift references evaluation 8−24835
^{15}N, obs. of high spin states in ^{12}C(^{6}Li,t) and ^{12}C(^{6}Li, ^{3}He) 8−13015
^{15}N, one-hole states, in double magic nuclei, form factors, spectroscopic factors, centroid energies 8−17090
^{15}N, photoabsorption, shell-model anal. of giant dipole state 8−29447
^{15}N, spins of p-h states from (d,τ) analysing powers 8−25111
^{15}N, study of excited states, spin and parity *(French)* 8−33158
^{15}N/^{14}N ratio in Galaxy, interpretation of obs. 8−4356
^{15}N+n, continuum shell model calcs. of particle emission threshold effects, cross section, line shape of resonances 8−46014
^{15}N+p reactions, ^{16}O energy levels near 15 MeV excitation, R-matrix anal. 8−29460
^{15}N(α,α), E_α=16-23.7 MeV, differential cross sections, ang. distribs. and excitation functions 8−13121
^{15}N(α,α) forward differential cross sections determ. using Feynman diags. 8−25210
^{15}N(e,e′), excitation of energy levels 9.7 to 14.7 MeV, 60-194 MeV, EM form factor meas. 8−25175
^{15}N(p,α) (p,$\alpha\gamma$), 0.9-1.25 MeV, ^{16}O levels, J^π 8−509
^{15}N(p,α)^{15}N, 2.50-5.14 MeV, 3^+ ^{16}O reson. state excit. 8−580
^{15}N(p,γ)^{16}O, anal. of ^{16}O giant dipole reson. struct. 8−4942
^{15}N(p,p)^{15}N, 2.50-5.14 MeV, 3^+ ^{16}O reson. state excit. 8−580
^{16}N, (π^-, γ) and (μ^-, ν_μ) capture rates, A=16 ground and excited states 8−17105
^{16}N activity from ^{16}O(n,p)^{16}N, nuclear powered ship, computer code and expt. comparison 8−13192
^{16}N* beta-decay, elementary particle treatment 8−8800
$^{16}N(0^-)\rightleftharpoons{}^{16}O(0^+)\beta$-decay and μ-capture, mesonic exchange correction 8−41673
^{19}Ne, β-decay, recoil ion energy spectrum anal. 8−21525
$^{19}Ne\rightarrow{}^{19}Fe+e^++\nu_e$, limit on Fierz interference 8−560
N(π^+,2p), 112 MeV, reaction mechanism *(Russian)* 8−29508
O ion induced fission of nuclei from Ag to U, fragment ang. distribs. *(Russian)* 8−17264
O+^{27}Al, total fusion cross section near Coulomb barrier 8−13141
O+n in cellulose nitrate plastic detector, spallation products 8−17198
O+nuclear emulsion, 2.1 GeV/amu, scatt. const. 8−13151
$^{14}O\rightarrow{}^{14}N\ e^+\nu_e$, rate calcs. using elementary particle and macroscopic treatments 8−29429
^{15}O, mag. moments, configuration mixing and meson exchange contrib. 8−17100
^{15}O, nucl. g-factor and lifetime of 5.24 MeV $5/2^+$ level 8−37269
^{15}O, obs. of high spin states in ^{12}C(^{6}Li,t) and ^{12}C(^{6}Li, ^{3}He) 8−13015
^{15}O production, non-linear behaviour of gas targets 8−25361
^{15}O, recoils from ^{16}O(n,2n)^{15}O, labelled mol. O_2 form. 8−3359
^{15}O, study of excited states, spin and parity *(French)* 8−33158
^{16}O, 3^+ reson. state, particle-hole component via (p,p) and (p,α) reactions 8−580
^{16}O, 31^- state, precession in Fe foil, depend. on magnetisation 8−37285

nuclei with mass number 6 to 19 continued
^{16}O, (π^-, γ) and (μ^-, ν_μ) capture rates, A=16 ground and excited states 8−17105
^{16}O, charge distribution, orthogonal scheme model *(Russian)* 8−29382
^{16}O, configuration mixing and α-cluster transfer 8−46004
^{16}O, coupled channel anal. of Λ'(1405) in kaonic atoms 8−540
^{16}O, dipole polarisability sum rule, HF calc., 8−21504
^{16}O, effective interactions, folded diagram expansion, self consistent and oscillator sd shell model spaces 8−21502
^{16}O, exchange current corrections for muon partial capture rates 8−33152
^{16}O excited states near 15 MeV, R-matrix anal. of ^{15}N+p reactions 8−29460
^{16}O, giant dipole reson. struct. anal. from ^{15}N(p,γ)^{16}O 8−4942
^{16}O giant electric and magnetic multipole resonances, microscopic descript. 8−538
^{16}O, inelastic form factors for abnormal parity states, K-harmonic method *(Russian)* 8−25113
^{16}O isoscalar giant quadrupole resonance, α-decay dominance from ^{16}O(α,α'+charged particle) 8−46035
^{16}O, isospin mixing anal. 8−8832
^{16}O, isospin mixing in nuclei, matrix elements explained by Coulomb interaction 8−37264
^{16}O, levels near 13 MeV via ^{15}N+p 0.9-1.25 MeV 8−509
^{16}O, longit. isoscalar electroexcitation, sum rules and mean excitation energy 8−521
^{16}O, mixed T=0 and 1 states, isospin mixing matrix elements 8−37289
^{16}O, nucleon self-energy in finite nuclei; renormalisation, nucleon-meson interaction 8−17110
^{16}O, nucleon-nucleon scatt., correlations, short-range, with pseudopotentials 8−37225
^{16}O, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{16}O, populated in ^{12}C(^{6}Li,α)^{14}N, α-particle spectrum sharp lines observation *(Russian)* 8−29495
^{16}O, π, electroproduction, near threshold, inelastic response functions 8−33172
^{16}O, π bound states in finite nuclei 8−46013
^{16}O, π^+ induced four nucleon removal 8−25242
^{16}O, shell and cluster model wave functions 8−29412
^{16}O, Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations 8−29435
^{16}O, spin-orbit coupling in relativistic Hartree model 8−8731
^{16}O, spreading of giant quadrupole resonance, calcs. using 2p-2h admixtures 8−21485
^{16}O structure, energy levels, binding energy, cluster model with varying hinge angle 8−4907
^{16}O+^{12}C, 168 MeV, inelastic scatt., folding model, macroscopic formalism, form factors 8−25227
^{16}O+^{16}O, 2.1 GeV/n elastic scatt., correlations 8−41761
^{16}O+^{16}O, 3D TDHF calcs. 8−626
^{16}O+^{16}O, optical potential elastic scatt., energy depend., Regge pole and Coulomb amplitudes 8−25228
^{16}O+^{16}O reaction cross sections, 12.5-30.5 MeV excitation functions 8−643
^{16}O+^{16}O system, strong damping of inner oscills., nuclear saturation props. 8−41749
^{16}O+^{28}Si, 17 to 37 MeV, inelastic and elastic backward angle scatt., surface resonances 8−37367
^{16}O+γ, continuum shell model calcs. of particle emission threshold effects, cross section, line shape of resonances 8−46014
^{16}O+p, 50 MeV, three particle final state *(Russian)* 8−29471
^{16}O+p, energy dependent radial functions formalism of continuum shell model 8−25185
^{16}O(^{12}C,$^{12}C_{2+}$)^{16}O, $^{12}C_{2+}$ spin alignment using γ-decay in flight 8−41767
^{16}O(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{16}O(^{3}He,p)^{18}F in water, ^{18}F prod. and yield 8−28065
^{16}O(^{3}He,t), 35 MeV, ^{16}F energy levels 8−17231
^{16}O(^{6}Li,d)^{20}Ne, 19.8 to 32 MeV, reaction mechanism and excitation functions 8−41757
^{16}O(O,C)^{20}Ne, 17 MeV, α transfer, cluster transfer process, cross sections 8−25218
^{16}O(O,Ne)^{12}C 17 MeV, α transfer, cluster transfer process, cross sections 8−25218
^{16}O(α,α), 23.7 MeV, cross sections, 20 to 170° 8−13118
^{16}O(α,α), forward differential cross sections determ. using Feynman diags. 8−25210
^{16}O(d,p)^{17}O, anal. using deuteron deform. effects *(Japanese)* 8−37355
^{16}O(d,p)^{17}O, channel coupling array and coupled reaction channel methods 8−8831
^{16}O(γ,γ), 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8−13059
^{16}O(γ,n)^{15}O, ang. distrib. asymmetry anal. 8−25172
^{16}O(μ,ν_μ)^{16}N*, elementary particle treatment 8−8800
^{16}O(n,2n)^{15}O, ^{15}O recoils, labelled mol. O_2 form. 8−3359
^{16}O(n,$\alpha\gamma$), 7-10.5 MeV gamma-ray prod. cross sections meas. 8−37338
^{16}O(n,n′γ), 7-10.5 MeV, gamma-ray prod. cross sections meas. 8−37338
^{16}O(n,p)^{16}N, meas. and calc. ^{16}N activity in water of nuclear powered ship 8−13192
^{16}O(n,p)^{16}N, neutron activation anal. of metals 8−15742
^{16}O(p,p′), 25-46 MeV, effects of two-step process determ. 8−21569
^{16}O(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{16}O(p,pd)^{14}N, quasi-elastic cluster knock out, cross section calc. 8−46042
^{16}O(p,pt)^{13}N, quasi-elastic cluster knock out, cross section calc. 8−46042
^{16}O(π,π)^{16}O, microscopic isobar-hole calc. doorway states 8−4965
^{16}O(π^+,$\pi^{+\prime}$), 50 MeV, energy spectra and cross sections 8−25241
^{16}O(π^+,π^+), 80-340 MeV, ang. distribs. of cross-sections determ. 8−33225
^{16}O($\pi^\pm$,$\pi^\pm$), Coulomb-nuclear interference, new anal. method 8−21608
^{16}O(t,p)^{18}O, excitation curve meas., 500-1250 keV 8−37359
^{17}O, effective charges and radial integrals calc. 8−4897
^{17}O, giant reson. isospin splitting, photonuclear cross-sections 8−577
^{17}O, M3 suppression in HF theory 8−33134

nuclei with mass number 6 to 19 continued
^{17}O, mag. form factor, core polarisation and exchange current effects 8−46003
^{17}O, mag. moments, configuration mixing and meson exchange contrib. 8−17100
^{17}O NMR, proton decoupling 8−2752
^{17}O, NMR obs. of water orientation in lyotropic phases 8−27905
^{17}O, NQR in BCC Heisenberg ferromagnets with $K_2CuCl_4.2H_2O$ struct. 8−39439
^{17}O valence energies, extended multiple scatt. approach to 2p1h system 8−29396
^{17}O/^{18}O ratio in Galaxy, interpretation of obs. 8−4356
^{17}O(^{3}He, α), 36 MeV, isospin mixing in ^{16}O determ. 8−8832
^{17}O(^{6}Li,d), ang. distrib., cross section, ^{21}Ne low lying states, weak coupling behaviour 8−46100
^{17}O(d,^{3}He), (d,t), 52 MeV, isospin mixing in ^{16}O determ 8−8832
^{17}O(e,e′), 65-168 MeV, giant resonance excitation 8−4930
^{17}O(e,e), elastic and inelastic, cross sections, excited states, charge radii 8−46049
^{17}O(p,γ), 0.56 MeV, populating ^{18}F 5603 keV level, isospin mixing 8−543
^{17}O(p,p)^{17}O, 1.4-3.0 MeV, spin-parity assignment in ^{18}F 8−29391
^{18}O alpha particle cluster states, rot. bands in ^{14}C+α model 8−8757
^{18}O, effective interaction, Hartree-Fock effects 8−534
^{18}O, study of excited states, s in and parity *(French)* 8−33158
^{18}O, trinucleon cluster states, low lying negative parity states 8−29387
^{18}O, two-body surface correls. in extended basis shell model 8−532
^{18}O+^{12}C, 10-23.6 MeV, periodic structure 8−46095
^{18}O+^{16}O, 10-23.6 MeV, periodic structure 8−46095
^{18}O+^{18}O, scatt. and neutron transfer reactions, excitation levels, recoil DWBA analysis 8−8837
^{18}O(^{3}He,pγ)^{20}F, 11-15 MeV, coincidence, ang. correl. and branching ratio meas. 8−13129
^{18}O(α,nγ)^{21}Ne, 4.3-6.5 MeV, excitation functions meas. 8−8833
^{18}O(π,π′), 230 MeV, neutron deform. param. determ. 8−29502
^{18}O(π$^+$,π$^-$), 140 MeV, nuclear structure effects on cross section 8−17246
^{18}O(π$^+$,π$^-$)^{18}Na, nuclear struct. effects 8−37380
^{19}O high spin states populated in ^{13}C(^{7}Li,p) 8−21595
O(π$^+$,2p), 112 MeV, reaction mechanism *(Russian)* 8−29508

nuclei with mass number 20 to 38
A=20, 36 to 38, sd shell nuclei, effective interaction between nucleons 8−17117
A=24, shell model calcs. of mass spectra and β decay 8−4903
^{20}Ne, rotational bands 8−45993
(π,Xγ) reaction at 70 MeV on s-d shell nuclei 8−29504
Al bombarded by ions, Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8−25216
Al, NQR in heteroorganic group III compounds, summary 8−25565
Al+e, 800 MeV, multicharged particle emission during nucleus disintegration 8−41702
Al+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
Al+π$^-$, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
^{24}Al, low-lying 1$^+$ state anal. in ^{24}Mg(^{3}He,t) 8−29484
^{26}Al, coherence widths, level density param. and effective moment of inertia 8−37360
^{26}Al, from supernova explosion near solar system rel. to lunar interior melting 8−40849
^{26}Al, isoscalar and isovector E2 transition matrix elements 8−25148
^{26}Al, liquid-drop limit, fusion of ^{12}C+^{14}N 8−4959
^{26}Al production in explosive C burning 8−20814
^{27}Al, analogue-antianalogue M1 transitions, nucl. shape change influence 8−13006
^{27}Al, coherence widths from ^{12}C(^{15}N,α) 8−41619
^{27}Al, low lying states, band mixing effects, quadrupole moment 8−490
^{27}Al, NMR in MAl_2Br_2 crysts.(M=Li, Na, K, Cs, NH_4, $(CH_3)_4N$), quadrupole effect 8−6597
^{27}Al, nucl. spin-lattice relax. meas. on $(La_{1-n}Gd_n)_3Al$ and $(La_{1-n}Ce_n)_3Al$ 8−2622
^{27}Al, pion scatt., 355 MeV, ratio of π$^+$ and π$^-$ cross sections from coincidence meas. 8−29501
^{27}Al, pionic, energy and width of 3d-2p transitions *(Russian)* 8−25760
^{27}Al, π^p high energy photoproduction and electroproduction 8−21543
^{27}Al, spins of p-h states from (d,τ) analysing powers 8−25111
^{27}Al+^{12}C, 83 MeV, giant resonance excitation 8−17235
^{27}Al+^{28}Si, 72 MeV, multinucleon removal 8−41755
^{27}Al+d, 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8−46075
^{27}Al+p, 400 MeV, p-γ coincidence meas. of multinucleon removal in quasifree process 8−37342
^{27}Al(^{14}N,2pn), ^{38}Ar high spin states, decay scheme 8−25232
^{27}Al(^{35}Cl,^{35}Cl), 100-170 MeV, elastic scatt. ang. distrib. 8−21605
^{27}Al(^{9}Be, ^{9}Be), 14-26 MeV, universal optical pot. 8−25219
^{27}Al(α,α′), 145 MeV, excitation energy anal., octupole strength conc. 8−21584
^{27}Al(d,^{3}He)^{26}Mg, 12.4 MeV, tensor analysing power, ^{3}He D-state effects 8−4948
^{27}Al(e,e′), transition widths, multipolarity assignment DWBA calc. 8−13068
^{27}Al(n,d), 56.3 MeV, spectroscopic factors, ^{26}Mg levels 8−4935
^{27}Al(n,p)^{27}Mg, 12.9-15.9 MeV, reaction cross section meas. 8−37337
^{27}Al(p,α$_0$)^{24}Mg, 1.12-3.08 MeV, ^{28}Si resonances 8−13091
^{27}Al(p,α)^{24}Mg, E$_p$ =1540-2220 keV, ^{28}Si, excited level obs. 8−17189
^{27}Al(p,γ)^{28}Si, E$_p$=992 keV resonance, γ-ray intensity standard 8−17472
^{27}Al(π$^-$,π$^-$n) and (π$^-$, π$^-$p+π^{0}n), knockout reactions, cross sections, nucleon charge exchange model 8−25246
^{27}Al(π$^\pm$,p), (π$^\pm$,d), E=100, 220 MeV p and d spectra meas. 8−648
^{28}Al, spectroscopic meas. in ^{30}Si(d,α) react. with polarised deuterons 8−41728
^{29}Al, mag. moment quadrupole coupling const. β-ray detected NMR in Al_2O_3 cryst. 8−37267
Al(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
^{32}Ar, isobaric analogue states via β-delayed protons 8−558
^{35}Ar, β-decay, recoil ion energy spectrum anal. 8−21525
^{36}Ar(^{6}Li,d)^{40}Ca, 17 MeV, alpha transfer to 4p-4h states 8−21590
^{36}Ar(d,p), Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611

nuclei with mass number 20 to 38 continued
^{36}Ar(e,e′), 65 to 115 MeV, low lying level struct., lifetimes 8−8798
^{36}Ar(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
^{37}Ar, double internal bremsstrahlung in electron capture, ang. correl. meas. 8−25157
^{37}Ar, implantation in Fe, perturbed ang. distrib. 8−12969
^{38}Ar high spin states from ^{27}Al(^{14}N,2pn), decay scheme 8−25232
^{38}Ar(^{6}Li,d), location of 0$^+$ 4p-2h and 6p-4h configs. in ^{42}Ca 8−25220
^{12}C to ^{22}Ne induced nucleon transfer reactions 8−41768
^{40}Ca, shell model anal. of ground state energy 8−29389
^{48}Ca, neutron radius determ., charge symm. 8−29380
Cl isotopes, effect of isotopic abundance on kerma 8−29536
Cl, strength function of deeply bound hole states 8−17113
^{32}Cl, isobaric analogue states via ^{32}Ar β-delayed protons 8−558
^{34}Cl compound nucleus in ^{32}S(d,α)^{30}P, fluctuation anal. 8−46070
^{34}Cl, ground and excited states, shell model verification by ^{32}S(^{3}He,p)^{34}Cl cross section meas. 8−13119
^{35}Cl, NQR freq. in aminoarsines, aminoboranes, N-As and N-B bonds 8−25566
^{35}Cl, NQR meas. in trichloroacetic acid-base H bonded complex 8−25555
^{35}Cl NQR spectra and reorientational motion of PCl_3 group in trichlorophosphazenes 8−25567
^{35}Cl(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
^{35}Cl(n,γ)^{36}Cl, E1 and M1 radiative strength functions 8−4940
^{36}Cl, Cherenkov counting using Teflon vials 8−858
^{36}Cl, g-factor determ. from perturbed ang. distribs. 8−12970
^{36}Cl, internal bremsstrahlung spectra, accompanying second forbidden β-decay 8−8776
^{37}Cl, in-beam γ-ray spectroscopy via ^{3}H(^{35}Cl,pγ) 8−13013
^{37}Cl neutrino absorpt. cross-sections, rel. to Brookhaven expt. sensitivity to solar neutrinos, collapsing stars and cosmic neutrinos 8−4929
^{37}Cl(α,d), 27 MeV, spectra, ang. distribs., ^{39}Ar low lying states, spins 8−25212
^{37}Cl(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
^{35,37}Cl, NQR in $BiCl_3.GaCl_3$ complex, geom. struct. 8−25569
^{20}F, 4 to 6 MeV levels populated in ^{19}F(d,p) 8−25118
^{21}F, form. in ^{19}F(t,p) reaction, 0.9 and 1.1 MeV, proton ang. distribs., possible compound nucl. form. 8−17218
^{38}K^m→^{38}Ar, superallowed 0$^+$→0$^+$ β transition, spectrum shape 8−37316
^{38m}K, end point energy of superallowed Fermi decay 8−46030
Mg bombarded by ions, Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8−25216
Mg, giant quadrupole resonance strength, p- and α-inelastic scatt. and α capture 8−37323
Mg isotopes, pionic, energy and width of 3d-2p transitions *(Russian)* 8−25760
Mg(^{9}Be,^{9}Be), 14-26 MeV, universal optical pot. 8−25219
^{24}Mg, 6 MeV 4$^+$ state, configuration anal., electron scatt. form factors 8−25115
^{24}Mg, dipole moment using transient mag. field from ion passing through ferromag. *(Dutch)* 8−29386
^{24}Mg, existence of second J$^\pi$=0$^+$ reson. at high excitation energy, study of ^{12}C(^{12}C,α)^{20}Ne reaction 8−25214
^{24}Mg, form. in ^{12}C+^{12}C reaction at 10.5 to 15 MeV, possible rot. band 8−13134
^{24}Mg, highly-excited rot. band obs. from ^{10}B(^{14}N,α)^{20}Ne 8−33218
^{24}Mg, identification of 10$^+$ levels using ^{12}C(^{16}O,α) at 26.7 MeV 8−33119
^{24}Mg, low energy positive parity spectra, 2ħω excitations, ang. momentum projected deformed particle-hole model calcs. 8−25119
^{24}Mg, rot. band, reson. states, J$^\pi$ via ^{12}C+^{12}C 8−491
^{24}Mg, rot. band obs. with ^{12}C(^{12}C,α)^{20}Ne 8−12951
^{24}Mg, rotational band fragmentation and rotation-vibr. model, ^{12}C+^{12}C appl. 8−25096
^{24}Mg, rotational band struct., obs. in (^{3}He,^{3}He′) 8−41616
^{24}Mg, Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations 8−29435
^{24}Mg, T=2 state props., obs. in ^{23}Na(p,γ)^{24}Mg reaction 8−8767
^{24}Mg+^{12}C, 42-84 MeV, binary fragmentation, kinematical anal. 8−25223
^{24}Mg+^{12}C(^{16,18}O) scatt., ^{24}Mg pot. quadrupole deform. length determ. 8−12963
^{24}Mg+p, 400 MeV, p-γ coincidence meas. of multinucleon removal in quasifree process 8−37342
^{24}Mg(^{18}O,p2nγ), ^{39}K high spin states, decay scheme 8−25232
^{24}Mg(^{3}He,t)^{24}Al, low-lying 1$^+$ states of Al anal. 8−29484
^{24}Mg(α,α′), 28, 40 MeV, lowest 3$^+$ state population, compound nucleus formation 8−33197
^{24}Mg(α,α′)^{24}Mg, 16.7-20 MeV, quasimol. intermediate resons., statistical anal. 8−41741
^{24}Mg(α,n)^{27}Si, threshold to 13.1 MeV, total cross section 8−618
^{24}Mg(α,nγ)^{27}Si, 12.60-16.35 MeV, ang. correl. and lifetime meas. 8−17224
^{24}Mg(d,p), 1.5-2.5 MeV, fluctuation anal., ^{25}Mg highly excited states 8−46071
^{24}Mg(d,p)^{25}Mg, 8-13 MeV, vector polarised deuterons, excitations function of cross sections 8−8826
^{24}Mg(n,α)^{21}Ne, near 14 MeV, differential cross sections compared to compound-nucleus theoretical results 8−37350
^{24}Mg(p,X), 17.5-48 MeV, proton total cross section 8−8809
^{24}Mg(p,p′), 135 MeV, high spin unnatural parity states, anal. 8−37334
^{24}Mg(p,p′), 22.5 to 28.5 MeV, giant reson. effects 8−4923
^{25}Mg, low-lying excited states calc. by generator coordinate method 8−12974
^{25}Mg(^{3}He,p)^{27}Al, 13 MeV, statistical multistep compound emission, proton spectrum fluctuations 8−37357
^{25}Mg(e,e), 40-260 MeV, cross sections, Coulomb multipole moments and magnetic form factor 8−25178
^{25}Mg(n,α)^{22}Ne, near 14 MeV, differential cross sections compared to compound-nucleus theoretical results 8−37350
^{26}Mg, isoscalar and isovector E2 transition matrix elements 8−25148
^{26}Mg, spectroscopic factors, via ^{27}Al(n,d) 56.3 MeV 8−4935
^{26}Mg(^{3}He,pγ)^{28}Al, 11-15 MeV, coincidence, ang. correl. and branching ratio meas. 8−13129
^{26}Mg(n,α)^{23}Ne, near 14 MeV, differential cross sections compared to compound-nucleus theoretical results 8−37350
^{26}Mg(p,p′), 6 MeV, spin-flip probability, ang. distrib., energy depend. 8−13078
^{26}Mg(p,π$^\pm$), 180 MeV, effect of Δ^{++} components in nuclei 8−33181

nuclei with mass number 20 to 38 continued
^{28}Mg prod., life sciences appl. 8−15882
Mg(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
Mg(p,p), A=24, 26, 5-6 MeV, polarisation in elastic scatt., thick target method 8−13079
Na bombarded by ions, Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8−25216
^{21}Na, mag. moment and lifetime of first excited state determ. 8−550
^{21}Na, mag. moment of first excited state, time differential plunger meas. 8−37271
^{21}Na, produced in ^{2}H(^{20}Ne,nγ)^{21}Na, energy level lifetime 8−41631
^{21}Na, study of excited states, spin and parity *(French)* 8−33158
^{22}Na, populated by ^{19}F(α,n), 5.5 MeV, level lifetimes, instrument testing 8−13375
^{22}Na, resonance levels obs. in ^{20}Ne(d,p_0) 8−46072
^{23}Na, band mixing, E2 and M1 matrix elements *(French)* 8−45994
^{23}Na, in electrolyte solns., NMR relax. *(Russian)* 8−15053
^{23}Na, low-lying excited states calc. by generator coordinate method 8−12974
^{23}Na, NQR in $NaD_3(SeO_3)_2$, second-order quadrupole shift, temp. depend. 8−15055
^{23}Na, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{23}Na(n,n′γ), 0.52-4.23 MeV, cross-sections, ang. distribs., mag. substate populations meas. 8−13100
^{23}Na(n,n′γ), cross-section near threshold 8−8808
^{24}Na, gamma radioactive source, buildup factor determination for meas. in air *(Rumanian)* 8−49132
^{24}Na(γ,n), 42 MeV, photoneutron flux determ. from induced activity meas. in water 8−20112
^{32}Na, π bound states in finite nuclei 8−46013
Na(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
Ne Coulomb excitation of sd shell nuclei, B(E2) values, bombarded by ions, Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8−25216
^{12}Ne, study of excited states, spin and parity *(French)* 8−33158
^{20}Ne, 0g orbit mixing via (e,e′), one-step forbidden transition anal. 8−493
^{20}Ne, 40 MeV excitation, ^{10}B(^{10}B,α)^{16}O, excitation functions, resonance like structures 8−29496
^{20}Ne, [211] quartet state, by study of ^{19}F(p,α)^{16}O, 1.5 to 2 MeV 8−46006
^{20}Ne, configuration mixing and α-cluster transfer on ^{16}O 8−46004
^{20}Ne, dipole moment using transient mag. field from ion passing through ferromag. *(Dutch)* 8−29386
^{20}Ne, form. in ^{19}F(p,γ) reaction, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8−17191
^{20}Ne, from ^{16}O(α,γ), 10.27 MeV, first $T=1,2^+$ state radiative width meas. rel. to analogue β-decays 8−549
^{20}Ne, heavy-ion α-transfer reactions, optical parameters *(Japanese)* 8−4962
^{20}Ne, highly excited α-unbound states, cluster model 8−634
^{20}Ne, low energy positive parity spectra, $2\hbar\omega$ excitations, ang. momentum projected deformed particle-hole model calcs. 8−25119
^{20}Ne, one-body density matrix determ. by iterative steepest descent approach 8−17125
^{20}Ne, Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations 8−29435
^{20}Ne, strong polarisation of levels obs. in ^{16}O(^{16}O,^{12}C) reaction 8−25213
^{20}Ne+^{12}C, 17 to 35 MeV, excitation functions, optical model anal. 8−41759
^{20}Ne+Al, relativistic ions, product spectra, statistical models 8−638
^{20}Ne(d,^{6}Li)^{16}O, Goldfarb-Buttle method *(Chinese)* 8−8834
^{20}Ne(d,p_0)^{21}Ne, 0.5-0.662 MeV, resonance obs., ^{22}Na levels 8−46072
^{20}Ne(d,p)^{21}Ne, 0.5-0.66 MeV, proton ang. distrib., excitation function, DWBA calc. 8−29475
^{20}Ne(e,e′) data anal., 0g orbit mixing 8−493
^{21}Ne low lying states from ^{17}O(^{6}Li,d), weak coupling behaviour, ^{20}Ne+n 8−46100
^{21}Ne, low-lying excited states calc. by generator coordinate method 8−12974
^{21}Ne, mag. moment and lifetime of first excited state determ. 8−550
^{21}Ne, recoil into vacuum g-factor meas. of $5/2^+$ state, 0.350 MeV 8−37272
^{21}Ne, transition probabilities and multipole moments between states calc. by generator coordinate method 8−13022
^{21}Ne*, produced in ^{2}H(^{20}Ne,p)^{21}Ne*, mag. moment meas. 8−41631
^{22}Ne, produced by ^{4}He(^{19}F,p)^{22}Ne, lifetime of lowest 4^+ state in ^{22}Ne 8−37307
^{22}Ne, stopping powers of Z=10 to 18 ions, using DSAM lifetime meas. 8−47456
^{22}Ne(4_1^+) from ^{4}He (^{19}F,pγ), lifetime meas. by high vel. coincidence DSA method 8−33148
^{30}P, compound nucl. form. by ^{14}N+^{16}O at 20-60 MeV 8−4954
^{31}P, analogue-antianalogue M1 transitions, nucl. shape change influence 8−13006
^{31}P excited residual states from ^{32}S(γ,p) at 16-27 MeV, cross sections 8−8795
^{31}P, NMR in amorphous ferromag. $Fe_{75}P_{15}C_{10}$ 8−2770
^{31}P(d,p), (d,α), cross-section fluctuations at 150° 8−29476
^{31}P(γ,x), (x=2p,2pn,3p,3pn), 75 to 640 MeV, yields and cross sections 8−37328
^{31}P(p,γ)^{32}S, ang. distribs. of γ-rays from decay of ^{32}S reson. states 8−13085
^{31}P(t,p), two-nucleon stripping reactions with Tabakin pot. 8−21570
^{32}P, Cherenkov counting using Teflon vials 8−858
^{32}P Cherenkov effect detect. efficiency determ. by ^{60}Co external source on liq. scintillation system 8−25387
^{32}P, spin-parity assignments from ^{34}S(d,α)^{32}P 8−17219
^{34}P ground and excited states from ^{30}Si(^{7}Li,^{3}He), mass excess, cross section 8−25230
P(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
S isotopes, pionic, energy and width of 3d-2p transitions *(Russian)* 8−25760
^{31}S excited residual states from ^{32}S(γ,n) at 16-27 MeV, cross sections 8−8795
^{31}S, studied via ^{28}Si(^{6}Li,t)^{31}S, t-energy spectra and reaction mechanism 8−41756
^{32}S, eikonal approx. of electron scatt. by spherically symmetric nuclei 8−37330
^{32}S (p,p), 5-6 MeV, polarisation in elastic scatt., thick target method 8−13079
^{32}S, decay of reson. states populated in ^{31}P(p,γ) 8−13085
^{32}S, exchange current corrections for muon partial capture rates 8−33152
^{32}S, fragment shell effects in fission determ. from many nucleon correlations 8−41690
^{32}S, transient field g-factor meas. on 2_1^+ states 8−37273
^{32}S+Mg(^{27}Al), 160 MeV, evaporation residues, isotope and element distribs. meas. 8−13153
^{32}S(^{3}He,p), cross section meas., verification of ^{34}Cl shell model calcs. 8−13119
^{32}S(d,α), ang. momentum transfers, determ. using polarized beams 8−37354
^{32}S(d,α)^{30}P, 2 to 2.5 MeV, fluctuation anal., ^{24}Cl compound nucleus 8−46070
^{32}S(γ,n), (γ,p), cross sections, ^{31}S, ^{31}P excited residual states 8−8795
^{33}S levels, excited by α-capture reactions 8−33124
^{34}S, transient field g-factor meas. on 2_1^+ states 8−37273
^{34}S(d,α)^{32}P, 8.25-9.50 MeV, tensor-polarised deuterons, spin-parity assignments to ^{32}P levels 8−17219
^{34}S(d,d), elast. and inelast. scatt. of 11.8 MeV polarised deuterons 8−33191
^{36}S(d,p), 3.2 MeV, proton spectra meas., ^{37}S energy level scheme *(Russian)* 8−41733
^{37}S energy level scheme from (d,p) study, proton spectra *(Russian)* 8−41733
S(d,p), A=32, 34, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
Si (n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
Si, bombarded by ions, Coulomb excitation of sd shell nuclei, B(E2) values, lifetime meas. 8−25216
Si isotopes, pionic, energy and width of 3d-2p transitions *(Russian)* 8−25760
^{26}Si, isoscalar and isovector E2 transition matrix elements 8−25148
^{27}Si, γ-branchings and mixing ratios determ. from ^{24}Mg(α,nγ) 8−17224
^{27}Si, studied via ^{24}Mg(^{6}Li,t)^{27}Si, t-energy spectra and reaction mechanism 8−41756
^{28}Si, dipole moment using transient mag. field from ion passing through ferromag. *(Dutch)* 8−29386
^{28}Si dipole reson., effect of 2^+ core excitation 8−17166
^{28}Si electrofission, decay to ^{12}C(2_1^+)+^{16}O(0_1^+) fragments 8−41793
^{28}Si, energy levels populated in ^{24}Mg(α,n)^{27}Si, threshold to 13.1 MeV 8−618
^{28}Si, excited levels populated in ^{27}Al(p,α)^{24}Mg at E_p=1540-2220 keV 8−17189
^{28}Si, fast moving ion in Fe, nature of dynamic mag. field 8−43697
^{28}Si, π bound states in finite nuclei 8−46013
^{28}Si resonances obs. in ^{27}Al(p,α_0)^{24}Mg at 1.12-3.08 MeV 8−13091
^{28}Si, shell model and statistical spectroscopic anal. 8−29390
^{28}Si, Sp(6,R) symmetry, α-breakup amplitudes, of giant E2 excitations 8−29435
^{28}Si+^{12}C elastic scatt. ang. distribs., optical pot. 8−8855
^{28}Si+^{12}C(^{16,18}O) scatt., ^{28}Si pot. quadrupole deform. length determ. 8−12963
^{28}Si+^{9}Be, ^{12}C, ^{14}N or ^{16,18}O, low energy elastic scatt., global optical model anal. 8−25229
^{28}Si+n, isobaric analogue resonances from total and differential elastic cross sections 8−41715
^{28}Si+p, 400 MeV, p-γ coincidence meas. of multinucleon removal in quasifree process 8−37342
^{28}Si(^{16}O,^{16}O), 45 to 63 MeV, energy depend. surface transparent optical pot. 8−46099
^{28}Si(^{3}He,α) inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{28}Si(^{9}Be,^{8}Be), DWBA anal., spectroscopic factor determ. 8−17098
^{28}Si(^{9}Be,^{9}Be), 14-26 MeV, universal optical pot. 8−25219
^{28}Si(α,^{2}He)^{30}Si, 65 MeV, spectrum ang. distrib. meas. 8−29492
^{28}Si(α,α), elastic and inelastic scatt., compound nucleus contrib. anal. 8−37356
^{28}Si(d,α), ang. momentum transfers, determ. using polarized beams 8−37354
^{28}Si(d,p), 18 MeV, cross-sections calcs. from pseudopotentials, spectroscopic factors 8−572
^{28}Si(d,p), Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
^{28}Si(d,p)^{29}Si, 12.3 MeV, tensor analysing powers 8−29479
^{28}Si(p,p′), 135 MeV, high spin unnatural parity states, anal. 8−37334
^{28}Si(p,p′γ)^{28}Si, 3.5-3.8 MeV, spin-flip probability in resonance region *(Russian)* 8−41725
^{29}Si, NMR studies of aqueous silicate solns. 8−15051
^{30}Si(^{3}He,pγ)^{32}P, 11-15 MeV, coincidence, ang. correl. and branching ratio meas. 8−13129
^{30}Si(^{7}Li,^{3}He)^{34}P, 24 MeV, spectra, ang. distribs., mass excess, cross section 8−25230
^{30}Si(γ,2p), 75 to 640 MeV, yields and cross sections 8−37328
^{30}Si(n,β)^{31}P transmutation doping 8−6107
Si(n,α)Mg, A=28,29, 14.1 MeV, cross sections determ. 8−37348
S(μ^-, e^-), upper limit for muon-electron conversion 8−21547

nuclei with mass number 39 to 58
4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
A=53 nuclei, struct., level props., ENSDF data 8−17076
isomeric A=48-50 nuclei, mag. moments and core polarisation 8−37274
(π,Xγ) reaction at 70 MeV on s-d shell nuclei 8−29504
Ar+Th, 388 MeV, deep inelastic reactions, double differential cross section calc. 8−8856
^{39}Ar low lying states from ^{37}Cl(α,d), spectra, ang. distribs., spins 8−25212
^{40}Ar, implantation in Fe, perturbed ang. distrib. 8−12969
^{40}Ar+^{164}Dy, evaporation residue prod. depend. on excitation energy of compound nucl. 8−21607

nuclei with mass number 39 to 58 continued
^{40}Ar+^{208}Pb, 1.8 GeV/nucleon, appl. of multiple-collision model for pion prod. 8−37365
^{40}Ar+^{58}Ni, 280 MeV, coincidence meas. of deep inelastic collisions 8−33206
^{40}Ar+^{58}Ni, deep inelastic collision at 280 MeV, fragment energy and spin 8−21599
^{40}Ar(α,nγ), struct. of high spin positive parity states in ^{43}Ca 8−46025
^{40}Ar(e,e′), 65 to 115 MeV, low lying level struct., lifetimes 8−8798
^{40}Ar(p,d), 35 MeV, DWBA anal., spectroscopic factors 8−17204
^{40}Ar(p,n), 8.3 meV, ^{40}K excitation energy, γ decay, of lowest T=2 state 8−8769
^{40}Ar(p,p)^{40}Ar, E_p=1 MeV, cross section meas. 8−13089
^{41}Ar, near-stack reactor effluent dispersion studies by SF_6 tracer method 8−11992
^{46}Ar decay, gamma-ray spectra meas., half-life determ. 8−21513
^{40}C, π, electroproduction, near threshold, inelastic response functions 8−33172
^{14}Ca, A=40,42,44,48, E0 matrix elements determ. from (e,e′) scatt. 8−33141
^{14}Ca(p,p), A=40, 42, 44, 48, 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{39}Ca-^{39}K mirror nuclei, configuration mixing, Coulomb energy anomaly 8−25099
^{40}Ca, 1$^-$, T=0 state at 6.95 MeV, isospin forbidden electroexcitation 8−25177
^{40}Ca (α,α), α-nucleus pot., microscopic calc. 8−8788
^{40}Ca (p,p), elastic scatt., polarisation and spin-orbital amplitude parameters, 1 GeV *(Russian)* 8−17208
^{40}Ca, alpha transfer to 4p-4h states obs. in ^{36}Ar(^{6}Li,d) 8−21590
^{40}Ca, dipole polarisability sum rule, HF calc., 8−21504
^{40}Ca, exchange current corrections for muon partial capture rates 8−33152
^{40}Ca, excitation of low lying collective states by (n,n′) scatt. 8−17205
^{40}Ca, neutron ang. distrib. following polarized muon capture, relativistic corrections 8−13063
^{40}Ca, nucl. effects in radiative muon capture 8−29428
^{40}Ca, nucleon-nucleon scatt., correlations, short-range, with pseudopotentials 8−37225
^{40}Ca, photo-nucleon spectra calc. in shell and pre-equilibrium model *(Russian)* 8−579
^{40}Ca photonuclear reactions, differential cross section calcs., direct-semidirect model 8−33166
^{40}Ca, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{40}Ca, pπα penetration range, 200 MeV to 2 GeV *(French)* 8−4964
^{40}Ca structure, supersoft-core pot., HF approx., ground state props. 8−533
^{40}Ca+^{16}O, single-particle polarisation, two-centre shell model 8−13142
^{40}Ca+^{40}Ca, 284 MeV, energy spectra struct. obs. 8−4958
^{40}Ca+^{40}Ca, 3D TDHF calcs. 8−626
^{40}Ca+^{40}Ca, evaporation-residue cross-sections meas. 8−33211
^{40}Ca+^{40}Ca, low impact parameters, energy dependence of fusion cross section 8−41751
^{40}Ca+α, core-like pot., resonating group anal. 8−4922
^{40}Ca+p, energy dependent radial functions formalism of continuum shell model 8−25185
^{40}Ca+p, optical model potential, spin-orbit component from internucleon pot. 8−46039
^{40}Ca(^{16}O,^{15}N)^{41}Sc, DWBA anal. including nuclear wave function polarisation 8−629
^{40}Ca(^{3}He,^{3}He), 27-84 MeV, energy depend. of optical model param. 8−41736
^{40}Ca(^{6}Li,^{6}Li), 30 MeV, back-angle anomalies 8−640
^{40}Ca(^{9}Be,^{8}Be), DWBA anal., spectroscopic factor determ. 8−17098
^{40}Ca(^{9}Be,^{9}Be), 14-26 MeV, universal optical pot. 8−25219
^{40}Ca(K$^+$,Kp$^+$), DWIA calc. of proton knockout as probe of deep hole states 8−13163
^{40}Ca(α,α), 104 MeV, optical model analysis 8−41737
^{40}Ca(α,α), 26 to 47 MeV, large angle scatt., differential cross section 8−46082
^{40}Ca(α,α), 36-61 MeV, large angle struct. 8−41743
^{40}Ca(α,α), back-angle anomaly, RGM and GCM 8−616
^{40}Ca(α,α), E_α=27.2 MeV, ang. distrib. meas. 8−13120
^{40}Ca(α,α), optical pot., nuclear glory effect 8−21578
^{40}Ca(α,d)^{42}Sc, 40 MeV ang. distribs. meas., Sc levels anal. 8−21579
^{40}Ca(d,α), ang. momentum transfers, determ. using polarized beams 8−37354
^{40}Ca(d,p), 7 MeV, cross-sections calcs. from pseudopotentials, spectroscopic factors 8−572
^{40}Ca(e,e), 757.5 MeV, cross-sections meas. 8−8801
^{40}Ca(γ,γ), 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8−13059
^{40}Ca(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in ‘fission-like’ reactions 8−598
^{40}Ca(p,p′), 25-46 MeV, effects of two-step process determ. 8−21569
^{40}Ca(p,p), 1.04 GeV elastic scatt., polarisation 8−21549
^{40}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{40}Ca(p,π$^+$)^{41}Ca, relativistic pion stripping formalism 8−41717
^{40}Ca(π$^+$,π$^{+\prime}$), 50 MeV, energy spectra and cross sections 8−25241
^{40}Ca(t,p)^{42}Ca, two-nucleon stripping process with effective interactions 8−610
^{41}Ca, deorientation of highly stripped ions recoiling in vacuo 8−37325
^{41}Ca(d,p)^{42}Ca, two-body matrix elements in fp shell 8−21574
^{42}Ca 0$^+$ 4p-2h and 6p-4h configs. populated in ^{38}Ar(^{6}Li,d) 8−25220
^{42}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{43}Ca, four-particle one-hole states anal. by ^{41}K(α,d) 8−21580
^{43}Ca high spin positive parity states, struct., from ^{40}Ar(α,nγ) 8−46025
^{44}Ca(^{6}Li,^{6}Li), 30 MeV, back-angle anomalies 8−640
^{44}Ca(α,α), 36-61 MeV, large angle struct. 8−41743
^{44}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{47}Ca, low-lying levels anal. in ^{48}Ca(d,t) reactions 8−13114
^{48}Ca, and rare isotopes, beam prod. using Cs sputter source 8−29686
^{48}Ca, double beta decay, electronic lepton number conservation law 8−17150
^{48}Ca, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{48}Ca, zz 8−12964
^{48}Ca+^{15}N(^{18}O) fusion-evaporation reaction, ^{59,60}Fe, ^{59,60}Co yrast decay scheme 8−13154
^{48}Ca+^{16}O 56 MeV, transitions to resolved levels, optical model parameter 8−41758

nuclei with mass number 39 to 58 continued
^{48}Ca(^{18}O, ^{17}C), 102 MeV, ^{17}C ions mass excess, low lying level struct. 8−8744
^{48}Ca(^{3}He,t), finite-range formalism anal. of (^{3}He,α) (α,t) sequence 8−17229
^{48}Ca(d,t)^{47}Ca, 13.5 MeV, polarised deuterons, low-lying levels in ^{47}Ca 8−13114
^{48}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
Ca(d,p), A=40, 48, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
Ca(p,p), 1 GeV, neutron densities 8−17087
Ca(p,p), 30 MeV, A=40, 48, pick-up and inelastic scatt. contributions to p optical pot. 8−25182
Ca(p,p′), 19 MeV, nuclear struct. anal. 8−17197
Ca(π$^\pm$,π$^\pm$), 130 MeV, A=40,48, π$^+$, π$^-$ cross sections, neutron radius 8−25240
^{40}Cd(d,p)^{41}Ca, 11 MeV, effect of Skyrme type density depend. effective pots. 8−46069
^{55}Co, IAR, J$^\pi$ via ^{54}Fe(p,p) 3.28-4.53 MeV 8−574
^{56}Co levels populated in ^{58}Ni(d,αγ), 7 MeV, mean lifetimes 8−4950
^{57}Co source, quantum beats of recoil-free γ radiation 8−43748
^{59}Co+n, calc. using pre-equil. statistical model code GNASH 8−4946
Cr (d,p), A=50, 52, 54, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
Cr, A=48,50,52,54, short-range correlations and pseudopotentials, Hartree Fock Bogoliubov method 8−535
Cr, A=48-52, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
Cr, fluoresc. yield meas. from electron-capture decay of ^{54}Mn 8−21530
Cr, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Cr(^{16}O,^{16}O′γ), 36 MeV, g-factors of first 2$^+$ states in ^{50,54}Cr 8−13138
^{47}Cr, β-decay GT matrix elements, $T_{1/2}$ 8−557
^{50}Cr+^{14}N, energy dissipation as func. of angle data comparison to classical and diffusion models 8−21604
^{50}Cr+^{22}Ne, energy dissipation as func. of angle data comparison to classical and diffusion models 8−21604
^{50}Cr(^{3}He,nγ)^{52}Fe, low-lying states of ^{52}Fe 8−4952
^{50}Cr(n,n) 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
^{50}Cr(p,p) and (p,p′), E_p=6 MeV, cross sections, opt. pot. parameters 8−13086
^{50}Cr(τ,α), 16 MeV, ^{49}Cr energy levels, spins, parities, spectroscopic factors 8−33199
^{52}Cr levels populated in decay of ^{52}V, ^{52}Mu^g and ^{52}Fe→^{52}Mn→^{52}Cr 8−21529
^{52}Cr, total photoneutron cross section, high resolution meas., isospin effects 8−8792
^{52}Cr(^{14}N,2p2nγ), 50-75 MeV, ^{62}Cu high spin states, level scheme *(French)* 8−21496
^{52}Cr(n,n), 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
^{52}Cr(p,p′), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
^{52}Cr(p,p) and (p,p′), E_p=6 MeV, cross sections, opt. pot. parameters 8−13086
^{55}Cr, half-life determ. 8−4915
Fe, A=52, 4, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
Fe, A=52,54,56,58, short-range correlations and pseudopotentials, Hartree Fock Bogoliubov method 8−535
Fe, Co, Ni in cosmic rays, abundances rel. to time delay between nucleosynthesis and accel. 8−28455
Fe, integral neutron capture cross sections in GCFR lattices 8−13246
Fe isotopes A=53-58, spectroscopic calcs. using mass independ. effective interaction, yrast levels 8−41638
Fe, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Fe, photonuclear cross sections in giant reson. region 8−17178
Fe, spallation by 0.3-1.0 GeV photons, cross-sections 8−41691
Fe+n, A=54, 56, 1-70 keV, total cross section, resonance parameters *(Russian)* 8−17210
^{51}Fe, β-decay GT matrix elements, $T_{1/2}$ 8−557
^{52}Fe, low-lying excited states, ^{50}Cr(^{3}He,nγ)^{52}Fe reaction 8−4952
^{52}Fe→^{52}Mn^m→^{52}Cr, γ-ray spectra, ^{52}Cr levels 8−21529
^{54}Fe neutron capture, asymmetric s-wave reson., background interf. 8−21563
^{54}Fe, surface structure analysis using Blair phase shifts 8−12959
^{54}Fe(^{16}O,^{16}O′γ), 36 MeV, g-factors of first 2$^+$ states in ^{54}Fe 8−13138
^{54}Fe(^{3}Hg,pγ)^{56}Co, 11-15 MeV, coincidence, ang. correl. and branching ratio meas. 8−13129
^{54}Fe(p,α)^{51}Mn, multi-step-direct-reaction anal. 8−8818
^{54}Fe(p,p′), cross sections and spectra, exciton model *(Russian)* 8−21536
^{54}Fe(p,p), 3.28-4.53 MeV, ^{55}Co IAR, J$^\pi$ assignments 8−574
^{55}Fe β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{55}Fe, X-ray source, parameter determ. 8−5081
^{56}Fe, 6$^+$ doublets populated in heavy-ion compound reactions, side feeding 8−13014
^{56}Fe, fast moving ion in Fe, nature of dynamic mag. field 8−43697
^{56}Fe, hadron generated cascades, energy flux absorption length, 1-20 TeV *(Russian)* 8−28468
^{56}Fe, K$^+$ interaction with nuclei 8−13165
^{56}Fe, radiative transitions from unbound states obs. in neutron inelastic scatt. *(Russian)* 8−41664
^{56}Fe, recoiling in Fe, enhanced transient fields 8−37284
^{56}Fe, surface structure analysis using Blair phase shifts 8−12959
^{56}Fe yrast band, coexistence of prolate and oblate shapes 8−12947
^{56}Fe+^{16}O, energy dissipation as func. of angle data comparison to classical and diffusion models 8−21604
^{56}Fe+n reactions in man, dose from 14.8 MeV 8−20275
^{56}Fe+p, 39 MeV, intranuclear cascade model 8−33185
^{56}Fe(^{13}C, 2np), ^{56}Fe(^{15}N, n2p), ^{66,68}Ga isomeric states, lifetimes, g-factors 8−33147
^{56}Fe(^{3}He,t)^{56}Co, ang. distrib. meas., DWBA calc. 8−29491
^{56}Fe(n,γ), resonance state, partial radiation widths of high energy transitions 8−13104
^{56}Fe(n,n′), 14 MeV, γ competition in decay of unbound states 8−8811
^{56}Fe(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{56}Fe(n,n′γ), up to 14.6 MeV, radiation and neutron widths for highly excited levels *(Russian)* 8−605
^{56}Fe(n,p)^{56}Mn, 14.8 MeV, cross section determ. 8−37347

nuclei with mass number 39 to 58 continued
^{57}Fe, 14 keV state excitation by synchrotron radiation 8−25147
^{57}Fe, γ-ray emission, test of time reversal invariance 8−29421
^{57}Fe, hyperfine mag. field in FeSn$_2$, Γ-reson. spectroscopy obs. *(Russian)* 8−39486
^{57}Fe implants in Si, electric quadrupole coupling at Fe nuclei 8−27137
^{57}Fe, isomer shift scale construction, based on nuclear gamma resonance *(Russian)* 8−35070
^{57}Fe, Mossbauer effect in Ge, appl. of in-beam implantation method 8−25372
^{57}Fe, Mossbauer expts. on optically active chiral molecules, optical activity analogy 8−27124
^{57}Fe, Mossbauer spectra of FeBr$_2$ and FeI$_2$, spin ordering obs. 8−43720
^{57}Fe nuclei, spin-echo signal recording by pulse generator and fast signal averager 8−21188
^{57}Fe(α,pγ), 13 MeV, ^{60}Co low lying states, spin constraints, γ mixing ratios 8−29487
^{58}Fe high spin states from ^{55}Mn(d,pγ), decay props., γ-γ coincidence 8−21515
^{58}Fe, surface structure analysis using Blair phase shifts 8−12959
^{58}Fe(^{3}He,p), ^{60}Co low lying states, DWBA anal. 8−29478
^{58}Fe(γ,n), near threshold, cross sections 8−13055
Fe(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
Fe(p,p′), A=54,6, E=17.2, 20.4, 24.6 MeV polarised protons, optical model, DWBA anal. 8−13094
K, strength function of deeply bound hole states 8−17113
^{39}K high spin states from ^{24}Mg(^{18}O, p2nγ), decay scheme 8−25232
^{39}K, spins of p-h states from analysing powers of (d,τ) reacts. 8−25111
^{40}K, decay consts. for use in geochronology and cosmochronology 8−28189
^{40}K excitation energy, γ decay, of lowest T=2 state populated in ^{40}Ar(p,n) 8−8769
^{40}K, g-factor determ. from perturbed ang. distribs. 8−12970
^{40}K, implantation in Fe, perturbed ang. distrib. 8−12969
^{41}K, implantation in Fe, perturbed ang. distrib. 8−12969
^{41}K, l-forbidden M1 decay from 1st excited state 8−13024
^{41}K(α,d)^{43}Ca, 40 MeV, four-particle one-hole states 8−21580
^{41}K(p,p′), impurity in Co, hyperfine field calc. by gamma ray ang. corr. method 8−6340
^{42}K, levels, studied by ^{44}Ca(d,α)^{42}K reactions, 11 MeV, DWBA analysis 8−8723
Mn photonuclear cross sections in giant reson. region 8−17178
^{52}Mn, 2-5 GeV photospallation, ratios of isomeric yields *(Russian)* 8−46047
^{52}Mn half-life meas. 8−17152
^{52}Mn, mag. hyperfine splitting const. in Co, NMR-ON meas. 8−43651
^{52}Mn, recoil-implanted in Au, nuclear orientation 8−43716
^{54}Mn, electron-capture decay, K X-ray emission rate determ. 8−21530
^{54}Mn, nuclear orientation in Ag-Mn dil. alloy 8−43713
^{54}Mn orientation in dil. Au-Mn(Cr)(Fe), spin glass state and Kondo effect 8−6514
^{55}Mn, NMR and mag. meas. in BCC Fe-Co-Mn and Fe-Ni-Mn alloys 8−39442
^{55}Mn, NMR in Mn$_4$N$_x$ 8−2768
^{55}Mn, NMR meas., hyperfine field in weakly antiferromag. β-Mn alloys 8−39441
^{55}Mn, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{55}Mn, spallation by 0.3-1.0 GeV photons, cross-sections 8−41691
^{55}Mn, spin echo form., parametric mechanism, spin dynamics *(Russian)* 8−23367
^{55}Mn(α,pγ), 12 to 24 MeV, ^{58}Fe high spin states, decay props., γ-γ coincidence 8−21515
^{55}Mn(γ,γ), 5.5-11.4 MeV, interference between reson. and Thomson scatt. 8−33167
^{55}Mn(p,p), (p,p′), cross section fluctuations anal. 8−21551
Mn(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
Ni(^{35}Cl,^{35}Cl), A=58,62, 100-170 meV, elastic scatt. ang. distrib. 8−21605
^{a}Ni+^{35}Cl, A=58, 62, 155-170 MeV, fission prod. yields, ang. distribs. and mean kinetic energies 8−41790
^{55}Ni, β-decay GT matrix elements, T$_{1/2}$ 8−557
^{57}Ni, studied via ^{54}Fe(^{6}Li,t)^{57}Ni, t-energy spectra and reaction mechanism 8−41756
^{58}Ni (p,p), 1.04 GeV, elastic scatt. 8−21549
^{58}Ni, charge density, single particle struct., using proton wave functions 8−45995
^{58}Ni, determ. of g-factor of 2_1^+ state in Fe 8−43697
^{58}Ni, giant electric resonances, study of ^{54}Fe(α,γ)^{58}Ni 8−41739
^{58}Ni, isovector M8 strength fragmentation, inelastic electron scatt. meas. 8−37305
^{58}Ni, short-range correlations and pseudopotentials, Hartree Fock Bogoliubov method for even-even isotopes 8−535
^{58}Ni, spherical nuclei, excitation of collective in high-energy proton interactions 8−17073
^{58}Ni+^{16}O deep inelastic collision, hot spot particle emission 8−13152
^{58}Ni+^{32}S, 110, 132 MeV, fusion evaporation residues, Monte Carlo simulation 8−41799
^{58}Ni+^{40}Ar, deep inelastic collision at 280 MeV, fragment energy and spin 8−21599
^{58}Ni+π, E$_\pi$=0, 45 MeV γ-ray spectra, prod. cross-section for residual nuclei meas. 8−649
^{58}Ni(^{12}C,2p)^{68}Ge, E=36 MeV, lifetimes of ^{68}Ge excited states 8−13020
^{58}Ni(^{16}O,2pγ)^{72}Se, 54.5-64.5 MeV, high spin and excitation regions anal. 8−25226
^{58}Ni(^{3}He,^{3}He), 27-84 MeV, energy depend. of optical model param. 8−41736
^{58}Ni(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{58}Ni(^{3}He,pγ)^{60}Cu, 11-15 MeV, coincidence, ang. correl. and branching ratio meas. 8−13129
^{58}Ni(^{9}Be,^{9}Be), 14-26 MeV, universal optical pot. 8−25219
^{58}Ni(α,α), 139 MeV, optical model analysis 8−41737
^{58}Ni(d,$\alpha\gamma$), 7 MeV, mean lifetimes of ^{56}Co levels 8−4950
^{58}Ni(n,γ), resonance state, partial radiation widths of high energy transitions 8−13104
^{58}Ni(p,γ)^{59}Cu, γ-decay of ^{59}Cu analogue resons. 8−13005

nuclei with mass number 39 to 58 continued
^{58}Ni(p,p′), E=17.2, 20.4, 24.6 MeV, polarised protons, optical model, DWBA anal. 8−13094
^{58}Ni(p,p), 0.8 GeV, ang. distrib. meas. 8−25186
^{58}Ni(p,p), 1 GeV, neutron densities 8−17087
Sc, A=43, 47, d$_{3/2}$ hole states, wave functions mag. moment, M2 transitions, shell model 8−17116
Sc, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
Sc, strength function of deeply bound hole states 8−17113
^{41}Sc-^{41}Ca Coulomb energy shift of mirror nuclei, 2p-2h core excitations influence 8−12953
^{41}Sc-^{41}Ca mirror nuclei, configuration mixing, Coulomb energy anomaly 8−25099
^{42}Sc, β^+ decay, isospin symm. hindered, branching fraction 8−21526
^{42}Sc, energy levels anal. by ^{40}Ca(α,d) at 40 MeV 8−21579
^{43}Sc, g-factor of 3/2$^+$ hole state meas. in (α,p) react. 8−21492
^{43}Sc, mag. moments in 19/2$^-$ state, time-differential perturbed ang. distrib. method 8−33117
^{43}Sc, resonance struct obs. in ^{42}Ca(p,γ)^{43}Sc below 2.75 MeV 8−13072
^{44}Sc, 2-5 GeV photospallation, ratios of isomeric yields *(Russian)* 8−46047
^{44}Sc, 68 keV state, g-factor, time differential PAC meas. 8−505
^{45}Sc, neutron stripping and pick-up, reanalysed data, sum rule anal. and spectroscopic factors 8−8828
^{45}Sc+^{22}Ne, energy dissipation as func. of angle data comparison to classical and diffusion models 8−21604
^{45}Sc+n, total cross section, neutron resonances, thermal scatt. parameters 8−8821
^{45}Sc(α,α), 27.2 MeV, elastic scatt. differential cross section 8−13116
^{45}Sc(n, γ), 2.5-100 keV, s- and p-wave radiative widths 8−17187
^{45}Sc(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in ‘fission-like’ reactions 8−598
^{46}Sc, impurity in mica, neutron fluence meas. using mica as nuclear track and activation detector 8−13346
^{49}Sc, location of major 2p$_{1/2}$ strength using (^{7}Li,^{6}He) react. 8−25095
^{48}T(p,p′), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
Ti, 20 to 50 MeV, total reaction cross sections, compared to optical model prediction 8−33174
Ti, A=44,46,48,50, short-range correlations and pseudopotentials, Hartree Fock Bogoliubov method 8−535
Ti, A=44-50, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
Ti, A=46,50, neutron radius determ., charge symm. 8−29380
Ti, K$_\beta$/K$_\alpha$ following K-electron capture and X-ray excitation 8−13031
^{43}Ti, mag. moments in 19/2$^-$ state, time-differential perturbed ang. distrib. method 8−33117
^{44}Ti, yrast states as α-particle cluster states 8−33114
^{45}Ti d$_{3/2}$ hole states, wave functions, mag. moment, M2 transitions, shell model 8−17116
^{46}Ti, eikonal approx. of electron scatt. by spherically symmetric nuclei 8−37330
^{46}Ti(d,d), 10 MeV, optical model calc. 8−41729
^{47}Ti(α,α′), 15.35 MeV, level density parameters, statistical model anal. 8−13130
^{47}Ti(α,p), 15.35 MeV, level density parameters, statistical model anal. 8−13130
^{47}Ti(α,pγ), 10 MeV, ^{50}V excited states, lifetimes 8−21583
^{48}Ti, (A+2)particles-2 holes excitations, interaction renormalisation 8−29375
^{48}Ti, eikonal approx. of electron scatt. by spherically symmetric nuclei 8−37330
^{48}Ti(α,pnγ)^{50}V, high-spin levels obs. by in-beam γ-spectroscopic technique *(French)* 8−21572
^{48}Ti(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{48}Ti(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in ‘fission-like’ reactions 8−598
^{48}Ti(p,n), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
^{48}Ti(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{48}Ti(p,p), E$_p$=1 GeV, elastic differential cross sections 8−13082
^{50}Ti, shell model calcs. using surface delta interaction 8−37290
V, A=47,59,51, spectra, e.m. moments, B(E2) and B(M1) values calc. 8−8745
V, A=47-51, effective charges and E2 transitions in 1f-2p shell nuclei 8−544
V isotopes, A=47-51 8−25114
V, K$_\beta$/K$_\alpha$ following K-electron capture and X-ray excitation 8−13031
^{48}V, K$^\pi$=4$^-$ rotational band 8−12944
^{50}V excited states populated in ^{42}Ti(α,pγ), lifetimes 8−21583
^{50}V, γ-ray spectrum from thermal neutron capture 8−21568
^{50}V, high-spin levels anal. in ^{48}Ti(α,pnγ) reaction *(French)* 8−21572
^{50}V, isobaric analogue states anal. from ^{51}V(p,d)^{50}V 8−33182
^{50}V(p,α), 13.85 MeV, level density parameters, statistical model anal. 8−13130
^{51}V, in MVO$_3$ polycryst., M=Na, Cs, NH$_4$, quadrupole coupling const., asymmetry parameter, chem. shift, NMR computer calcs. 8−6584
^{51}V, NMR meas. in V$_2$Zr, V$_2$Hf and V$_2$Ta *(Russian)* 8−23359
^{51}V, neutron resonance spectroscopy, R-matrix anal. 8−21555
^{51}V π^p high energy photoproduction and electroproduction 8−21543
^{51}V, shell model calcs. using surface delta interaction 8−37290
^{51}V, spallation by 0.3-1.0 GeV photons, cross-sections 8−41691
^{51}V+^{16}O, energy dissipation as func. of angle data comparison to classical and diffusion models 8−21604
^{51}V(^{16}O, p2nγ), lifetimes of ^{64}Zn levels 8−13019
^{51}V(^{16}O,p2n), E=36-46 MeV, high-spin states in ^{64}Zn 8−33145
^{51}V(^{16}O,p2nγ)^{64}Zn, E=50 MeV, lifetimes of quasi-rotational states of ^{64}Zn 8−17140
^{51}V(^{3}He,d), (^{3}He,^{3}He), 15 MeV, ang. distribs. meas., optical model anal. 8−33192
^{51}V(α,α), 27.2 MeV, elastic scatt. differential cross section 8−13116
^{51}V(α,nγ)^{54}Mn, Doppler shift attenuation meas. of ^{54}Mn excited state lifetimes 8−17141
^{51}V(e,e), mag. elastic scatt., radial distrib. of 1f$_{7/2}$ proton orbit using cross sections 8−13067
^{51}V(γ,3n), cross sections at intermediate energies 8−8793
^{51}V(p,d)^{50}V, 51.9 MeV, symm. pot. anal. 8−33182
^{51}V(p,n), 1.56-5.53 MeV, total cross section, excitation functions, isobaric analogue resonance 8−4943
^{51}V(π,π′γ), 200 MeV, ^{51}V levels 8−21611
^{54}V, β-decay scheme and T$_{1/2}$ determ. 8−21528

nuclei with mass number 39 to 58 continued

- ^{55}V β-decay scheme and $T_{1/2}$ determ., mass excess meas. 8–21528
- V(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8–13081
- V(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in 'fission-like' reactions 8–598

nuclei with mass number 59 to 89

- double-even nuclei, Ge to Sr, low-lying octupole states anal. 8–21497
- excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- odd mass nuclei, $59 \leqslant A \leqslant 149$, E2, M1 multipole mixing ratios 8–4911
- As, stable isotopes, masses meas. 8–12956
- ^{75}As, NQR freq. in aminoarsines, N-As bonds 8–25566
- ^{78}As, level struct. determ. in ^{80}Se(d,α) at 16 MeV 8–8827
- As(n,n′), 14.1 MeV, precompound processes 8–13093
- ^{76}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- ^{77}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- ^{79}Br, NQR in SrBr$_2$-H$_2$O and CaBr$_2$-H$_2$O, cryst. struct. 8–27110
- ^{79}Br+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8–37335
- ^{79}Br(d,pxn), excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- ^{79}Br(d,xn), excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- ^{80}Br, level struct. determ. from thermal (n,γ) meas. 8–41667
- ^{80}Br, study of excited states from ^{79}Br(n,γ) and ^{80}Se(p,nγ) *(French)* 8–29393
- ^{80}Br+p, 70 GeV/c, s-particles ave. multiplicity 8–21567
- ^{81}Br NQR in MAl$_2$Br$_7$ crysts. (M=Li, Na, K, Cs, NH$_4$, (CH$_3$)$_4$N), Zeeman effect 8–6597
- ^{81}Br(d,pxn), excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- ^{81}Br(d,xn), excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8–44609
- ^{81}Br(p,nγ), f28^{1}Kr low lying levels from γ spectra, γ-γ coincidences 8–25195
- ^{82}Br, level struct. determ. from thermal (n,γ) meas. 8–41667
- ^{82}Br, study of excited states from ^{81}Br(n,γ) and ^{82}Se(p,nγ) *(French)* 8–29393
- ^{83}Br, levels assignment, ^{83m}Se decay scheme obs. 8–17147
- ^{87}Br, β-decay into ^{87}Kr, delayed neutrons, high energy γ spectra, energy levels 8–25155
- Br(p,xn)^{77}Kr, prep. of carrier free ^{77}Kr using natural Br 8–29678
- Co, A=59,60, yrast decay scheme from ^{48}Ca+^{15}N(^{18}O) fusion-evaporation reactions 8–13154
- Co, admissibility as alloy constituent in primary cooling circuits of HTRs *(German)* 8–25294
- Co, mass dependence for radiative capture of 14.1 MeV neutrons 8–13087
- ^{59}Co, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8–41707
- ^{59}Co, NMR in Co$_2$TiAl 8–2760
- ^{59}Co NMR line breadth and chemical shift data compilation *(Japanese)* 8–15045
- ^{59}Co, NMR obs. of anisotropic hyperfine interactions in ferromag. Co 8–43658
- ^{59}Co, neutron resonance spectroscopy, R-matrix anal. 8–21555
- ^{59}Co, radiative transitions from unbound states obs. in neutron inelastic scatt. *(Russian)* 8–41664
- ^{59}Co, spallation by 0.3-1.0 GeV photons, cross-sections 8–41691
- ^{59}Co+n, 8-31 MeV, spin-spin depend. of total cross section 8–17172
- ^{59}Co(^{7}Li,2n), E=18 MeV, high-spin states in ^{64}Zn 8–33145
- ^{59}Co(d,p), ^{60}Co low lying states, DWBA anal. 8–29478
- ^{59}Co(e,e), mag. elastic scatt., radial distrib. of 1f$_{7/2}$ proton orbit using cross sections 8–13067
- ^{59}Co(γ,xn), x=2,3 or 4, cross sections at intermediate energies 8–8793
- ^{59}Co(n,2n), (n,np), (n,d), 16.2 to 21.8 MeV, γ-ray prod. cross sections 8–13080
- ^{59}Co(n,n′), 14.6 MeV, ToF spectra meas. *(Russian)* 8–41721
- ^{59}Co(n,n′), exciton neutron inelastic scatt. model *(Russian)* 8–33189
- ^{60}Co, decay to ^{60}Ni, aero-phonon, $4_1^+ \rightarrow 2_2^+$ γ-ray transition 8–17136
- ^{60}Co, exposure-rate calibration of small radioactive sources 8–41881
- ^{60}Co external source on liq. scintillation system for ^{32}P Cherenkov effect detect. efficiency meas. 8–25387
- ^{60}Co, gamma radioactive source, buildup factor determination for meas. in air *(Rumanian)* 8–49132
- ^{60}Co low lying states from ^{57}Fe(α,pγ), spin constraints, γ mixing ratios 8–29487
- ^{60}Co low lying states struct., orbital ang. momentum, spectroscopic factors 8–29478
- ^{60}Co, mag. hyperfine splitting const. in Co, NMR-ON meas. 8–43651
- ^{60}Co, oriented in Fe, triple pulse reson. studies 8–43675
- ^{63}Co, radioactive decay scheme from ^{64}Ni(n,d), 14.3 MeV 8–46053
- ^{64}Co, radioactive decay scheme from ^{64}Ni(n,p), 14.3 MeV 8–46053
- Co(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8–13081
- Cu, A=63, 65, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8–41707
- Cu, K_β/K_α following K-electron capture and X-ray excitation 8–13031
- Cu+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8–17213
- Cu+p, dimuon prod., struct. in Υ region near 9.5 GeV 8–17201
- Cu+π$^-$, 3.7 GeV/c, proton spectra *(Russian)* 8–41785
- ^{59}Cu, analogue resons. excited in ^{58}Ni(p,γ), γ-decay 8–13005
- ^{60}Cu levels from ^{60}Ni(^{3}He,t) 8–46079
- ^{62}Cu high spin states populated in ^{60}N+α, ^{63}Cu+p, ^{52}Cr+^{14}N, level scheme *(French)* 8–21496
- ^{62}Cu, yrast states obs. in ^{60}Ni(α,pnγ) and ^{63}Cu(p,pnγ) 8–12945
- ^{63}Cu, decay of analogues, γ-ray ang. distribs. and spins of resons. 8–13002
- ^{63}Cu, NMR meas. in one-dimensional antiferromag. CsCuCl$_3$ 8–2756
- ^{63}Cu, paradoxical octupole-multiplet pattern 8–41617
- ^{63}Cu+^{197}Au, 365 MeV deep inelastic collisions, neutron multiplicity 8–645
- ^{63}Cu+^{63}Cu, 450 MeV, energy spectra struct. obs. 8–4958
- ^{63}Cu(γ,p), up to 4.5 GeV, ang. depend. of normalised invariant cross section parameters *(Russian)* 8–17180
- ^{63}Cu(n,2n)^{62}Cu, 12.9-15.9 MeV, reaction cross section meas. 8–37337

nuclei with mass number 59 to 89 continued

- ^{63}Cu(p,3n)^{61}Zn, 30-47 MeV, cross-section meas. 8–13090
- ^{63}Cu(p,pnγ), 22-28 MeV, ^{62}Cu high spin states, level scheme *(French)* 8–21496
- ^{64}Cu, autoionisation of K-shell following β-decay 8–13029
- ^{64}Cu, simultaneous prod. with ^{67}Cu and ^{67}Ga, and bleomycin labelling with ^{67}Cu or ^{64}Cu 8–28066
- ^{65}Cu(^{7}Li,2n), 16-9 MeV, high-spin states in ^{70}Ge anal. 8–33146
- ^{65}Cu(p,α$_0$)^{62}Ni, 1.1-3.6 MeV, Wigner cusps 8–41719
- ^{65}Cu(p,γ)^{66}Zn, 1.1-3.6 MeV, Wigner cusps 8–41719
- ^{65}Cu(p,n), cross sections and spectra, exciton model *(Russian)* 8–21536
- ^{67}Cu, simultaneous prod. with ^{64}Cu and ^{67}Ga, and bleomycin labelling with ^{67}Cu or ^{64}Cu 8–28066
- Cu(n,n′), 14.1 MeV, precompound processes 8–13093
- Cu(π$^-$, Ψ), 43 GeV, A dependence of inclusive distrib. *(Russian)* 8–45983
- Fe, A=59,60, yrast decay scheme from ^{48}Ca+^{15}N(^{18}O) fusion-evaporation reaction 8–13154
- ^{61}Fe, radioactive decay scheme from ^{64}Ni(n,α), 14.3 MeV 8–46053
- Ga, A=66, 68 isomeric state from ^{56}Fe+^{13}C and ^{56}Fe+^{15}N reactions, lifetimes, g-factors 8–33147
- Ga, NQR in heteroorganic group III compounds, summary 8–25565
- Ga, stable isotopes, masses meas. 8–12956
- ^{67}Ga, simultaneous prod. with ^{64}Cu and ^{67}Cu 8–28066
- ^{69,71}Ga, NQR in BiCl$_3$.GaCl$_3$ complex, geom. struct. 8–25569
- Ge, A=68, 70, lifetime meas. by DSAM, using (α, 2nγ) reaction at E_α=30 MeV 8–8773
- Ge, doubly even nuclei, quasiparticle+phonon model calcs. 8–41626
- Ge, even-even isotopes, surface transparency of optical pots., determ. from heavy ion scatt. 8–13146
- Ge, stable isotopes, masses meas. 8–12956
- ^{a}Ge+^{86}Kr, A=70, 74, 76, 50 to 120 MeV, angular momentum limits 8–25224
- ^{68}Ge, lifetimes of excited states populated in ^{58}Ni(^{12}C,2p), spins and parities of levels 8–13020
- ^{69}Ge, J^π assignments from (d,t) and (d,p) reacts. with polarised deuterons 8–17221
- ^{69}Ge, quadrupole interaction in In, Sn, Sb, Tl and Bi, TDPAD expts. 8–48089
- ^{69}Ge, TDPAD, in Sn host lattice 8–43725
- ^{70}Ge, high-spin states anal. from γ-ray spectra of heavy-ion reactions 8–33146
- ^{70}Ge+^{32}S, 110, 132 MeV fusion evaporation residues, Monte Carlo simulation 8–41799
- ^{70}Ge(^{16}O,^{16}O′γ), 36 MeV, g-factors of first 2$^+$ states in ^{70}Ge 8–13138
- ^{70}Ge(d,t),(d,p), differential cross sections and vector analysing powers 8–17221
- ^{71}Ge, energy release accompanying electron capture 8–17148
- ^{71}Ge, J^π assignments from (d,t) and (d,p) reacts. with polarised deuterons 8–17221
- ^{71}Ge, LX-, LX-coincidences during decay 8–17149
- ^{71}Ge, levels, studied via ^{68}Zn(α,nγ), 8 to 10 MeV, comparison with coupling model calcs. 8–8742
- ^{73}Ge, 13.3 keV Mossbauer resonance, dispersive interference effects 8–25145
- ^{74}Ge, 26 MeV levels from ^{75}As(d,^{3}He) 8–25112
- ^{67,71}Ge in Zn, quadrupole interaction, TDPAC meas. 8–43740
- Ge(p,t), 26 MeV, ^{70,72,74}Ge excited states, spins, parities 8–25194
- Ge(p,t), shape transition obs. 8–25190
- Ge(t,p), shape transition obs. 8–25190
- ^{77}Kr carrier-free isotope prod. by (p,xn) reactions on natural Br 8–29678
- ^{81}Kr low lying states populated in ^{81}Br(p,nγ), γ spectra, γ-γ coincidences 8–25195
- ^{82}Kr(d,3n)^{81}Rb, non-linear behaviour of gas targets for isotope prod. 8–25361
- ^{84}Kr, 1.84 μs isomeric state, g-factor meas. 8–17101
- ^{84}Kr+^{209}Bi, 712 MeV, deform. and transfer in strongly damped collisions 8–21601
- ^{85}Kr, beta dose to crit. human tumour sites 8–28074
- ^{85}Kr conc. determ. at high pressures using β-ray count, CaF$_2$ scintillation counter activated with Eu 8–13385
- ^{85}Kr extraction, occupational doses in gas liquefaction industry 8–15905
- ^{85}Kr, gaseous, absolute counting, calibration of well-type NaI(Tl)-detector 8–9036
- ^{86}Kr(^{3}He,n), 25.4 MeV, ^{88}Sr 0$^+$ states struct., subshell closure 8–21582
- ^{87}Kr energy levels from ^{87}Br β-decay, delayed neutrons, high energy γ spectra 8–25155
- ^{81m}Kr, continuous carotid infusion for assessment of regional cerebral blood flow 8–20254
- Kr(p,p′), 51.9 MeV, low-lying octupole states anal. 8–21497
- LiAl$_2$B4$_7$, ^{81}Br NQR and ^{27}Al NMR 8–6597
- ^{60}N(α,pnγ), 22-35 MeV, ^{62}Cu high spin states, level scheme *(French)* 8–21496
- Ni, A=60,62,64, short range correls. and pseudopots., Hartree Fock Bogoliubov method 8–535
- Ni, even-even isotopes, surface transparency of optical pots., determ. from heavy ion scatt. 8–13146
- Ni+π, A=60, 2, E_π=0, 45 MeV γ-ray spectra, prod. cross-section for residual nuclei meas. 8–649
- Ni(^{35}Cl,^{35}Cl), A=58,62, 100-170 meV, elastic scatt. ang. distrib. 8–21605
- ^{a}Ni, A=60, 62, 64, determ. of g-factor of 2_1^+ state in Fe 8–43697
- ^{a}Ni+^{35}Cl, A=58, 62, 155-170 MeV, fission prod. yields, ang. distribs. and mean kinetic energies 8–41790
- ^{59}Ni, studied via ^{56}Fe(^{6}Li,t)^{59}Ni, t-energy spectra and reaction mechanism 8–41756
- ^{60}Ni (^{12}C,2p), 30-9 MeV, high-spin states in ^{70}Ge anal. 8–33146
- ^{60}Ni, aero-phonon, $4_1^+ \rightarrow 2_2^+$ γ-ray transition 8–17136
- ^{60}Ni, electron elast. scatt. cross sections, phase shift anal. and HF calcs. *(Russian)* 8–41707
- ^{60}Ni, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8–25097
- ^{60}Ni+^{12}C, energy dissipation as func. of angle data comparison to classical and diffusion models 8–21604
- ^{60}Ni+p, 400 MeV, multinucleon removal in quasifree process, p-γ coincidence expt. 8–37342

nuclei with mass number 59 to 89 continued
^{60}Ni+π, 70 MeV, γ+charged particle coincidence spectroscopy, cross section, p multiplicity 8−46111
^{60}Ni(^{3} He,t), 38 MeV, ^{60} Cu energy levels, spectroscopic factors, transition amplitudes 8−46079
^{60}Ni(α,2n)^{62}Zn excitation function, and prod. of ^{62}Zn-bleomycin 8−28067
^{60}Ni(α,nγ)^{63}Zn, 8-16 MeV, low-lying negative parity states of ^{63}Zn anal. 8−21521
^{60}Ni(e,α)e′X, alpha particle spectra, statistical model calc., direct reaction component 8−41704
^{60}Ni(n,γ), resonance state, partial radiation widths of high energy transitions 8−13104
^{61}Ni(α,nγ)^{64}Zn, 7.8 MeV, γ-ray spectroscopy Zn levels below 3.1 MeV 8−21514
^{61}Ni(d,^{3}He), ^{60}Co low lying states, DWBA anal. 8−29478
^{62}Ni+$\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{62}Ni(^{32}Cl,f), statistical anal. of excitation functions, Bohr-Wheeler and liq. drop model 8−13181
^{62}Ni(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8−29464
^{62}Ni($\pi^{\pm}$,p),($\pi^{\pm}$,d), E=100, 220 MeV, p and d spectra meas. 8−648
^{63}Ni β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{64}Ni, fast neutron bombard., decay schemes 8−46053
^{64}Ni, zz 8−12964
^{64}Ni+^{40}Ca, 182 MeV, deep inelastic collisions, short lifetime and long lifetime regime 8−21597
^{64}Ni(^{16}O,^{14}C)^{66}Zn, 56 MeV, full recoil one and two-step DWBA anal. 8−46091
^{64}Ni(^{4}He,^{8}He)^{60}Ni, angular distribution 8−29488
Ni(p,p′), A=60,2, E=17.2, 20.4, 24.6 MeV, polarised protons, optical model, DWBA anal. 8−13094
^{208}Pb(π^{+},$\pi^{+\prime}$), 50 MeV, energy spectra and cross sections 8−25241
Rb neutron deficient radioisotope selective production in (α,xn) reacts. *(Croatian)* 8−44608
Rb, spin and mag. moment, trends in neutron deficient nuclei 8−37261
^{76}Rb, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
^{76}Rb, spin of neutron deficient nucleus by β radiation detected optical pumping 8−8782
^{81}Rb production, non-linear behaviour of gas targets 8−25361
^{85}Rb, single-particle estimate of γ-γ transition probability 8−13023
^{85}Rb, two-quantum γ-γ decay of 514 keV excited state 8−13009
^{87}Rb, decay constant determ., Rb-Sr dating appl. 8−29424
^{87}Rb, decay consts. for use in geochronology and cosmochronology 8−28189
^{88}Rb→^{88}Sr, Gamow-Teller β-transition, matrix elements and log ft values calc. 8−21531
Se, circular polarisation of muonic K_{α} X-rays 8−9284
Se, stable isotopes, masses meas. 8−12956
Se(^{86}Kr,xnγ), Yb nuclei at high ang. momentum, moment of inertia from γ spectra 8−13135
^{72}Se, high spin and excitation regions anal., ^{58}Ni(^{16}O,2pγ) 8−25226
^{75}Se decay, gamma transitions 8−13008
^{77}Se NMR Knight shift, in n-CdSe impurity carrier wavefunction 8−35049
^{82}Se, fast moving ion in Fe and Gd, nature of dynamic mag. field 8−43697
^{82}Se(p,p) elastic, inelastic 4.5-77 MeV scatt., IAS, ^{83}Se low-lying states 8−573
^{83}Se, IAS, J^{π} via ^{82}Se(p,pγ) 4.5-7.7 MeV 8−573
^{83m}Se, decay scheme refinement, ^{83}Br levels 8−17147
Sr, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
^{83}Sr levels from ^{84}Sr(^{3}He,α α), 18 MeV, DWBA calcs. using optical model 8−41738
^{84}Sr(α,p), 18 MeV, low-lying states of ^{87}Y anal. 8−17228
^{85}Sr, decay to ^{85}Rb, two-quantum γ-γ decay of 514 keV excited state 8−13009
^{88}Sr populated in ^{86}Kr(^{3}He,n), subshell closure, 0^{+} states 8−21582
^{87}Y, low-lying states anal. in ^{84}Sr(α,p) at 18 MeV 8−17228
^{87}Y^{m}, hyperfine interactions in Al, Au, and Fe, nuclear orientation meas. 8−43715
^{87}Y^{m} orientation meas. in Al and Au hosts, mag. moment of $9/2^{+}$ isomeric state 8−41632
^{88}Y solution, standardisation using efficiency extrapolation method, β-γ coincidence meas. 8−21832
^{89}Y, 6.2-15.6 MeV, gamma-ray spectra, cross-section meas. 8−33176
^{89}Y, high resolution neutron total cross section meas., 27-240 keV 8−25193
^{89}Y+^{40}Ar, 237 meV, γ-ray multiplicities and energies, primary fragment angular momenta 8−46093
^{89}Y(e,e′), 92.5 MeV, giant reson. and bound collective states 8−13070
^{89}Y(p,p′), two stage processes in direct reactions *(Dutch)* 8−29439
^{89}Yb(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8−29464
Zn, doubly even nuclei, quasiparticle+phonon model calcs. 8−41626
Zn, even isotopes, effect of particle-vibr. coupling in nucl. struct. 8−12940
Zn, K_{β}/K_{α} following K-electron capture and X-ray excitation 8−13031
Zn, stable isotopes, masses meas. 8−12956
Zn+d production of ^{64}Cu, ^{64}Cu and ^{67}Ga and bleomycin labelling with ^{67}Cu or ^{64}Cu 8−28066
^{61}Zn, studied via ^{58}Ni(^{6}Li,t)^{61}Zn, mass, t-energy spectra and reaction mechanism 8−41756
^{62}Zn production and bleomycin labelling, excitation function for ^{60}Ni(α,2n)^{62}Zn 8−28067
^{63}Zn, low-lying negative parity states anal. by ^{60}Ni(α,nγ) ^{63}Zn 8−21521
^{64}Zn, electron excitation of giant multipolar resonances *(Russian)* 8−8802
^{64}Zn, γ-ray spectroscopy and role of $g_{9/2}$ orbital 8−33142
^{64}Zn, γ-ray spectroscopy from ^{61}Ni(α,nγ)^{64}Zn 8−21514
^{64}Zn, high-spin states anal. from heavy-ion reactions 8−33145
^{64}Zn, lifetimes of levels populated in ^{51}V(^{18}O, p2nγ) 8−13019
^{64}Zn, quasi-rotational states populated in ^{51}V(^{16}O,p2nγ), lifetimes and effective population times 8−17140
^{64}Zn(d,^{6}Li), 55 MeV, cluster model DWBA anal. 8−21573

nuclei with mass number 59 to 89 continued
^{64}Zn(γ, n)^{63}Zn, giant dipole reson. isospin splitting, reaction cross section *(Russian)* 8−46040
^{65}Zn, γ-ray spectroscopy and role of $g_{9/2}$ orbital 8−33142
^{65}Zn, high spin states obs. in (α,nγ), and (^{16}O,np) 8−13016
^{65}Zn, impurity in plastic, neutron fluence meas. using plastic as nuclear track and activation detector 8−13346
^{67}Zn, appl. to Mossbauer meas. of gravitational red shift 8−24905
^{67}Zn, excited state lifetime, DSA meas. *(Russian)* 8−41668
^{67}Zn, high spin states obs. in (α,nγ) 8−13016
^{67}Zn, Mossbauer obs. of quadrupole interaction in Zn metal 8−27120
^{67}Zn(d,p)^{68}Zn, 12.3 MeV, tensor analysing powers 8−29479
^{68}Zn, 26 MeV levels from ^{69,71}Ga(d,^{3}He) 8−25112
^{68}Zn(α,α), 38 MeV, correls. of optical pot. parameters for elastic scatt. 8−13117
^{69}Zn^{m}, nuclear quadrupole alignment 8−48090
^{70}Zn, 26 MeV levels from ^{69,71}Ga(d,^{4}He) 8−25112
^{70}Zn, lifetime meas. by DSAM, using (α, 2nγ) reaction at E_{α}=30 MeV 8−8773
Zn(p,X), A=64, 66, 68, 17.5-48 MeV, proton total cross section 8−8809
^{86}Zr, populated in ^{73}Ge(^{16}O,3n), lifetime meas. by Doppler shift method 8−25152
^{89}Zr, IAS and bound hole states via ^{90}Zr(^{3}He, ^{4}He)^{89}Zr 39 MeV 8−492

nuclei with mass number 90 to 149
107<A<143, isomeric ratios for (n,2n) reactions at 14.8 MeV 8−13073
^{90}Y, 1^{+} and 0^{+} states populated in ^{88}Sr(^{3}He,p) 8−25116
Cr ^{130}Te+^{28}Si, diffusion model anal. of onset of friction 8−8848
high spin effects in nuclei with proton no. 40-60, shape, deforms. 8−503
life sciences appl. 8−15882
multipole excitation of doubly-open shell spherical nuclei 8−21507
rare earths, pairing energy, single particle levels and interaction matrix elements 8−8721
^{118}Sn+^{6}Li, α and d energy spectra, break up of ^{6}Li d+α clusters in nuclear field 8−46092
^{127}(p,xn) and ^{127}I(p,pxn), excitation functions, yields for ^{123}Xe prod. 8−594
Ag (^{9}Be, ^{9}Be), 14-26 MeV, universal optical pot. 8−25219
Ag, A=107, 9, +^{86}Kr, 618 MeV, γ-ray multiplicities and angular momentum fractionation 8−37370
Ag, proton-induced fission at 400 GeV, ternary to binary event ratio 8−13170
Ag+^{20}Ne, 175 MeV, γ-ray multiplicities and energies, primary fragment angular momenta 8−46093
Ag+^{40}Ar deep inelastic reactions, γ-ray polarisation meas., neg. deflection angles 8−8845
^{101}Ag, $T_{1/2}$ meas., decay scheme, ^{101}Pd levels 8−37311
^{104}Ag, β^{+} decay, ^{104}Pd energy levels, spins, parities 8−13018
^{105}Ag decay, energy levels, spin, parities, of populated ^{105}Pd states 8−37306
^{105}Ag decay, γ-ray spectra, γ-γ coincidence and ang. correl. meas. 8−13007
^{105}Ag, high spin states γ-single spectra, γγ coincidence, excitation functions, ang. distrib., polarisation meas. 8−21519
^{106}Ag^{m}, L/K ratios, Q-value 8−29426
^{107}Ag+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
^{107}Ag(n,γ)^{108}Ag, coincidence meas. of low-lying states of 215.38 keV 8−12975
^{108}Ag, form. in ^{107}Ag(n,γ) reaction, isomeric level scheme at 215.38 keV 8−12975
^{108}Ag+p, 70 GeV/c central collisions, s-particles ave. multiplicity 8−21567
^{110}Ag^{m} cascade decay, γ-γ linear polarisation direction correls., Ge detectors *(Japanese)* 8−41903
^{111}Ag, 376.7 keV level lifetime, shape coexistence, γ-branching 8−551
^{111}Ag, level scheme, daughter 74 s ^{111m}Ag to ^{111}Cd decay scheme 8−541
^{113}Ag, 5.3 h decay scheme, ^{113}Cd level scheme 8−46028
^{115}Ag, 20 min decay scheme, ^{115}Cd level scheme 8−46029
^{110m}Ag, fission product, amount in burnt-up HTR fuel *(German)* 8−25298
Ag(n,n′), 14.1 MeV, precompound processes 8−13093
Ag(p,f), 600 MeV, mass yields in binary fission 8−8819
Au+^{86}Kr, 724 MeV, coincidence meas., pre-equilibrium α-emission 8−33208
Ba, A=134-138, average neutron cross sections, statistical and optical model calcs. 8−29458
Ba, A=144, 145, short lived fission product, Q_{β}-value 8−37317
Ba isotopes, ang. momentum projected quasiboson states 8−41637
Ba isotopes, microscopic dynamic calc. of collective states 8−17075
^{125}Ba, $7/2^{\pm}$ states, populated in ^{116}Sn(^{12}C, 3n), explained by triaxial core model 8−37258
^{129}Ba, excitation and props. of high-spin levels using ^{120}Sn(^{12}C,3nγ) 8−17104
^{131}Ba, L/K and M/L capture ratios 8−29425
^{135}Ba(α,α′), 8-10 MeV Coulomb excitation, reduced E2 transition probabilities 8−13127
^{138}Ba(d,p), below and near Coulomb barrier 8−29483
Ba(γ,γ′), 7.28, 7.63 MeV, ^{209}Bi, ^{139}La energy level anal. 8−13058
^{107,109}Cd in Ag, spin rotation amplitude, temp. depend. 8−43738
Cd, A=105 to 109, parity assignments from (^{16}O,xnγ) obs. 8−41630
Cd, A=110, 112, isobaric analogue resonances, QRPA anal. of (p,p) reactions 8−576
Cd covered U-mica system, neutron dosimetric meas. using fission fragment track technique 8−13347
Cd, even isotopes, effect of residual interaction in particle-particle channel on low-lying states 8−21503
Cd, even-mass, shape coexistence, quasi-rot. band 8−496
Cd, isotopes A=109, 106, 105, 104, high spin states excited by (α,xnγ) *(French)* 8−29394
Cd, quadrupole moments of first excited states of even isotopes 8−17099
^{a}Cd, static quadrupole moments determ. for A=111, 113, 115 8−37281
^{a}Cd(p,t), A=106, 104, at high excitation, observation of hole states 8−25187

nuclei with mass number 90 to 149 continued
^{107}Cd, heavy ion nucl. alignment, recoil in vac., time-differential meas. 8−37304
^{109}Cd, 11 μs isomeric level, spin and parity determ. by ^{108}Pd(α,3n) *(French)* 8−8738
^{109}Cd β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{109}Cd, correlated radiation damage in Ag, TDPAC 8−43739
^{109}Cd, LX-, LX-coincidences during decay 8−17149
^{109}Cd nuclear transformation rate meas. using 4π proportional counter 8−21826
^{110}Cd, recoiling in Fe, enhanced transient fields 8−37284
^{111}Cd, elec. field gradient in Zn and Sn hosts, press. depend., TDPAC expts. 8−48092
^{111}Cd, hyperfine field in Heusler alloys, TDPAC meas. 8−43705
^{111}Cd, mag. hyperfine field in $Ni_{1+x}MnSb$, TDPAC obs. 8−43709
^{111}Cd, pionic, E2 nuclear resonance effects 8−29868
^{111}Cd, quadrupole hyperfine interaction in Cd, effect of radiation defect annealing 8−43741
^{111}Cd(n,n')^{111m}Cd, 13-17 MeV, cross section meas. by activation method 8−46057
^{111}Cd(p,nγ)^{111}In, E_p=6 MeV, γ-ray spectra and ^{111}In level scheme 8−13083
^{112}Cd, pionic E2 nuclear resonance effects 8−29868
^{112}Cd(n,p)^{112}Ag, 13-17 MeV, cross section meas. by activation method 8−46057
^{113}Cd, level scheme from ^{113}Ag 5.3 h β-decay 8−46028
^{114}Cd proton hole states populated in ^{115}In(d,^{3}He), DWBA anal. 8−8829
^{115}Cd, level scheme from ^{115}Ag 20 min decay 8−46029
^{116}Cd(^{3}He,n), second order processes in DWBA calcs. 8−46076
^{116}Cd(d,n)^{117m,g}In, excitation functions 8−13105
^{133}Cd NMR Knight shift, in n-CdSe impurity carrier wavefunction 8−35049
Cd(γ,γ'), 7.28, 7.63 MeV, ^{209}Bi, ^{139}La energy level anal. 8−13058
Cd(p,p)Cd, A=110, 112, 5-9 MeV, isobaric analogue reson., QRPA calc. 8−576
Cd(π^-, X), 0 MeV, A=111, 112, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
Ce, A=145, 147, 148, short lived fission product, Q_β-value 8−37317
Ce band structures populated in ^{116,118}Sn(^{16}O,3n), high spin levels, yrast cascade 8−8842
Ce isotopes, neutron rich, decay properties 8−13032
^{140}Ce, 6.2-15.6 MeV, gamma-ray spectra, cross-section meas. 8−33176
^{140}Ce, hexadecapole motion obs. from α-scatt., EM transitions and conversion electron spectra 8−25097
^{140}Ce(d,p), below and near Coulomb barrier 8−29483
^{140}Ce(p,X), 17.5-48 MeV, proton total cross section 8−8809
^{139m}Ce, internal conversion of N=81 isotones 8−13027
Ce(γ,γ'), 7.28, 7.63 MeV, ^{209}Bi, ^{139}La energy level anal. 8−13058
^{252}Cf, spontaneous fission product charge distrib. 8−13176
^{137}Co, gamma radioactive source, buildup factor determination for meas. in air *(Rumanian)* 8−49132
^{141}Cr(γ,γ'), 7.28, 7.63 MeV, ^{209}Bi, ^{139}La energy level anal. 8−13058
Cs, A=116-120, spectra of delayed protons and α-particles in β^+ decay *(Russian)* 8−46034
Cs, A=119, 121, 123, 125, deformed $9/2^+$ proton hole states 8−41620
Cs, A=134, 137, distrib. in Peach Bottom HTGR primary coolant circuit 8−13275
Cs, fission product, release and diffusion in fuel elements *(German)* 8−25298
Cs isotopes, nucl. spins and mag. moments, atomic-beam mag. reson. expt. 8−17097
Cs, spin and mag. moment, trends in neutron deficient nuclei 8−37261
^{116}Cs, delayed particle emission in β^+ decay 8−8778
^{118}Cs, delayed particle emission in β^+ decay 8−8778
^{119}Cs, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
^{119}Cs, spin of neutron deficient nucleus by β radiation detected optical pumping 8−8782
^{123}Cs, decoupled band obs. by in-beam γ-ray spectra of ^{115}In(^{12}C,4n) 8−21520
^{124}Cs, β-decay, ^{124}Xe level struct. 8−13033
^{124}Cs, β-decay props. of collective 1^+ states 8−13028
^{126}Cs, β-decay props. of collective 1^+ states 8−13028
^{126}Cs, EC and β^+-decay, exam. of Xe nuclear level struct. 8−21498
^{129}Cs, band struct., in-beam γ-ray spectroscopy after (γ,2n) reaction 8−4951
^{133}Cs, NMR in ferroelectric CsH_2PO_4 8−15034
^{133}Cs, quadrupole interaction of 81 keV state in Te 8−48088
^{133}Cs(^{3}He, 3n)^{133}La, band struct., in-beam γ-ray spectroscopy 8−4951
^{133}Cs(α,2n)^{135}La, band struct. of ^{135}La, in-beam γ-ray spectroscopy 8−4951
^{133}Cs(n,n'γ), level scheme and deexcitation of excited ^{133}Cs levels 8−13004
^{134}Cs, standardisation (1977) AECL 8−25371
^{137}Cs, distrib. in fuel elements of Peach Bottom HTGR 8−13274
^{137}Cs, exposure-rate calibration of small radioactive sources 8−41881
^{137}Cs gamma-ray spectra of spherical reactor fuel elements, burn-up determ. *(German)* 8−25299
^{137}Cs to ^{131}I fractional release ratio from breached fission fuel elements 8−21713
^{137}Cs transmutation in fusion reactor imploding liner blanket 8−17420
^{137}Cs-^{137m}Ba generator, for nucl. medicine, preparation by ion exchange chromatography 8−28071
^{149}Eu level structure populated in ^{150}Sm(p,2nγ), spin, parity 8−21561
Ga isotopes, independ. yield in ^{238}U(p,f) 8−13171
^{146}Gd, 1579 keV state, assignment of isospin and parity, using γ-ray ang. distrib. 8−21489
^{146}Gd, 3^- 1579 keV first excited state 8−41670
^{146}Gd, high multiplicity yrast isomers prod. in (α,xn) reactions 8−41666
I, A=129, 131, 132, PAC obs. of quadrupole interaction in Te, Zn, and Cd 8−48087
I energy levels, collective excitations, spin,parity, populated in ^{121,123}Sb(α,2n), γ spectra 8−4891
I, odd-mass nuclei, $9/2^+$ bands, deformed states 8−17106
^{a}I, A=121, 123 and 125, cyclotron prod. by ^{127}I(p,xn)Xe→(β)→I reactions, yield curves 8−44611

nuclei with mass number 90 to 149 continued
^{123}I, carrier-free, prod. from ^{127}I(p,5n)^{123}Xe using in-beam collection of ^{123}Xe 8−44610
^{123}I, mass. meas., ground state Q-value of ^{123}Te (^{3}He,d) 8−4896
^{123}I production in cyclotron by ^{124}Te(p,2n)^{123}I, improved targetry and radiochem. 8−28064
^{123}I two-crystal coincidence counting 8−13394
^{124}I production in cyclotron by ^{124}Te(p,n)^{124}I, improved targetry and radiochem. 8−28064
^{125}I β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{125}I in partially blocked thyroid of rats, testis damage 8−3565
^{125}I source activity calculation from counting rates in single and coincidence photopeaks 8−13371
^{125}I therapy, RBE of soft X-rays 8−7405
^{125}I-iodoproflavine binding with DNA, double strand break induction 8−20145
^{127}I γ cascade following ^{127}Te decay, 360.3-57.6 keV γ-γ directional correl. 8−25151
^{127}I(α,2n)^{129}Cs, band struct. of ^{129}Cs, in-beam γ-ray spectroscopy 8−4951
^{127}I(p,xn)Xe→(β)→I reactions, yield curves for cyclotron prod. of ^{123}I, ^{125}I and ^{121}I 8−44611
$^{129}I_2$ radioisotope detection in nuclear fuel cycle, intracavity selective absorpt. analysis 8−46182
^{131}I, gamma radioactive source, buildup factor determination for meas. in air *(Rumanian)* 8−49132
^{131}I, in vivo whole-body counter calibration for quantiative retention estimation 8−3579
^{132}I isotope, doubly odd, quadrupole moments, PAC meas. 8−37280
^{135}I, fractional cumulative yields in ^{252}Cf SF 8−41791
In, A=113m, 115m, cross-section of inelastic neutron acceleration 8−17196
In isotopes, independ. yield in ^{238}U(p,f) 8−13171
In, NQR in heteroorganic group III compounds, summary 8−25565
In, odd-mass isotopes, positive parity bands in deformed and spherical representation 8−21495
In, photonuclear cross sections in giant reson. region 8−17178
^{a}In, A=109,110, nucl. g-factor NMR-ON meas. on Fe-In alloys 8−37275
^{108}In, level scheme determ. from ^{108}Sn decay and ^{108}Cd(p,n) 8−41636
^{111}In, DPAC obs. of elec. field gradient in radiation damaged Cu 8−43727
^{111}In, populated in ^{111}Cd(p,nγ), γ-ray spectra, level scheme 8−13083
^{114}In^{m}, nuclear quadrupole alignment 8−48090
^{115}In, conc. and temp. depend. nucl. relax. in liq. In-Sn(Pb) alloys 8−19357
^{115}In, K-shell positron annihilation, excitation of nucleus *(Russian)* 8−33171
^{115}In(^{12}C,4n)^{123}Cs, in-beam γ-ray spectroscopy, decoupled band in ^{123}Cs obs. 8−21520
^{115}In(d,^{3}He), 50 MeV, proton hole states in ^{114}Cd, DWBA anal. 8−8829
^{115}In(γ,γ')^{115m}In, appearance energies of In complex cpds. determ. 8−8794
^{115}In(n,γ), cross section, statistical theory anal., radiative strength functions *(Russian)* 8−17212
La, A=144, 145, 147, short lived fission product, Q_β-value 8−37317
La, A=144-6, β-decay, γ-ray singles and coincidence meas. 8−4913
^{133}La, band struct., in-beam γ-ray spectroscopy after (^{3}He,3n) reaction 8−4951
^{135}La, band struct., in-beam γ-ray spectroscopy after (α,2n) reaction 8−4951
^{137}La, Mossbauer effect in CeO_2-$LaCrO_3$ and CeO_2-La_2O_3 8−27121
^{137}La, possibility of obs. of Mossbauer effect 8−39457
^{139}La, NMR in $La_{1-x}Gd_x$(Zn,Ag) 8−15038
^{139}La(e,e'p), $f_{7/2}$ ground isobaric analogue resonance, proton decay mode 8−29450
^{139}La(γ,γ'), 7.28, 7.63 MeV, energy levels anal. 8−13058
^{139}La(n, γ), 10-70 keV, gamma-ray transitions 8−17185
^{139}La(n, γ), 2.5-90 keV, s- and p-wave resons. 8−17186
La(p,f), 600 MeV, mass yields in binary fission 8−8819
Mo, A=103-5, half-lives and γ-ray energies of short-lived isotopes following ^{235}U fission 8−17137
Mo, A=95, 97, nucl. acoustic reson. determ. of electronic contrib. to elec. field gradient tensor in Mo 8−48059
Mo, γ-ray attenuation meas. using Ge(Li) detector 8−17539
Mo+α, A=92,96,100, isobaric yield curves at A=72 from high energy spallation 8−25211
Mo+n, 1.6×10^{-3} to 10 eV, total cross section, raactor structural material 8−46052
^{92}Mo, broken-pair approx. to seniority shell model 8−29408
^{92}Mo, populated in heavy ion reactions, mag. moments, proton core polarisation 8−21598
^{93}Mo, effective three-body interaction 8−524
^{94}Mo, level spins and multiple mixing ratios from γ-γ correlation meas. 8−21517
^{98}Mo(^{3}He,d), ^{99}Tc level struct., spin-parity assignments 8−8743
^{98}Mo(d,p)^{99}Mo, excitation functions and yields, <13 MeV 8−37353
^{99}Mo, production as generator for ^{99m}Tc 8−37353
^{99}Mo, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{100}Mo,(d,p)^{101}Mo excitation functions and yields, <13 MeV 8−37353
^{100}Mo+^{100}Mo→^{200}Po, two dimensional fusion barrier, penetrability calc. 8−41798
^{100}Mo(γ,n)^{99}Mo^{m1,m2,g}, isomeric cross section ratios 8−29448
^{93m}Mo, nucl. g-factor NMR-ON meas. on Fe-Mo alloys 8−37275
Nb, A=90, 92, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
Nb and Tc doubly odd isotopes, multiplet struct., ^{96}Tc nuclear struct. 8−46024
^{a}Nb, nucl. g-factor, A=90, 92 m, NMR-ON meas. on Fe-Nb alloys 8−37275
^{90}Nb, mag. hyperfine splitting const. in Co, NMR-ON meas. 8−43651
^{91}Nb, 3.8 μs isomeric state, mag. moment, TDPAD meas. 8−41634
^{91}Nb, populated in heavy ion reactions, mag. moments, proton core polarisation 8−21598
^{91}Nb, struct. anal. from ^{91}Zr(p,nγ) at 3.5-4.8 MeV 8−13011
^{92}Nb, half life determ. by gamma spectroscopy, comparison of ^{92}Nb, ^{94}Nb activities and abundances 8−29423

nuclei with mass number 90 to 149 continued
^{93}Nb, Knight shift and quadrupole coupling parameters in orthorhombic β phase NbH and NbD 8−19352
^{93}Nb(α,2n), 23-7 MeV, proton-neutron excitations in high-spin states of ^{95}Tc 8−17225
^{93}Nb(n,n′), exciton, neutron inelastic scatt. model *(Russian)* 8−33189
^{93}Nb(n,n′γ), 1.3-2.7 MeV, energy levels, decay scheme, de-excitation gammas 8−41710
^{93}Nb(n,n′γ), (n,γn′), 14.6 MeV, differential cross sections from nγ coincidence spectra anal. *(Russian)* 8−17209
^{93}Nb(n,n′γ), up to 14.6 MeV, radiation and neutron widths for highly excited levels *(Russian)* 8−605
^{97}Nb level structure from ^{97}Zr decay, spins, parities γ ang. correls. 8−29418
^{99}Nb fission product, nuclear struct. *(German)* 8−29395
^{90m}Nb, decay rate perturbation by implantation in metals 8−21524
Nb(n,n′), 14.1 MeV, precompound processes 8−13093
Nd(^{12}C,^{12}C), A=143-150 even isotopes, multistep effects in elast. and inelast. scatt. at 70.4 MeV 8−17240
^{a}Nd, A=142,144,146,148, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{142}Nd(d,p), below and near Coulomb barrier 8−29483
^{142}Nd(e,e′p), spectra and ang. distribs. meas., $T_>$ giant reson. anal. 8−13069
^{143}Nd(n,α), thermal cross-sections 8−4932
^{143}Nd(n,α)^{140}Cd, thermal neutrons, partial cross-section 8−608
^{143}Nd(n,γα)^{140}Ce, thermal neutrons, partial cross-section 8−608
^{144}Nd(n,γ), 0.04 to 11 keV, reson. γ-ray anal. 8−8823
^{145}Nd level scheme from ^{144}Nd(n,γ) 8−8823
^{147}Nd, energy levels anal. from ^{148}Nd(d,t)^{147}Nd 8−507
^{147}Nd, spin by vector analysing powers of ^{148}Nd(d,t)^{147}Nd 8−609
^{148}Nd(^{16,18}O, xnγ), 69-78 MeV, ^{161,162}Er high ang. momentum states, γ decay modes from multiplicity meas. 8−29419
^{148}Nd(d,t)^{147}Nd, energy levels of ^{147}Nd 8−507
^{148}Nd(d,t)^{147}Nd, vector analysing powers, spin determ. of ^{147}Nd 8−609
^{148}Nd(p,2nγ), 12.1-20.2 MeV, γ-spectra, deduced ^{147}Pm level struct. 8−510
^{141m}Nd, internal conversion of N=81 isotones 8−13027
^{141}PR(e,e′p), $f_{7/2}$ ground isobaric analogue resonance, proton decay mode 8−29450
^{96}Pb, broken-pair approx. to seniority shell model 8−29408
^{208}Pb(^{6}Li, αp), 22.2 and 23.0 MeV, break-up near Coulomb barrier 8−636
^{208}Pb(^{6}Li,αd), 22.2 and 23.0 MeV, break-up near Coulomb barrier 8−636
Pd, circular polarisation of muonic K_α X-rays 8−9284
Pd, even-mass isotopes, collective model with deform., vibr., rot. energy levels, B(E2) ratios 8−17120
Pd, quadrupole moments of first excited states of even isotopes 8−17099
^{a}Pd(p,t), A=104, 102, at high excitation, observation of hole states 8−25187
^{101}Pd, level struct. obs. in ^{101}Ag β-decay 8−37311
^{102}Pd, meas. of $Q(2_1{}^+)$ by reorientation precession technique 8−12971
^{102}Pd(p,p′γ), 8 MeV, ang. correl. meas. to determ. level scheme 8−21559
^{104}Pd levels populated in ^{104m,g}Ag β^+ decay , spins, parities 8−13018
^{104}Pd, meas. of $Q(2_1{}^+)$ by reorientation precession technique 8−12971
^{104}Pd(^{6}Li,xnypγ), 54-99 MeV, breakup, fusion-evaporation and pre-equilib. nucleon emission 8−17238
^{105}Pd muonic X-rays, nuclear charge parameters, quadrupole moments 8−29377
^{105}Pd(n,p)^{105}Rh, 13-17 MeV, cross section meas. by activation method 8−46057
^{106}Pd(^{6}Li,xnypγ), 54-99 MeV, breakup, fusion-evaporation and pre-equilib. nucleon emission 8−17238
^{109}Pd, energy levels determ. from decay of ^{109}Rh 8−25154
^{110}Pd(p,t)^{108}Pd($2_1{}^+$), analysing power difference from ^{110}Pd(p,t)^{108}Pd($2_1{}^+$) 8−37341
^{111}Pd, isomer decay populating ^{111}Ag levels 8−551
^{111}Pd^{g,m}, γ-ray decay, ^{111g}Pd half-life, ^{111}Ag levels and decay 8−541
^{109g}Pd, gamma-ray decay, gamma-gamma coincidences 8−29417
^{145}Pm, form. in electron capture decay of ^{145}Sm, γ-transition decay rate and intensities 8−13030
^{145}Pm, low-lying levels anal. using ^{145}Sm decay 8−29420
^{147}Pm β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{147}Pm, in-vivo measurement by phoswich detector 8−28087
^{147}Pm, level struct. via ^{148}Nd(p,2nγ) 12.1-20.2 MeV 8−510
^{149}Pm, shape factor anal. of β-transitions 8−21532
^{148m,148g}Pm, independent form. cross-section from ^{232}Th by ^{4}He ion induced fission 8−33228
Pr, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
^{141}Pr+^{35}Cl, 155-170 MeV, fission prod. yields, ang. distribs. and mean kinetic energies 8−41790
^{141}Pr+n, spherical optical model anal., fast neutron differential elastic scatt. and total cross sections 8−46051
^{141}Pr(^{35}Cl,^{35}Cl), 100-170 MeV, elastic scatt. ang. distrib. 8−21605
^{141}Pr(^{35}Cl,f), statistical anal. of excitation functions, Bohr-Wheeler and liq. drop model 8−13181
^{144}Pr, 935 keV beta transition, spectrum shape 8−4918
^{146}Pr→^{146}Nd, decay scheme and energy levels, log ft values 8−4912
^{148}Pr, short lived fission product, Q_β-value 8−37317
^{a}Rb, A=91, 93, 94, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
^{98}Rb, γ spectra and coincidence meas., deform. in ^{98}Sr anal. 8−12961
^{99}Rh γ-ray cascade, obs. in ^{90}Zr+^{12}C, and ^{91}Zr+^{11}B 8−41762
^{109}Rh, half-life and decay props. 8−25154
Ru isotopic axial distributions in EBR II (U, Pu)O_2 failed fuel pins, γ-scanning determ. 8−687
Ru, quadrupole moments of first excited states of even isotopes 8−17099
^{94}Ru, broken-pair approx. to seniority shell model 8−29408
^{94}Ru, effective three-body interaction 8−524
^{94}Ru, populated in heavy ion reactions, mag. moments, proton core polarisation 8−21598
^{99}Ru, hyperfine field in Rh_2MnSn, TDPAC expt. 8−43708
^{101}Ru, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{102}Ru(γ,p)^{101}Tc^{m,g}, isomeric cross section ratios 8−29448

nuclei with mass number 90 to 149 continued
^{105}Ru, γ-γ ang. correl. meas., spin and γ-ray mixing ratios 8−21516
S6, A=120, 122, 3^+ isomeric states quadrupole moments, (p,n) excited, TDPAD method 8−41635
Sb, A=115, 117, $11/2^-$ isomeric states, half-life, and g-factor 8−33122
Sb, A=127-33, fission fragments, partial level schemes determ. 8−29392
Sb, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
Sb, odd-mass nuclei, $9/2^+$ bands, deformed states 8−17106
^{117}Sb, levels studied via ^{116}Sn(^{16}O,^{15}N)^{117}Sb, ang. distrib. anal. of 64 MeV reacts. 8−8836
^{119}Sb, γ-γ and γ-e directional correls. following ^{119m}Te decay, branching ratios 8−546
^{120}Sb, nuclear alignment in Sn, temp. depend. 8−41720
^{121}Sb, in $V_{2-x}Sb_xO_4$, Mossbauer spectra, defect struct. exam. 8−18635
^{121}Sb, positive parity levels, Coulomb excitation obs. 8−21522
^{121}Sb(d,2n)^{121m,g}Te, 4-24 MeV, yield meas. 8−37349
^{121}Sb(p,n)^{121m,g}Te, 4-24 MeV, yield meas. 8−37349
^{122}Sb, 5^+ isomeric state, mag. moment determ. from ^{122}Sn(d,2n)^{122}Sb 8−21493
^{123}Sb, positive parity levels, Coulomb excitation obs. 8−21522
^{123}Sb(d,2n)^{123m}Te, 4-24 MeV, yield meas. 8−37349
^{123}Sb(p,n)^{123m}Te, 4-24 MeV, yield meas. 8−37349
^{133}Sb, level scheme of one proton and doubly closed shell core 8−37291
Sb(α,2nγ), collective excitations in ^{123,125}I, spin, parity, level schemes 8−4891
Sm+^{12}C, population of ^{154}Er, high-spin states 8−29373
Sm(^{3}He,^{3}He′), 53 MeV, even A=144-154, DWBA anal. of ang. distribs. 8−17230
^{a}Sm, A=144,148, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{144}Sm, isoscalar breathing mode state obs. in (α,α′) scatt. at 96 MeV 8−17086
^{144}Sm, produced in ^{100}Mo+^{48}Ca 8−37260
^{145}Sm decay, low-lying levels of ^{145}Pm anal. 8−29420
^{145}Sm, electron capture decay to ^{145}Pm, γ-transition decay rate and intensities 8−13030
^{145}Sm, electron capture decay, internal bremsstrahlung 8−13035
^{148}Sm(^{18}O,^{16}O)^{150}Sm, $2_1{}^+$ ang. distributions, shape difference between pickup and stripping reaction 8−33209
^{148}Sm(α,xn)^{146}Gd, high multiplicity yrast isomers prod. 8−41666
^{148}Sm(n,n), (n,n′), (n,n′γ), E=2.47 MeV, collective excitations obs. 8−33187
^{149}Sm(α,xn)^{147}Gd, high multiplicity yrast isomers prod. 8−41666
Sm(n,γ) A=147, 149, cross section, statistical theory anal., radiative strength functions *(Russian)* 8−17212
Sn (^{35}Cl,^{35}Cl), A=116,120,124, 100-170 MeV, elastic scatt. ang. distrib. 8−21605
Sn, A=104, 106, 108, seniority four admixtures in low lying 0^+ states 8−8741
Sn, A=116, 120, density of states of spherical nuclei calc. 8−513
Sn, even isotopes A=116-124, 0^+, 2^+ 4^+ states, Tamm Dancoff approx. 8−37297
Sn odd isotopes, spreading widths of deep lying hole states 8−29388
Sn, photoactivation by 42 MeV bremsstrahlung, gamma transition energies and line intensities 8−13057
Sn(^{16}O,3n)^{131,129}Ce, band structs., high spin levels, yrast cascades 8−8842
Sn(^{16}O, 4nγ), 76 MeV, lifetimes of yrast states of even Ce nuclei 8−21589
^{a}Sn+^{35}Cl, A=112, 116, 120, 124, 155-170 MeV, fission prod. yields, ang. distribs. and mean kinetic energies 8−41790
^{a}Sn+^{40}Ar, A=122, 124, 50 to 120 MeV, angular momentum limits 8−25224
^{a}Sn(p,t), A=122, 120, 124, 116, 118, at high excitation, observation of hole states 8−25187
^{112}Sn(A,n)^{115}Te, nuclear alignment of ^{115}Te temp. depend. 8−41720
^{113}Sn, correlated radiation damage in Ag, TDPAC 8−43739
^{114}Sn, zz 8−12964
^{115}Sn, levels, J^π via ^{116}Sn(d,t)^{115}Sn 23 MeV 8−612
^{116}Sn, level density with schematic forces 8−41639
^{116}Sn, levels studied via ^{116}Sn(^{16}O,^{16}O) and ^{116}Sn(^{16}O,^{16}O′) ang. distrib. anal. of 64 MeV reacts. 8−8836
^{116}Sn particle-hole states, strength decoupling form giant dipole resonance, Gaussian force, δ-force diagonalisation 8−25125
^{116}Sn(^{12}C, 3nγ), 45-55 MeV, collective excitations in ^{125}Ba 8−37258
^{116}Sn(^{32}Cl,f), statistical anal. of excitation functions, Bohr-Wheeler and liq. drop model 8−13181
^{116}Sn(d,t)^{115}Sn, 23 MeV, populating ^{115}Sn levels to 4 MeV excit. 8−612
^{117}Sn, level density with schematic forces 8−41639
^{117}Sn(n,γ)^{118}Sn, parity violation obs. 8−8820
^{118}Sn (^{6}Li,αd), 22.2 and 23.0 MeV, break-up near Coulomb barrier 8−636
^{118}Sn(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{118}Sn(^{6}Li, αp), 22.2 and 23.0 MeV, break-up near Coulomb barrier 8−636
^{118}Sn(γ,p)^{117}In, 150 to 750 MeV, reaction cross section 8−37329
^{118}Sn(p,α)^{115}In, 20 MeV polarised protons, DWBA calcs. 8−41714
^{119}Sn, hyperfine mag. field in $FeSn_2$, γ-reson. spectroscopy obs. *(Russian)* 8−39486
^{119}Sn, hyperfine field in Rh_2MnSn, Mossbauer expt. 8−43708
^{119}Sn, Mossbauer effect in Au, Pd, and Pt matrices 8−15080
^{119}Sn(p,n)^{119}Sb, 16-20 MeV, isobaric analogue state, ang. distrib. meas. 8−29468
^{120}Sn, giant multipole reson. fragmentation over two-phonon states 8−575
^{120}Sn, spherical nuclei, excitation of collective states in high-energy proton interactions 8−17073
^{120}Sn(^{12}C,3nγ)^{129}Ba, E=45-54 MeV, excitation of high-spin levels in ^{129}Ba 8−17104
^{120}Sn(p,n)^{120}Sb, nuclear alignment of ^{120}Sb temp. depend. 8−41720
^{121}Sn, liquid scintillation counting for activation analysis of biological samples at nanogram level 8−3693
^{122}Sn, kaonic, E2 nuclear resonance effects 8−29868
^{122}Sn+^{120}Sn, 630 MeV, multipair transfer calcs. for superfluid ions, coupled channel WKB approx. 8−37373

nuclei with mass number 90 to 149 continued

^{122}Sn(K$^-$, X), 0 MeV, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
^{122}Sn(d,2n)^{122}Sb, ^{122}Sb 5$^+$ isomeric state mag. moment determ. 8−21493
^{122}Sn(d,d), 15 MeV, optical model calc. 8−41729
^{122}Sn(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8−29464
^{124}Sn, electron excitation of giant multipolar resonances *(Russian)* 8−8802
^{124}Sn, inelast. ^{3}He and α-particle scatt., ang. distrib. meas. and DWBA anal. 8−13125
^{124}Sn, zz 8−12964
^{124}Sn(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{124}Sn(α,α), optical model parametrization, cross section, energy depend. 8−33196
^{124}Sn(d,p), below and near Coulomb barrier 8−29483
^{117m}Sn, half-life and γ-ray intensities 8−4916
Sn(d,t)Sn, even A=112 to 124, deeply bound hole states of odd A Sn 8−8725
Sn(t,p), A=116, 118, two-nucleon stripping reactions with Tabakin pot. 8−21570
^{90}Sr β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{90}Sr, leaching behaviour in cement composites 8−37416
^{90}Sr, transmutation in fusion reactor imploding liner blanket 8−17420
^{97}Sr fission product, nuclear struct. *(German)* 8−29395
^{98}Sr, onset of deform. anal. from ^{98}Rb decay 8−12961
^{149}Tb, lifetimes of low-lying levels *(Russian)* 8−46027
Tc, A=98, 100, 101, short lived isomers from photonuclear reactions, internal conversion coeffs. 8−37308
^{a}Tc, A=93-95, nucl. g-factor NMR-ON meas. on Fe-Tc alloys 8−37275
^{93}Tc, effective three-body interaction 8−524
^{93}Tc, populated in heavy ion reactions, mag. moments, proton core polarisation 8−21598
^{95}Tc, high momentum states band structs. obs. in (α,2nγ) 8−33109
^{95}Tc, high spin states, coupled proton-neutron excitations 8−17225
^{96}Tc low lying states, level scheme, parities, from conversion electron, γ spectra 8−46024
^{98}Tc energy levels from ^{99}Tc(p,d), l-values, spectrocopic factors, parities 8−25183
^{99}Tc level structure, spin-parity, from inelastic scatt. and proton stripping studies 8−8743
^{99}Tc, neutron capture cross section meas. up to 80 keV 8−25197
^{99}Tc(d,d′), 17.2 MeV, level struct., spin-parity assignments 8−8743
^{99}Tc(p,d), 22.9 MeV, ^{98}Tc energy levels, l-values, spectroscopic factors, parities 8−25183
^{99m}Tc, production from ^{99}Mo 8−37353
^{99m}Tc, supercInd. effect on decay rate, lattice consts., transition temp. 8−41671
^{99m}Tc-HEDP, quantitative evaluation of rheumatoid arthritic activity 8−20255
^{99m}Tc-glucoheptonate, use in brain tumour detect. 8−20253
^{99m}TcO$_4$, radiation damage to mouse testis cells 8−24103
Te, even isotopes, effect of residual interaction in particle-particle channel on low-lying states 8−21503
^{123,125}Te, Fourier transform NMR, K$_2$TeO$_3$, Na$_2$TeO$_3$ in D$_2$O soln. 8−15046
Te(^{40}Ar,xnγ), Yb nuclei at high ang. momentum, moment of inertia from γ spectra 8−13135
Te(^{3}He, xn)^{125}Xe, prod. of ^{125}Xe for medical use using natural Te 8−3604
^{115}Te, nuclear alignment in Sn, temp. depend 8−41720
^{118}Te, levels studied via ^{116}Sn(^{16}O,^{14}C)^{118}Te, ang. distrib. anal. of 64 MeV reacts. 8−8836
^{118}Te, produced in ^{82}Se+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
^{122}Te, inelast. ^{3}He and α-particle scatt., ang. distrib. meas. and DWBA anal. 8−13125
^{122}Te(^{3}He,d), ^{123}I mass meas. from ground state Q-value 8−4896
^{124}Te, giant multipole reson. fragmentation over two-phonon states in spherical nuclei 8−575
^{124}Te, inelast. ^{3}He and α-particle scatt., ang. distrib. meas. and DWBA anal. 8−13125
^{124}Te^m, internal conversion in valence shell for M1 and M4 transitions, effect of chemical environment 8−33149
^{124}Te(p,2n)^{123}I, improved targetry and radiochem. for ^{123}I prod. 8−28064
^{124}Te(p,n)^{124}I, improved targetry and radiochem. for ^{124}I prod. 8−28064
^{125}Te, 109 keV transition, K-conversion coeff. determ. 8−552
^{125}Te, hyperfine field in PdMnSb, Mossbauer expts., compared with Jena-Geldart model 8−43707
^{127}Te decay, ^{127}I γ cascade, 360.3-57.6 keV γ-γ directional correl. 8−25151
^{130}Te, N stability, geochem. test independ. of decay mode 8−8667
^{130}Te(d,p), below and near Coulomb barrier 8−29483
^{119m}Te decay, population, ^{119}Sb levels, γ-γ and γ-e correls. 8−546
^{123m}Te, yields in Sb bombardment by protons and deuterons 8−37349
^{121m,g}Te, yields in Sb bombardment by protons and deuterons 8−37349
Te(α, xn)^{125}Xe, prod. of ^{125}Xe for medical use using natural Te 8−3604
Te(n,n′), A=124-130, scattering cross sections and optical model 8−4944
Te(t,p), SU(6) boson model for two-nucleon transfer intensities 8−25206
Xe, A=126-132 even nuclei, gyromagnetic ratios of 1st 2$^+$ states 8−12966
Xe isotopes, microscopic dynamic calc. of collective states 8−17075
^{118}Xe, decay investig. using mass separator on-line with synchrocyclotron 8−17139
^{119}Xe, decay investig. using mass separator on-line with synchrocyclotron 8−17139
^{123}Xe production in ^{127}I(p,xn) and ^{127}I(p,pxn) reactions 8−594
^{124}Xe, energy level scheme, ^{124}Cs decay 8−13033
^{124}Xe, level struct. exam. using β^+-decay of Cs 8−21498
^{125}Xe production for medical use by ^{3}He bombardment of natural Te 8−3604

nuclei with mass number 90 to 149 continued

^{126}Xe, level struct. exam. using β^+-decay of Cs 8−21498
^{127}Xe decay, absolute gamma-ray intensities 8−548
^{130}Xe+^{209}Bi, 1130 MeV, deform. and transfer in strongly damped collisions 8−21601
^{133}Xe, gaseous, absolute counting, calibration of well-type NaI(Tl)-detector 8−9036
^{133}Xe, nuclear moments and optical isotope shift 8−33118
^{136}Xe(n$_{th}$,γ)^{137}Xe, spectra meas., ^{137}Xe level and decay scheme 8−13102
^{137}Xe level and decay scheme from ^{136}Xe(n$_{th}$,γ) 8−13102
^{129m}Xe implanted in diamond, lattice location, combined Mossbauer and IPAC meas. 8−43733
Y, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
^{90}Y β decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{90}Y(^{90}Sr) beta scintillation counting, improved method with reusable phosphors 8−9024
^{97}Y fission product, nuclear struct. *(German)* 8−29395
^{99}Y fission product, nuclear struct. *(German)* 8−29395
Zr, A=90-95, levels, J$^\pi$, neutron-hole struct., ^{95}Zr IAS 8−508
Zr(^{3}He, ^{4}He), A=91-96, E=39 MeV, Zr levels, J$^\pi$, ^{95}Zr IAS 8−508
^{90}Zr, anal. of spectrum of transitions to low-lying 2$^+$ states 8−17138
^{90}Zr, broken-pair approx. to seniority shell model 8−29408
^{90}Zr, giant electric and magnetic multipole resonances, microscopic descript. 8−538
^{90}Zr, giant multipole reson. fragmentation over two-phonon states 8−575
^{90}Zr, $\gamma\gamma$ directional correl. meas. 8−33144
^{90}Zr, linearised Hartree Fock model, effective charge, isoscalar nuclear shifts, rms radius 8−25138
^{90}Zr, neutron and nuclear matter space distribs from (p,p) 1 GeV scatt. *(Russian)* 8−502
^{90}Zr, neutron reson. parameters below 300 keV 8−8805
^{90}Zr, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{90}Zr, populated in heavy ion reactions, mag. moments, proton core polarisation 8−21598
^{90}Zr, spherical nuclei, excitation of collective states in high-energy proton interactions 8−17073
^{90}Zr, zz 8−12964
^{90}Zr+^{12}C, 56 MeV, assignment of γ-ray cascade to ^{99}Rh 8−41762
^{90}Zr(^{3}He, ^{4}He)^{89}Zr, 39 MeV, ^{89}Zr IAS and bound hole states 8−492
^{90}Zr(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{90}Zr(^{3}He,n), second order processes in DWBA calcs. 8−46076
^{90}Zr(^{3}He,t)^{90}Nb, 130 MeV, giant Gamow-Teller resonance, T=4, T=5 components 8−46081
^{90}Zr(^{6}Li,^{6}Li′), 74 MeV, excitation of giant quadrupole reson. 8−8854
^{90}Zr(d,d), 10 and 15 MeV, optical model calc. 8−41729
^{90}Zr(d,p)^{91}Zr, 12.3 MeV, tensor analysing powers 8−29479
^{90}Zr(n,γ) ^{91}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
^{90}Zr(p,p′), polarised protons, compound nuclear contribs. to IAR inelastic decay 8−8813
^{90}Zr(p,p)^{90}Zr, 1 GeV, neutron and nuclear matter space distribs. *(Russian)* 8−502
^{90}Zr(p,π^+)^{91}Zr, 160 MeV, ang. distributions 8−37345
^{91}Zr, high resolution neutron transmission and capture 8−8806
^{91}Zr, nuclear reson. fluoresc., γ-ray spectra 8−588
^{91}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8−17190
^{91}Zr+^{11}B, 40 MeV, assignment of γ-ray cascade to ^{99}Rh 8−41762
^{91}Zr(p,nγ), 3.5-4.8 MeV, ^{91}Nb lifetimes, branching ratios, multipole mixing ratios 8−13011
^{92}Zr, gamma-gamma directional correl. study 8−29422
^{92}Zr(n,γ)^{93}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
^{92}Zr(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{93}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8−17190
^{94}Zr, 2$^+$ state, recoiling in Fe, enhanced transient fields 8−37284
^{94}Zr(n,γ)^{95}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
^{94}Zr(n,n′γ), 1.57-2.8 MeV, low levels excitation *(Russian)* 8−41722
^{95}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8−17190
^{96}Zr(n,γ)^{97}Zr, thermal neutron reactions, γ-ray line obs. 8−17190
^{96}Zr(t,p), 20 MeV, short range correlations with Tabakin pot. 8−13115
^{96}Zr(t,p), two-nucleon stripping reactions with Tabakin pot. 8−21570
^{97}Zr β decay into ^{97}Nb, level struct., spins, parities, from γ ang. correls. 8−29418
^{97}Zr fission product, nuclear struct. *(German)* 8−29395
^{97}Zr, populated in thermal neutron radiative capture reactions, γ-ray line obs. 8−17190
^{99}Zr fission product, nuclear struct. *(German)* 8−29395
^{100}Zr, confirmation of 331 keV 0$^+$ state 8−41643
^{100}Zr, lifetime meas. of 331.3 keV 0$_2$$^+$ state 8−21523
Zr(α,α), A=90, 92, optical model parametrization, cross section, energy depend. 8−33196
Zr(α,α), A=90,2, E=40-120 MeV, form factors, optical model anal. 8−13123

nuclei with mass number 150 to 189

^{150}Sm(^{16}O,^{18}O)^{148}Sm, 2$_1$$^+$ ang. distributions, shape difference between pickup and stripping reaction 8−33209
γ-ray multiplicities meas. at beam energies 40 to 140 MeV 8−21585
data sheets for A=184 nuclei 8−12948
deformed nuclei, one-particle state fragmentation, general regularities *(Russian)* 8−494
high spin effects in nuclei with proton no. 40-60, shape, deforms. 8−503
multipole excitation of doubly-open shell spherical nuclei 8−21507
rare earths, pairing energy, single particle levels and interaction matrix elements 8−8721
recoil shadow method in-beam spectroscopy of low energy conversion electrons 8−33372
W+p, 24 GeV, J/ψ prod. cross section 8−46055
^{159} Tb, 58 keV level, nuclear reson. fluorescence 8−33121
^{161} Dy, in Gd$_2$O$_4$, and Gd, TDPAC meas. 8−10809
Au, isotopes near A=186, competition of nucl. shape 8−17094
Au, odd isotopes, negative-parity level props. 8−17103
^{185}Au, high-spin states anal. h$_{9/2}$ and i$_{13/2}$ bands 8−25117

nuclei with mass number 150 to 189 continued
^{187}Au energy states from ^{187}Hg decay, parities γ-spectra, triaxial nuclear deform. *(French)* 8−33143
^{197}Au+^{32}S, 373 MeV, in-plane ang. correls. between α and residue heavy ions 8−46101
^{197}Au(n,γ), cross section, statistical theory anal., radiative strength functions *(Russian)* 8−17212
^{158}Cy, double crossing of ground rotational band and super band 8−45996
Dy (A=154, 156), negative parity band crossing in even-even nuclei 8−21488
Dy(^{3}He,d), (α,t), ^{a}Ho single proton states, A=157, 159, 161, 163 8−489
^{153}Dy, populated by ^{144}Nd(^{12}C,3n), 59 MeV, level lifetimes, instrument testing 8−13375
^{156}Dy, prompt transitions multipolarities, γ and conversion electron spectra, energy level bands, spin, parity 8−8768
^{156}Dy, superband 8−29374
^{157}Dy, decoupled bands, perturbative anal. level energies 8−41623
^{160}Dy, hyperfine interaction of Γ_8 quartet, Mossbauer expt. 8−43718
^{161}Dy, E0, E2 and E4 charge moment determ., using muonic atoms 8−21490
^{162}Dy, intraband transition rates in gamma vibr. bands 8−45992
^{162}Dy+^{16}O, Coulomb-nuclear interference for high spin states 8−46097
^{163}Dy(α,α'), E2 and E4 transition moments, rotational states 8−41740
^{164}Dy, in neutron-irrad. Al$_2$O$_3$, β-decay, electron slowing-down flux spectrum 8−10108
^{164}Dy(^{32}S,^{32}S$'\gamma$), recoil distance lifetimes of ground state bands 8−8774
Dy(α,α'), A=156,8, E=12-13 MeV, E2, E4 transition matrix elements determ. 8−33202
Er, A=161,162, high ang. momentum states from Nd+^{16,18}O, γ decay modes from multiplicity meas. 8−29419
Er production in ^{a}Ge+^{86}Kr, A=70, 74, 76, and ^{a}Sn+^{40}Ar, A=122, 124, 50 to 120 MeV, angular momentum limits 8−25224
^{a}Er,A=166,168,170, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{a}Er, A=166-170, α-particle Coulomb excitation of octupole vibr. states 8−41618
^{154}Er, high-spin states 8−29373
^{156}Er, negative parity band crossing in even-even nuclei 8−21488
^{156}Er, negative parity yrast states, microscopic calc. 8−495
^{156}Er, nonaxial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
^{156}Er, rotating nuclei, two-phase model 8−33113
^{158}Er, double crossing of ground rotational band and super band 8−45996
^{159}Er decay populating ^{159}Ho levels, γ-singles and electron conversion spectra 8−547
^{159}Er, decoupled bands, perturbative anal. level energies 8−41623
^{160}Er, produced in ^{124}Sn+^{40}Ar, γ-ray multiplicity spectra, nuclear shape at high angular momentum 8−37260
^{162}Er, microscopic calc. of high-spin rot. states 8−8730
^{163}Er, excited states populated in ^{163}Tm decay 8−17146
^{164}Er, populated via ^{150}Nd(^{18}O,4n)^{164}Er, multiple band crossings 8−37257
^{166}Er, Coulomb excitation with ^{4}He and ^{16}O ions 8−8839
^{166}Er, level population by radioactive decay of ^{166}Ho *(French)* 8−545
^{166}Er, non axial deformability of rotating nuclei in two-phase model *(Russian)* 8−46002
^{166}Er, rotating nuclei, two-phase model 8−33113
^{167}Er(α,α), E2 and E4 transition moments, rotational states 8−41740
^{167}Er(d,d'), 12.1 MeV, excitation of Nilsson states, Coriolis coupling 8−33190
^{168}Er, intraband transition rates in gamma vibr. bands 8−45992
^{168}Er(d,t)^{167}Er, 17 MeV, DWBA anal. of ang. distribs. 8−17222
^{170}Er level struct. obs. in ^{170}Ho β^--decay 8−41675
^{170}Er(^{32}S,^{32}S$'\gamma$), recoil distance lifetimes of ground state bands 8−8774
Er(α,α'), A=162, 4, E=12-13 MeV, E2, E4 transition matrix elements determ. 8−33202
^{151}Eu, Mossbaeur obs. of hyperfine interactions in Eu intermetallic cpds. 8−43714
^{151}Eu, Mossbauer effect in Eu$_x$Sr$_{1-x}$S, Eu$_x$Sr$_{1-x}$SO$_4$, and Eu$_x$Ca$_{1-x}$ 8−14971
^{151}Eu, Mossbauer spectra of EuO-RN solid solns., (R=Nd,Eu,Gd) 8−6610
^{156}Eu decay, γ-γ directional correls., ^{156}Gd transitions from second K$^\pi$=0$^+$ band 8−25150
^{152g}Eu, neutron resonance obs. by time of flight spectroscopy, cf. ^{151}Eu and ^{153}Eu *(Russian)* 8−25120
Eu(n,γ), A=151, 153, cross section, statistical theory anal., radiative strength functions *(Russian)* 8−17212
Gd(^{35}Cl,^{35}Cl$'\gamma$), A=154, 6, 132-43 MeV, lifetime meas. of high spin states 8−13140
^{a}Gd, A=156,158,160, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{150}Gd, vibr. levels anal. from ^{150}Tb decay 8−8772
^{152}Gd, negative parity band crossing in even-even nuclei 8−21488
^{153}Gd, use in tissue lipid content analysis by photon absorpt. 8−28041
^{154}Gd(α,α'), 11.8 MeV, charge deform. parameter determ. 8−33201
^{155}Gd, Mossbauer spectroscopy of mag. ordering in Gd$_x$Ce$_{1-x}$Ru$_2$ 8−27139
^{156}Gd transitions from second K$^\pi$=0$^+$ band following ^{156}Eu decay, branching, mixing ratios 8−25150
^{158}Gd(p,n)^{158}Tb, 7.4 MeV, equilib. and nonequilib. contribs. 8−21565
^{160}Gd(^{16}O,4n), ^{172}Hf high spin states, two-quasiparticle struct. 8−25217
Gd(α,α'), A=154,156,158,160, E2 and E4 reduced matrix elements 8−29490
Gd(d,d'), A=155, 157, 12.1 MeV, excitation of Nilsson states, Coriolis coupling 8−33190
He, A=157, 159, 161, 163, single proton states, Dy(^{3}He,d) and Dy(α,t) reactions 8−489
^{172}Hf, decoupled two-quasiparticle bands, backbending 8−4890
^{172}Hf, gamma-ray spectra of ^{172}Yb, excited level struct. 8−33140
^{172}Hf production, recovery and purification for nucl. medicine use as ^{172}Lu generator 8−48893
^{172}Hf rotation bands from ^{160}Gd(^{16}O,4n), high spin states, halflives 8−25217
^{174}Hf, double crossing of ground rotational band and super band 8−45996
^{174}Hf, microscopic calc. of high-spin rot. states 8−8730
^{176}Hf, ground rotational band level energies calc. 8−45996
^{176}Hf yrast traps, cranking Hartree Fock Bogoliubov calcs. 8−25100
^{178}Hf, 2$^+$-0$^+$ transitions, mean square nuclear charge radius change, Mossbauer expt. 8−25109
^{178}Hf, g-factor for K=6, J$^\pi$=6$^+$ isomer, perturbed ang. distrib. meas. 8−37277
^{180}Hf, nonrotational interpretation of E$_4$ matrix element 8−33111
^{180}Hf(n,α), thermal cross-sections 8−4932
Hf(α,α'), A=176,8,180, E2 and E4 reduced matrix elements 8−29490
Hg, isotopes near A=186, competition of nucl. shape 8−17094
^{180}Hg, T$_{1/2}$=3s decay chain, on-line γ-ray spectroscopy 8−13034
^{184}Hg$\rightarrow$^{184}Au decay, energy levels and lifetimes *(French)* 8−41661
^{186}Hg from ^{186}Tl decay, γ, conversion electron spectra and coincidences, shape coexistence 8−25156
^{187}Hg decay, ^{187}Au energy states, parities, γ spectra, triaxial nuclear deform. *(French)* 8−33143
Ho, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
^{159}Ho, level scheme, γ-singles, conversion electron spectra via ^{159}Er decay 8−547
^{165}Ho, electron-oriented nucleus scatt., eikonal approx. calc. 8−37331
^{165}Ho +^{86}Kr, 618 MeV, γ-ray multiplicities and angular momentum fractionation 8−37370
^{165}Ho, aligned, pion cross-section meas. in (3,3) reson. region 8−29507
^{165}Ho+^{84}Kr, damped collision, interaction time 8−637
^{165}Ho+n, polarised projectile and target, spin depend. of total cross section *(Russian)* 8−17211
^{165}Ho(n,γ), <2 keV, spin depend. of s-wave neutron strength function 8−21562
^{165}Ho(π^-,X), 175 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{166}Ho, radioactive decay, ^{166}Er level population *(French)* 8−545
^{170}Ho β^--decay, T$_{1/2}$ meas., ^{170}Er level struct. 8−41675
^{166m}Ho, relative intensities of gamma-rays 8−46201
Ir, odd isotopes, negative-parity level props. 8−17103
^{181}Ir, γ-ray spectra, half-life, decay scheme 8−41672
^{172}Lu, gamma-ray spectra of ^{172}Yb, excited level struct. 8−33140
^{172}Lu generator, ^{172}Hf production, recovery and purification for nucl. medicine use 8−48893
^{174}Lu, populated by ^{176}Lu (p,t)^{174}Lu, energy levels and rotational bands 8−37346
^{175}Lu(^{12}C,f), fission probability calc., α emission and evaporation effects 8−657
^{175}Lu(γ,γ'), elastic and Raman scatt. at 8.5-11.4 MeV, GDR parameters 8−587
^{175}Lu(π^-,X), 230 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{176}Lu, reson. spins, secondary γ-transition intensity, from ^{175}Lu(n,γ) 8−21512
^{177}Lu, reson. spins secondary γ-transition intensity meas. in ^{176}Lu(n,γ) 8−21512
^{177}Lu, nuclear quadrupole alignment 8−48090
^{176m}Lu, electron capture meas. *(German)* 8−33153
Nd(^{12}C,^{12}C), A=143-150 even isotopes, multistep effects in elast. and inelast. scatt. at 70.4 MeV 8−17240
^{150}Nd, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{150}Nd+^{150}Nd$\rightarrow$^{300}120, effect of nuclear force finite range on fission and heavy-ion reactions 8−13180
^{150}Nd+^{20}Ne, 175 MeV, cross sections and energy spectra 8−41760
^{150}Nd(^{16,18}O, xnγ), 69-78 MeV, ^{161,162}Er high ang. momentum states, γ decay modes from multiplicity meas. 8−29419
^{150}Nd(α,4n)^{150}Sm, 45 MeV, yrast bands in Sm anal. in interacting boson approx. 8−13124
^{177}Os$\rightarrow$^{177}Re decay scheme, lower excited states of ^{177}Re obs. 8−17145
^{179}Os$\rightarrow$^{179}Re decay scheme, lower excited states of ^{179}Re obs. 8−17145
^{185}Os, γ-ray spectra obs., first forbidden beta decay anal. 8−559
^{186}Os, 2$^+$-0$^+$ transitions, mean square nuclear charge radius change, Mossbauer expt. 8−25109
^{186}Os, electromagnetic moments from muonic X-rays 8−12972
^{188}Os, electromagnetic moments from muonic X-rays 8−12972
^{188}Os, hyperfine interaction in Gd, PAC expts. 8−48102
^{189}Os(α,2n), 23-27 MeV, ^{191}Pt level scheme, γ, conversion electron spectra, spins, parities 8−25149
^{189}Os(e,e'), 72-100 keV, nucl. excitation by electron transition 8−41703
Os(γ,xn), photoneutron cross section, bremsstrahlung yield curves 8−17176
^{152}Pm decay, β and γ rays, spins, half lives, ^{152}Sm levels 8−542
Pt, isotopes near A=186, competition of nucl. shape 8−17094
^{188}Pt side band, low lying and high spin states populated in ^{191}Ir(p,4nγ) 8−4936
Re, A=183, 184, 186, 188, nuclear quadrupole alignment in Re single cryst. at low temp. 8−48091
^{177}Re, populated in decay of Os isotopes, lower excited state obs. 8−17145
^{179}Re, populated in decay of Os isotopes, lower excited state obs. 8−17145
^{182}Re, cryonuclear physics for radioactive decay studies *(Dutch)* 8−29416
^{183}Re, elec. quadrupole moment of 514 Nilsson state, TDPAC meas. 8−37276
^{183}Re, γ-ray spectra obs., first forbidden beta decay anal. 8−559
^{187}Re, 206 keV state, g-factor, time differential PAC meas. 8−505
Sm(^{3}He,^{3}He'), 53 MeV, even A=144-154, DWBA anal. of ang. distribs. 8−17230
^{a}Sm, A=150,152,154, fast neutron radiative capture cross sections, 5 to 350 keV *(Russian)* 8−33188
^{150}Sm, negative parity band crossing in even-even nuclei 8−21488
^{150}Sm, yrast bands anal. from ^{150}Nd(α,4n), interacting boson approx. 8−13124
^{150}Sm(^{12}C,^{14}C), 2$_1$$^+$ ang. distributions, shape difference between pickup and stripping reaction 8−33209

nuclei with mass number 150 to 189 continued
^{150}Sm(^{16}O,xnγ), Yb nuclei at high ang. momentum, moment of inertia from γ spectra 8–13135
^{150}Sm(p,2nγ), 18-26 MeV, level struct. of ^{149}Eu, spin, parity 8–21561
^{152}Sm, giant resonance excitation by (e,e′) at 60-105 MeV, DWBA analysis *(Russian)* 8–41686
^{152}Sm levels populated in ^{152}Pm decay, γ spectra 8–542
^{152}Sm(^{35}Cl,^{35}Cl′γ), 132-43 MeV, lifetime meas. of high spin states 8–13140
Sm(n,n), (n,n′), (n,n′Γ), A=150,2, E=2.47 MeV, collective excitations obs. 8–33187
Sm(t,p), SU(6) boson model for two-nucleon transfer intensities 8–25206
Ta, γ-ray attenuation meas. using Ge(Li) detector 8–17539
Ta, mass dependence for radiative capture of 14.1 MeV neutrons 8–13087
Ta+p(K$^-$), 28.5 (12.6) GeV/c, backward particle emission, energy depend. 8–25236
Ta+p→p+X, backward inclusive scattering of polarised protons 8–17206
^{178}Ta, nucl. orientation in Fe 8–39412
^{181}Ta, 6.2 keV level, Mossbauer spectroscopy, source prep. 8–25373
^{181}Ta, appl. to Mossbauer meas. of gravitational red shift 8–24905
^{181}Ta, ground state rotational band, electroexcitation 8–33168
^{181}Ta, PAC obs. of crit. behaviour of Ni-Ta system 8–43723
^{181}Ta+^{86}Kr, 620 MeV, charge and ang. distribs., kinetic energy spectra, of deeply inelastic fragments 8–25221
^{181}Ta+$\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8–25239
^{181}Ta(e,e′), giant monopole and quadrupole resonances excitation 8–17184
^{181}Ta(γ,γ′)^{181}Ta, elastic and Raman scatt. at 8.5-11.4 MeV, GDR parameters 8–587
^{181}Ta(n,γ), 2-3 eV, γ-spectra, energy levels, J$^{\pi}$ 8–602
^{181}Ta(n,γ), cross section, statistical theory anal., radiative strength functions *(Russian)* 8–17212
^{181}Ta(n,n’)^{181}Ta, 9.1 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8–25198
^{181}Ta(n,total), 15 to 2030 eV resonances, time of flight spectroscopy 8–41716
^{181}Ta(p,n)^{181}W, 10.2 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8–25198
^{181}Ta($\pi^{\pm}$,p), ($\pi^{\pm}$,d), E=100, 220 MeV, p and d spectra meas. 8–648
^{182}Ta, decay scheme, conversion electron spectra, K-line transitions 8–13025
^{182}Ta, levels, J$^{\pi}$, via 2-3 eV neutron capture γ-spectra 8–602
^{150}Tb, β-decay, ^{150}Gd vibr. levels anal. 8–8772
Tb(p,f), 600 MeV, mass yields in binary fission 8–8819
^{186}Tl decay, γ, conversion electron spectra and coincidences, ^{186}Hg bands, shape coexistence 8–25156
^{163}Tm decay, ^{163}Er excited state obs. 8–17146
^{163}Tm, high spin rot. levels, studied via ^{165}Ho(^{3}He,5n) and ^{165}Ho(α,6n) reactions 8–8722
^{169}Tm, Mossbauer expts. in ^{3}He-^{4}He dilution refrigeration 8–27127
^{169}Tm, studied via ^{169}Tm(^{32}S,^{32}S′γ), EM props. of ground state rot. band 8–8726
^{169}Tm(p,n), cross sections and spectra, exciton model *(Russian)* 8–21536
^{171}Tm, 635.4 keV level props., mag. moment from γ ang. correl. meas. 8–13017
W isotopes, A=182, 184, 186, Coulomb excitation with ^{4}He and ^{16}O ions 8–8839
W, produced in (^{16}O,xn) 8–37371
W+O, fission lifetime distrib. and probability estimates 8–659
W+p, 400 GeV/c, dihadron prod., A depend. of prod. cross sections for massive dihadron states 8–33180
W(^{16}O,^{16}O′), 53, 4 MeV, quadrupole moment determ. 8–12968
^{174}W, decoupled two-quasiparticle bands, backbending 8–4890
^{179}W, backbending, high spin isomer decay 8–45997
^{182}W, 2$^+$-0$^+$ transitions, mean square nuclear charge radius change, Mossbauer expt. 8–25109
^{182}W, Mossbauer lineshape, dispersion amplitudes 8–25146
^{182}W, reson. γ-quanta absorption and emission probabilities *(Russian)* 8–23383
^{182}W(^{12}C,f), fission probability calc., α emission and evaporation effects 8–657
^{182}W(^{20}Ne,xn)Po, neutron deficient isotope prod. 8–8835
^{184}W(^{18}O, ^{18}O), polarisation by Coulomb excitation in closed formalism 8–37376
^{187}W, p and α interactions, 2 to 5 GeV/nucleon, multiplicities of secondary particles *(Russian)* 8–46066
W(α,α′), 13.5 MeV, anal. of deexcitation γ-rays, quadrupole moment determ. 8–12968
W(π^-, Ψ), 43 GeV, A dependence of inclusive distrib. *(Russian)* 8–45983
Yb, A=153-158, neutron deficient isotopes, daughter products, α-decay, halflives 8–21533
Yb, A=163, 165, 167, backbending of rotational bands 8–8728
Yb, A=169, 170, moments of inertia of excited bands, even-odd difference *(Chinese)* 8–498
Yb, A=172,174,176, Mossbauer effect in Yb cpds., appl. of in-beam implantation method 8–25372
Yb with high angular momentum from heavy ion reactions, moment of inertial using γ-spectra 8–13135
^{161}Yb, produced in (^{16}O, xn), γ-ray spectra, dipole moment in yrast cascade 8–37371
^{168}Yb, microscopic calc. of high-spin rot. states 8–8730
^{168}Yb(α,α′), 12-13 MeV, E2, E4 transition matrix elements determ. 8–33202
^{170}Yb, Mossbauer relax. spectrum in $Cs_2NaYbCl_6$ 8–27141
^{170}Yb, Mossbauer spectroscopy, fast γ-ray detection systems 8–25376
^{172}Yb, gamma ray spectra, β-decay of ^{172}Hf and ^{172}Lu 8–33140
^{172}Yb(d,p)^{173}Yb, 14 MeV, proton spectra and ang. distrib. meas. level struct. determ. 8–29482
^{174}Yb(^{12}C,f), fission probability calc., α emission and evaporation effects 8–657
^{174}Yb(^{32}S,^{32}S′γ), recoil distance lifetimes of ground state bands 8–8774
^{174}Yb(d,t)^{173}Yb, 14 MeV, proton spectra and ang. distrib. meas. level struct. determ. 8–29482

nuclei with mass number 190 to 219
^{209}Bi(α,f), search for near threshold asymmetrical fission *(Russian)* 8–33233
A=198 nuclei, struct., level props., decay, review 8–17077
A=214 nuclei, struct. info., energy levels, spin, parity, decay 8–17078
A=218 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8–17079
compound nuclei prod. in (HI, xn), lifetimes with account of fission process *(Russian)* 8–25233
multipole excitation of doubly-open shell spherical nuclei 8–21507
optical model parametrization, cross section, energy depend. 8–33196
Pt(t,α), A=194, 196, population of Ir, A=193, 195, proton states 8–33123
rare earths, pairing energy, single particle levels and interaction matrix elements 8–8721
^{210}At, isomeric 19$^+$ state, isospin depend. in two-particle core polarisation 8–21499
Au, binary fission characts. induced by α-particle bombardment of 0.65 to 4.12 GeV 8–13169
Au, eikonal approx. of electron scatt. by spherically symmetric nuclei 8–37330
Au, odd isotopes, negative-parity level props. 8–17103
Au, photonuclear cross-sections in giant reson. region 8–17178
Au, proton-induced fission at 400 GeV, ternary to binary event ratio 8–13170
Au, spin and mag. moment, trends in neutron deficient nuclei 8–37261
Au+O, fission lifetime distrib. and probability estimates 8–659
^{a}Au, A=193-199, positive parity states, particle-asymmetric rotor description 8–46005
^{194}Au decay scheme, γ-spectrum, low-intensity transitions and level energies of ^{194}Pt 8–13003
^{196}Au, studied via ^{197}Au(n,2n), isomeric cross-section ratio and spin-cut-off factor 8–13096
^{197}Au +^{86}Kr, 618 MeV, γ-ray multiplicities and angular momentum fractionation 8–37370
^{197}Au (^{9}Be, ^{9}Be), 14-26 MeV, universal optical pot. 8–25219
^{197}Au, Mossbauer effect in Au, Pd, and Pt matrices 8–15080
^{197}Au Mossbauer spectroscopy, integrating counting technique 8–25377
^{197}Au+^{132}Xe, 7.5 MeV/amu ions, neutron multiplicities as func. of total energy loss 8–21606
^{197}Au+^{40}Ar, 220 MeV, nucleon transfer reactions *(Russian)* 8–33219
^{197}Au(^{16}O,Cα), ang. correlations between react. products 8–8849
^{197}Au(α,α), 24 MeV, total reaction cross section 8–25209
^{197}Au(d,pn), E_d=13.6 MeV, disintegration reactions, isotopic effects 8–13108
^{197}Au(n,γ), cross section meas. using large Gd loaded liquid scintillator 8–25380
^{198}Au, redetermination of γ-ray standards between 0.1 and 1.0 MeV 8–37472
Au(α,f) 0.65, 1.74, 4.12 GeV, and using polycarbonate detector 8–13178
Bi, binary fission characts. induced by α-particle bombardment of 0.65 to 4.12 GeV 8–13169
Bi, π^- absorption *(Russian)* 8–46115
^{203}Bi high spin states from ^{203}Tl(α,4n), lifetimes meas. 8–29485
^{206}Bi, nucl. orientation in ferromag. BiMn 8–13010
^{207}Bi, decay, time differential perturbed ang. γ-γ correl. meas. 8–17134
^{207}Bi, nucl. orientation in ferromag. BiMn 8–13010
^{209}Bi, conc. and temp. depend. nucl. relax. in liq. Bi-Sn(Pb) alloys 8–19357
^{209}Bi coherent scattering of polarised thermal neutrons, parity violating effects 8–29461
^{209}Bi, effect of pairing modes in multiplet struct. 8–12973
^{209}Bi, NQR in $BiCl_3.GaCl_3$ complex, geom. struct. 8–25569
^{209}Bi, particle-vibr. model 8–519
^{209}Bi, reson. parameters for s and p-wave levels 8–37322
^{209}Bi+^{136}Xe, damped collision, interaction time 8–637
^{209}Bi+^{14}N, 85 and 95 MeV, preequilibrium α spectra, statistical treatment 8–41750
^{209}Bi+ZZ *(Russian)* 8–46120
^{209}Bi+d, 6.3 GeV/c, inclusive spectra of fast p and d *(Russian)* 8–46075
^{209}Bi+p, 39 MeV, intranuclear cascade model 8–33185
^{209}Bi(α,α), 24 MeV, total reaction cross section 8–25209
^{209}Bi(γ,γ′), 7.28, 7.63 MeV, energy levels anal. 8–13058
^{209}Bi(γ,xn), x=2,3 or 4, cross sections at intermediate energies 8–8793
^{209}Bi(n,n), 0.6 to 1.0 MeV, optical model params. 8–21557
^{214}Bi, meas. of low conc. in air 8–28308
Bi(α,f), 0.65, 1.74, 4.12 GeV, and using polycarbonate detector 8–13178
Bi(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8–13081
Hg, A=199, 197, 5/2$^-$ state halflife and mag. moments 8–506
Hg, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8–12950
^{a}Hg, A=198-204, reorientation effect meas. on 2$^+$ states 8–37282
^{197}Hg energy levels from ^{195}Pt(α,2n), γ and conversion electron spectra, spins, parities 8–25149
^{197}Hg, quadrupole interaction and lattice location in Be 8–48086
^{197}Hg, TDPAC and Mossbauer obs. of quadrupole interactions of Au in Be 8–43726
^{198}Hg, static quadrupole moment of 1st excited state 8–17095
^{199}Hg, Mossbauer spectroscopy, fast γ-ray detection system 8–25376
^{202}Hg(α,3nγ), 38.2 MeV, γ-spectra obs., ^{203}Pb decay scheme determ. 8–29489
^{204}Hg (α,4n), yrast levels in ^{204}Pb, spin, parity, γ spectra 8–12954
Ir, A=193, 195, proton states, populated via Pt(t,α), A=194, 196 8–33123
Ir, odd isotopes, negative-parity level props. 8–17103
^{191}Ir(d,2n), 13 MeV, ^{191}Pt level scheme, γ, conversion electron spectra, spins, parities 8–25149
^{191}Ir(p,4nγ), 38 MeV, low lying and high spin states in ^{188}Pt side band 8–4936
^{191}Ir(p,n), 10 MeV, ^{191}Pt level scheme, γ, conversion electron spectra, spins, parities 8–25149
^{192}Ir β decay into ^{192}Pt 3$^+$ and 4$_1{}^+$ states, lifetime meas. by β-γ coincidence 8–25153

nuclei with mass number 190 to 219 continued
^{192}Ir, redetermination of γ-ray standards between 0.1 and 1.0 MeV 8−37472
^{190}Os, electromagnetic moments from muonic X-rays 8−12972
^{190}Os(n,n')^{190m}Os, 13-17 MeV, cross section meas. by activation method 8−46057
^{192}Os, electromagnetic moments from muonic X-rays 8−12972
^{192}Os, muonic, dynamic hyperfine effect, model independ. anal. 8−22057
^{192}Os(^{12}C,^{14}C)^{190}Os, 70 MeV, shape transition effect on quadrupole transfer strength 8−644
^{192}Os(d,p)^{193}Os, ^{193}Os energy levels, neutron separation energy 8−41642
^{192}Os(n,γ)^{193}Os, ^{193}Os energy levels, neutron separation energy 8−41642
^{193}Os, energy levels investig. using ^{192}Os(d,p)^{193}Os and ^{192}Os(n,γ)^{193}Os reactions 8−41642
^{194}Os beta decay, X-ray/gamma relative intensities, L_1 subshell yields 8−4919
^{196}Os, $T_{1/2}$ and partial decay scheme 8−21527
Os(γ,xn), photoneutron cross section, bremsstrahlung yield curves 8−17176
Pb, A=193, 5, 7, 9, high-spin states anal. by heavy ion reactions 8−21500
Pb, A=200, 202, 204, seniority four admixtures in low lying 0^+ states 8−8741
Pb, A=204,6, quadrupole moments of first excited state meas. 8−21491
Pb, binary fission characts. induced by α-particle bombardment of 0.65 to 4.12 GeV 8−13169
Pb, γ-ray attenuation meas. using Ge(Li) detector 8−17539
Pb, multiple scatt. of cosmic ray muons at sea level, 230 MeV/c 8−7850
Pb, multiple scatt. of cosmic ray muons at sea level, anomalous scatt. distrib. 8−7851
Pb, π^- absorption *(Russian)* 8−46115
Pb+e^+, 0.5-3.5 GeV positron initiated showers, test of cosmic ray shower calcs. 8−37332
Pb+Kr, deep inelastic collisions, excitation of nuclear surface modes 8−37374
Pb+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
Pb+π^-, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
Pb+U, 750 MeV, classical model, kinetic energy, ang. distribs., instantaneous fission fragments 8−13185
^{201}Pb, nuclear spin, metastable atomic states, hyperfine struct. meas. 8−25110
^{203}Pb, high-spin level struct. determ. from ^{202}Hg(α,3nγ) at 38.2 MeV 8−29489
^{203}Pb, nuclear spin, metastable atomic states, hyperfine struct. meas. 8−25110
^{204}Pb yrast levels populated in ^{204}Hg (α,4n), spin, parity, γ spectra 8−12954
^{206}Pb, level scheme including conversion electrons ≤40 eV 8−21518
^{206}Pb proton pairing vibr. obs., using (^{3}He,n) reaction of 33.3 MeV 8−13128
^{206}Pb(α,α), 24 MeV, total reaction cross section 8−25209
^{206}Pb(t,p), two-nucleon stripping reactions with Tabakin pot. 8−21570
^{207}Pb+p, 70 GeV/c, s-particles ave. multiplicity 8−21567
^{207}Pb(d,pn), E_d=13.6 MeV, disintegration reactions, isotopic effects 8−13108
^{207}Pb(p,p'), 135 MeV, DWIA test 8−33186
^{208}Pb, neutron and nuclear matter space distribs. from (p,p) 1 GeV scatt. *(Russian)* 8−502
^{208}Pb, π bound states in finite nuclei 8−46013
^{208}Pb (Ar, π^-X), 1.8 GeV/nucleon, fireball model calc. of π-multiplicity distribs. 8−37366
^{208}Pb (p,p), 1.04 GeV elastic scatt., polarisation 8−21549
^{208}Pb (p,p) elastic scatt., polarisation and spin-orbital amplitude parameters, 1 GeV *(Russian)* 8−17208
^{208}Pb, eikonal approx. of electron scatt. by spherically symmetric nuclei 8−37330
^{208}Pb, excitation of low lying collective states by (n,n') scatt. 8−17205
^{208}Pb giant electric and magnetic multipole resonances, microscopic descript. 8−538
^{208}Pb, isoscalar breathing mode state obs. in (α,α') scatt. at 96 MeV 8−17086
^{208}Pb, K^+ interaction with nuclei 8−13165
^{208}Pb, linearised Hartree Fock model, effective charge, isoscalar nuclear shifts, rms radius 8−25138
^{208}Pb, longit. isoscalar electroexcitation, sum rules and mean excitation energy 8−521
^{208}Pb, pion scatt., 355 MeV, ratio of π^+ and π^- cross sections from coincidence meas. 8−29501
^{208}Pb, pion-exchange contribs. to charge densities, HF calcs. 8−46001
^{208}Pb region, effective interaction and energy spectra 8−25121
^{208}Pb region, finite Fermi systems, review 8−537
^{208}Pb, Thomas-Fermi model 8−8747
^{208}Pb, zz 8−12964
^{208}Pb+^{12}C, 96 MeV, inelastic scatt., folding model, macroscopic formalism, form factors 8−25227
^{208}Pb+^{136}Xe, double octupole phonon excitation, coupled channel WKB approx. 8−4960
^{208}Pb+^{16}O, 20 MeV/A, nucleon motion effect on energy spectra and ang. distribs. 8−4971
^{208}Pb+^{16}O, microscopic model anal. of fragment yields at 20 MeV/A and 2100 MeV/A 8−33214
^{208}Pb+^{40}Ca, 255, 300 MeV, lowered fusion cross section 8−41797
^{208}Pb+^{6}Li, Coulomb and nucl. excitation in ^{6}Li dissociation 8−41770
^{208}Pb+^{86}Kr, 469 MeV, search for superheavy nuclei, Z>106, lifetimes >2 ps 8−46102
^{208}Pb(^{12}C,^{11}B)^{209}Bi, DWBA anal. including nuclear wave function polarisation 8−629
^{208}Pb(^{12}C,^{11}B)^{209}Bi, single-particle polarisation, two-centre shell model 8−13142
^{208}Pb(^{16}O,Cα), ang. correlations between react. products 8−8849
^{208}Pb(^{3}He,α), inner hole states excitation, DWBA anal., reaction mechanism *(French)* 8−41735
^{208}Pb(^{40}Ar, πX), 1.8 GeV/nucleon, appl. of multiple-collision model for pion prod. 8−37365
^{208}Pb(α,α'), RPA calcs., existence of breathing mode 8−25163

nuclei with mass number 190 to 219 continued
^{208}Pb(α,α), 104 MeV, optical model analysis 8−41737
^{208}Pb(α,α), 20 to 26 MeV, total reaction cross section meas. 8−25209
^{208}Pb(d,d'), RPA calcs., existence of breathing mode 8−25163
^{208}Pb(d,p), below and near Coulomb barrier 8−29483
^{208}Pb(d,p)^{209}Pb, 12.3 MeV, tensor analysing powers 8−29479
^{208}Pb(d,pn), E_d=13.6 MeV, disintegration reactions, isotopic effects 8−13108
^{208}Pb(e,e'), 50 and 63.5 MeV, mag. quadrupole strength fragmentation 8−41705
^{208}Pb(e,e'), isospin fine struct., 8-12 MeV, multipole assignment of 8.9 MeV reson. 8−13071
^{208}Pb(e,e'), RPA calcs., existence of breathing mode 8−25163
^{208}Pb(γ,γ), 6.92, 7.12 MeV, reson. fluoresc. meas. 8−8797
^{208}Pb(γ,γ), mean polarisation meas. of 4843 keV 8−29446
^{208}Pb(γ,n), 8 to 13 MeV, total cross section, resonance struct. 8−4928
^{208}Pb(γ,p), up to 4.5 GeV, ang. depend. of normalised invariant cross section parameters *(Russian)* 8−17180
^{208}Pb(n,n), (n,n'), 7-26 MeV, optical model anal. 8−37340
^{208}Pb(p,d), two stage processes in direct reactions *(Dutch)* 8−29439
^{208}Pb(p,p'), 40, 45 MeV, fine struct. in giant resonance region, collective dipole spin flip excitation 8−46056
^{208}Pb(p,p'), sum rule anal. of inclusive cross section 8−33183
^{208}Pb(p,p), 0.8 GeV, ang. distrib. meas. 8−25186
^{208}Pb(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{208}Pb(p,p), 30 MeV, pick-up and inelasti scatt. contribution to p optical pot. 8−25182
^{208}Pb(p,p)^{208}Pb, 1 GeV, neutron and nuclear matter space distribs. *(Russian)* 8−502
^{208}Pb(p,π^+)^{209}Pb, 160 MeV, ang. distributions 8−37345
^{208}Pb(p,t)^{206}Pb, successive and simultaneous transfer processes, on-shell, DWBA methods 8−8812
^{209}Pb unbound high spin shell model states, single nucleon states 8−25126
^{210}Pb from nucl. explosions in environment 8−21774
^{210}Pb(t,d), Pauli principle effects in ^{211}Pb levels 8−17108
^{211}Pb, Pauli principle effects on level spectrum, ^{210}Pb(t,d) spectroscopic factors 8−17108
^{214}Pb, meas. of low conc. in air 8−28308
Pb(α,α), 104 MeV, A=204,206,208, neutron density RMS radii 8−17088
Pb(α,f), 0.65, 1.74, 4.12 GeV, and using polycarbonate detector 8−13178
Pb(d,α)Tl, A=208,206,204 at 80 MeV, high-spin states, α-spectra 8−504
Pb(n,n), A=206,207,208, 0.6 to 1.0 MeV, optical model params. 8−21557
Pb(n,n), elastic and inelastic scatt., cross sections meas. and calcs. 8−13081
Pb(p,t), A=204,6,8, E=35 MeV, spectra and ang. distribs. meas. DWBA anal., sum rules 8−13101
Po, neutron deficient isotope prod. in ^{182}W(^{20}Ne,xn) reactions 8−8835
^{208}Po, perturbed angular distribution in Pb, temp. depend. 8−43735
^{210}Po, α-spectrometric dating method, appl. to sediments 8−28350
^{210}Po, perturbed γ-ray angular distrib. temp. depend., radiation damage effects 8−43736
^{216}Po→^{212}Pb, obs. of collective states fed by weak α-transitions 8−8786
^{218}Po, meas. of low conc. in air 8−28308
Pt, A=192, 194, 2^+, 3^+ states via (α,α') Coulomb excit. 8−622
Pt, positive-parity states, Coriolis antipairing effect, deformed-rotor model 8−12950
Pt+p, dimuon prod., struct. in Y region near 9.5 GeV 8−17201
^{191}Pt energy levels, γ and conversion electron spectra, spins, parities 8−25149
^{192}Pt 3^+ and 4_1^+ states from ^{192}Ir β decay, lifetime meas. by β-γ coincidence 8−25153
^{194}Pt, level energies, ^{194}Au γ-spectrum obs. 8−13003
^{194}Pt+^{136}Xe, multiple Coulomb excitation, E2 transition probabilities of ^{194}Pt 8−4961
^{195}Pt, Mossbauer lineshape, dispersion amplitudes 8−25146
^{195}Pt^m, internal conversion coeffs., meas. of s-electron densities at nucleus in Pt metal 8−27140
^{195}Pt(α,2n), 23-27 MeV, ^{197}Hg level schemes, γ and conversion electron spectra, spins, parities 8−25149
^{195}Pt(p,p'), single proton distrib. anal. 8−603
^{196}Pt struct., O(6) limit, levels fed in ^{195}Pt(n,γ) 8−33110
Pt(α,α')Pt, 14.9 MeV, A=192, 194, 2^+ and 3^+ state Coulomb excit. 8−622
Pt(p,d)^{193,195,197}Pt, l-assignments, spectroscopic factors 8−8810
Rn isotopes, A=205, 206, 207, in flight mass separation of fusion recoils 8−25381
^{212}Rn, Knight shift and absolute mag. moment meas. 8−37278
Tl, A=208,206,204, high-spin states, α-spectra via (d,α) 80 MeV 8−504
Tl, mass dependence for radiative capture of 14.1 MeV neutrons 8−13087
Tl, odd isotopes, negative-parity level props. 8−17103
Tl, π^- absorption *(Russian)* 8−46115
Tl yield during proton and deuteron irradiation of Hg 8−2174
^{203}Tl(α,4n), 46-55 MeV, ^{203}Bi high spin states, halflives 8−29485
^{204}Tl β-decay surface contamination monitoring probes, comparison of response between detectors 8−25398
^{205}Tl$^+$, NMR in aq. soln., dissolved O_2 on nuclear spin relax. rate 8−19356

nuclei with mass number 220 or higher
^{239}U vibr. states, obs. in ^{238}U(n,γ) 8−41627
A=222 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17080
A=234 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17081
A=238 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17082
A=242 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17083
A>228 odd mass nuclei, single particle states, nuclear deform. 8−12952
actinides, fission through double-humped barrier excitation energy 10-35 MeV 8−583

nuclei with mass number 220 or higher continued
actinoid element alpha-decay, current state of results 8−17159
compound nuclei prod. in (HI, xn), lifetimes with account of fission process *(Russian)* 8−25233
data sheets for A=231, 235, 239 nuclei 8−12949
independent particle model, forces between heavy nuclei 8−635
multigroup time-dependent delayed γ-spectra from fission and activation 8−13184
rare earths, pairing energy, single particle levels and interaction matrix elements 8−8721
^{227}Ac, 7 to 16 MeV photofission, giant resonance and nuclear deformation *(Russian)* 8−41795
Am-Be neutron probe, underestimation of radiation exposure by film badges 8−15900
^{241}Am, α-decay, pair production probability estimate 8−13036
^{241}Am, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{241}Am, neutron emission probability in Np(^{4}He,nx), fissionability energy depend. determ. 8−655
^{243}Am(^{49}Ca,xn), production of superheavy elements with A=114-116 8−29493
^{244}Am decay, relative probability of electron capture 8−17153
Cf, N=152 to 154, resonances, fission probabilities and thresholds 8−46119
Cf, neutron irradiation separation and α-spectra identification of ^{253}Es 8−17435
Cf, splitting of cold and hot nuclei *(Russian)* 8−29516
^{249}Cf(n,f), thermal., yields of isotopes of Nb, I and Cs, charge distrib. 8−41789
^{252}Cf fission fragment tracks in quartz glass, electron microscope obs. 8−17526
^{252}Cf for interstitial radiotherapy implantations, clinical study 8−11722
^{252}Cf, mass distribution of fragments from spontaneous fission *(Russian)* 8−29517
^{252}Cf, neutron activation anal. of Constantinian coins 8−350
^{252}Cf, SF, charge distrib., determ. of fractional cumulative yields of ^{134}Te and ^{135}I 8−41791
^{252}Cf source with high emission, n and γ dosimetry, safety *(Czech)* 8−33296
^{252}Cf spontaneous fission, forward-backward anisotropy of prompt neutron emission 8−25254
^{252}Cf, spontaneous fission, yields and isomer ratio in A=134 chain 8−41786
^{252}Cf spontaneous fission beta, positron, prompt gamma events, super-high density nuclei formation *(Russian)* 8−17263
^{252}Cf, spontaneous fission determ. of heavy-ion interaction pot. *(Russian)* 8−41765
^{252}Cf, spontaneous fission neutron spectrum meas. using ^{6}Li spectrom. 8−17477
^{252}Cf, spontaneous fission product charge distrib. 8−13176
^{252}Cf, spontaneous ternary fission, multiplicity distrib. of prompt γ rays 8−21615
^{252}Cf, use for brachytherapy 8−20272
Cm isotopes, quadrupole and hexadecapole deforms., model independ. parameters using Fermi distrib. 8−17096
Cm(^{48}Ca,xn), production of superheavy elements with A=114-116 8−29493
^{242}Cm, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{244}Cm, fast neutron cross-sections 8−21556
^{245}Cm, neutron resonance parameters, neutron energies 1-30 eV range 8−17167
^{245}Cm(n,f), cross section, 0.01 to 35 eV 8−21612
^{245}Cm(n,f), thermal neutron fission, kinetic energy distribs. determ. 8−658
^{252}Es, half-life, γ-ray decay obs. 8−4914
^{253}Es, coupled-channel α-decay theory 8−17156
^{253}Es, separation and α-spectra identification following neutron irradiation of Cf 8−17435
^{254}Fm spontaneous fission, distrib. of mass, KE and neutron yield 8−17257
^{255}Fm, coupled-channel α-decay theory 8−17156
Fr, spin and mag. moment, trends in neutron deficient nuclei 8−37261
H isotopes, quadrupole and hexadecapole deforms., model independ. parameters using Fermi distrib. 8−17096
^{227}Np damage track detectors, effects of subthreshold fission on neutron dose meas. 8−33375
^{237}Np, fission rates measured in graphite-reflected lithium assembly, nonelastic neutron anisotropy effect 8−29511
^{237}Np, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{237}Np, Mossbauer lineshape, dispersion amplitudes 8−25146
^{237}Np, Mossbauer spectroscopy, fast γ-ray detection system 8−25376
^{237}Np(^{4}He,f), (^{4}He,n), (^{4}He,2n), E=17.5-22.5 MeV excitation function meas. 8−656
^{237}Np(e,e′f), 20-120 MeV, electrofpssion cross section, E1, E2 strengths 8−13174
^{237}Np(n,f), ave. no. of neutrons/fission meas. 8−41792
^{237}Np(nth, f), sub-barrier fission, fragment energy correl. meas. 8−21614
^{238}Np(n,f), subthreshold fission, fine struct. resonances anal. 8−652
^{237m}Np fission isomer from ^{238}U(p,2n), statistical model anal., fission to γ branching ratio 8−25256
Np(α,xn) ^{241}Am, neutron emission probability and fissionability energy depend. 8−655
^{236}Pa, β-delayed fission, search *(Russian)* 8−46033
^{238}Pa, β-delayed fission, search *(Russian)* 8−46033
Pu, A=238, 239, neutron emission probability in U(^{4}He,xn), fissionability energy depend. determ. 8−655
Pu, A=239, 241, delayed neutron parameters selection for reactor calcs. *(Slovak)* 8−21534
Pu, A=239, 241, fission probability, Γ_n/Γ ratio struct. 8−37382
Pu, alpha-energy and mass analyses, using single sample mount 8−15744
Pu isotopes, quadrupole and hexadecapole deforms., model independ. parameters using Fermi distrib. 8−17096
Pu, multigroup time-dependent delayed γ-spectra from fission and activation 8−13184
Pu, N=150 and 152, fission probabilities and thresholds 8−46119
^{232}Pu, fission barrier determ., from β-delayed fission 8−29518
^{237}Pu , half-life determ. by gamma counting in NaI(Tl) 8−8775

nuclei with mass number 220 or higher continued
^{238}Pu, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{239}Pu alpha particles, internal source microdosimetry 8−3615
^{239}Pu, infinite multiplication factors, neutron captures and fission, rel. to GCFR parameters 8−33245
^{239}Pu, integral neutron capture cross sections in GCFR lattices 8−13246
^{239}Pu, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{239}Pu, mass distribution of fragments in neutron induced fission *(Russian)* 8−29517
^{239}Pu neutron data evaluation for ENDF/B-V 8−25288
^{239}Pu/^{235}U, (n,f) ratio meas. in range 1 keV-30 MeV 8−46118
^{239}Pu(n,f), cross sections for ^{252}Cf neutrons 8−25258
^{239}Pu(n,f), cross-section, 2, 24, 55, 144 keV neutron 8−17262
^{239}Pu(n,f), fission neutron spectra, TOF meas. 8−17476
^{239}Pu(n,f), low energy, fission widths, channel characts. 8−29515
^{239}Pu(n,f), polarised thermal neutrons, parity nonconservation *(Russian)* 8−33232
^{239}Pu(n,f), σ(^{239}Pu)/σ(^{235}U) meas., neutron energies 0.27-9.85 MeV 8−660
^{240}Pu, appl. of shell correction method for finite well potentials 8−37298
^{240}Pu at very high spins, double-humped fission barrier anal. 8−4970
^{240}Pu, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{240}Pu, mass distribution of fragments from spontaneous fission *(Russian)* 8−29517
^{240}Pu, radial depend. of shell model pot. *(Russian)* 8−41655
^{240}Pu(n,f), 14.8 MeV, products from ^{66}Ni to ^{169}Er, mass distrib., total chain yields 8−25255
^{241}Pu, evaluation of neutron cross sections in region 10^{-5} eV to 15 MeV 8−17254
^{241}Pu, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{241}Pu, neutron capture and fission cross sections, 0.01 eV-30 keV 8−29512
^{241}Pu(n,f), thermal neutron fission, kinetic energy distribs. determ. 8−658
^{242}Pu, half-life meas. 8−17154
^{242}Pu, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{242}Pu(^{48}Ca,xn), production of superheavy elements with A=114-116 8−29493
Pu(n,f), A=241, 243, subthreshold fission, fine struct. resonances anal. 8−652
^{226}Ra, exposure-rate calibration of small radioactive sources 8−41881
^{226}Ra(p,f), 12 MeV, prompt neutron energy distrib. meas. 8−13182
^{226}Ra(p,f), 12 MeV, prompt γ-ray spectra meas. 8−13183
^{228}Ra-Be (α,n) source, neutron spectrum calc. from angular distrib. and cross-section data 8−41882
Rn, A-220, 2, α-particle meas. by solid-state track detectors 8−25396
Rn alpha particle etch pits in CA80-15 and LR-115 cellulose nitrate track detectors 8−855
Rn, isotope separation by barrier technique, U prospecting appl. 8−21770
^{222}Rn concentrations in water, rapid meas. with commercial liq. scintillation counter 8−28339
^{222}Rn daughter conc., meas. sensitivity computer optimisation 8−49126
^{222}Rn implanted in Cu, Si and SiO_2, TIPAC meas. 8−43732
Th isotopes, quadrupole and hexadecapole deforms., model independ. parameters using Fermi distrib. 8−17096
Th, K^- meson induced fission at 700 MeV/c, fragment mass distrib. 8−13168
Th, neutron total cross-section meas. near 24 keV 8−29456
Th-mica system, neutron dosimetric meas. using fission fragment track technique 8−13347
Th+Ar, 388 MeV, deep inelastic reactions, double differential cross section calc. 8−8856
Th+π^-, neutron multiplicity distrib. *(Russian)* 8−41783
^{228}Th decay, γ-ray and internal conversion intensities 8−41669
^{228}Th, precise γ-ray energy meas. with Ge(Li) detectors 8−13376
^{230}Th, precise γ-ray energy meas. with Ge(Li) detectors 8−13376
^{231}Th β decay and ^{235}U α decay, γ-radiation study, energy level scheme *(Russian)* 8−17160
^{232}Th, ^{4}He ion-induced fission, ^{148m}Pm, ^{148g}Pm independent form. cross-sections 8−33228
^{232}Th, α-decay half-life, liq. scintillator expt. for students 8−12496
^{232}Th, decay consts. for use in geochronology and cosmochronology 8−28189
^{232}Th, delayed neutron parameters selection for reactor calcs. *(Slovak)* 8−21534
^{232}Th, fission rates measured in graphite-reflected lithium assembly, nonelastic neutron anisotropy effect 8−29511
^{232}Th, induced fission in natural systems, radiochem. obs. 8−4966
^{232}Th, quadrupole photofission and role of nucl. symm. *(Russian)* 8−17258
^{232}Th, thermal Westcott g-factor meas. 8−37287
^{232}Th+^{86}Kr, Coulomb-nuclear interference for high spin states 8−46097
^{232}Th(e,e′f), 20-120 MeV, electrofission cross section, E1, E2 strengths 8−13174
^{232}Th(γ,f), 9, 15, 38 MeV peak bremsstrahlung 8−33229
^{232}Th(n,f), 1.55-3 MeV, mass asymm., ang. anisotropy of fragments *(Russian)* 8−17265
^{232}Th(n,f), fission spectrum averaged cross section 8−17253
^{232}Th(n,γ), cross-section from 2.6-800 keV 8−8807
^{232}Th(p,f), 4-7 MeV, cross sections *(Russian)* 8−41794
^{233}Th(n,f), 1.2-2.3 MeV, transition state effect on fragment KE *(Russian)* 8−661
^{234}Th, JWKB approximation for multiple-humped fission barriers 8−585
Tn alpha particle etch pits in CA80-15 and LR-115 cellulose nitrate track detectors 8−855
U, A=233, 235, 238, delayed neutron parameters selection for reactor calcs. *(Slovak)* 8−21534
U, K^- meson induced fission at 700 MeV/c, fragment mass distrib. 8−13168
U, proton-induced fission at 400 GeV, ternary to binary event ratio 8−13170

nuclei with mass number 220 or higher continued
U, Pu fission by thermal neutrons, HIAWATHA, fission-fragment recoil mass spectrometer 8−16892
U-mica system, neutron dosimetric meas. using fission fragment track technique 8−13347
U+Ne$\rightarrow$p+X, high energy heavy ion collisions, comparison of models 8−46088
U+p, particle-stable neutral nuclei prod. search, multi-GeV energies 8−25189
U+Pb, 750 MeV, classical model, kinetic energy, ang. distribs., instantaneous fission fragments 8−13185
U(^{3}He, f), 530 MeV, cross section meas. by glass solid state track detectors 8−13179
^{232}U(n,f), reactor neutron fission, kinetic energy distribs. determ. 8−658
^{232}U$\rightarrow$^{212}Pb decay chain, obs. of collective states fed by weak α-transitions 8−8786
^{233}U cross sections, evaluation of ENDF/B-IV and Hansen-Roach cross sections 8−29550
^{233}U, high-energy spin state obs. using Coulomb excitation 8−17102
^{233}U/^{235}U, (n,f) ratio meas. in range 1 keV-30 MeV 8−46118
^{233}U(d,d′), multipolarities and reduced transition probabilities 8−17215
^{233}U(n,f), fission neutron spectra, TOF meas. 8−17476
^{233}U(n,f) polarised thermal neutrons, P-odd asymm. *(Russian)* 8−33231
^{234}U(n,f), cross section rel. to ^{235}U in 2-3 MeV region 8−21613
^{234}U(n,γ)^{235}U, 5-49 MeV, low-spin states 8−512
^{235}U (n,f), fission by fast neutrons, fragment K X-ray spectra, $\bar{\nu}$ energy depend. in heat balance method 8−17260
^{235}U α decay and ^{231}Th β decay, γ-radiation study, energy level scheme *(Russian)* 8−17160
^{235}U, cross-section from anal. of BNL exponential expts. with ENDF/B-IV data 8−13218
^{235}U, fission probability, Γ_n/Γ ratio struct. 8−37382
^{235}U, fission product mass distrib. from 25 MeV bremsstrahlung irradiation 8−13175
^{235}U, fission rate meas. with Makrofol solid state track recorder 8−13396
^{235}U, fission rates measured in graphite-reflected lithium assembly, nonelastic neutron anisotropy effect 8−29511
^{235}U, impurity in mica, neutron fluence meas. using mica as nuclear track and activation detector 8−13346
^{235}U, induced fission, in UO_2 mineral deposit *(Spanish)* 8−44823
^{235}U, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{235}U, K-shell positron annihilation, excitation of nucleus *(Russian)* 8−33171
^{235}U, levels, J^{π}, multipolarities via (n,γ) 5-49 MeV 8−512
^{235}U, mass distribution of fragments in neutron induced fission *(Russian)* 8−29517
^{235}UO_2, visualisation of fissionable radionuclides in rat lung using neutron-induced autoradiography 8−28055
^{235}U(d,d′), 13.1 MeV multipolarities and reduced transition probabilities 8−17215
^{235}U(n,f), 0.3-12.5 MeV, fission cross-sections meas. 8−46117
^{235}U(n,f), ang. distrib. of fission fragments 8−37383
^{235}U(n,f), cross section sensitivity anal. of fission rates in graphite reflected Li assembly 8−46166
^{235}U(n,f), cross sections for ^{252}Cf neutrons 8−25258
^{235}U(n,f), cross-section, 2, 24, 55, 144 keV neutrons 8−17262
^{235}U(n,f), cross-section below 1 keV 8−4969
^{235}U(n,f), fission fragments with high KE, mass separation based on TOF spectra 8−46209
^{235}U(n,f), fission neutron spectra, TOF meas. 8−17476
^{235}U(n,f), polarised thermal neutrons, parity nonconservation *(Russian)* 8−33232
^{235}U(n,f), subthreshold fission, fine struct. resonances anal. 8−652
^{235}U(n,f), $\sigma(^{239}Pu)/\sigma(^{235}U)$ meas., neutron energies 0.27-9.85 MeV 8−660
^{235}U(n,f), thermal, discrete neutron emission probability 8−25257
^{235}U(n,f) cross section in range 0.2-8.2 MeV 8−654
^{235}U(n,f) half-lives and γ-ray energies of short-lived isotopes of Mo 8−17137
^{235}U(n,f) up to 36 keV, statistical anal., cross sections, intermediate struct. 8−653
^{235}U(nth, f), above-the-barrier fission, fragment energy correl. meas. 8−21614
^{235}U(p,f), 13.7-14.2 MeV, isobaric analogue resonances, fission width 8−21616
^{236}U, isotope composition tables for isotopes produced in CANDU reactors 8−29564
^{236}U activity meas. in UO_2 mineral deposit *(Spanish)* 8−44822
^{236}U, effect of nuclear force finite range on fission and heavy-ion reactions 8−13180
^{236}U fission isomer produced in ^{238}U(γ,2n) prod. cross sections, half life 8−46045
^{236}U(n,f), cross section rel. to ^{235}U in 2-3 MeV region 8−21613
^{238}U, ^{235}U, decay consts. for use in geochronology and cosmochronology 8−28189
^{238}U (μ^-,f), fission product mass distrib., fission probability, radiochem. investigation 8−29514
^{238}U, cross-section from anal. of BNL exponential expts. with ENDF/B-IV data 8−13218
^{238}U, deep subthreshold photofission using 3.8 to 5.7 MeV γ-rays 8−41787
^{238}U, deuteron and proton bombardment, excitation function determ. 8−41709
^{238}U, evaluation for ENDF/B-V 8−25289
^{238}U, fission product mass. distrib. from 25 MeV bremsstrahlung irradiation 8−13175
^{238}U, fission rate meas. with Makrofol solid state track recorder 8−13396
^{238}U, fission rates measured in graphite-reflected lithium assembly, nonelastic neutron anisotropy effect 8−29511
^{238}U, ground rotational band level energies calc. 8−45996
^{238}U, infinite multiplication factors, neutron captures and fission, rel. to GFR parameters 8−33245
^{238}U, meas. of Cd ratio of neutron capture rates in slightly ^{235}U enriched fuel, systematic errors 8−8901
^{238}U, microscopic calc. of high-spin rot. states 8−8730

nuclei with mass number 220 or higher continued
^{238}U, negative parity band crossing in even-even nuclei 8−21488
^{238}U, neutron capture cross section representation, TRX-2 lattice param. sensitivity 8−25275
^{238}U, neutron cross section integral meas., interactive graphic techniques 8−29457
^{238}U, proton-induced fission, asymm. region, nucl. charge distrib. 8−4967
^{238}U, spontaneous fission, in UO_2 mineral deposit *(Spanish)* 8−44823
^{238}U, subbarrier photofission, differential cross section 8−41796
^{238}U+^{238}U, 7.42 MeV/nucleon, charge, energy and ang. distribs. of prods. 8−8846
^{238}U+^{40}Ar, Coulomb-nuclear interference for high spin states 8−46097
^{238}U+ZZ *(Russian)* 8−46120
^{238}U+n, resolved resonance energies, 100 eV-170 keV 8−37339
^{238}U(^{136}Xe, ^{136}Xe), multiple Coulomb and nucl. excitation 8−21603
^{238}U(^{238}U, ^{238}U), multiple Coulomb and nucl. excitation 8−21603
^{238}U(Xe,f), depend. of Coulomb fission on nucl. struct. 8−13173
^{238}U(e,e′) scatt. from octupole band, model for nuclear surface vibrations 8−37333
^{238}U(e,e′f), 20-120 MeV, electrofission cross section, E1, E2 strengths 8−13174
^{238}U(e,e′n)^{237}U, 6-25 MeV, transition multipolarities 8−590
^{238}U(γ,2n), ^{236}U fission isomer, cross section, half life 8−46045
^{238}U(n,f), 0.3-12.5 MeV, fission cross-sections meas. 8−46117
^{238}U(n,f), 1.5-7.7 MeV, mass yield curves 8−41788
^{238}U(n,f), cross section sensitivity anal. of fission rates in graphite reflected Li assembly 8−46166
^{238}U(n,γ), cross section meas. using large Gd loaded liquid scintillator 8−25380
^{238}U(n,n′), cross section param. from optical model anal. 8−21557
^{238}U(n,n), elastic and inelastic scatt. cross sections at 144 keV 8−21554
^{238}U(n,n)^{238}U, differential elastic and inelastic cross sections at 144 keV 8−4945
^{238}U(p,2n), production of ^{237m}Np fission isomer, statistical model anal. 8−25256
^{238}U(p,f), 30-98.6 MeV, independ. yield of In and Ga isotopes 8−13171
^{238}U(p,f), 35-85 MeV, nuclear charge dispersion in light mass region 8−8864
^{238}U(p,f), 4-7 MeV, cross sections *(Russian)* 8−41794
^{238}U(p,nf), multiple scatt. effect due to filling in of blocking patterns 8−21617
^{238}U(p,xnf), lifetime of second chance fission at threshold, in UO_2 single cryst. 8−17259
U(α,xn) ^{238,239}Pu, neutron emission probability and fissionability energy depend. 8−655
U(γ,γ), 2.75 MeV, Delbruck theory, multiphoton exchange 8−8796

nucleic acids *see macromolecules*

nucleon interactions *see hyperon-nucleon interactions; kaon-nucleon interactions; lepton-nucleon interactions; muon-nucleon interactions; neutrino-nucleon interactions; nucleon-nucleon interactions; nucleon-nucleus reactions; photon-nucleon interactions; pion-nucleon interactions*

nucleon-nucleon interactions
see also nucleon-nucleon scattering; proton-proton interactions
annihilation widths and displacement of quasinuclear levels, bonded channel model *(Russian)* 8−464
baryonium and dibaryon, quark shell model 8−41479
coupling const. singular points for approx. Bethe-Salpeter eqns., with a nonlocal pseudopotential 8−25062
effective NN interaction, long range components, configuration mixing 8−41646
electromagnetic contrib. to NN interaction, one photon exchange helicity amplitudes 8−17040
f-meson-other field strong gravitational coupling, effect on nuclear force in nucleon-nucleon interactions 8−514
finite state interactions *(Russian)* 8−33080
hard-core systems, bound states and scatt., for teaching 8−41115
high density matter, relativisitc quantum many-body problem 8−4909
inclusive production of hadrons in high energy nucleus+nucleus collisions, scaling laws 8−33204
long range NN interaction, axial polarisability, two pion exchange 8−29397
low-energy pot., Regge-pole theory 8−45889
modified Duller-Walker approach, cosmic ray energy, 100-10000 GeV 8−49261
N resonances in NN interaction 8−25066
$N\bar{N}$ annihilation cross section at nonrelativistic energies *(Russian)* 8−33079
phase shift analysis *(Rumanian)* 8−45942
proton beam dump expt. at CERN SPS, obs. of excess ν_e, $\bar{\nu}_e$ events 8−45978
proton interactions, beam dump expt. at CERN SPS 8−45979
quark-gluon interaction in pN collisions, dimuon prod. at large transverse momenta 8−29355
radius perturbation theory, appl. to NN system and pionic atoms 8−21007
realistic nonlocal pots. from inverse scatt. theory for $^3S_1$-$^3D_1$ interaction 8−41651
short-range repulsion, gauge theory of coloured quarks 8−12880
total cross sections, medium energy dynamics, OPE three-body theory 8−25064
n+nucleus, diffractive prod. of pπ^- systems, 8 to 24 GeV/c, cross sections 8−41711
N*N, total cross sections of diffractively produced nucleon excitations 8−21481
NN, $N\bar{N}$ helicity non-flip forward scatt. amplitude 8−21447
$N\bar{N}$, nonrelativistic scatt. review 8−25065
NN$\rightarrow$NNπ, isovector exchange, comparison with πN elastic scatt. 8−37189
$N\bar{N}\rightarrow$pions, direct channel scheme based on statistical bootstrap, low-energy region 8−12924
p-nucleus collision, prompt μ prod., multiple prod. model based on lepton-hadron relation 8−29362
p+Be(Cu)(Pb), 300 GeV, inclusive prod. of Λ^0 hyperons 8−37253
pN, 100-GeV/c, charged-particle multiplicity distribs. 8−33101
pN$\rightarrow l\bar{l}$X, quark structure functions for hadrons, Drell-Yan model anal. 8−21476

nucleon-nucleon interactions continued
$pN \to \mu^+\mu^- X$, determ. of parton sea 8−29304
$pN \to NN\pi$, 6 to 1480 GeV, cross channel isospin amplitudes 8−45964
$\bar{p}N \to \bar{N}(N\pi)_{I=1/2}$, 5.7 GeV.c ρ exchange contrib., cross channel isospin amplitude anal. 8−45938
$pN \to pn\pi^+$ (and similar), $\Delta(1236)$ isobar prod. 8−21443
Be+p, 400 GeV/c, two hadron correlation at large transverse momenta 8−46060
Cu+p, dimuon prod., struct. in Y region near 9.5 GeV 8−17201
Cu+p collisions, 400 GeV, prompt ν prod. 8−46061
Pt+p, dimuon prod., struct. in Y region near 9.5 GeV 8−17201

nucleon-nucleon scattering
see also neutron-proton scattering; nucleon-nucleon interactions; proton-proton scattering
correlations, short-range, with pseudopotentials 8−37225
hard-core systems, bound states and scatt., for teaching 8−41115
high-energy, effect of anomalous mag. moments in quantum field theory 8−465
kinematic formalism 8−21463
nonlinear chiral dynamics, one-loop approx. *(Ukrainian)* 8−460
phase shift analysis *(Rumanian)* 8−45942
polarised NN scatt., weak neutral current models 8−41562
potential models, high-energy phase shifts and off-shell react. matrices 8−45936
small angle, appl. of eikonal vector meson exchange theory 8−17052
total cross sections, medium energy dynamics, OPE three-body theory 8−25064
d double scattering on H target, d alignment, spin struct. of NN amplitude 8−45937
nd, three-body Amado-Lovelace eqn. at positive energies, anal. soln. 8−16938
NN, nonrelativistic scatt. review 8−25065
NN resonance, Goldberger-Treiman relation corrections 8−463

nucleon-nucleus reactions
for inelastic nucleon-nucleus scattering, see "nucleon-nucleus scattering"
see also neutron-nucleus reactions; nucleon-nucleon interactions; proton-nucleus reactions
Bethe-Goldstone eqn., nucl. matter, nucleon optical pot. anal. 8−12981
deformed even-even nuclei, specific form. of nucleon-nucleus interaction, low energy 8−13077
double differential cross-section, analytic expression 8−8825
Hamada-Johnston interaction, nucleon optical pot. 8−12982
multiplicity of particles produced in hadron-nucleus high-energy interactions 8−4933
optical model potential, spin-orbit component from internucleon pot., ^{40}Ca+p appl. 8−46039
optical nucleon-nucleus potential *(Russian)* 8−37321
pion cumulative production in hadron-nucleus collisions *(Russian)* 8−607
quark-parton model, relation between low mass dimuon and meson prods. 8−41477
relativistic nucleon-nucleus collisions, superdense matter eqn. of state *(Russian)* 8−606
NN spin depend. t-matrix for intermediate energy reacts. 8−41682
π production, relativistic nucleon interactions *(Russian)* 8−25201

nucleon-nucleus scattering
see also neutron-nucleus scattering; nucleon-nucleon scattering; proton-nucleus scattering
deformed even-even nuclei, specific form. of nucleon-nucleus interaction, low energy 8−13077
Levinson theorem, standard optical pots., nucleon+nucleus scatt. phases *(Russian)* 8−17214
multichannel quasi-separable pot. approach 8−37320
optical nucleon-nucleus potential *(Russian)* 8−37321
recoil corrections in continuum shell model 8−8751
single scattering optical model, three body approach, appl. to nucleon+nucleus scatt. 8−25162
^{4}He+n, elastic scatt., orthogonality condition model derived from parity energy surfaces 8−29432

nucleon scattering *see hyperon-nucleon scattering; kaon-nucleon scattering; lepton-nucleon scattering; muon-nucleon scattering; neutrino-nucleon scattering; nucleon-nucleon scattering; nucleon-nucleus scattering; photon-nucleon scattering; pion-nucleon scattering*

nucleons
see also neutrons; protons
quark effective-bare mass distinction 8−12866

nucleosynthesis
Ap stars, review of obs. and possible nucl. reactions *(Russian)* 8−20843
big-bang nucleosynthesis with nonzero lepton numbers 8−16583
core He flash and C and CH star origins 8−4190
cosmic ray isotopic composition, review 8−20599
cosmic rays, time delay between nucleosynthesis and accel. to relativistic energies 8−28455
elements origin and evolution 8−32619
galactic ^{4}He and heavy elements enrichment by stellar nucleosynthesis 8−28657
high-luminosity stars, nucleosynthesis during thermal pulses rel. to surface comp. 8−40917
long neutron capture chains, abundances evaluation method 8−45216
massive stars, bulk yields of nucleosynthesis 8−36552
massive stars, neutron capture nucleosynthesis in He burning codes 8−4195
maximum isotope abundance correl. 8−45219
nucleocosmochronology, model, r-process elements discrete addition to presolar cloud 8−4121
r-process, rel. to origin of cosmic rays with $Z \gtrsim 60$ 8−40782
s-process, pulsed neutron flux effects 8−20812
s-process isotopes, nonthermal isomeric branching, importance of long-lived states 8−7983
s-process neutron capture by ^{208}Pb at stellar temps. 8−4196
s-process nucleosynthesis, thermally pulsing stars 8−4193
s-process studies, exact soln. for unbranched network 8−28649
slow novae, $Z=0.03$ envelope model evolution rel. to CNO isotopic ratios 8−32468
stars, Fe peak elements nucleosynthesis during C core thermonuclear explosion 8−36558
stellar C-O cores, Urca neutrino loss rates 8−20813
stellar evolution, review of recent exptl. research 8−4100

nucleosynthesis continued
stellar interiors, s-process during thermal pulses of He shell burning 8−28668
superheavy elements, possibility of occurrence in nature 8−20407
supernova explosions, presolar grains and meteorites isotopic anomalies 8−20845
ultraheavy cosmic-rays rel. to r-process models 8−49250
^{26}Al production in explosive C burning 8−20814
C,N,O, stellar nucleosynthesis rel. to galactic obs. of CNO isotopes 8−4356
C stars, low-energy spallation rel. to ^{6}Li/^{7}Li ratio 8−40927
^{253}Es, separation and α-spectra identification following neutron irradiation of Cf 8−17435
H burning, intermediate nuclei behaviour in stellar interiors 8−45218
K, Ar, interstellar, supernova nucleosynthesis rel. to isotopic anomalies 8−28761
^{6}Li(d,n)^{7}Be, low energy cross section, 100-180 keV 8−4949
Ne-E, anomalous meteoritic Ne component, thermonuclear origin, supernova models 8−45292
^{20}Ne, form. in ^{19}F(p,γ) reaction, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8−17191

nucleus
see also hypernuclei; nuclei with mass number 150 to 189; nuclei with mass number 190 to 219; nuclei with mass number 1 to 5; nuclei with mass number 20 to 38; nuclei with mass number 220 or higher; nuclei with mass number 39 to 58; nuclei with mass number 59 to 89; nuclei with mass number 6 to 19; nuclei with mass number 90 to 149
No entries

numerical analysis
see also approximation theory; curve fitting; difference equations; error analysis; finite element analysis; function approximation; function evaluation; functional analysis; functional equations; interpolation; iterative methods; Monte Carlo methods
air-water bubbly mixtures, press. wave propag. *(French)* 8−22402
antenna radiation field, soln. as initial value problem *(Chinese)* 8−9294
N.Atlantic waters integral circulation, numerical calc. 8−3811
atmosphere baroclinic instability, numerical modelling *(Russian)* 8−44922
beam dynamic loading, large elastic-plastic deform., numerical anal., expt. meas. 8−1574
blade to blade flow, anal. with Thomas algorithm 8−24669
blood flow in heart, flow pattern anal. 8−15854
Boltzmann eqn., collision integrals, rigorous soln. of relaxation phase *(Russian)* 8−8231
Boltzmann equation, nonlinear, exact solns. 8−12656
bubble dynamics, quantitative study appl. *(Italian)* 8−22403
chemical kinetics equations, numerical solns., stiffness 8−48624
chemically reactive flow, kinetics, stiff ordinary differential eqns. numerical soln. 8−48631
chemically reactive flow characts., simultaneous heat-mass transfer *(Japanese)* 8−22431
Cholesky-conjugate gradient method, incomplete, for iterative soln. of systems of linear eqns. 8−28932
circular elastic-plastic plates, numerical anal. under press. and temp. cycles 8−30199
circular plate, finite amplitude vibr. 8−30214
clouds numerical models, methods of parametrisation of condensation process *(Russian)* 8−16091
clusters of galaxies, numerical models for X-ray line emissions 8−8149
CO_2-laser, numerical soln. to nonlinear rate eqns. of population level density *(Bulgarian)* 8−33720
Compton effect, multiple scatt. corrections, error bounds 8−16959
conductivity equations, conductometric probe analysis, field disturbances in conducting fluid modelling *(Russian)* 8−231
corner, three-dimens., Navier-Stokes eqn. soln., numerical code 8−30314
crack problems, exact linear elastic solutions for Mode I, II and III loading 8−34072
cylinder, in viscous fluid impulsive translation, numerical computation method 8−5727
cylindrical shells, vibr. anal. by finite element formulation 8−34048
differential equations, numerical integration methods, conservation props. 8−45464
differential fourth order systems near bifurcation, numerical anal. 8−24653
diffused optical waveguide numerical analysis and applications 8−1377
diffusion, approx. soln., linear programming, regularisation 8−32775
dissipative systems, numerical expts. on trajectory instabilities trajectory instabilities 8−41235
dissociation effects on reflected shock wave and unsteady thermal boundary layer, anal. *(Japanese)* 8−5733
double stars, rectilinear trajectories calc., appl. to h 5094, effects of erroneous positions *(French)* 8−20857
Earth EM sounding, transients from two horizontal thin conducting strata *(Russian)* 8−40485
EEG signals with changing spectra, anal. using Kalman estimator 8−24167
eigenvalue systems of second order differential eqns., numerical soln., matching method 8−8232
elastic behaviour conoid, cylindrical shell retaining walls 8−5655
elastic body containing fine inclusion system in single plane *(Russian)* 8−34017
elasticity, linear theory of, shift function derivation 8−4484
elasticity, mixed boundary value problems, numerical scheme 8−26038
electrochemical flux equations, solns. with variable diffusion coeff. and transference number 8−48666
EM cascade eqns., numerical integration, results for air, Cu, Pb and Fe 8−20602
EM diffraction, three dimensional *(French)* 8−29883
EM wave scatt. by plane grating in homogeneous medium, point matching method 8−1132
exponential integrals, general method for accurate numerical evaluation 8−36
finite difference numerical solns 8−9661
flow, unsteady, viscous, separated, laminar, numerical modelling 8−46933
flow between two counter rotating infinite plane discs, numerical soln. by multiple shooting 8−42621
Fredholm non-singular eqns., numerical soln. 8−16630

numerical analysis continued
fusion plasma, Lawson criterion for impurity losses, energy balance eq. *(Korean)* 8−17414
fusion-fission hybrid blanket designs, accidental criticality 8−778
geopotential field numerical analysis using meteorological information 8−7814
geothermal reservoir, effect of magma dike intrusion on free convection 8−7599
grey medium between concentric cylinders, 2 dimens. radiative equilib. 8−42523
harmonic oscillator Schrodinger eqn. numerical soln., teaching aid 8−8188
heat conduction eqn., inverse, boundary conditions recovery, using Cauchy soln. and regularising algorithms 8−26016
heat radiation, two-dimens. isotropic scatt. in semiinfinite medium 8−42521
heat recuperator, packed bed, heat transfer meas. 8−5742
hierarchical model ε-expansion, numerical test of Borel summability 8−12650
highly prestressed anisotropic plates, numerical perturbation technique 8−18214
indentation, dynamic, of elastic half-space by rigid punch, numerical method 8−1612
infinite elastic thick plate, axially symmetric loading, numerical method *(Japanese)* 8−9568
integral eqn., improvement of Sastry's method by Richardson's extrapolation 8−28924
integral eqns., singular 8−32661
intensity distribution inside absorbing-isotropically scatt. semiinfinite medium 8−32335
ionosphere, chemistry and transport processes, numerical modelling 8−49202
isotope separation, binary gas mixture, convection-diffusion eqn. soln. for centrifuge axisymm. vel. field 8−17434
Jupiter-Saturn-Sun systems, long-term numerical solns. 8−24450
Lagrangian hydrodynamics meshes, discrete rezoning algorithm, hot interacting bubbles calcs. 8−42628
laminar incompressible flow in straight polar ducts 8−22424
laminar stationary 2D viscous duct flow, generalised Prandtl eqns., soln. methods 8−5726
large chemical kinetic systems, functional group anal. 8−48626
linear inference and underparameterised models, geophysical appls. 8−49000
LMFBR reactor vessel, buoyancy induced flow redistrib. 8−8887
metal forming, limit anal. appl., book contrib. 8−11140
microwave cavity containing dielec. sample, num. soln. of charact. eqn. *(French)* 8−13649
monodimensional Poiseuille and thermal creep flows, rigorous constructive soln. 8−30319
neutron slowing down and transport in medium of const. cross-section 8−33235
neutron transport, double P_l eqns. for sphere, series soln. 8−13187
neutron transport, multidimensional, transverse leakage approx. 8−29531
neutron transport equation for slabs, power series solns. comparison 8−13190
NMR of ^{11}B in borate glass, fast stable analysis technique 8−6585
noise propagation around thin half-plane, numerical calc. 8−9486
nonequilibrium, plasma MHD generator, diagonal type, 2-D anal. 8−30491
nucleation theory, time depend., supersaturated cooling gas 8−6151
orbital transfer, optimal, low-thrust, limited power, elliptical orbits 8−4087
orthotropic plate bending anal. with identification method 8−26071
parabolic boundary value problem 8−28925
partial differential equations, time-varying, numerical solns. 8−45463
perturbed motion stability anal. *(Russian)* 8−16640
plane elastostatics, numerical props. of integral eqns. describing boundary value problems 8−34013
point reactor kinetics equations soln. using Taylor series methods 8−13201
Poisson's equation for isolated source distribs., computer soln. using finite mesh, Green's function 8−35
polymer solution, flexible mols., dynamic intrinsic viscosity, hydrodynamic interaction 8−47548
porous bed, transient non-Darcy gas flow 8−47033
potential flow about boundary shape, method of singularity with spline fit distrib. 8−22324
potential scatt., inverse problem at fixed energy 8−41203
problems in unbounded regions, use of coord. transforms in numerical solns. 8−8219
quasi-one-dimensional flow equations, exterior differential form represent. *(Japanese)* 8−8243
recurrence formulas for phases and amplitudes of free wave spherical functions 8−56
relativistic electron Coulomb scatt., approx. to $\cos\gamma$ 8−28962
reverberation chamber LF sound power injection analysis and response averaging 8−42496
rotating fluid dynamics, review *(French)* 8−30300
rotational flow, analytic solutions to nonlinear eqns. 8−1670
Saint Venants eqns., three point weighted scheme for numerical soln. 8−30356
Schrodinger equation, generalisations of finite element and R-matrix methods 8−24676
Schrodinger time depend. eqn., solutions comparison 8−12596
solar electrons-interplanetary plasma wave interaction, numerical anal. 8−7853
state of art survey, book 8−20953
Stefan multiphase problem, numerical algorithm 8−33989
stellar degenerate C core, numerical calcs. of thermonuclear explosion 8−36558
Stokes flow, numerical soln., appl. to interacting spheres 8−22407
structural damping constant evaluation by time series analysis 8−46902
supersonic laminar boundary layer separations, quasi-3-dimens. 8−46995
surface loads, reciprocating dynamic stresses produced in elastic half space 8−9562
texture analysis, numerical calc. of generalised spherical harmonic function *(French)* 8−18484
thermoelectric coolers, numerical anal. of transient behaviour 8−21140
thermorheological problems, numerical soln. 8−13910

numerical analysis continued
thin crystals, surface state calc. 8−14778
thin elastic plates, nonlinear vibr. 8−1593
torsion of connected bars *(German)* 8−34024
transport coeff. numerical simulation of meas. by correlation method 8−8364
transport processes, two-group problems with anisotropic scatt., closed-form solns. 8−4569
turbulent flow, numerical simulation of large eddies 8−9628
turbulent flow in pipes, numerical anal. by finite element method 8−18341
turbulent shear flow computation, Navier-Stokes eqns., Reynolds stress modelling 8−46955
two-dimensional turbulence in square region, inviscid Navier-Stokes eqn. calcs. 8−16656
two-junction Josephson interferometer, reson. phenomena, anal. 8−47910
upper atmosphere hydrodynamical accelerator, numerical modelling *(Russian)* 8−16225
vapour pressure, constrained fitting of limited data 8−34615
visco-plastic approach to plasticity and creep problems, involving geom. nonlinearities 8−26050
viscous transonic cascade flows around airfoil, coord. system for numerical calcs. 8−42627
vorticity, chordwise variation, approx. for use in panel methods 8−18306
wave propagation, weak, in elastic-plastic and elastic viscoplastic solids with interfaces, Al calcs. 8−18216
waveguide characteristics, of gradient-index fibres *(German)* 8−5550
X-ray small angle scattering, slit-height exact soln., arbitrary slit transmission functions 8−42853
N_2 high intensity arc anode region, temp., current density, flow field, numerical anal. 8−9827
$N_2O/N_2/H_2O$, CW gasdynamic laser, numerical anal. 8−29935
Na vapour bubble growth in superheated liquid, numerical anal. 8−29576
OH, chemiluminesc., form. from O+ethylene, mechanism, rate const., mathematical model calcs. 8−48655

numerical methods
see also convergence of numerical methods; predictor-corrector methods
acoustic wave propagation, in nonuniform ducts, wave-envelope technique 8−9464
beams, frames, arches, axisymmetric shells, finite element anal., Newton Raphson method, nonlinear equilib. eqns. 8−22282
boundary element methods, using weighted residual techniques potential problems and engineering appl. 8−36803
boundary integral eqn. method for 3-D thermoelasticity 8−5657
boundary integral eqn. methods, advanced appl. 8−42531
boundary layer, laminar separation, from upstream-moving wall 8−13989
bubbly, two-phase mixtures, numerical anal. of press. transients by explicit-implicit method 8−34185
cardiac muscle model activation parameter behaviour, numerical study 8−11686
celestial mechanics, planetary motion, Taylor-Steffensen series appl. *(Russian)* 8−49352
celestial mechanics, regularised numerical method based on Taylor-Steffensen power series *(Russian)* 8−49300
celestial mechanics, satellite motion prediction by extrapolation methods *(Russian)* 8−49299
chemical kinetics, modelling, numerical method based on Taylor series expansion 8−48629
Cholesky factorization of stiffness matrix, method for updating factorization 8−16623
CIDNP, numerical methods, model depend. 8−13530
classical dynamics systems, stochastic props., numerical methods reliability, time averages 8−41151
convection, natural, in closed container, numerical simulation 8−46969
convection, three-dimensional, natural, in box 8−5743
cylindrical media, radiative transfer eqn. 8−5642
differential quadrature, appl. to transient nonlinear diffusion 8−16755
Einstein's field eqns. on curved background metric, approximation method 8−109
elastic plate, infinite, concentrated load, stress. anal., numerical method *(Japanese)* 8−22273
electrochemical diffusion, boundary value problems, orthogonal collocation calcs. 8−40053
fluid, classical, transport coeffs. computation by cell hydrodynamics 8−38600
GARNET, graphic analysis of resources by numerical evaluation techniques 8−20525
gas dynamics, partial ionis. computation method 8−38447
generator coordinate method 8−29731
geophysical inverse problems, resolution anal. for discrete systems 8−49153
holographic reconstruction, two dimens. Fourier transforms 8−1180
integral eqn. method for potential problems with source function not located on boundary 8−24643
integral eqns. solution, book 8−41143
integral equations with kernels containing poles, interpolative technique, numerical solns. 8−41141
Kramers-Kronig transforms, Fourier method numerical soln. by computer 8−2825
laminar flow in vertical tubes, free convection effects 8−5722
linear elliptic and parabolic partial differential eqns. with boundary singularities, numerical soln. 8−41142
micropolar elasticity, 3-D finite element approach to static and dynamic problems 8−34014
molecular electron elastic scatt., vibronic effects 8−9249
multidimensional reactor dynamics equation, fast factorization and exponential transform. procedures 8−17303
Navier-Stokes eqns., soln. by efficient numerical method 8−9619
neutron transport theory, recent work at LASL 8−13195
Newton method with mesh refinements for nonlinear two-point boundary value problem 8−36809
nonlinear autoregressive processes 8−24642
nonlinear shell theory, numerical method *(Russian)* 8−34006
nuclear reactor thermal channel gap heat transfer calc. 8−21630
optimal control, problems with constraints, transformation methods of an exponential function type 8−12541

numerical methods continued
orthogonal collocation method, appl. to heat conduction problems 8−33990
oscillators with nonlinear restoring forces, first passage failure probability calc. 8−42562
over-wing-blowing configurations, aerodynamic characts. determ. 8−5774
photogrammetry, orientation, triangulation and digitisation 8−36312
polyatomic molecule, dissoc., natural collision coords. 8−44373
potential problems, numerical solution, integral equations without Green's function 8−20950
random vortex methods for two dimens. large Reynolds number flow, errors 8−42614
Schrodinger equation, one-dimensional eigenvalue problem, bound state solns. 8−20992
screen acoustic impedance evaluation 8−13831
spherical bubble growth in uniformly ultraheated liquid 8−1550
spinning shells, Magnus characts., empirical calc. method 8−26072
stress anal. in 3-D, numerical-experimental hybrid technique 8−22265
string vibrations numerical study by physical discretisation 8−45480
surface area calc. by gas adsorption, progammable calculator appl. 8−15706
toroidal diffuse equilib. config., pinches, Tokamak 8−30471
transonic flow, far-field matching method 8−26146
transverse isotropic inelastic work hardening constitutive model, numerical implementation 8−42547
triangular finite elements and numerical integration 8−33
turbulent diffusion, nonlinear integrodifferential eqn., numerical soln. 8−38306
vibrating system solution, linear, damped, of finite degrees of freedom 8−24656
vibration problems, Zienkiewicz four-time-level scheme for numerical integration 8−1594
Vlasov equation, two dimens., numerical soln., multistep technique 8−1795
work hardening-recovery type constitutive eqns., numerical integration, improved method 8−6949
H+positron, S-wave scatt., lowest reson. calc. 8−37743

numerical methods, convergence *see convergence of numerical methods*

nuvistors
No entries

Nyquist criterion
see also Nyquist diagrams
stability anal. by finite element method 8−29543

Nyquist diagrams
see also Nyquist criterion
nonconservative system resonance, modal analysis 8−42557

Nyquist noise *see thermal noise*

occultations
AO 0235+164, BL Lacertae object, lunar occultation obs. rel. to radio halo struct. 8−4386
asteroids, dates for occultations during 1978 8−20718
atmosphere occultation meas. using monoaxial controlled solar pointer *(Japanese)* 8−32312
4C 03.59, BL Lacertae object, lunar occultation obs. rel. to radio halo struct. 8−4386
Comet Kohler (1977m), occultation of 70 Ophiuchi, prediction 8−7930
Crab Nebula, by Moon, struct. determ. at 327 MHz 8−12339
Crab pulsar, by Moon, pulsed X-ray emission obs. 8−8032
15 Eunomia, occultation of ξ Cancri on 1978 January 19, further predictions 8−20714
ε Geminorum, by Mars, struct. and extinction of Martian upper atm. 8−7898
Iapetus, radius from 1974 March 30 lunar occultation 8−36505
Jupiter, satellites, diameters from lunar occultation meas. 8−45272
Kepler's supernova remnant, by Moon, struct. determ. at 327 MHz 8−12339
υ Leonis (SAO 138298), angular diameter from lunar occultation obs. 8−45332
lunar occultations of stars, double and multiple stars obs. 8−4079
lunar occultations of stars, summary of obs. 8−7982
Mariner 10 by Venus, pressure-temp. profile obs. 8−28563
Neptune, appulses of 12th and 13th magnitude stars (early 1978) 8−16347
χ^1 Orionis (SAO 077705), by Moon, ang. dia. meas. 8−20825
photoelectric obs., diffraction, stellar diameters and double stars 8−7866
photoelectric observing, techniques and apparatus 8−4117
planet diamter meas. by occultation obs., teaching expt. 8−12457
planetary nebulae by Moon, radio continuum obs. and electron temps. 8−41027
SAO 158687, by Uranus, estimation of true external errors of Tokyo meridian circle obs. 8−28487
SAO 159250 by 16 Psyche on 1978 Feb. 25, details 8−16332
SAO 206553 by 704 Interamnia on 1978 April 28, details 8−16332
SAO 85009, by Pallas on 1978, May 29, revised position 8−12080
SAO 97745, by 15 Eunomia, visibility track 8−12081
Saturn, astrometric results from 1974 lunar occultations of satellites 8−36506
star by Earth, stratospheric balloon meas., ceiling altitude var. compensation *(French)* 8−11947
stars, by Moon, new technique for photoelec. obs. by dark limb reappearances 8−4115
stars, by Neptune, predictions for 1978-80 period 8−40868
stars, by Uranus rings, 1977-80 period, S/N ratios 8−32392
stars by Moon, 1965-71 events recorded at Poltava *(Russian)* 8−4083
stars by planets, effects of photon noise and initial conditions 8−28530
stars by rings of Uranus, 1977-1980, colours and magnitudes 8−16277
stars by rings of Uranus, predictions for (1977-1980) 8−16343
Viking by solar corona, radio obs. at 1976 Mars solar conjunction 8−20789
Viking orbiter by Mars, radio occultation meas. of atmosphere and topography 8−20687
ψ Virginis (SAO 139033), by Moon, ang. dia. meas. 8−20825

ocean water *see seawater*

oceanic crust
Arctic Ocean bathymetry at latitudes north of 85°N 8−3756

oceanic crust continued
S Atlantic Ocean, depositional history during last 125 million years 8−44798
N.Atlantic recent sediments, volcanism effects on mineral comp. 8−44802
Baffin Bay continential margin and Lancaster Sound, seismic refr. meas., continental/oceanic crust boundary determ. 8−20368
Barents Sea, morphostructural map of SE region 8−3749
basalts, deep sea, trace element distrib. pattern, neutron activation anal., rel. to genesis 8−11879
basalts, from N Pacific, mag. props. rel. to Pacific plate tectonics 8−40543
basalts from Nazca Plate, mag. props. and opaque mineralogy 8−20396
bathymetric charts construction aboard ship, efficient method 8−45029
Black Sea basin, crustal struct. from Love and Rayleigh waves dispersion *(Russian)* 8−28192
Black Sea basin formation *(German)* 8−3737
Black Sea continental platform, seismic prospecting method appl. *(Rumanian)* 8−20564
Black Sea Pleistocene clay sediments, physical and mechanical props. 8−3755
Black Sea transverse rise, geological and geophysical data 8−3754
Blanco fracture zone, microearthquakes location determ. using sonobuoy arrays 8−40504
Bouvet triple junction, S.Atlantic Ocean, geochem. and petrology of dredged basalts 8−11877
calcareous ooze and chalk, Ontong Java Plateau, W Pacific, sound vel., sonobuoy data 8−40542
Colombia basin, Caribbean Sea, crustal struct. from profiler-sonobuoy meas. 8−28198
continental crust rel. to ocean and margin formation 8−11851
continental margins, stress state 8−3742
continuous seismic profiling, diffr. waves travel time curves 8−3725
converted shear waves trapped in sediment layer ocean bottom seismometers and surface buoy meas. 8−44776
deep sea sedimentary sections, recycling 8−32059
depth anomalies, depend. on latitude and plate motion 8−28215
East Pacific Rise at 21°N, hydrothermal activity and crestal struct. 8−28216
EM response of conducting sphere in two-layer conductor 8−15961
Galapagos Rift mounds, deep tow hydrothermal obs. 8−11871
Grand Banks and J-anomaly ridge, geological comparison 8−15983
Gulf of Aden, mag. survey, seafloor spreading phases determ. 8−32049
Gulf of Oman, seismic bright spots, possible gas reservoirs 8−32057
Indian Ocean triple junction region, microseismicity 8−32020
Juan de Fuca ridge, heat flow meas., evidence for hydrothermal circulation 8−28197
Juan de Fuca spreading centre tectonics, propagating rift model and pseudofaults 8−32046
Jurassic seafloor, Point Sal, California, rare earth and trace element geochem. 8−32094
King's Trough, NE.Atlantic Ocean, struct. from bathymetric, seismic and gravity data 8−49005
Labrador Sea and North Atlantic evolution 8−28210
magnetized layer, lower bound on thickness 8−28162
marginal basins, diffuse magnetic anomalies and their tectonic and petrologic significance 8−32064
Melanesia Basin deep-sea sediments, palaeomag., polarity reversals 8−36102
Mesozoic sea floor off Dronning Maud Land, Antarctica, magnetic mapping 8−3715
microearthquakes near St. Paul's Fracture Zone, depth determ., lithosphere thickness 8−48980
Mid Atlantic Ridge, FAMOUS area, petrogenesis of basalts 8−11891
Mid Atlantic Ridge, geophysical significance of plagiogranite 8−16007
Mid Atlantic Ridge, SW of Azores, deep seismic sounding results 8−3747
Mid Atlantic Ridge and Kurchatov Fracture Zone, sonar obs. 8−28214
Mid Atlantic Ridge near 45°N, ocean bottom seismograph obs. 8−11875
mineral deposits, prospecting, extraction, X-ray spectrometric anal. *(German)* 8−20551
Narmada-Son lineament, extension towards Murray Ridge 8−15985
Nazca plate off S. Peru, crustal model from ocean bottom seismometer obs. 8−32032
New England Seamounts, submersible observations 8−20383
Newfoundland, Bay of Islands ophiolite complex, oceanic crust exposure 8−40506
Ninetyeast Ridge, seismic sounding with bottom seismographs and air guns 8−3748
Pacific, eastern central region, sea floor relief from side-scan sonar obs. 8−36142
W Pacific guyots, ^{40}Ar/^{39}Ar ages and evolution 8−11876
E.Pacific Rise, equatorial, regional shape and tectonics 8−44800
E.Pacific Rise crest structure from multichannel seismic reflection 8−40523
E.Pacific Rise near 3°25′S, structural geomorphology of fast-spreading rise crest 8−44799
piston core behaviour recording device 8−20532
plate-stress rel. to mantle circulation with partial shallow return flow rel. to oceanic plates 8−40520
Puerto Rico Trench origin and gravity anomalies 8−11861
refractory megacrysts and Mg-rich melt inclusions in spinel in oceanic tholeiites 8−32060
ridge migration and asymmetric sea floor spreading 8−11858
ridge system, volume changes rel. to secular changes in continents marine inundation 8−3735
rifting and subduction causes, appl. to Atlantic margin of Brazil 8−3743
Romanche fracture zone, equatorial Atlantic, Neogene crustal emersion and subsidence 8−11857
Scotia Sea dsland arc and back arc tholeiites, geochemical study 8−11872
seafloor spreading, south of Agulhas Fracture Zone 8−24277
sedimentary basins, thermal and subsidence history 8−49010
sediments from DSDP Site 219, trace elements partition patterns 8−36143

oceanic crust continued
seismic internal vels. in crustal layers from sonobuoy records of mantle reflections 8−28184
Seychelles-Mauritius Plateau, mag. anomalies, sediment thickness 8−3750
Somali Basin, seismic profiling and bottom topography, possible fracture zone 8−28213
source-span-sink thermal models of arcs and ridges 8−32040
South Sandwich Islands, seismicity 8−7582
spreading centres, perpendicularity to transform faults questioned 8−24276
spreading ridges, crests palaeobathymetry rel. to ocean basin ages and latit. 8−11869
submarine canyon heads, relief development processes, Black Sea 8−44803
Tasman Sea evolution, marine magnetic data 8−11870
Timor Trough and Australia, facies rel. to topographic wave migration during past 3 million years 8−49018
Transkei Basin, seismic refraction obs. 8−11831
Tyrrhenian Sea floor, tholeiitic basalts 8−11873
Mn nodule, sediment-water interface and submergence dynamics 8−28217
Mn nodules, accumulation rates from alpha track method 8−7610

oceanographic equipment
see also oceanographic techniques; water pollution detection and control
35 mm camera systems for deep sea appls. 8−4003
acoustic impedance transducer, for in situ meas. of marine sediments 8−9519
anchor releases, dual mode and timed electrolytic devices 8−40693
automated profiling water quality sensing system 8−45052
automatic sampling buoy for accumulation of dissolved and particulate organic material in seawater 8−49149
buoys, environmental data acquisition 8−36287
deep ocean release mechanism for instrument packages 8−12021
differential spectrophotometer for hydro-optical studies 8−3997
fluorometer for underwater detection of rhodamine dye tracer 8−36313
graphic system for space-time series processing and anal. 8−3998
Great Lakes coastal waters, thermal plume meas. systems 8−44891
hydrophysical apparatus, channels with automatic transfer function correction *(Russian)* 8−16193
imaging systems in water, point and beam spread functions 8−5426
integrating optics and sonar for deeply towed vehicle 8−45045
international standards for oceanographic instrumentation 8−45043
laser velocimeters appl. to ocean meas. 8−36325
MF/HF backscatter radar for sea surface meas. *(Japanese)* 8−16210
microprocessor-assisted flow-through anodic stripping voltammeter 8−36324
microprocessor-based particle data collection system 8−36323
moored buoy system design for shallow waters 8−36319
moored current meters, meas. intercomparisons, review 8−45050
near-bottom quantitative seismic profiler 8−16196
Oceans '77, conf., Los Angeles, USA (Oct. 77) 8−36193
piston core behaviour recording device 8−20532
polymers for undersea environment high temp./press. materials test 8−3213
pressure tolerant electronics, appls. 8−45056
pressure vessel for trapping deep-sea animals, simply actuated closure 8−3821
Pull-Up Shallow Water Seismometer design and appls. 8−45025
radio buoy for tracking oil slicks 8−45034
radiotelemetering meas. system for buoy testing *(Russian)* 8−16192
recording inclinometers for deep ocean current meas. 8−45054
remotely controlled profiling system for shallow water 8−36328
SeaTrak Data Processor, surface data reduction system for current meter 8−45042
shipboard subsystem, operation peculiarities of Minsk 22 computer *(Russian)* 8−16165
side looking sonar for sand wave study in White Sea 8−3999
sofar floats for POLYMODE 8−45047
sonar, signal processing algorithms soln. with multi-microprocessor network 8−45044
sonar systems, underwater electric cable terminations 8−45041
submerged cylinders, forced oscills. test in water 8−5728
surface currents mapped by coastal HF radar system 8−28351
surface wave slope meter, fast response instrument, wind-wave moments meas. 8−45012
telemetry data buoy for coastal operation 8−36320
temperature-depth profiles system, solid state memories 8−24383
thermistors, spectral response characts. 8−20533
TV camera, pressure tolerant, small, features 8−32243
wave height sensor, buoy-mounted barometric pressure instrument 8−36321
wave sensor array, high resolution, for wave directional spectra meas. in nearshore zone 8−36329

oceanographic techniques
see also oceanographic equipment; water pollution detection and control
35 mm camera systems for deep sea appls. 8−4003
acoustic imaging, appl. to New England shelf-slope water mass surfaces 8−3784
active microwave sensing of surface phenomena *(Japanese)* 8−16215
Arctic sea ice, layered struct. study by radar sounding *(Russian)* 8−16023
bathymetric charts construction aboard ship, efficient method 8−45029
Black Sea water, chemical anal. method and F content 8−32118
continuous seismic profiling, diffr. waves travel time curves 8−3725
current meas. by Lagrangian drifting buoys 8−45049
current meas. near ocean surface, general problems, review 8−45048
current meter data, graphic presentation 8−45055
current monitoring using acoustic techniques 8−11907
data objective anal. and classification 8−36318
deep seismic profiling, Atlantic Ocean, automatic processing of bottom seismograph records 8−45030
density profile remote sensing pulses, numerical algorithm 8−20429
depth sounding using airborne laser land profiler 8−49173
echo sounders, magnetostriction effects appl. *(German)* 8−23311
estuary mapping, classification algorithms for Landsat data 8−40567
expendable bathythermograph data correction for salinity effects, Gulf Stream rings dynamic heights calc. 8−49151
flow measurement 8−32260

oceanographic techniques continued
Gulf Stream ring tracking with free drifting surface buoy 8−7769
heavy metal sedimentation rate in Saanich Inlet, British Columbia, ^{210}Pb technique 8−32063
hydrocarbon pollution detection, caution on use of Niskin sampling bottles 8−45039
iceberg sounding by impulse radar 8−24388
industrial waste dumping, dispersion meas. technique 8−44884
isotopic generators appl. *(Spanish)* 8−15922
laser optical instrument, for capillary wave slope meas. 8−36173
laser velocimeters appl. to ocean meas. 8−36325
low temperature skin-layer, investigation via satellite IR photography *(Russian)* 8−36180
marine modelling (vol.6 of 'The Sea') 8−16047
marine seismic surveying, potential efficiency of shot grouping *(Russian)* 8−40702
microwave holographic imaging of water waves 8−37861
mining, position location system 8−45046
moored instruments for meas. in permanently ice-covered waters 8−49150
mooring monitoring, acoustic phase tracking technique 8−30138
nearshore bathymetry using remote multispectral imaging 8−45053
Oceans '77, conf., Los Angeles, USA (Oct. 77) 8−36193
oceans '77, conference, Los Angeles, CA, (17-19 October, 1977) 8−45040
offshore environmental monitoring program for proposed nuclear power plant in Islote, Puerto Rico 8−11917
oil spills remote detection using laser-excited Raman backscatt. and backscatt. fluoresc. 8−32242
palaeotemperatures, from SiO$_2$ O isotopes in diatoms, 20000 yr record in deep-sea sediments 8−32247
pollution, technique for estimating long-term conc. of conservative substances discharged into ocean 8−44885
radar, synthetic aperture imaging of ocean waves, focusing effects 8−40555
radiothermal location, inverse problem soln. method *(Russian)* 8−16188
remote sensing, ocean surveillance by US Coast Guard 8−45004
remote sensing for, water depth and bottom features mapping 8−40673
saline water trace element analysis problems 8−45051
sea ice/lake SAR L-band imagery computer processing 8−36311
sea level nonperiodic oscills. calc., spectral method for deriving regression eqns. 8−7660
sea state and wind sensing by HF skywave radar 8−24396
sea temp. vertical distrib., modelling and prediction on expedition *(Russian)* 8−16190
SEASAT program, Canadian participation 8−20535
seawater bromide determ. using bromide ion-selective electrodes 8−3996
seawater elec. cond. meas., var. with temp. 8−20531
seawater purification, method for obtaining Si-free and PO$_4$-free water 8−3817
sediment trap arrays recovery, appl. of timed electrolytic anchor release 8−40693
seismic and side-scan sonar images, recording, signal amplitude preservation 8−36326
Seto Inland Sea hydraulic model tidal flow pattern anal. *(Japanese)* 8−36314
side-scan sonar, Pacific Ocean floor relief meas. 8−36142
storm zone location methods using radiothermal remote meas. *(Russian)* 8−16189
surface temperature remote sensing by satellite appl. to advection in Peru Current 8−16029
surface water, global radioactive contamination levels determ., math. method 8−7816
tides, oceanic and shallow water, spectral method of computation *(French)* 8−28321
turbulence breakdown coefficient determ., influence of data treatment technique *(Russian)* 8−7690
waste drift, satellite and current drogue studies 8−3824
wave and swell forecasting for North Sea 8−7658
waveheight nondirectional spectrum from inversion of HF sea-echo Doppler spectrum 8−16203
SiO$_2$, dissolved, natural oceanic circulation tracer, Yucatan Strait 8−44830

oceanography
see also liquid waves; seawater; sediments; surface waves (fluid); tides
acoustic field radial spatial coherence from near ocean surface source 8−30117
acoustic narrow-band signals and noise amplitude fluctuations in sea 8−9479
acoustic radiated noise meas. from data buoys and cycloidal propellers 8−33960
acoustic reverberation spectral rel. to remote detect. of turbulence 8−38124
acoustic transmission in isospeed channel, effect of random ocean current 8−13840
acoustic velocity profile, horizontal range, and travel time series expansions 8−5604
active ocean layer, integral model *(Russian)* 8−7649
active ocean layer, numerical modelling *(Russian)* 8−32110
N.Adriatic Sea, bora driven circulation 8−40556
NW.African upwelling region, sea surface temp. and salinity meas., 1971-72 winter 8−44827
air-sea interface, heat and momentum flux in const. flux layer, from temp. meas. 8−44899
air-water exchange reactions, wind-wave interactions *(Dutch)* 8−3785
Albian open seaway between northern and southern proto-Atlantic 8−40538
ambient air/water interface, frictional coefficient at low wind strength, obs. *(French)* 8−16020
ambient sea noise directionality, meas. and processing techniques 8−16025
Antarctic Bottom Water, near-zero production 8−11903
Antarctic Circumpolar current struct. and transport at Drake Passage 8−44848
Antarctic Ocean, interdisciplinary studies 8−11915
circum-Antarctic Ocean, rel. to Cenozoic evolution of Antarctic glaciation and global palaeoceanography 8−16063

oceanography continued
Antarctic ocean, topographic effects in rapidly rot. flow over transverse ridge 8−28245
Antarctic Polar Frontal Zone from Australia from Drake Passage, thermal struct. 8−44850
Antarctic waters, effect of glacial weathering on Antarctic waters silica budget 8−20436
anticyclonic eddy off W.Austalian coast, trapping of drifting buoys 8−44832
aocustic coherent ray propagation through Gulf Stream ring 8−11906
aqueous heavy metals, adsorption on inorganic minerals 8−49006
arbitrary continuously stratified environments, propagated, reflected and transmitted acoustic waves 8−13829
Arctic basin, drifting sea ice, deformation *(Russian)* 8−7652
Arctic sea ice, layered struct. study by radar sounding *(Russian)* 8−16023
SW.Atlantic, abyssal circulation increase during Late Pliocene rel. to global climatic cooling 8−40645
N.Atlantic, iceberg fluctuations *(German)* 8−49038
NW.Atlantic, M_2 tide and Nova Scotia crustal struct. from tilt and gravity obs. 8−40464
N.Atlantic, main thermocline large-scale depth perturbs., obs. 8−24302
Atlantic, nonlinear P-V-T props. effects on pot. energy distrib. 8−49024
N Atlantic, potential energy maxima in tropical and subtropical regions 8−3774
NE.Atlantic, salinity and O_2 distrib., influence of Southern Atlantic Central Water 8−49028
N.Atlantic, sea-air large-scale interaction, thermodynamics 8−3786
Atlantic, semidiurnal temp. fluctuations horizontal coherence, Polygon-70 *(Russian)* 8−44844
Atlantic, tropical, mass flux divergence of deep currents *(Russian)* 8−7651
N. Mid-Atlantic Bight, NE. drift 8−40566
Atlantic near Gibraltar, O and phosphate distribs. *(Russian)* 8−16058
S. Atlantic Ocean, bathymetry, rel. to seafloor spreading south of Agulhas Fracture Zone 8−24277
S Atlantic Ocean, depositional history during last 125 million years 8−44798
Atlantic Ocean palaeobathymetry from Jurassic to present 8−20387
N.Atlantic waters integral circulation, numerical calc. 8−3811
atmosphere-ocean momentum, heat and H_2O vapour fluxes, meas. methods 8−32213
atmospheric boundary layer, turbulence meas. distortion caused by rolling ship 8−3805
W.Australian Current, eddy struct. 8−44829
E Baltic coast littoral drift regime and dynamics *(Russian)* 8−36147
Baltic coastal shelf suspended drift quantitative distribution *(Russian)* 8−49011
SE.Baltic inshore wave deformation peculiarities *(Russian)* 8−36188
Baltic Sea, mixing in thermocline and halocline layers 8−40571
Baltic Sea, water balance study, International Hydrological Program 8−7661
Baltic Sea, water temp. stratification in offshore zone 8−3792
Baltic Sea region, evaporation-precipitation during IHP 8−44865
Baltic Sea sedimentation, role of river suspensions *(Russian)* 8−7616
Baltic Sea sediments, organic acids 8−49007
Baltic Sea Upper Quaternary sediments, physical props. 8−3753
SE.Baltic shore development due to hydrotechnical constructions *(Russian)* 8−36145
SE.Baltic shore zone dynamic classification *(Russian)* 8−36146
SE Baltic shore zone subdivision into lithomorphodynamic sections *(Russian)* 8−36148
SE.Baltic storm surge peculiarities of water level *(Russian)* 8−36189
E.Baltic upper shelf suspended matter distribution and structure *(Russian)* 8−36187
baroclinic instability in two-layer current model, beta effect influence *(Russian)* 8−44842
baroclinic instability of integral circulation in open ocean 8−3789
baroclinic ocean, integral stream function and pot. energy determ. 8−3808
barotropic currents over anisotropic bottom topography, nonlinear theory 8−44867
barotropic nondivergent shelf waves on Ghana continental shelf 8−44837
barotropic ocean response to moving hurricane 8−36191
barrier island migration computer simulation 8−20384
bathymetrically trapped current ring obs. in Bering Sea 8−44863
beach slope sand granulometric composition variations during wave cycle *(Russian)* 8−15991
Bering Sea, medium-scale features obs. along seasonal ice edge 8−3778
bidimensional surface waves, periodic correlational random field model *(Russian)* 8−20430
Black Sea, large rockslide formations rel. to Cenozoic sedimentation 8−3751
Black Sea, quantitative distrib. of suspended matter 8−3818
Black Sea, shelf bathymetry *(Rumanian)* 8−20391
Black Sea sediment cores, organic geochemistry 8−49040
Bombay High area, winter swells 8−32112
bottom boundary layer, mass transport by gravity waves *(Russian)* 8−16036
bottom nepheloid layers and bottom mixed layers, obs. on continental shelf off Oregon 8−16027
bottom reflectivity at low freqs. 8−40559
bottom surface layer and atm. surface layer, turbulence spectra similarity scaling 8−44860
bottom topography, convex and concave effects on drift circulation *(Polish)* 8−3771
boundary layer, diurnal temp. cycle 8−20434
Bristol Bay, Alaska, finestructure 8−20425
California Undercurrent stability off Vancouver Island 8−44859
capillary wave slope meas., using laser optical instrument 8−36173
capillary-gravity waves on ocean bottom, development and stability *(Russian)* 8−16033
early Cenozoic Atlantic Ocean, calcareous plankton palaeobiography and climatic fluctuations 8−16143
chemical speciation of Cd, Cu, Pb and Zn in mixed freshwater, seawater and brine solns. 8−20409
Chile, Quaternary sea level fluctuations 8−44980

oceanography continued
NE.Chukchi Sea, coastal currents obs. 8−32107
circulation, composite Eulerian-Lagrangian model 8−44870
circulation, MHD effects in electrolytes as model *(Russian)* 8−40610
circulation studies and use of tracers 8−16053
circulation variations near Cape of Good Hope 8−3812
cliff erosion, wave induced rel. to erosive force of waves 8−20388
coastal trapped long waves, obs. off United States west coast 8−44854
coastal zone of non-uniform sea, wind effect on steady circulation *(Russian)* 8−16038
Cochin Harbour, siltation in outer channel, tidal streams and longshore currents 8−36144
continental margin sedimentation, computer simulation 8−15998
continental shelf, simple theoretical model of flow from estuary 8−49030
continental shelf currents during tropical storm Delia 8−7655
continental shelf dynamics and topographically trapped coastal waves 8−16057
continental shelf sediment transport modelling 8−15995
continental shelf wave side band instability and long wave resonance 8−16030
continental shelf waves, effects of variable Coriolis parameter, coastline curvature and bottom topography 8−3775
current finestructure and moored current meter meas. of internal waves 8−44828
current regime in Gulf of Kutch, NW.India 8−36184
current structure function for intermittent turbulence *(Russian)* 8−32109
currents and winds off Oregon Coast, rotary cross-bispectra and energy transfer functions 8−44858
currents measurement, appl. of SeaTrak Data Processor surface data reduction system 8−45042
cyclonic rings, water transformation, warm saline water/cooler fresher water mixing 8−44861
cylindrical solitary waves in variable depth water 8−40578
Deep Ocean Mining Environment Study phase I and II, prospect 8−16164
deep sea floor surveys, integrating optics and sonar 8−45045
deep sea waste disposal *(German)* 8−24311
deep-sea cores, ^{231}Pa dating via ^{227}Th counting 8−32238
deep-sea sediment magnetic spherules, ^{40}K/^{41}K ratio rel. to possible meteorite origin 8−11874
deep-sea sedimentation, time scales and dynamic models 8−15988
deep-sea sediments, unmixing of O isotope record rel. to deglacial meltwater spike 8−3746
density fronts, effects on coastal pollutants 8−7659
Doppler scattering of EM waves by ripples due to acoustic and capillary waves 8−3807
Drake Passage, deep flow variability from current meas. 8−44849
Drake Passage, summer current meas. 8−7657
eddy effects on sound transmission 8−11905
edge waves over trench-ridge topography adjoining straight coastline 8−44838
El Nino, 1972, sea level vars. 8−44847
El Nino, verification of theories 8−24294
EM field of nonstationary marine currents, theory 8−44833
English Channel M_4 tide derived from nonlinear numerial model of M_2 tide 8−49027
equatorial, response to periodic monsoon winds 8−3773
equatorial counter-current formation *(Russian)* 8−16035
estuarine flow, nonlinear partial differential eqn., finite element anal. *(Japanese)* 8−8233
estuary with uniform reversing tidal flow, suspended sediment model 8−7648
evanescent internal waves in rotating stratified liquid *(French)* 8−38356
fine struct. of hydrophysical fields, nonlinear internal wave theory 8−3796
fine suspended particles, removal mechanisms and residence times 8−32106
fjords, horizontal temp. and density gradients 8−24303
Flandrian sea level changes in Thames Estuary, implications for land subsidence in England and Wales 8−24304
fluid dynamical systems, statistical anal. and prediction 8−11901
fluid dynamics, use of similarity theory in Soviet work *(Russian)* 8−16174
forced plume characteristics 8−18286
Galapagos submarine hydrothermal water excess ^{3}He and ^{4}He 8−40593
general circulation models 8−16048
German Bight, geoid determ. by gravimetric levelling *(German)* 8−3813
global air-sea interactions rel. to climate formation 8−16142
global sea pollution, ecological aspects 8−3826
gravity waves, deep water almost-highest, matching and anal. extn. 8−46991
gravity waves, finite amplitude, in deep water, instabilities, superharmonics 8−38349
gravity waves, finite amplitude, in deep water, instabilities, subharmonics 8−38350
gravity waves, growth and equilib. in wind-wave tank 8−1679
gravity waves, shape and breaking in stratified shear flow 8−34147
gravity waves propag. over permeable bed *(Polish)* 8−38353
Guacanayabo Bay, Cuba, tectonic processes rel. to Holocene sedimentation 8−3752
Guinea Current upwelling 8−24306
Gulf of Gdansk, lithodynamical processes, theoretical anal. and scale model tests *(Polish)* 8−40540
Gulf of Mexico, anticyclonic current patterns temporal var. 8−32114
Gulf of Mexico, aromatic hydrocarbons concs. in seawater at proposed deepwater port sites 8−44880
Gulf of Mexico, Ba non-conservative behaviour during mixing of Missisippi River and marine waters 8−32120
NW Gulf of Mexico, near-bottom cross-shelf currents, response to wind forcing 8−3780
Gulf of Mexico, particle size distrib. of suspended matter in deep water 8−36177
Gulf of Mexico and Caribbean Sea bottom press. obs. 8−36175
Gulf Stream, Site D, Rossby wave obs. 8−3806
Gulf Stream cold core ring, observed formation 8−44862
Gulf Stream intensification after 1976-77 winter 8−11910

oceanography continued

- Gulf Stream intrusion into S.Atlantic Bight shelf waters 8−32108
- Gulf Stream meanders, effects on New England fishing grounds 8−36195
- Gulf Stream ring tracking with free drifting surface buoy 8−7769
- Gulf Stream rings, distrib., number and movement 8−24297
- Gulf Stream rings dynamic heights calc. from corrected expendable bathythermograph data 8−49151
- Gulf Stream roughness var. from radar cross section obs. 8−36194
- heavy metal sedimentation rate in Saanich Inlet, British Columbia, ^{210}Pb technique 8−32063
- high-latitude N Atlantic, Late Quaternary surface ocean kinematics and climatic change 8−16026
- high-level radioactive waste, ultimate disposal on seabed, rel. to oceanographic circulation 8−13273
- horizontal circulation in World Ocean *(Russian)* 8−16034
- horizontal divergence and voriticity from vel. and temp. meas., MODE region 8−3772
- horizontal turbulence, spectral struct. 8−3790
- Hudson Bay, spring break-up of estuaries 8−11930
- Hudson River estuary, ^{222}Rn distrib. and transport across sediment-water interface 8−16064
- Humboldt Bay, California, offshore current meas. rel. to proposed outfall 8−44876
- hurricane Camille, wind speed and direction, ocean wave height and barometric press. meas. 8−36254
- ice, initial forms, microwave refr. index and absorpt. 8−49036
- icebergs, melting in environment with salinity gradient, rel. to fresh water supply 8−24305
- Indian, surface temp. anomaly patterns effect on summer monsoon circulation, NCAR model 8−40634
- N.Indian, tidal charts 8−32115
- SW Indian Ocean, drift obs. from Nimbus VI satellite-tracked buoys 8−20426
- Indian Ocean, modelling of equatorial currents variability caused by monsoons *(Russian)* 8−44839
- industrial waste dumping, dispersion meas. technique 8−44884
- infrasonic sea noise, meas. and experimental problems 8−11902
- inshore submarine slope cross-profile changes and littoral drift balance *(Russian)* 8−15989
- internal gravity wave packet modulation, reson. with mean motion 8−5761
- internal gravity waves, short-period, nonstationary features rel. to thermocline oscills. *(Russian)* 8−16024
- internal slightly nonlinear nonstationary waves in deep ocean 8−44869
- internal wave field, equilib. mechanisms 8−44852
- internal wave obs. by Skylab 8−3801
- internal wave spectra, temp. and current contamination 8−40564
- internal waves, damping in ocean with rough bottom *(Russian)* 8−24293
- internal waves, effect on surface wind waves, expt. with ship 8−40562
- internal waves, effect on surface wind waves, theory 8−40563
- internal waves, temp. field fine structure influence *(Russian)* 8−36182
- internal waves at interface of two water media of different densities *(Polish)* 8−38352
- internal waves generated by travelling disturbance *(Russian)* 8−16031
- internal waves impingement onto moving mixed surface layer 8−24298
- internal waves interaction with small-scale surface turbulence *(Russian)* 8−44845
- internal waves with nonstationary shear, hydrodynamical instability *(Russian)* 8−7650
- Irish Sea, density currents from 3-dim. model 8−7647
- irradiance meas. in upper layer 8−44864
- isolated two-dimensional strongly nonlinear Rossby waves in barotropic ocean 8−44868
- Israel coast, nearshore sediment pollution by trace metals derived from sewage effluent 8−44882
- Kelvin waves, wind-generated linear and nonlinear, along irregular coastline 8−11908
- Kuroshio Western Boundary Current tracking, by Nimbus 6 satellite 8−36190
- large-scale circulation, diagnostic calcs. 8−16056
- lateral mixing of water masses 8−3781
- layered medium disturbed by internal waves, statistical props. 8−22359
- LF sound absorpt. rel. to temp., pH, B conc. and pressure 8−40560
- light scattering matrix of hydrosol, influence of form of scatt. particles *(Russian)* 8−5420
- long surface waves in canals, bays and oceans, linear transport methods 8−40573
- longshore sediment transport and sediment budget for Malpeque barrier system, Gulf of St. Lawrence 8−36140
- longshore variations in longshore currents 8−7645
- Loop Current winter intrusions 8−40569
- low temperature skin-layer, hydrodynamic model *(Russian)* 8−36180
- main waves generated by tropical hurricane, calcs. *(Russian)* 8−16021
- marginal ice zone, wave decay, inverted echo sounding from submarine 8−49025
- marine atmosphere, ocean as source or sink of reactive trace gases 8−3894
- marine atmosphere, results of Complex Atmospheric Energetics Experiment (CAENEX) 8−3904
- marine atmosphere particulate matter, organic C conc. and particle size distrib. 8−32139
- marine geodesy, geometrical problems *(German)* 8−3709
- marine inundation of USSR and N.America during Phanerozoic, secular changes 8−3735
- marine modelling (vol.6 of 'The Sea') 8−16047
- marine sediments, sulphate reduction and methanogenesis 8−49009
- Martinique Beach, Nova Scotia, nearshore currents and beach topography 8−7646
- mass transport by waves in turbulent bottom boundary layer 8−3797
- Math Modelsea Project, Belgian coast, silt suspension turbulent boundary layer, steady state model 8−28242
- W. Mediterranean, O and phosphate distribs. *(Russian)* 8−16058
- Mediterranean, steady state model of upper mixed layer in Bay of Calvi 8−32116
- mesoscale motion in western North Atlantic Ocean, space and time scales 8−49035
- mesoscale motions, fluctuating winds as energy source 8−40625
- mesoscale topography effects on stability and growth rate of two-layer model 8−44836

oceanography continued

- mesoscale warm core closed eddies form. off SE.Australian coast 8−24296
- metals fate in ocean, ^{210}Pb as tracer 8−11914
- microcomputer applications 8−36322
- microwave sea backscatter intermittency at extreme grazing angles, model 8−24307
- midocean mesoscale eddies, numerical model rel. to MODE obs. 8−49023
- Miramichi estuary, New Brunswick, tidal current control of submarine morphology 8−36174
- mixed layer, deepening rate model *(Russian)* 8−24292
- New England shelf-slope water mass interfaces, acoustic imaging 8−3784
- New South Wales coast, supply of sand from Hunter River 8−16066
- North Sea, residual flows and elevations in southern region 8−16045
- ocean thermal energy conversion (OTEC), emerging programme of significance to marine community 8−44875
- ocean-atmosphere climate model, large-scale long-term interactions 8−7750
- Oceans '77, conf., Los Angeles, USA (Oct. 77) 8−36193
- oceans '77, conference, Los Angeles, CA, (17-19 October, 1977) 8−45040
- oil spill, dynamics in fractured ice field in Buzzards Bay, Massachusetts 8−40596
- optical image resolution limitation imposed by random medium 8−37813
- optical properties, one parameter characterisation for remote sensing 8−7644
- Otway coast evolution from Last Interglacial to Present 8−20390
- Otway region, S.W.Victoria, conf. (Melbourne, 1975 October 9) 8−20415
- N.Pacific, dissolved Cu distrib. 8−32119
- S.E.Pacific, DSDP Site 319, metalliferous sedimentation history 8−7611
- Pacific, eastern tropical region, acoustic vol. reverberation, rel. to oceanographic features 8−36176
- Pacific, E.equatorial, long waves obs. in geostationary satellite IR images 8−24308
- N.Pacific, heat flux vars. rel. to Kuroshio, 1956-64 period 8−28240
- Pacific, satellite obs. of mesoscale eddy dynamics in E tropical regions 8−24295
- N Pacific, subarctic fronts struct. and response to atm. forcing 8−44846
- N.Pacific, synoptic obs. of Kuroshio and Oyashio fronts 8−32113
- Pacific, transition zone between intermediate water masses, temp. salinity curves 8−3791
- NW Pacific, wind-wave tropical cyclone model, parametrisation characts. 8−24301
- NE.Pacific, Zn conc. 8−36200
- E.Pacific and equatorial Atlantic, hemispheric asymm. of heat budget 8−40570
- W.Pacific equatorial zone, current meas. *(Russian)* 8−16044
- Pacific equatorial zone, water transparency *(Russian)* 8−16043
- NW.Pacific Ocean, edge waves obs. *(Russian)* 8−44841
- Pacific Ocean, T transport models source function 8−32122
- Pacific Ocean sediments, ^{10}Be dating compared with palaeomagnetic ages 8−32058
- Pacific subantarctic section of Southern Ocean, counterclockwise circulation 8−20427
- palaeocontinental slopes of East Coast Geosyncline, Canadian Atlantic Margin 8−36141
- Panama Basin, bottom water inflow 8−44826
- penetrative convection model, appls. to atmopshere, ocean and laboratory expts. *(Russian)* 8−24335
- Peru Current, advection obs. by satellite 8−16029
- phosphorite nodules on sea floor off Peru and Chile, U isotopes 8−7612
- plane periodic flow, post-critical regime construction *(Russian)* 8−34109
- plane waves, group vel. in inhomogeneous media *(Russian)* 8−5755
- pollutant dispersion in oscillatory fluid flow 8−44881
- pollution, technique for estimating long-term conc. of conservative substances discharged into ocean 8−44885
- postglacial sea level changes, W.Newfoundland, rel. to ^{14}C age of Robinson's Head moraine 8−20401
- quasigeostrophic motions of first kind, classification 8−3787
- radar echoes of second order from ocean waves, first inversion 8−49032
- radiative transfer eqn. for scattering layer with extended scattering indicatrix *(Russian)* 8−40660
- radionuclide adsorption on hydrated MnO, ^{137}Cs and ^{90}Sr 8−3822
- radionuclide distributions in oceans and marine sediments from nuclear weapons testing 8−13344
- Rayleigh-Jeffreys convective stability problem with temp. and salinity gradients *(Russian)* 8−14012
- reciprocal acoustic transmission, midocean current monitoring appl. 8−11907
- research trends and costs prediction *(Russian)* 8−16042
- Rossby waves stability in baroclinic ocean 8−3788
- rotating channel with arbitrary end wall, Kelvin wave reflection 8−5751
- rough sea surface rel. to underwater light field fluctuations *(Russian)* 8−36183
- Saanich Inlet, British Columbia, dissolved N_2O consumption in anoxic basin 8−40594
- saltwater-ice system, differentially heated, Arctic Ocean model 8−20435
- NW.Sargasso Sea, effects of 1976 to 1977 winter cooling 8−28243
- NESargasso Sea, large cold core cyclonic current rings 8−49031
- satellite data availability from Environmental Data Service 8−36288
- Scotia Sea, Antarctica Convergence position rel. to maximum ice extent on island groups 8−20450
- Scotia Sea, gradient currents, water circulation 8−3798
- Scotian Shelf, hydrocarbons in surface sediments 8−49008
- sea bed movement effect on submarine cables, between St. Margarets Bay and La Paune 8−15992
- sea bottom, mass transfer, horizontally 2D bodies effect 8−11909
- sea breeze rel. to pollution over gulf region 8−11977
- sea floor analysis with deep tow techniques 8−33942

oceanography continued
sea ice deformation, viscous law as stochastic average of plasticity 8−16028
sea ice dynamics in Arctic (May 1975), simulation 8−36192
sea level vars. determ. from marsh foraminifera vertical zonations 8−44866
sea levels versus groundwater variations rel. to mammalian extinctions 8−36215
sea motion forecasting and physic, JONSWAP *(German)* 8−3783
sea surface signal interpretation and energy transfer calc. 8−28241
sea surface temperature anomalies and thermocline variability, stochastic climate model appl. 8−3918
sea surface temperature anomalies rel. to atm. surface press. anomalies 8−49034
sea surface tension variability with mean wind speed 8−7656
sea waves, cause of EM field vars. 8−44834
sea-air CO$_2$ flux meas., eddy correl. method 8−32191
sea-air small-scale interaction, heat exchange estimates 8−3810
Seasat-A, data processing and distrib. 8−45005
seasonal thermocline, one-dimens. models 8−16050
seawater, transfer matrix elements of scattering medium *(Russian)* 8−36181
sediment transport near ocean bed, theoretical flow models 8−15996
sediments, in situ acoustic impedance meas. method 8−9519
sediments interstitial waters, dissolved organic matter nature and reactions 8−49039
semiclosed water basin, eigenoscillations, hydrodynamic models, appl. to Ligurian Sea 8−3782
shallow seas, dynamics, coastal jet conceptual model 8−16051
shallow water horizontal spatial coherence meas. 8−5605
shear diffusion two-layer model 8−20428
shelf waves, nonlinear generation 8−40587
shelf waves, resonance near islands 8−40588
shelf waves, resonant interactions with wind-generated effects 8−44835
shelf waves and mean currents, nonlinear aspects 8−40589
shelf waves diffraction by irregular coastline 8−40586
shelf waves in presence of sheared geostrophic current 8−40590
shoaling waves, numerical soln. of exact eqns. 8−40579
shoreline changes due to dredged holes, math. and lab. models *(Japanese)* 8−11878
shoreline evolution, beach sand transport modelling 8−15993
short period internal waves, spatial spectrum 8−3800
silt suspension turbulent boundary layer, steady state model 8−28242
sound propag. loss in stochastic environment 8−9478
sound speed in seawater at high press., meas. 8−13837
Southern Ocean, long waves 8−40591
Southern Ocean, nonbiogenic fixed N from Antarctic ice sheet, ecological implications 8−32129
Spit of Kursiu Nerija, morphodynamical characteristics of protectional dune ridge *(Russian)* 8−20389
spreading ridges crests, latit.-depth and age-depth relations 8−11869
St. Lawrence Gulf, Mn-rich suspended particulate matter 8−11911
stationary jet current, particle motion calc. 8−3809
stationary longshore wind-driven current, tideless sea offshore zone 8−3804
statistical characts. of underwater illumination *(Russian)* 8−7653
storm surge simulation expts. 8−16052
Strait of Georgia, British Columbia, current oscillations 8−40585
stratified fluid, flow over obstacle *(Russian)* 8−24291
supertanker radiated noise spectra in deep ocean, origin 8−33959
surf, atmospheric elec. space charge generation 8−36235
surf and run-up 8−40581
surface cooling, under free and forced convection regimes *(Russian)* 8−36179
surface drift velocities 8−3779
surface effective radiation calc. *(Russian)* 8−16040
surface gravity wave, wind-wave generation, bispectral contrib. 8−49033
surface gravity waves, triple roots and curved caustics 8−40584
surface gravity waves diffraction, ray methods 8−40574
surface layer, dye plumes diffusion, expt. 8−44871
surface mixed layer, energy and momentum transfer by wind 8−44856
surface mixed layer dynamics 8−44855
surface waves, wind-generated in deep water, Rayleigh method *(Russian)* 8−36178
surface waves incident on submerged circ. sill 8−1677
suspended particles, rel. to chem. processes in Atlantic and Pacific oceans 8−36201
swell waves at St. Helena related to distant storms 8−20432
S.Tasman Sea, LF acoustic propag. meas., Project TASMAN TWO 8−11904
temperature, model of annual var. and appl. to study of climate 8−20433
temperature field space/time struct. during NORPAX POLE expt. 8−3777
temperature-depth profiles, recording via solid-state memories 8−24383
thermal boundary layer near air-water interface, fine struct. *(Russian)* 8−22332
thermal energy conversion plant design, oceanographic data interpretation 8−44874
thermal radio emission from exponential slab, sea ice appl. 8−28244
thermal wedge, effects of tidal flow on position of upper surface *(Russian)* 8−16046
thermocline approx., discontinuity surface in active ocean layer *(Russian)* 8−16037
thermohaline and wind circulation in two-dimens. dynamical model *(Russian)* 8−40557
three dimensional sound ray paths in basins, troughs and near seamounts using ray invariants 8−30113
tidal behaviour, internal surface, two-layered basin *(Japanese)* 8−11912
tidal currents calc. in homogeneous estuaries 8−7654
tidal dissipation, astronomical, geophys. and oceanographic consequences 8−20431
tides, periodic flow anal., using finite element perturbation method 8−24290
tides, shallow water, three-dimens. nonlinear model *(Chinese)* 8−24309
time-varying shallow water channel weighting function meas. 8−5606

oceanography continued
Tokyo Bay, central Japan, recent sea level vars. from geological formations and basal topography 8−44818
topographic planetary waves, resonant interactions, continuously stratified fluid 8−36186
topographic Rossby waves, nonlinear theory 8−3795
trapped edge waves in presence of irregular coastline 8−44853
tropical circulation, modelling 8−16055
tropical regions, oceanic and continental climates during ice age, simulation 8−16144
tsunami generation and propag. in ocean with real bathymetry, numerical simulation 8−40576
tsunamis, local behaviour 8−40577
tsunamis, theoretical research, obs. in Japan 8−40575
tsunamis propag. from sources off N.E.Japan Pacific coast *(Japanese)* 8−11813
turbidity current flow, computer simulation 8−15997
turbulence, small-scale, statistical patterns 8−3802
turbulence breakdown coefficient determ., influence of data treatment technique *(Russian)* 8−7690
turbulence generation, conditions and efficiency *(Russian)* 8−16022
turbulent bottom layer beneath waves, residual flow and boundary shear stress 8−24300
turbulent spot in stably stratified fluid, dynamics *(Russian)* 8−40558
underwater light field fluctuations, numerical modelling *(Russian)* 8−32111
underwater sound, attenuation of surface-generated noise received deep 8−9481
underwater sound, connection between small-waveheight solns. of ocean surface scatt. problem 8−13839
underwater sound in refractive channels, bottom loss effects in diffusion loss 8−9482
underwater sound speed profile, modification to improve accuracy of parabolic eqn. technique 8−1480
underwater visibility basic controlling parameters 8−36196
unsteady currents, dynamics 8−16054
unsteady ship waves *(Russian)* 8−16032
US National Shoreline Erosion Control Demonstration Program, review 8−16163
vertical fine struct. of hydrophysical fields 8−3793
Vienna Standard Mean Ocean Water (V-SMOW) stable isotopes meas. standard 8−32246
Walvis Bay, methane prod. 8−28246
water density vertical vars., review of math. models 8−49022
water wave diffraction by 3-D bodies, hybrid element method 8−38344
wave disturbances 8−32209
wave height and period characts. off Mangalore, India 8−36185
wave patterns under Hurricane Gloria, obs. with airborne synthetic-aperture radar 8−44873
wave propagation on large-scale currents over gently sloping sea bed 8−40582
wave propagation over flat porous bed, radiation-type boundary condition 8−44851
wave refraction, lab. expts. 8−38355
wave-wave interactions near shore 8−40580
waveheight nondirectional spectrum from inversion of HF sea-echo Doppler spectrum 8−16203
waves, finite-amplitude, on nonuniform currents 8−40583
waves, shallow water, propag. modelling criteria, appl. to tsunamis 8−26132
waves, synthetic aperture radar imaging, focusing effects 8−40555
waves in varying depth, classical problems 8−38354
waves on erodable base, bottom vel. and scouring 8−49029
waves on water of variable depth, conf., Canberra, Australia (July 1976) 8−40572
waves reflection and refraction by shear currents 8−32117
Weddell Sea, tidal currents in central region 8−44831
White Sea, periodic forms of bottom relief on shelf 8−44804
wind stress and roughness length over breaking waves 8−24299
wind stress over North America eastern continental shelf 8−3776
wind waves, EM fluctuations induced on deep sea floor 8−40561
wind waves generation theory, dynamical eqns. *(Russian)* 8−44840
wind waves in finite water depth, freq. spectra *(Russian)* 8−44843
wind-driven circulation in homogeneous ocean with islands and depressions 8−3799
wind-driven quasigeostrophic water movements near fast ice edges 8−49026
wind-generated surface waves, HF spectrum meas. 8−44857
Yucatan Strait and Gulf of Mexico dissolved SiO$_2$ as natural circulation tracer 8−44830
^{10}Be var. in deep sea sediments, critical evaluation 8−7615
CaCO$_3$ production of mare incognitum, upper windward reef slope, Enewetak Atoll 8−7662
Fe, removal mechanism in estuaries 8−20437
Hg, in fish and waters of Irish Sea and other United Kingdom fishing grounds 8−36204
Hg in surface waters in seas around the UK 8−7664
Mn, hydrothermal, in deep sea, scavenging residence time and Mn/^{3}He relationships 8−32121
N compounds exchange between ocean-atmosphere-continent system 8−3794
O, in palaeoaquatic environment 8−44879
^{210}Pb, ^{210}Po, concs., physico-chem. states and residence times in marine and estuarine waters 8−11913
^{226}Ra source, flux from estuarine and continental shelf sediments 8−32061

OCR *see optical character recognition*

octet theory *see SU$_3$ theory*

ODMR *see microwave-optical double resonance*

oecology *see ecology*

OH$^-$-centres
No entries

ohmic contacts
electron microscopic observations of metal-semicond. contacts, new phases struct. 8−34899
n-GaAs, Au-SnNi-Au ohmic contacts low temp. alloying electroplated layers, expt. 8−35319
III-V semiconds., ohmic contacts *(Japanese)* 8−47869

ohmic contacts continued
sputter-etch plus evaporated film technique for inexpensive, reliable contacts to Si devices 8−23165
CdS-Al, ohmic contact stability improved by annealing 8−6443
p-CdTe with Pd and Pt, I-V characts., temp. depend. of cond., activation energy 8−39211
GaAs devices ohmic contact fabrication using epitaxial Ge films 8−47871
InSb-Cu non-rectifying contacts by immersion plating 8−30984
ZnS, low resistivity, noise characts. and contact resistance 8−14827

ohmmeters
see also electric resistance measurement
linear analogue circuits, design, review 8−37031
percentage ohmmeter, wide-range, for resistive transducers 8−239

oiling (lubrication) *see lubrication*

oils, insulating *see insulating oils*

omega mesons
backward prod., baryon exchange dip and parton effects 8−17030
dual unitarisation, renormalisation of trajectories with zero quantum numbers 8−21400
e^+e^- annihilations, radial excitations of ρ, ω, φ mesons 8−4866
γN, 7.5-10.5 GeV, inelastic ω and $\rho^\pm$ prod. 8−45930
K^0N interaction, 10 to 50 GeV/c, residue of partial W amplitudes *(Russian)* 8−41590
$\omega\to\eta\gamma$, radiative decay width determ. 8−467
ω-f exchange degeneracy, anal. of Pomeron-f complex 8−483
ω′(1675), prod. in $\pi^+p\to\Delta^{++}\pi^+\pi^-\pi^0$ 8−37241
π^-p inclusive interactions, ρ^0, ω, f-mesons prod. cross section *(Russian)* 8−33098
π^-p interactions, 15 GeV/c, vector meson prod., polarisation props. 8−37251
$\pi^-p\to\omega n$, Reggeon cuts and reaction description *(Russian)* 8−45947
πππ system, relativistic dynamics in ω channel 8−21360

omegatrons *see cyclotrons*

one-dimensional conductivity
CDW commensurate-incommensurate phase transition, 1-D electron-phonon system 8−14682
CDW dynamics in one-dimens. cond. chain array, long-range Coulomb effects 8−47717
CDW sliding in periodic and disordered lattices, pinning 8−14717
charge transfer conductors, press. effects on mag. props., review 8−6505
charge transfer molecular crystal, electronic transport mechanisms 8−6370
collective excitation of CDW 8−18981
3,3′-diethyl-2,2′-selenacyanine-[TCNQ]$_2$, elec. cond., and quasi-two-dimensional mag. props. 8−6564
dimerized organic linear chain conductor, electron mol. vibr. coupling consts. 8−14686
disordered quasi-one-dimensional materials, review 8−6361
electron-phonon system, renormalisation *(Russian)* 8−43314
Fermi gas model with two charact. energies, scaling theory 8−6287
fermion system, cluster expansion methods and thermodynamics 8−6289
HMTSF-TNAP, organic low temp. cond. 8−43368
hopping conduction and diffusion, theory 8−6355
hopping conduction in quasi 1-D disordered compound 8−10425
Hubbard chain, optical spectrum 8−10920
Hubbard model, one-dimensional, antiferromag. and Peierls instability 8−23233
impurity pinning in single chain, CDW dynamics 8−47716
incommensurate Frohlich model, displacement correl. of classical ions 8−6291
infrared problems and phase transitions of continuous order in low-dimens. systems 8−6286
linear chain system, exciton model of supercond. 8−6476
linear conductor, interchain coupling role 8−6294
low-dimensional crystals, excitonic superfluidity 8−6359
Luttinger model, quasiclassical random pot., effect on electron correlation in one dimens. system 8−39047
microwave permittivity measurement techniques 8−10825
non-conducting chain systems, 3-d Coulomb coupling and charge ordering 8−18980
one-dimensional complex order parameter model, mol. dynamics 8−34787
one-dimensional metallic systems, theory of structural phase transitions 8−38830
order-disorder transitions, static precursor nuclei, anomalies in high temp. superconductors, ferroelectrics, organic conductors 8−10165
organic charge transfer salts, cond. meas., polycryst. techniques 8−43365
organic conductors and semiconductors, conf., Siofok, Hungary (Sept. 1976) 8−6284
organic donor-acceptor compounds, incomplete charge transfer stability 8−30883
Peierls instability and superconductivity, possibility of coexistence 8−31028
Peierls transition, interchain bandwidth effect at low temp. 8−10352
Peierls-Frolich state, impurity pinning of charge density wave 8−6298
phonons effect on localisation and electrocond. 8−6362
polyacetylene: Br(Cl)(I)(AsF$_5$) electrical conductivity, metal-to-insulator transition 8−10525
pyrene-TCNE, vapour-grown cryst., transit-time meas. of photocarriers 8−39149
quantum solitons in one-dimensional conductors 8−6285
quasi one dimensional organic materials, microwave cond., dielectric const. *(Hungarian)* 8−26850
quasi-one-dimensional conductor, chiral charge density waves form. 8−6302
quasi-one-dimensional conductor, high temp. struct. instability, tight-binding approx. and fluctuation model 8−6292
quasi-one-dimensional conductors, impurity effect on phase transitions 8−6297
quasi-one-dimensional conductors, order in coupled metallic chains problem 8−6358
quasi-one-dimensional electron-lattice system, three dimensional CDW ordering temp. 8−23037
quasi-one-dimensional metal, longitudinal cond. at finite temp. 8−2473
quasi-one-dimensional metal, theory of cond. 8−2472

one-dimensional conductivity continued
quasi-one-dimensional metal systems with random impurities, cond. at T=0 8−6360
quasi-one-dimensional metallic system, phase transitions problem, Gorkov-Dzyaloshinskii model 8−6296
quasi-one-dimensional organic conductor, chem. trends and stabilisation of nearly one-dimens. state, review 8−10328
quasi-one-dimensional systems, charge distrib. and lattice distortion 8−6317
quasi-one-dimensional systems, free energy of Ginzburg-Landau field, equiv. Hamiltonian 8−6293
quasi-one-dimensional systems, three-dimens. ordering in system of weakly coupled chains 8−6295
sliding Frohlich waves, lack of superconducting behaviour 8−10378
static conductivity at finite temp. *(Russian)* 8−10428
strongly interacting system, Efetov Larkin model 8−6288
structural aspects, book contrib. 8−10429
systems with half-filled zone, singularity of electronic density of states due to impurities 8−6254
TCNQ, infinite stacks, all valence electron band struct. 8−39001
(TCNQ)$_2$ MEM, crystal struct. of 1:2 complex, at −160°C 8−10031
TCNQ alkaline salts, phase transitions, vibronic intensity enhanced IR spectra 8−23441
TCNQ and its salts, XPS meas. surface effects 8−11075
TCNQ complexes, Qn(TCNQ)$_2$, NMePh.TCNQ, and Li$^+$TCNQ$^-$, extrinsic and intrinsic mag. susceptibility 8−43556
TCNQ complexes with dipyranylidene and dithiadipyranylidene, high cond. investigs. and related props. 8−6368
TCNQ derivatives, substituted, org. cond. with low-symmetric acceptors, cond. behaviour rel. to cryst. struct. 8−6365
TCNQ salt, $(DEPE)^{2+}(TCNQ)_4^{2-}$, elec. props., semicond. and metallic phases 8−34826
TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
TCNQ salt, alkali transition metal, elec. cond. and phase transition 8−43370
TCNQ salt, DECA (TCNQ)$_2$, struct., phys. props. and irreversible phase transition 8−6273
TCNQ salt, HMTTF-TCNQ, metallic organic charge transfer complex, chemical prep. and phys. props. 8−2471
TCNQ salt, HMTTF-TCNQ, quasi-one-dimensional organic conductor, mag. susceptibility meas. 8−6508
TCNQ salt, K$^+$TCNQ$^-$, temp. depend. of dynamic nucl. polarisation enhancement of protons 8−6601
TCNQ salt, K-TCNQ, cryst. struct. *(French)* 8−43006
TCNQ salt, K-TCNQ, energy gap, electron-phonon interaction, IR spectrum 8−15167
TCNQ salt, pyridine (TCNQ)$_2$, phase transition at 80K investig. and interpret. 8−6530
TCNQ salt, Qn(TCNQ)$_2$, temp. and freq. depend. of nucl. relax. rate 8−6594
TCNQ salt, quinolinium (TCNQ)$_2$, random-exchange Heisenberg antiferromag. chain, sp. ht., 0.07-5K 8−14976
TCNQ salt, TMPD-TCNQ , mag. excitation gap attributed to spin polarisation instability 8−31086
TCNQ salts, complex, with aromatic donors, interchain coupling and disorder 8−6314
TCNQ salts, complex, with symmetric and asymmetric donors, transport and mag. props. 8−6315
TCNQ salts, electron arrangement in ground state, optical spectra interpretation 8−47715
TCNQ salts, electron tunnelling 8−47769
TCNQ salts, model for cond. 8−10426
TCNQ salts, Qn(TCNQ)$_2$ and Cs$_2$(TCNQ)$_3$, surface magnetism obs. 8−6561
TCNQ salts, Qn(TCNQ)$_2$ and Cs(TCNQ)$_3$, surface magnetism 8−2703
TCNQ salts, quasi-one-dimensional, Wigner cryst. model 8−47273
TCNQ salts, simple, triplet exciton obs. by ESR 8−10373
TCNQ salts 8−6356
TCNQ salts with alkali metals, intensities of IR absorpt., electronic transfer magnitude 8−6691
TCNQ salts with alkali metals, optical absorpt. spectra of small particles 8−19505
TCNQ salts with NMP and Rb, elec. cond., temp. and press. depend. *(Japanese)* 8−43366
TCNQ-coronene complexes, spectra, stoichiometry 8−23435
TCNQ-HMTSeF, large Hall effect obs. below room temp. 8−6364
TCNQ-HMTSeF, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
TCNQ-HMTSeF, polarised single cryst. reflectance obs. and one-dimens. behaviour interpret. 8−6690
TCNQ-HMTSeF, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
TCNQ-HMTTF, metallic state stabilisation at low temp. under press. 8−30911
TCNQ-NMP, disordered, paramag. susceptibility 8−10645
TCNQ-NMP, metal-insulator transition theory based on generalised Hubbard model 8−18966
TCNQ-potassium, dynamic nucl. polarisation exam., temp. depend. 8−39447
TCNQ-pyrene complex, evaporated layers and single crysts., photocond. *(Russian)* 8−6416
TCNQ-TSeF:TCNQ-M, thermopower determ. 8−47772
tetraselenatetracene bromide complex, optical props. 8−6680
tetraselenotetracene bromide, positive microwave dielectric const. 8−47771
tetrathiotetracene iodide, positive microwave dielectric const. 8−47771
theoretical aspects 8−10422
TMBP.HCNB and TMBTP.HCNB complexes, elec. and mag. props. 8−6512
(TMTTF)$_2$BF$_4$, organic conductor, cryst. struct. *(French)* 8−26556
(TMTTF)$_2$Br, cryst. struct. *(French)* 8−34503
transition metal complex, linear chain type, synthesis 8−6047
transition metal mixed valence complexes, quasi-one-dimens., elec. props. at ultrahigh press. 8−2470
(TSeF)$_x$(TTF)$_{1-x}$(TCNQ), interstack hybridisation role in metal-insulator transition temp. determ. 8−6304
(TSeF)$_x$(TTF)$_{1-x}$TCNQ, struct., cond., phase transitions 8−47770
TSeF salts, mol. props., one-dimens. cond. salts form. 8−6363
TSeF-TCNQ, Ginzburg-Landau model for metal-insulator transition 8−6301

one-dimensional conductivity continued
TSeF-TCNQ, resist., crit. behaviour anisotropy 8−10430
TSeF-TCNQ, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
TTF_x $TseF_{1-x}TCNQ$ solid soln., DC conductivity, struct. 8−10423
TTF, infinite stacks, all valence electron band struct. 8−39001
$(TTF)_7I_5$, superstruct. modulation, X-ray obs. 8−14333
TTF and TTN derivatives, quasi-one-dimens. cond., phys. and electronic props. 8−6366
TTF-d_0, -d_4, IR and Raman spectra, vibr. assignments 8−23436
TTF-DETCNQ, metal-insulator transition, struct., elect. cond. and sp. ht. expts. 8−14662
TTF-TCNQ, optical evidence for Coulomb interactions, review 8−6704
TTF-TCNQ:TCNQ-M, thermopower determ. 8−47772
TTF-TCNQ, CDW and phase transition exam. 8−6283
TTF-TCNQ, CDW instability, classical vs. crit. behaviour 8−39041
TTF-TCNQ, covalon conduction 8−10427
TTF-TCNQ, deuterated, compressibility under hydrostatic press., neutron diffr. meas. 8−2197
TTF-TCNQ, dimers and trimers, Xα scattered wave calc. 8−10326
TTF-TCNQ, dynamic nucl. polarisation exam., temp. depend. 8−39447
TTF-TCNQ, electron-electron interaction strength, electron scatt. and spin-lattice relax. data 8−30878
TTF-TCNQ, electronic props. and comparison with $(SN)_x$, review 8−6306
TTF-TCNQ, inelastic neutron scatt., re-examination 8−30721
TTF-TCNQ, isotope effect on Peierls transition temp. 8−43367
TTF-TCNQ, isotope effect on Peierls transition temp. 8−43369
TTF-TCNQ, Kohn anomalies, phonon dispersion curves, neutron scatt. 8−10133
TTF-TCNQ, Kohn anomaly and Peierls-type transition, X-ray obs. 8−14435
TTF-TCNQ, Landau theory of phase transitions 8−30914
TTF-TCNQ, low temp. phase transitions, elastic neutron scatt. obs. 8−14464
TTF-TCNQ, Madelung energy, electronic struct. *(Russian)* 8−6253
TTF-TCNQ, metallic conductivity temp. depend. 8−6357
TTF-TCNQ, modulated phases in terms of four-and five-dimens. superspace groups 8−47310
TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
TTF-TCNQ, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
TTF-TCNQ, ordering types below 54K, perp. phase depend. 8−6300
TTF-TCNQ, Peierls instability and consequences 8−6303
TTF-TCNQ, phonon dispersion curve meas., Peierls transition exam. 8−10134
TTF-TCNQ, positive microwave dielectric const. 8−47771
TTF-TCNQ, possible Lifshitz point, struct. transitions exam. 8−2423
TTF-TCNQ, resist., crit. behaviour anisotropy 8−10430
TTF-TCNQ, single cryst., mag. susceptibility in phase transition region, two-gap model 8−6511
TTF-TCNQ, struct. rel. to quasi one-dimensional elec. props. 8−14716
TTF-TCNQ, surface magnetism 8−2703
TTF-TCNQ, surface magnetism obs. 8−6561
TTF-TCNQ, symmetry changes and phase transitions 8−6299
TTF-TCNQ, temp. depend. of dynamic nucl. polarisation enhancement of protons 8−6601
TTF-TCNQ, theory of structural phase transitions 8−38831
TTF-TCNQ, two-chain inverted band model 8−6313
TTF-TCNQ, X-ray, neutron scattering, low temp. modulated lattice, 3D modulated lattice 8−10033
TTF-TCNQ, X-ray exam. of 2k and 4k anomalies 8−10162
TTF-TCNQ electronic props., PMR 8−2763
TTF-TCNQ film, energy loss spectra of low energy electrons 8−19116
TTF-TCNQ phase transition, press. depend., longitudinal lockin, stacking axis resistivity meas. 8−47520
TTF-TCNQ-d_8, large single cryst. platelet growth by diffusion method 8−3010
TTG-BDT(Cu), giant struct. distortion, high speed photography obs. 8−43121
$TTT_{1.2}NiS_4C_4H_4$, quasi-one-dimensional cond., cryst., mag. and elec. props. 8−10424
$(TTT)_2I_{3+\delta}$, 1 dimens. conducting chains, supercond. fluctuations 8−39099
$(TTT)_2I_3$; metal-insulator phase transition, elec. cond. and mag. susceptibility meas. 8−14719
TTT cation-radial salts, new class of quasi-one-dimens. org. cond. 8−6367
$Hg_{2.86}AsF_6$, linear chain, anomalous low temp. sp. ht. 8−14476
$Hg_{3-\delta}AsF_6$, one-dimens. phonons and phase-ordering phase transition, neutron scatt. expts. 8−26644
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, lattice softening, temp. depend. of elastic consts., US meas. 8−14432
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, struct. rel. to quasi one-dimensional elec. props. 8−14716
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, one-dimensional cond., phys. props. *(Japanese)* 8−30916
$K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, lattice dynamics, neutron scatt. expts. 8−14412
$K_2Pt(CN)_4Br_{0.3}.3.2H_2O$, Kohn anomalies, phonon dispersion curves, neutron scatt. 8−10133
$K_2Pt(CN)_4Br_{0.3}.xH_2O$, dynamical props. near Peierls instability, neutron scatt. 8−14436
$K_2Pt(CN)_4Cl_{0.3}(Br_{0.3}).3H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
$K_{1.75}Pt(CN)_4.1.5H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
$K_{1.75}Pt(CN)_4.1.5H_2O$, Pt chain distortion, X-ray obs. 8−14322
NbI_4, quasi-one dimens., press.-induced metal-insulator transition 8−43447
$NbSe_3$, fibrous struct., comparison with $NbSe_2$ 8−14715
$NbSe_3$, linear chain metal, anomalous transport props. 8−14718
Pt complex, $(C(NH_2)_3)_2Pt(CN)_4Br_{0.23}.H_2O$, pseudo-one-dimens. cpd., solitary wave excitations, and cryst. struct. 8−6307
Pt complex, bis(1,2-benzoquinonedioximato)platinum(II), intrinsic elec. cond. 8−6377
Pt complex, $Mg_{0.82}Pt(C_2O_4)_2.xH_2O$, X-ray diffuse scatt., 1-D Peierls-Kohn anomaly and struct. transforms. 8−14680

one-dimensional conductivity continued
$Pt_6(NH_3)_{10}Cl_{10}(HSO_4)_4$, chain struct. and elec. cond. 8−2469
$(SN)_x$, acoustic phonons, inelastic neutron scatt. obs. 8−6136
$(SN)_x$, electron tunnelling, absence of supercond. energy gap 8−47769
$(SN)_x$, electronic props. and comparison with TTF-TCNQ, review 8−6306
$(SN)_x$, electronic struct., X-ray and UV photoemission obs., OPW and pseudopot. calcs. 8−6832
$(SN)_x$, electronic struct. and opt. props. 8−6256
$(SN)_x$, intrinsic cond. anisotropy from galvanomag. effect obs. 8−6369
$(SN)_x$, preparation and properties 8−27389
$(SN)_x$, quantum chem. calcs. of electronic struct. 8−6257
$(SN)_x$, supercond. props., review 8−6474
$(SN)_x$, tensile and piezoresist. expts. 8−15447
TTF-TCNQ , elec. props. in high temp. regime, effect of controlled disorder 8−30912
$TTF.CuS_4C_4(CF_3)_4$, spin-Peierls system, nucl. spin-lattice relax. process 8−19361
$TaSe_3$, fibrous struct., comparison with $TaSe_2$ 8−14715
V_3Si, quasi-one-dimens. band struct. 8−19596

one-dimensional conductors *see one-dimensional conductivity*

online operation
see also real-time systems
biological STEM, low-dose, using digital data processing system 8−24203
biological STEM, on-line data processing system 8−24202
display aid for bubble chamber film automatic meas. 8−5098
magnetic torque curve analysis, online microprocessor system 8−254
Nancay radioheliograph, Mark II, on-line data reduction methods 8−28517
paediatric radioluscent bone length meas. 8−48891
pulmonary gas exchange data online acquisition system 8−28100
vectorcardiographic analysis microprocessors and instrumentation 8−36020

Onsager relations *see thermodynamics*

Onsager theory of dielectrics *see dielectric properties of substances*

opacimeters *see turbidimetry*

opalescence
see also critical opalescence
depolarising optical system characterisation by automated ellipsometer 8−32855

OPDAR *see optical radar*

operating amplifiers *see operational amplifiers*

operating systems (computers)
Minsk 22 interrupts *(Russian)* 8−16165

operational amplifiers
computing amplifier calculating logarithm of a ratio 8−4600
DC current meter appl., with automatic drift compensation, for 10^{-12} to 10^{-6} A, neutron flux detection appl. *(Czech)* 8−883
ECG amplifier with automatic lead switching 8−28106
high-gain amplifier circuit for Se photocells 8−4679
Norton amplifier level control, liquid nitrogen for parametric amp. using diode 8−29121
thermoelectric transistor thermometer composed of thermocouple, transistor thermometer, operational amplifier *(Japanese)* 8−45625
two-channel amplifier section with common negative feedback loop 8−9042
voltmeter auxiliary equipment appl., for low voltage meas. in high ohmic circuits *(Czech)* 8−4664
zone refiner, electron beam, emission current control cct. 8−6844

operations analysis *see operations research*

operations research
see also decision theory and analysis; game theory; mathematical programming
fuzzy set theoretic approach to systems analysis 8−17352
optical element production start up, operational control optimisation 8−18078

operator training *see training*

optic mode of crystals *see lattice dynamics*

optical aberrations *see aberrations*

optical activity *see optical rotation*

optical auroras *see aurora*

optical character recognition
Chinese character recognition with real time optical correlator 8−29904
Dreyfus file optical writing appraisal 8−37821
handprinted character, field effect method and angle-distance distribution method combination *(Japanese)* 8−9342
Hebraic ancient handwritten characters, coherent and incoherent averaging 8−37820
spatial filtering with light beam deflection 8−1370
spectral intensity filtering for image recognition 8−46529

optical collimators
bent glass optics 8−45767
centering devices, vertical collimators, for geodetic appl. 8−13807
focusing, critical auto-collimation technique modification 8−42424
laser collimation and focusing at given distance *(Russian)* 8−29959
single element gradient index collimator design 8−9426

optical communication
see also optical links
2 km 20 Mb/s optical fibre transmission system 8−42437
6.3 Mb/s optical fibre communication for power system protection and control 8−1423
analogue signals, using optical waveguides, transceiver transducers *(German)* 8−1333
book, optics and information theory 8−5435
conference, Munich (1977) *(German)* 8−33854
data transmission performance study in optical fibre communication system 8−38028
digital 1.12 Gbit/s fibre system, optimum repeater parameter calcs. *(German)* 8−37989
error probability anal. of digital fibre optic communication systems 8−46775
fibre, potential and research in Denmark *(Danish)* 8−9440
fibre application to existing communication systems *(German)* 8−33887
fibre optics, practical problems *(Swedish)* 8−25988
fibre optics for military appls., review and assessment 8−42438

optical communication continued
fibre telecommunication, propag. mechanism and characts. 8−22213
fibre transmission between 0.8 and 1.4 micron 8−37990
fibre-optic communication systems for electric power companies 8−1422
fibre-optic component availability 8−18048
fibre-optic systems, future in telecommunication networks 8−22214
fibre-optic transmission technique status in Germany 8−1416
fibres application, current technology *(German)* 8−22210
glass fibre development and prospects 8−9453
information, message and signal concepts *(German)* 8−46525
information transmission methods, survey *(German)* 8−13804
integrated optics and single mode fibre optics 8−42469
integrated optics techniques for fibre-optic communications *(German)* 8−38069
International Microwave Symposium, San Diego, Calif., USA (June 1977) 8−5478
interval modulation semiconductor laser communication system 8−9331
LED analogue video signal transmission, LED linearisation by predistortion 8−37993
military fibre-optic communication systems progress 8−1425
noise immunity of optical signal reception with unstable modulator characts. 8−46690
optical fibre transmission, conference, Williamsburg (1977) 8−1382
PCM optical fibre communication system numerical aperture optimisation *(German)* 8−38017
photoacoustic spectroscopy appl. *(French)* 8−48143
photocounting communication analysis, optimum photon detect. 8−27956
photoelectron statistics, book 8−25842
plane wave pulses, random media propagation 8−9324
polarization modulated light, freq. mixing detection using periodic analyzers 8−5433
quantum communication theory, appl. of generalised quantum meas. theory 8−13668
regenerative fibre-optic transmission system supervisory line codes *(German)* 8−33884
Second European Conference on Optical Fibre Communication, September 1976, review *(Italian)* 8−5552
semiconductor lasers, recent progress, review 8−17938
single-fibre optical systems, efficient power combiner for multiplexing multiple sources 8−18039
status and prospects *(German)* 8−33855
telephone service in Chicago (USA) 8−5574
transmission system design, influence of optical component baseband frequency response 8−1415
turbulent atmosphere, phase distortion compensation efficiency 8−1177
UK optical fibre communication system feasibility trials *(German)* 8−33877
waveguide, errors in determ. of output signal parameters 8−1365

optical communication equipment
see also optical waveguides
5 Gbit/s multiplexer, for optical fibre communication system 8−18044
acoustooptical multiplexer/demultiplexer terminals, appl. to laser communication system, expt. results 8−25959
antennas focused at finite distances, angle-distance pattern 8−33842
avalanche photodiode receiver sensitivity, specification and testing *(German)* 8−38015
averaged threshold receiver for lognormal atm. channel 8−13788
coherent laser detection system, radiation effects analysis 8−30056
compound optical crosspoint with low crosstalk, using $LiTaO_3$ 8−33915
data bus system with planar access coupler, optimized layout 8−33823
data bus T-system, single multimode fibre, based on access coupler 8−46810
diode twin-guide laser, narrow radiation angle for optical fibre coupling 8−46628
electro-optical transceivers, optical analogue communication systems *(German)* 8−1333
encoding-decoding optical fibre network 8−25963
equaliser, nonlinear, with shaping filter 8−30052
fibre, data bus systems appl. 8−25949
fibre optic communication systems, sources and detectors 8−42412
fibre optics, practical problems *(Swedish)* 8−25988
fibre systems for civil telecommunications, state-of-the-art review 8−25979
fibre systems receiver design, review 8−30077
fibre-optic Bell System Chicago installation 8−42434
fibre-optic communications source and detector props. and performance 8−22212
hybrid p-i-n photodiode-FET preamplifier design for digital optical receivers *(German)* 8−33878
injection laser automatic level control by optoelectronic feedback *(German)* 8−33883
injection laser diodes for fibre optic communication 8−33751
injection laser transmitter module, emitter unit, driving and control circuits *(French)* 8−46636
IR multipurpose communications transmitters 8−30053
laser communication of sound, positional modulation, for undergraduates 8−12498
laser diode and transmitter unit lifetime tests *(German)* 8−37883
laser diode degradation modes and accelerated life tests 8−1233
laser diode fabrication reproducibility *(French)* 8−42357
laser source, He-Ne, using cold-cathode plasma, educational demonstrations and experiments appl. 8−45448
LED, as semiconductor junction transceiver, for fibre optic communication 8−42410
LED's, DH, second harmonic distortion prediction 8−18058
linearised LED and laser transmitters, for analogue fibre optical systems 8−46818
near IR Faraday rotation isolators 8−18042
OCCULT laser system operating in marine boundary layer 8−5565
optical communication testbed 8−33925
photodetector low-noise amplifiers using J-FETs for optical fibre receivers 8−37997
photodiode detector for optical cable, optimal filter struct. and characts. 8−18067

optical communication equipment continued
photodiode detector for optical fibre communication *(German)* 8−33874
receivers, phase compensation type 8−1329
receiving optical antenna, angle-distance sensitivity variation anal. 8−33841
repeater, fibre optic, low-power (0.5 W) design 8−22195
Second European Conference on Optical Fibre Communication, September 1976, review *(Italian)* 8−5552
semiconductor stripe laser high-speed modulation, noise, and nearfield meas. *(German)* 8−37923
single multimode optical fibre communication directional couplers *(German)* 8−33873
slip-ring for transmission of transducer signals 8−13814
solar pumped laser for space communications 8−46645
space laser communications K-Rb arc lamp development 8−46646
standardisation of components, military appl. 8−30083
star couplers for single multimode fibre communication systems *(German)* 8−33872
superluminescent diode source for fibre-optic systems *(German)* 8−38013
US Bragg cell, standing wave, appl. to laser communication system, theory 8−25958
US Bragg cell, standing wave, appl. to laser communication system, expt. results 8−25959
(Al,Ga)As LEDs, high-radiance double-heterostructure for optical fibre links 8−37991
CC GaInAs-InP injection lasers with longer wavelengths for optical fibre communications, review *(Japanese)* 8−25892
GaAlAs DH injection laser transmitter, for long distance fibre optics communication 8−42355
$Ga_{1-x}Al_xAs$:GaAs LED 640 mbit/s PCM optical fibre source, expt. 8−37998
GaAs DH injection laser, modulation behaviour, appl. in high bit-rate fibre optical communications 8−1281
GaAs homojunction LED signal source for fibre-optic communication 8−1413
GaAs LEDs, high speed, optical transmitter appl. 8−33844
GaAs laser diodes, digital modulation *(German)* 8−37919
GaAs laser source package for multichannel optical links 8−1266
GaAs-(GaAl)As laser, SiO_2 stripe geometry, for wide band optical communication systems 8−42358
GaAs-$Al_xGa_{1-x}As$ buried-heterostructure laser, wideband optical sources *(German)* 8−37904
GaAs-AlGaAs high-radiance LED for optical communication systems, power and modulation bandwidth 8−42416
GaAs-$Ga_{1-x}Al_xAs$, DH laser, characts. exam. for communication appl. 8−37891
GaAs-GaAlAs injection laser sources, for fibre optic communications 8−46637
GaInAs, efficient photodiode for near IR detection 8−16848
GaInAsP-InP, broad-area and stripe-geom. DH laser, for fibre optic communication 8−42356
$Ga_{1-x}In_xAs_{1-y}P_y$-InP DH lasers, 1000-hour CW operation 8−1265
He-Ne mode locked laser for very wide band communication system 8−17994
InGaAsP, 1.3 μm LED, for high-bit-rate fibre data link 8−46825
InGaAsP, high radiance CW LEDs emitting at 1.30 μm 8−22196
Nd lasers appl., characts. *(German)* 8−37902
Nd:YAG laser, appl. in space communications 8−28483

optical constants
see also light absorption; reflectivity; refractive index
absorption coefficients at 632.8 nm, intracavity laser meas. 8−8454
anthracene, O-O exciton absorption bands, thermomodulation study 8−39563
ATR meas., 2-polarisation method, accuracy, optimisation 8−45673
far IR research, Rubens era (1892-1925) 8−4454
ferroelectric crystal, absorpt. coeff. calc., Green functions method 8−10851
graphite grains, interstellar, IR optical consts. rel. to temp. 8−12324
heavy water, 6-450 cm^{-1}, 19°C 8−6649
heavy water, optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
III-V semiconductors, oxide film growth, optical props. *(German)* 8−34730
leucosapphire, spectral absorpt. coeff., 1800K 8−27252
metal oxide film, optical and diffusion consts. meas., dynamic method *(Russian)* 8−43950
metal oxide layers, heterogeneous, optical consts., Garnett's theory calcs. *(Russian)* 8−23427
metallic films, determ. from Abeles formulae for reflectance, transmittance 8−15240
modulation spectroscopy, anal. of Kramers-Kronig relations 8−23423
narrow band interference filter, spectral transmission curve meas. 8−297
organic bases, biologically important, and derivatives, optical crystallograhpic props. 8−3449
plastics, filled and reinforced, optical const. determ. 8−19472
real thin films, optical consts. determ. 8−35213
reflection spectroscopy, causality calcs. optical consts. determ. as function of wavelength 8−32887
ruby, spectral absorpt. coeff., 1800K 8−27252
sheet with chipped surface, spectral transmission curve meas. 8−297
substrate, surface quality determ. by optical reflectance methods 8−43862
surface films and film growth meas., ellipsometry appl. 8−39619
water, 6-450 cm^{-1}, 19°C 8−6649
water, optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
$Ag-MgF_2$ layered system, optical excitation of surface plasma waves 8−6803
Ag_2S, film, optical characterisation, inversion method 8−11008
$(Al_{0.42}Ga_{0.58})As$, LPE grown layer, optical absorpt. coeff. meas. 8−6801
Au film, on α-quartz substrate, optical consts. evaluation from surface polariton dispersion 8−48249
Au film, optical characterisation, inversion method 8−11008
$BaTiO_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
CaF_2, optical props. of cation colloidal particles 8−23503
CdS, reson. dispersion of Brillouin shift 8−35160

optical constants continued
Cr_7Te_8 film, optical and magneto-optical props., appl. as storage medium 8−23545
FeO, ultrathin homogeneous absorbing films, ellipsometric nucl. microanalysis data analysis *(French)* 8−11011
Ga, optical properties in 0.3 to 5 eV range 8−31196
GaAs, optical conductivity, constants, refractivity from IR absorption spectra 8−43873
Gd, ferromag., magneto-optical reson., optical consts. determ. 8−6657
Gd, optical constants, reflectance meas. *(French)* 8−2869
Gd, polarimetric meas., mag. ordering effects 8−15184
Ge, film, optical characterisation, inversion method 8−11008
GeSe, amorphous film, optical properties 8−39620
$LiN_2H_5BeF_4$, linear and nonlinear optical props. *(French)* 8−33778
$MnAu_2$, optical consts., 0.5-3.5 eV, intra-and interband absorpt. *(French)* 8−10916
MnTe, optical props. and electronic struct. 8−6682
Ni(100) platelet surface optical and magneto-optic consts. 8−15151
PbI_2, complex dielectric and optical consts., ellipsometric determ. 8−23425
Si surface, influence of mech. treatment, charact. by ellipsometry 8−15141
SiO_2 glasses, opt. consts. in IR and vacuum UV 8−27238
Sn film, white, optical props. between 2-15 eV 8−19584
SnO_2, film, optical characterisation, inversion method 8−11008
SrF_2, optical props. of cation colloidal particles 8−23503
$SrTiO_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
$ZnIn_2S_4$, fund. optical consts., Kramers-Kronig analysis, reflectivity spectra 8−39573

optical couplers
2 km 20 Mb/s optical fibre transmission system 8−42437
44.7 Mb/s fibre optic transmission system expts. 8−1420
adjustable branching coupler/attenuator, for multimode single fibre systems 8−46808
adjustable single-fibre connector and output monitor *(German)* 8−38011
bidirectional central couplers, for links with fibre bundles 8−46809
bistable switch, based on waveguide coupler, exam. 8−38086
Bragg effect waveguide coupler analysis 8−33827
Bragg switch, thin film 8−38088
branch, for multimode optical fibre system 8−46831
branching waveguide directional coupler, for GaAs-GaAlAs injection laser 8−38047
channel waveguide coupling with fibres on Si substrate 8−46761
codirectional coupled waves representation 8−1150
coherent mode coupling at waveguide bends 8−38060
communication technology state of art *(Czech)* 8−5575
compact optical directional coupler design and test results 8−1410
compound optical crosspoint with low crosstalk, using $LiTaO_3$ 8−33915
corrugated waveguides and lasers, improved coupled mode analysis 8−46842
coupling efficiency analysis, single fibre connector design appl. 8−46766
data bus system with planar access coupler, optimized layout 8−33823
data bus T-system, single multimode fibre, based on access coupler 8−46810
demountable optical fibre connector design and fabrication *(German)* 8−38010
DH injection laser coupling to optical fibre waveguide 8−33851
dielectric gratings for beam couplers, network methods for integrated optics 8−38070
directional, with variable spacing, closed form solns. 8−46759
directional 1-D planar confined coupler, anal. 8−38027
directional coupler phase tuning by chalcogenide glass film loading 8−1373
directional coupler switch, electrooptic, used as amplitude modulator, exam. 8−42467
disc waveguide, coupled power theorem and orthogonality relations 8−38003
duplex fibre-optic cable interconnection system 8−46801
fibre, coupling loss calculation using geometric optics method 8−42406
fibre, data bus systems appl. 8−25949
fibre attenuation meas., backscatter method modified for endfire launching *(German)* 8−33868
fibre cable and chuck connector optical and mech. props. *(German)* 8−33862
fibre cable corrector for multifibre cables *(French)* 8−42425
fibre connector, damage-free using Selfoc lens 8−46829
fibre connector plugs, angular misalignment precise meas. 8−46770
fibre connectors, developments 8−46784
fibre connectors, hot forming versus epoxy bonding of bundles, single fibre techniques 8−42482
fibre coupling with Lambertian source, using spherical lens, coupling efficiency calc. *(Japanese)* 8−42407
fibre interconnection components 8−46812
fibre optic connector design eliminating tolerance effects 8−46803
fibre optic connector system characteristics, aerospace user's viewpoint 8−46804
fibre optic processor serial interconnect system 8−1426
fibre optics for military appls., review and assessment 8−42438
fibre splice loss, Gaussian power model 8−46828
fibre splices, loss and output numerical aperture meas. 8−42403
fibre system connectors 8−42414
fibre-bundle holographic coupler, expt. 8−42419
fibre-optic technology for interconnection designers 8−46800
fibre-to-fibre connections, technology review 8−9459
fibres, multimode, power coupling, theory 8−33893
fused biconical tapered couplers, full duplex optical transmission 8−1341
grating couplers, anal. and design 8−1320
holographic couplers for optical fibre bundles 8−25839
holographic elements for practical fibre bundle couplers 8−46550
holographic gratings as beam-couplers and splitters 8−25821
horn for mode coupling in waveguides 8−1434
integrated optical device for Hadamard transformation 8−22221
integrated optics, theory of coupling to waveguides with linearly tapered horns 8−33917
interconnection of fibres and cables 8−46785

optical couplers continued
interferometric fabrication of diffraction grating and optical waveguide coupler 8−1440
laser-fibre coupling with optical transition structures 8−42449
laser-waveguide transition coupling struct. fabrication 8−38029
Luneberg lens for laser diode coupling to graded-index fibre *(German)* 8−33875
mode filters using coupling between two nonidentical waveguides 8−46757
modulator, coupled waveguide *(Japanese)* 8−46789
modulator, coupled waveguide with pn-junction, strip loaded channel waveguide, design 8−46843
multichannel GaAs laser array output synchronisation 8−42417
multifibre cable structure, jointing procedure *(French)* 8−42459
multimode electro-optic guiding for single fibre data links, system design 8−38065
multimode fibre coupler for optical data bus systems 8−1414
multimode fibre joints, design, error tolerance evaluation method 8−9436
multimode graded-index optical waveguide detachable connector 8−46830
multimode optical fibre fabrication, 3 dB low loss 8−37976
multimode optical systems-power coupling between waveguides 8−42473
multiport coupling between single mode fibres and indiffused channel waveguides 8−38061
offset waveguides, length optimisation of S-shaped transition 8−38059
optical fibre, for demountable connector 8−30065
optical fibre transmission, conference, Williamsburg (1977) 8−1382
planar waveguides and fibres, book 8−42426
ribbon-splicing injection-moulded connector with Si chip insert 8−1412
S-shaped transition between offset straight waveguides, length optimisation 8−46838
single fibre optic cable connector losses 8−46802
single fibre optic moulded connector and encapsulated connectorised devices 8−1409
single fibre optical systems, connection methods 8−46783
single mode coupling problems, fibre and integrated optics, for optical communication 8−42469
single mode fibre coupling structure fabrication 8−33899
single mode fibre coupling to semiconductor laser, fibre strength tests 8−33900
single mode fibre optic system coupling techniques 8−33901
single multimode optical fibre communication directional couplers *(German)* 8−33873
single-mode fibre, jointing loss 8−25964
star coupler, unidirectional, for single-fibre distrib. systems 8−25980
star couplers for single multimode fibre communication systems *(German)* 8−33872
strip waveguide directional coupler, leaky-wave 8−38058
strongly coupled parallel slab waveguides, coupling coeffs. 8−1356
surface EM wave launching at edge of metal film 8−43945
switch operation, exam. by fluorescence method 8−38049
T-coupler for multimode optical fibres 8−42457
tapered coupling problems, use of Bloch vector model 8−22219
tapered velocity coupler application, freq. discrimination 8−38057
TE-TM mode splitter for optical waveguides, glass comp., r.f. sputtered fabrication 8−46841
thin-film optical waveguides coupling *(Polish)* 8−33849
transmissive star coupler for single fibre cables, mixer rod power distrib. inhomogeneities 8−46832
transverse light coupling, from GaAs laser into optical fibres 8−18045
triple ball connector, for optical fibres 8−13795
tunable coupler filter, composed of coupled nonidentical $LiNbO_3$ strip waveguides, description 8−38083
$(Ga_{1-x}Al_x)As$ LOC DBR laser integration with p-n junction detector 8−38066
$Ga_{1-x}Al_xAs$ Schottky directional coupler switch, construction and operation 8−25960
GaAs laser array to channel groove waveguide coupling prism 8−38067
$LiNbO_3$ corrugated optical waveguide, electrooptic scanning of coupled light 8−38050
Si alignment chips for optical fibre cable connector 8−1411

optical design techniques
see also optical instruments
achromatic metal-dielectric mirror coating, computer synthesis 8−46750
acousto-optic modulator, wide bandwidth, design procedure 8−5569
antireflection coating, linear programming 8−5537
antireflection coating, three layer 8−9423
antireflection coatings, two-wavelength, two or three layer, design 8−25943
apochromat, four-lens three-colour, glass selection for design 8−13783
collimator, single element gradient index design 8−9426
conic reflectors, basic props. of meridional and sagittal caustics 8−25948
decentered concave mirror in three-mirror concentric objective, for astigmatism correction 8−46749
dielectric multilayer systems for optical appls., computer program synthesis *(German)* 8−46788
dielectric semitransparent wide-band mirror, synthesis method 8−13785
diffuse light collection onto extended absorber, mirror designs 8−22186
fundamental chromatism coefficients 8−1317
geodesic lens, aberration corrected, for integrated optics circuits 8−38074
holographic elements as lenses, optical system design 8−9425
holographic grating, concave, imaging props. *(Japanese)* 8−37971
holographic scanner, two-dimens., design considerations 8−46535
integrated optics techniques for fibre-optic communications *(German)* 8−38069
laser beam mode phase compensation, optimization techniques 8−1291
laser beam steerer-expander device, two-mirror afocal telescope design 8−46700
laser multielement resonant reflector design, temp. and wavelength depend. props. 8−17945
lens design and testing for laser systems, assets and liabilities 8−46753
lens design for laser beam shaping 8−13781

optical design techniques continued
lens design merit functions, RMS image spot size and RMS optical path difference 8−46743
metal-dielectric thin film coatings, designing, applications 8−30042
multilayer antireflection coatings 8−33797
null Ronchi grating from spot diagrams 8−5548
pancratic system with mechanical compensation, design *(Russian)* 8−37961
parabolic mirrors, fast off-axis, design and fabrication 8−46741
single lens, longitudinal-chromatic and spherical aberrations, ray-tracing method estimation 8−1311
solar tower concept, ray trace approach 8−5571
spectacle lens design, computation of unwanted sphere and cylinder in periphery 8−48928
superachromatization, glass combination selection 8−1315
telescope system, IR Galilean, attachment for information scanning device, aberrations 8−46751
waxicon design and fabrication 8−5543
zoom lens, Delano and aperture diagram *(German)* 8−13779

optical detection of ENDOR *see ENDOR; optical double resonance*

optical detection of magnetic resonance (EPR) *see microwave-optical double resonance*

optical detection of magnetic resonance (radiofrequency) *see magnetic double resonance; optical double resonance*

optical dispersion
see also optical constants
achromatism of optical wedge of holographic elements *(Russian)* 8−13787
chirped pulse, compression, in dispersive media 8−33669
crystal surface, light interaction effects and spatial dispersion role *(Russian)* 8−23481
exciton resonance region, energy density and flux 8−48201
Faraday rotation and dispersion associated with point-imperfections 8−19449
ferromagnetic medium, magnetised, unattenuated refracted wave propag., optical modulation appl. *(Russian)* 8−25774
fibre, modal caustics and dispersion mechanism 8−33895
fibre, multimode, loss and mode-conversion parameter meas. principle 8−22192
fibre, multimode, optimum operating wavelength for chromatic equalisation 8−25965
fibre, pulse broadening, inter- and intramodal dispersion 8−5547
fibre, zero material dispersion wavelength determ. by pulse delay meas. 8−1322
fibre attenuation and dispersion meas. techniques and interpretation pitfalls 8−1399
fibre inhomogeneous dispersion, direct meas. method 8−1400
fibre material dispersion meas. by baseband modulated envelope detection 8−1368
fibre optical cable, buried, transmission characts. meas. *(German)* 8−33865
fibre transmission between 0.8 and 1.4 micron 8−37990
fibre wavelength dispersion, difference method measurement 8−37974
fibre zero dispersion wavelength, pulse delay meas. 8−30064
fibre-optic cable manufacture, testing, and installation *(German)* 8−33863
fibre-optic cable pulse dispersion and attenuation meas. *(German)* 8−33859
fibre-optic index-difference dispersion and bending loss/wavelength relationships 8−1367
fibres, pulse distortion at wavelength of dispersion min. 8−22187
fibres, single- and multimode, fundamental mode signal transmission 8−42442
fibres, truncated index with minimum mode dispersion, anal. 8−38000
Fizeau effect, theory, expt., and Zeeman meas., for teaching 8−24597
glass, birefringence dispersion, meas. with Babinet compensator using white light 8−27177
glass CVD fibres with axial refractive index dip, dispersion meas. *(German)* 8−33857
graded index fibre, profile dispersion effects on transmission bandwidths 8−22198
group velocity and energy density, monochromatic wave dispersion depend., for teaching 8−25792
IR dispersion filters, crystal-air, spectral characts. *(Russian)* 8−5581
Kramers-Heisenberg dispersion formula, Dirac transformation generalisation 8−16960
modal dispersion in optical fibres with any numerical aperture and doping profile 8−1391
monomode optical fibre dimensions, dispersion, and losses *(German)* 8−33866
multimode fibre, ring shaped and graded index with central dip, dispersion evaluation 8−42455
multimode graded index fibres, minimum total dispersion 8−22203
multimode optical fibre dispersion rel. to wavelength, frequency-domain meas. 8−1401
multiphonon effects on dispersion, Faraday rot., associated with point imperfections 8−43839
optical fibre, pulse delay meas. in zero material dispersion region 8−33822
optical fibre, step or graded index, refr. index dip effect on propag. 8−18053
optical fibre transmission meas. technique using time dispersion of Cerenkov radiation 8−5557
optical radiation pressure meas. in dispersive media refractive index depend. 8−33665
plane wave intensity fluctuations in turbulent medium *(Russian)* 8−1156
prism beam expander for dye laser, dispersion 8−17968
radiation pressure in dispersive medium, photon momentum, drag 8−33666
Raman oscillator, two-mode fibre, group velocity matching 8−25925
repeater section lengths rel. to transmitter power and fibre dispersion *(German)* 8−38012
rough surface, far field polychromatic speckle, external angular dispersion effect 8−22086
Rozhdestvensky interferometer with nonequal arms for anomalous dispersion measurements by the interference fringe shift *(Russian)* 8−279
silicate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
silicate glass, single mode optical fibre, at zero dispersion wavelength, exam. 8−38043
six-level atomic medium, self-focusing of two intense monochromatic waves *(Russian)* 8−25932
stellar spectrography with crossed dispersion 8−49337
surface wave propag., influence of bulk losses and bulk dispersion 8−33892
transparent molecular systems, optical dispersion, polarised light, depend. on coherence, radiation field 8−5294
$CaCO_3$, calcite, quadrupole nonlinear coeff. dispersion meas. 8−37943
Cd, gas, refraction, determ. by phase vel. matching method *(Russian)* 8−30406
p-CdP_2, Faraday rot., inherent optical activity dispersion *(Russian)* 8−35119
CdP_2, two-photon light absorpt. dispersion, allowed-forbidden transition *(Russian)* 8−15193
$CdTiO_3$, refl. and absorpt. coeffs. 3-3.5 eV, and refr. index dispersion *(Russian)* 8−39561
GaAs, nonlinear refractive index dispersion at helium temp. 8−2820
H_2, gas, refractivity and dispersion in visible and IR regions 8−34258
Hg_2Cl_2, cryst., birefringence and dichroism, 200-500 nm and far IR 8−27257
phosphate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
Si_3N_4, film, absorption, refr. index, freq. dispersion 8−48248
SiO_2:Ge(P) fibres, pulse delay meas. in zero-material-dispersion region 8−46769
SiO_2-B_2O_3(P_2O_5)(GeO_2), wavelength dispersive props. and composition in optical fibres 8−33793
Xe, refraction, determ. by phase vel. matching method *(Russian)* 8−30406
Xe-Ar, 3547 to 1182 Å conversion efficiency limited by Kerr-induced dispersion 8−37940
ZnP_2, two-photon light absorpt. dispersion, allowed-forbidden)transition *(Russian)* 8−15193

optical double resonance
see also microwave-optical double resonance
acetyl cyanide-d_1, microwave-microwave double reson., r_s, r_0-struct. 8−13491
atom, spin-1/2, general higher-order effects of freq. shifts in optical-RF double reson. 8−21884
benzophenone $^3(n,\pi^*)$, and isotopic forms, in 4,4′-dibromodiphenylether, level anticrossings, ODMR obs. 8−2772
tris(2,2′-bipyridine) ruthenium(II) cation, IR-optical double reson. and thermal modulation spectra 8−25576
camphor separated optical isomers, inverted IR Lamb dips, IR-RF double reson. obs. 8−21951
conference on optical techniques in mag. reson. spectroscopy, Dublin, Ireland (Aug. 1977). 8−43683
fluoromethane, $^{13}CH_3F$ and $^{12}CH_3F$, vibr. energy transfer between ortho- and para-mols. *(Russian)* 8−29845
fluoromethane, in liq. O_2(Ar), vibr. energy relax. obs. 8−5208
fluoromethane-d_0, -d_1, vibr. relax. in matrix, rot. effects, double reson. obs. 8−46375
maser, three-level, collisional relax. times 8−13675
molecular crystals, triply-excited impurity centres, effect of acoustic wave on phosphorescence 8−27115
molecular spectroscopy, IR laser cavity, IR-RF double reson. techniques, book contrib. 8−9278
semiconductor, dynamic polarisation of nuclei due to optical orientation of conduction electrons 8−19376
semiconductor, violation of σH invariance accompanying optical orientation of spin *(Russian)* 8−35068
1,2,4,5-tetrachlorobenzene, triplet excitons, ESR and ODMR 8−43681
tryptophan, triplet state, zero-field splittings, wavelength depend. 8−43680
two-level system, optical rotary saturation 8−13770
AgCl(:AgBr), intrinsic ODMR spectrum mechanism, doping effect 8−43682
$Al_{0.25}Ga_{0.75}As$, optically oriented electron, nuclear spin systems, local anisotropy effects on states, resonances *(Russian)* 8−43679
Cs vapour, general higher-order effects of freq. shifts in optical-RF double reson. 8−21884
He-Ne laser, double reson., RF mag. field strength and g-value depend. *(Japanese)* 8−9359
I, chemical generation of population inversion between spin-orbit states 8−17767
KCl, F centre pairs, ODMR, close and distant pairs 8−43691
LaF_3:Pr^{3+}, $^1D_2$ metastable state, hyperfine splittings, enhanced and saturated absorpt. spectra 8−43694
LaF_3:Pr^{3+}, hyperfine splitting of $^1D_2$ metastable state, RF optical double reson. 8−35067
NH_3+H_2O, collision-induced energy transfer, IR-microwave double reson. obs. 8−42171
Ne, $2p^53p$ config., Lande factors, double reson. meas. *(French)* 8−9113
OCS mixtures, rot. energy collisional transfer, M-depend., microwave double reson. 8−46435
POF_3, IR rot.-vibr. spectrum, mol. consts., laser Stark spectroscopy obs. 8−33508
SF_6, dynamics of 10.4 μm absorption, vibr. bath model 8−17666
SF_6, IR absorpt. of highly vibr. excited mols., double reson. meas. 8−37662
SF_6, vibrationally excited, collisionless intramolecular energy transfer 8−37663

optical elements
see also diffraction gratings; fibre optics; mirrors; monochromators; optical collimators; optical fibres; optical films; optical filters; optical isolators; optical modulation; optical prisms; optical waveguides; optical zone plates
beam splitter, self-supporting thin-film, for far IR interferometers 8−275
beam splitters, design of high efficiency for two beam IR interferometer 8−30093
camera window for aerial photography large interferometer for testing 8−13821
dielectric multilayer systems for optical appls., computer program synthesis *(German)* 8−46788

optical elements continued
dielectric thin film multilayer systems, polarisation effects and use in laser physics *(German)* 8−33912
elastic parallelogram mechanism 8−16859
fibre type light protecting shield 8−18066
fine wire free standing grids for mm and sub mm waves 8−5559
focal plane camera shutters with independent curtain movements 8−29195
holographic beam splitter form. in optoelectronic holographic memory system 8−17882
holographic elements as lenses, optical system design 8−9425
IR polariser grid prod. process *(Russian)* 8−46795
machined part flatness and parallelism meas., contactless interferometric method 8−21208
metal IR window materials, diamond machinability 8−5586
phase imaging systems, chromaticity, luminous efficiency 8−33824
phase shifter, broadband, for two beam interferometer 8−37968
polarizer, matching type to applic. 8−18051
polaroids for sub-mm. range based on dichroic crystals 8−5555
quartz plate standard for precision polarimeter, systematic errors *(German)* 8−16832
reflection polarisers for vacuum UV, design and performance 8−33801
shutter, psec time scale, using thin foil irradiated by laser beam 8−1350
soft diaphragms, prepared by induced absorption method at 1.06 micron in CaF$_2$ 8−5477
switch, fast IR, for ultrafast photography, with 10.6 μm radiation 8−38035
windows for Big European Bubble Chamber 8−17483
ZnS CVD windows for forward looking IR radar systems 8−46816

optical fibers *see optical fibres*

optical fibres
2.1 km optical cable link installation, TV and telephonic transmission expt. *(German)* 8−33890
2 km 20 Mb/s optical fibre transmission system 8−42437
6.3 Mb/s optical fibre communication for power system protection and control 8−1423
8.448 Mb/s optical cable feasibility trial *(German)* 8−33888
9 km fibre-optic telephone transmission system 8−42435
16 and 32 Mb/s short-haul high-performance optical data links 8−1421
32 Mb/s step-index optical fibre repeater equaliser *(German)* 8−33881
32Mb/s optical fibre transmission system planning and expt. 8−1418
44.7 Mb/s fibre optic transmission system expts. 8−1420
140 Mb/s fibre-optic field demonstration system *(German)* 8−33889
140 Mb/s optical fibre transmission system 8−42436
140 Mbit/s feasibility trial over 5.75 km for main telecommunication network use 8−30076
400 Mb/s optical fibre communications, integrating and transimpedance front end performance comparison *(German)* 8−33879
400Mb/s SELFOC fibre transmission system expt. 8−1419
absorption and scatt. losses in optical fibres, calorimetric meas. 8−46790
acoustic sensor, single optical fibre interferometric 8−38161
adjustable single-fibre connector and output monitor *(German)* 8−38011
alignment chuck, light transmission characteristic testing appl. 8−30090
alkali-PbSiO$_3$ optical fibres, high aperture, double-crucible preparation 8−1450
analogue fibre optic commandable communication system, 650 MHz 8−46819
analogue fibre optical systems, linearised LED and laser transmitters 8−46818
analogue transmission, transceiver transducers, PAL TV transmission *(German)* 8−1333
analogue/digital communication system with 5 MHz bandwidth *(German)* 8−30062
angular pattern display using TV camera 8−33820
anisotropy effects in inhomogeneous fibres 8−1360
application to existing communication systems *(German)* 8−33887
applications to military and industrial systems 8−38021
attenuation and dispersion meas. techniques and interpretation pitfalls 8−1399
attenuation meas., backscatter method modified for endfire launching *(German)* 8−33868
automatic measurement fibre parameters *(Japanese)* 8−37982
avionic multiterminal data link, fibre-optic interconnection system 8−46805
bandwidth change under production process and splicing *(German)* 8−33858
bandwidth limitation of system with linear intensity modulation 8−1339
baseband frequency measurement, interpretation 8−46777
Bell System Chicago installation 8−42434
bent step index fibre, optical power flow 8−30092
bidirectional central couplers, for links with fibre bundles 8−46809
Bragg cylindrical fibres, confined lossless optical propag. 8−38062
branch, for multimode optical fibre system 8−46831
branching, 1:1 branch using graded-index rods, expt. 8−13811
breaking strain, estimation for long lengths of fibres 8−30060
breaking tool 8−5585
Brillouin optical fibre ring oscillator 8−1275
broadband signal response 8−33818
buried optical cable transmission characteristics meas. *(German)* 8−33865
cable and chuck connector optical and mech. props. *(German)* 8−33862
cable connector for multifibre cables *(French)* 8−42425
cable construction, installation, and testing 8−46797
cable design, splicing and interconnection system developments 8−42431
cable development, robust, installation and jointing development and experience 8−9460
cable installation methods to prevent cable damage, guidelines 8−1326
cable pulse dispersion and attenuation meas. *(German)* 8−33859
cable structure, jointing procedure *(French)* 8−42459
cable units for use in ocean, design rel. to stresses 8−42439
cabled fibre, temp. effect on transmission loss and pulse delay distortion 8−1407

optical fibres continued
cables, longitudinal stress in fibres due to twisting in manufacture, anal. 8−30048
channel waveguide coupling with fibres on Si substrate 8−46761
circularly curved graded index fibre, optical beam propag. 8−25973
civil telecommunications use of optical fibre systems, state-of-the-art review 8−25979
coating concentricity improvement by tapered nozzles *(German)* 8−38095
coating technique improvement 8−5593
coatings, UV-cured epoxy-acrylate, chemistry and application 8−1444
colour multiplexing in fibre waveguide links 8−42444
communication appl., potential and research in Denmark *(Danish)* 8−9440
communication application, current technology *(German)* 8−22210
communication applications, in future telecommunication networks 8−22214
communication conference, Munich (1977) *(German)* 8−33854
communication for military appls., review and assessment 8−42438
communication lines, optoelectric systems on injection lasers 8−42464
communication lines, use of semicond. lasers and avalanche photodiodes 8−46793
communication link, 140 Mbit, experimental using GaAs laser transmitter *(French)* 8−30088
communication link, 5 Gbit/s multiplexer 8−18044
communication link, long distance, injection laser transmitter appl. 8−42355
communication links development in Canada, w.r.t. economics 8−42408
communication system, A-7 ALOFT economic analysis, EM interf. and pulse tests 8−42448
communication system, cost model 8−42447
communication system, data transmission performances study 8−38028
communication systems, Soviet studies *(German)* 8−25972
communication systems for electric power companies 8−1422
communication systems in Japan 8−46815
communication technology state of art *(Czech)* 8−5575
communications appls., advantages and costs, introduction 8−33910
communications source and detector props. and performance 8−22212
communications system, installation in Chicago, USA *(German)* 8−38006
compact optical directional coupler design and test results 8−1410
component availability 8−18048
conference, optical fibres and integrated optics, London, England (May 1977) 8−38063
connector, damage-free, using Selfoc lens 8−46829
connector design eliminating tolerance effects 8−46803
connector plugs, angular misalignment precise meas. 8−46770
connector system characteristics, aerospace user's viewpoint 8−46804
connectors, developments 8−46784
connectors, triple ball connector, demountable 8−30065
connectors in optical fibre systems 8−42414
cost considerations 8−1389
coupler, multimode 3 dB low loss, fabrication 8−37976
coupling, fibre-to-fibre, technology review 8−9459
coupling efficiency analysis, single fibre connector design appl. 8−46766
coupling of light from Lambertian source, using spherical lens, coupling efficiency calc. *(Japanese)* 8−42407
curved, single mode, radiation of discrete beams 8−18041
curved multimode waveguide, geometrical optics shape of nonmeridional rays *(German)* 8−5566
curved single-mode fibre, field deformation 8−37972
curved step index fibre, integrals 8−1340
CVD fabricated, abrupt central dip in refractive index 8−22217
data bus systems appl. 8−25949
data bus T-system, single multimode fibre, based on access coupler 8−46810
data link, high bit rate, using InGaAsP 1.3 μm LED 8−46825
data link components, ccts. 8−30054
data transmission, using inexpensive fibre links 8−42413
defence applications of fibre optics in UK 8−42440
delta measurement by refr. index tuning 8−13792
demountable optical fibre connector design and fabrication *(German)* 8−38010
demountable triple ball connector 8−13795
deterioration due to US cleaning 8−33821
DH injection laser coupling to optical fibre waveguide 8−33851
diameter checking, laser interference method 8−18080
diameter meas. using microprocessor based system 8−1443
dielectric tube waveguide, cutoff freqs. derivation under weak guidance 8−18059
digital data bus interconnect system techniques 8−13793
digital data transmission, design criteria and experimental results *(Rumanian)* 8−46791
digital transmission system, 2 km, for field use at 20 Mb/s 8−38064
discrete radiation from curved single-mode fibres, comparison of theories 8−33847
double layer, pulse response due to boundary inhomogeneities between core and jacket 8−30089
drawing of seven optical fibres simultaneously from a double crucible 8−33920
drawing of smooth fibres, diameter control improvements 8−1445
drawing process, diameter control 8−13794
drawing techniques, effect of thermal fluctuations *(Japanese)* 8−37980
duplex fibre-optic cable interconnection system 8−46801
encoding-decoding fibre network 8−25963
equaliser with shaping filter, nonlinear, optical communications appl. 8−30052
error probability anal. of digital fibre optic communication systems 8−46775
expanding horizons, appls. and advantages 8−46782
experimental link operating at 140 Mb/s 8−1321
fabrication by improved CVD method 8−1448
fabrication by isothermal plasma-activated CVD *(German)* 8−33928
fatigue strength, environmental and temp. effects 8−46835
fibre connectors, hot forming versus epoxy bonding of bundles, single fibre techniques 8−42482
fibre data transmission system, operational 18-channel 8−46823
fibre preform, high silica, continuous fabrication process, for step index fibres and graded index fibres *(Japanese)* 8−37978

optical fibres continued
field plotting of optical fields using single-mode optical fibre 8−30097
fractographic anal. of fracture surface, after proof stressing, SEM exam. 8−38093
fracture strength and degradation factors 8−1383
Fraunhofer diffraction by bundled fiber-optical waveguides 8−25978
full duplex transmission link over single strand optical fibre 8−1341
furnace drawn silica fibres, contamination reduction 8−33918
fused silica, GeO$_2$-, P$_2$O$_5$-, B$_2$O$_3$-doped, IR characts. *(Japanese)* 8−37981
Gaussian beam scattering characts. at dielec. media interface 8−42275
glass, epoxy-acrylate coated, strength and static fatigue 8−1386
glass, phase separated, opt. props. of elongated phases 8−27179
glass, smooth fracture faces manufacture using incandescent wire 8−38098
glass, UV-cured, epoxy-acrylate coated, environmental effect on long-term strength 8−5582
glass CVD fibres with axial refractive index dip, dispersion meas. *(German)* 8−33857
glass fibre development and prospects 8−9453
glass fibre manufacture using CVD *(German)* 8−33933
glass fibre properties for information transmission *(German)* 8−9439
glass fibres from a single material 8−33897
graded index, guided modes, asymptotic theory 8−9447
graded index, profile, dispersion effects on transmission bandwidths 8−22198
graded index, selective mode excitation 8−37970
graded index, transmission characts. computation 8−42454
graded index and step index design, practical problems *(Swedish)* 8−25988
graded index fibre cable transmission performance in operational ducts *(German)* 8−33864
graded index fibres optical loss, influence of fibre structure, expt. 8−33846
graded index fibres with mode scramblers, spliced, OTF 8−33832
graded-index, tunnelling rays in pulse propag. 8−18057
graded-index fibre differential mode attenuation meas. 8−1403
graded-index optical fibre bandwidth factors and progress 8−1390
gradient index, refr. index profile influence on transmission quality 8−42453
gradient-index, numerical analysis of waveguide characteristics *(German)* 8−5550
high-temperature fatigue strength and OH$^-$ stress-induced corrosion 8−1387
holographic appl., exit and radiation, reference and/or illuminating wave 8−17884
holographic coupler for optical-fibre-bundles expt. 8−42419
holographic couplers for optical fibre bundles 8−25839
holographic elements for practical fibre bundle couplers 8−46550
hybrid digital optical fibre transmission system, terminal equipment and reshaping/regenerative repeaters *(German)* 8−33880
index-difference dispersion and bending loss/wavelength relationships 8−1367
inhomogeneous dispersion, direct meas. method 8−1400
integrated optics techniques for fibre-optic communications *(German)* 8−38069
intensity profile distortion, due to index profile determ., near field method 8−37977
interconnection advantages over conventional cabling 8−9442
interconnection components 8−46812
interconnection of fibres and cables 8−46785
interference filters, optical props. determ., via matrix method *(French)* 8−30070
interference of two beams from two fibres, fringe visibility 8−33828
Italian local digital network applicability of optical cables *(German)* 8−33886
jacket eccentricity tolerance criteria *(German)* 8−38008
jointing by plastic tape wrapping *(German)* 8−38096
large core broadband fibre design 8−30075
laser array packaged with fibre lightguide array on Si substrate 8−46611
laser drawing limitations 8−1447
laser splicing, thermal conditions 8−13820
laser-fibre coupling with optical transition structures 8−42449
launching and coupling losses, determ. using geometrical optics method 8−42406
leakage induced by non-destructive methods in fibre link 8−42450
LED and laser source and Si photodetector development 8−42430
less coefficients of 10^{-5} cm^{-1}, attainment, lecture 8−25991
link for Command and Control System 280 8−42445
link systems, UK expts. 8−42462
links in space and ground-based, review of NASA tasks 8−42441
liquid core hollow quartz fibre, stimulated Raman scatt. 8−30087
long lengths fabrication, improved CVD method 8−33922
loose tube packaging, fibre buckling obs. 8−25962
loss and output numerical aperture meas. of fibre splices 8−42403
lossy fibre propagation, leaky-mode radiation field computation *(German)* 8−33867
low loss, properties and appl. *(Japanese)* 8−46779
low loss waveguide, transient radiation effects 8−30055
low-aberration focusing fibre, optimum diffusion exchange and heat treatment 8−1378
low-dose radiation damage growth and decay obs. 8−1398
low-loss compound-glass optical fibre 8−13798
Luneberg lens for laser diode coupling to graded-index fibre *(German)* 8−33875
material dispersion meas. by baseband modulated envelope detection 8−1368
and measurement technique *(Japanese)* 8−22200
mechanical performance characterisation methods *(German)* 8−33870
mechanical stress effect on transmission characts. of clad fibre 8−5579
metal coating, for strengthening and surface protection 8−30103
metal shielded optical fibre transmission characteristics 8−1369
military aeronautic application *(French)* 8−46813
military avionics interconnection fibre-optic data bus 8−46806
military communications appl., local distribution systems, use of plastic clad/fused silica fibre 8−9457
military fibre-optic communication systems progress 8−1425
military optical fibre communications 8−42433
modal caustics and dispersion mechanism 8−33895

optical fibres continued
modal dispersion in optical fibres with any numerical aperture and doping profile 8−1391
mode coupling coeffs. determ. using fibre resonator 8−5560
mode excitation calc., extended two-dimensional theory *(French)* 8−5546
monomode optical fibre dimensions, dispersion, and losses *(German)* 8−33866
multichannel fibre optic sonar link 8−42446
multichannel GaAs laser array output synchronisation 8−42417
multilayered waveguide, attenuation and tunnelling coeffs. for leaky rays 8−38002
multimode, beam evolution 8−42443
multimode, effect of cladding radius 8−30050
multimode, finite-bandwidth propag. 8−42456
multimode, group delay meas. using swept frequency tech. *(Japanese)* 8−37984
multimode, loss and mode-conversion parameter meas. principle 8−22192
multimode, loss mechanisms of leaky skew rays 8−46768
multimode, optimum operating wavelength for chromatic equalisation 8−25965
multimode, power coupling, theory 8−33893
multimode, power loss caused by random mode coupling 8−18046
multimode, ring shaped and graded index with central dip, dispersion evaluation 8−42455
multimode, step index, transmission characteristics *(Japanese)* 8−37988
multimode, theory of light propagation 8−30051
multimode, transmission characteristics *(Japanese)* 8−37985
multimode, transmission characts. *(German)* 8−30069
multimode, transmission characts. of microwave-modulated radiation 8−25985
multimode, transmission loss due to lossy cladding layer *(Japanese)* 8−37986
multimode, wavelength depend. propag. 8−38018
multimode electro-optic guiding for single fibre data links, system design 8−38065
multimode fibre, optimum index profile w.r.t. mode coupling 8−18054
multimode fibre coupler for optical data bus systems 8−1414
multimode fibres, recent advances in production 8−30096
multimode graded fibre, near and far field power distribs. 8−1337
multimode graded index fibres, minimum total dispersion 8−22203
multimode graded-index optical waveguide detachable connector 8−46830
multimode joint designs, error tolerance evaluation method 8−9436
multimode lightguide, time dependent propag. 8−13801
multimode optical fibre dispersion rel. to wavelength, frequency-domain meas. 8−1401
multimode optical fibre incoherent chirp pulse transmission 8−1374
multimode optical fibre transmission, perturbation soln. 8−1380
multimode randomly bent fibres, ray theory of impulse response 8−22208
multimode single fibre systems, appl. of adjustable branching coupler/attenuator 8−46808
multimode step index, baseband frequency response measurements, mode scrambler technique *(Japanese)* 8−37983
multimode step index fibre, excess loss due to outer layer 8−9430
multimode W-type optical fibre launching and connection characteristics 8−1376
multipath time dispersion theory of optical network 8−22207
multiport coupling between single mode fibres and indiffused channel waveguides 8−38061
multiterminal data system for aircraft, based on time division multiplexing 8−46811
near square law type, propag. consts. perturbation anal. 8−33891
near-field scanning technique resolution limit *(German)* 8−33856
nonlinear equalisation by shaping filter *(German)* 8−33882
onboard data bus systems, for electrical control TDM signals *(German)* 8−25968
optical fibre, graded index, differential mode attenuation meas. 8−13797
optical fibre, index profile meas., nondestructive 8−13796
optical fibre data link, integrated industrial, circuit and system considerations 8−46817
optical fibre transmission, conference, Williamsburg (1977) 8−1382
optimum parameter determ. 8−38023
optimum repeater parameter calcs. of 1.12 Gbits/sec system *(German)* 8−37989
OTF measurement method *(French)* 8−42458
packaging in loose fitting tubes of orientated polymer 8−1338
parabolic fibre cutoffs 8−13800
parabolic-index slabs and fibres with bent axes, radiation losses 8−46758
PCM optical fibre communication system numerical aperture optimisation *(German)* 8−38017
photodetector low-noise amplifiers using J-FETs for optical fibre receivers 8−37997
photodiode detector for optical fibre communication *(German)* 8−33874
planar waveguides and fibres, book 8−42426
PMMA-d$_8$ ductile plastic optical fibre cables with improved visible and IR transmission 8−46834
polymer clad SiO$_2$ fibre, ionizing radiation effect on attenuation 8−42405
polymeric coatings, Bell Labs activities 8−1388
power attenuation calc., in bent multimode step index slab and fibre waveguides 8−25961
power launching analysis in multimode opt. waveguide with graded refractive index, appl. 8−46767
processor serial interconnect system 8−1426
propagation characteristics of near square law fibres, perturbation analysis 8−22202
properties, signal to noise ratio, freq. response, dispersion effects, communication system design appl. 8−9435
pulse broadening, inter- and intramodal dispersion 8−5547
pulse delay meas. in zero material dispersion region 8−33822
pulse distortion at wavelength of dispersion min. 8−22187
pulse interval modulation optical fibre communication system field expt. 8−1424

optical fibres continued
quartz glass, hydroxyl-free, for low-loss fibre waveguides, γ-irrad. effects 8−13773
radially inhomogeneous, vectorial wave anal. using finite elements method 8−37999
Raman oscillator, tunable 1.1 μm fibre 8−1242
Raman oscillator, two-mode fibre, group velocity matching 8−25925
Raman spectrum, polymer cladding effect 8−30073
randomly gradient fibres with irregular bends, optical mode propagation and scattering 8−1325
receiver design for optical fibre communication systems, review 8−30077
rectangular and circular fibre cutting machine 8−33932
refractive index automatic profiling 8−46836
refractive index dip effect on propag. in step or graded index fibres 8−18053
refractive index near-field profiling methods, detail resolution 8−42451
refractive index profile, Marcatili condition derivation and interpretation 8−22193
refractive index profile determ. by spatial filtering 8−33829
refractive index profile determ. from diffr. pattern 8−25953
refractive index profile meas., nondestructive transverse interference method 8−38024
refractive index profile meas. technique 8−42452
regenerative fibre-optic transmission system supervisory line codes *(German)* 8−33884
reinforcement of optical fibre waveguide cables *(German)* 8−33861
repeater, low-power (0.5 W) design 8−22195
repeater section lengths rel. to transmitter power and fibre dispersion *(German)* 8−38012
resin-coated optical fibre, tensile strength tests *(German)* 8−33871
ribbon-splicing injection-moulded connector with Si chip insert 8−1412
rotating optical fibre ring interferometer, Fresnel-Fizeau effect 8−4685
rugged fibre-optic cable manufacture, testing, and installation *(German)* 8−33863
rupture stress rel. to ageing *(German)* 8−38009
scattering angular depend. and polarisation rotation, Brillouin and Rayleigh scatt. meas. 8−30085
scattering loss dependence on launching condition, lossy-layer model 8−5577
scintillator-fibre optic system, for high bandwidth radiation diagnostics 8−46820
self focusing, rectangular and Gaussian pulse propag. 8−33831
SELFOC fibre, non-Gaussian laser beam propag. 8−1335
SELFOC fibre 400 Mb/s optical transmission system 8−1353
short fibre, leaky modes effect on response 8−9449
short single-mode optical fibre polarisation effects 8−1393
short-range fibre optics 8−46786
short-range optical fibre system applications *(German)* 8−33885
signal transmission, fundamental mode, in single- and multimode fibres 8−42442
silicate glass, single mode optical fibre, at zero dispersion wavelength, exam. 8−38043
silicone-clad silica low-loss fibre radiation response obs. 8−1397
single fibre optic cable connector losses 8−46802
single fibre optic moulded connector and encapsulated connectorised devices 8−1409
single fibre optical systems, connection methods 8−46783
single mode, jointing loss 8−25964
single mode, low loss splicing technique 8−1442
single mode, polarisation and magnetooptic props., expt. meas. 8−33830
single mode, refr. index profile meas. by refl. method 8−46756
single mode fibre, 800 Mbit/s transmission expt. 8−30058
single mode fibre coupling structure fabrication 8−33899
single mode fibre coupling to semiconductor laser, fibre strength tests 8−33900
single mode fibre optic system coupling techniques 8−33901
single mode fibre optics and integrated optics, for optical communication 8−42469
single mode fibres, core-cladding concentricity meas. 8−33848
single mode fibres, noncircular core influence on polarisation performance 8−37973
single multimode optical fibre communication directional couplers *(German)* 8−33873
single-fibre optical systems, efficient power combiner for multiplexing multiple sources 8−18039
single-mode, characterisation factor 8−22189
single-mode, evolution and polarisation 8−9432
single-mode, mode shift at bend anal. 8−22191
single-mode fibre birefringence and optical activity obs. 8−1394
single-mode limit with arbitrary refractive-index profile, formula 8−46771
single-mode optical fibre microbending loss and pulse distortion analysis 8−1395
single-mode optical fibres with different B_2O_3-SiO_2 compositions 8−1392
single-mode radially inhomogeneous fibre, propag. modes 8−22206
slicing by collapsed glass sleeve *(German)* 8−38097
soda lime silica glass fibres, low OH content, low loss 8−37975
spark-induced fracture for low-loss joints prep. 8−1441
splice loss, Gaussian power model 8−46828
splicing characteristics and techniques 8−46798
splicing techniques and strategies affecting cable design 8−1408
standardisation of components, military appl. 8−30083
star coupler, unidirectional, for single-fibre distrib. systems 8−25980
star couplers for single multimode fibre communication systems *(German)* 8−33872
step index, refractive index and radius ratio determ. from backscatt. light 8−30049
step index fibre, Lambertian source, impulse response 8−33819
step-index fibre baseband equalisation 8−1371
step-index optical fibre and cable transmission characteristics 8−1404
strength testing, tensile, extrapolation of short length test results 8−9456
strength tests, pulling machine construction 8−33931
stress-optical degradation obs. 8−1402
submarine optical fibre cable unit design and test results 8−46799
surface defects, influence on fractive strength *(Japanese)* 8−37987
surface wave propag., influence of bulk losses and bulk dispersion 8−33892

optical fibres continued
switches for fault terminal isolation 8−46833
T-coupler for multimode optical fibres 8−42457
technology for interconnection designers 8−46800
telecommunication, propag. mechanism and characts. 8−22213
telecommunication applications 8−42432
telecommunications, comparative assessment of requirements and available systems *(French)* 8−42422
telemetry system for EM probe, microwave radiation effects obs. appl. 8−15859
telephone carrier system appl., T1 PCM, fibre cable development 8−9458
telephone carrier systems 8−42463
telephone installation, Las Vegas, 4.5 km fibre optic cable 8−46822
telephone systems, fibre links in Europe 8−46781
tensile strength distrib. and gauge length extrapolation 8−9434
tensile strength testing 8−42481
testing, backscattering method, compact optical test unit *(German)* 8−30098
testing using digital processing oscilloscope 8−22188
theory, review 8−1351
tip lens fabrication and smoothing 8−33923
transfer function meas., swept-frequency technique 8−1375
transmission application, American view *(German)* 8−33845
transmission between 0.8 and 1.4 micron 8−37990
transmission expts. for 100 Mb/s and 400 Mb/s PCM signals 8−1323
transmission line, bandwidth ultimate performance, lecture 8−25992
transmission lines, use of microoptical switches 8−38085
transmission link technology 8−46772
transmission loss and pulse delay distortion before and after cabling 8−1406
transmission meas. technique using time dispersion of Cerenkov radiation 8−5557
transmission system, UK Post Office feasibility trial 8−1417
transmission system filtering prism *(Japanese)* 8−9441
transmission systems comparsion, 0.8 to 1.4 μm 8−46824
transmission systems design 8−1352
transmission technique status in Germany 8−1416
transmission technology, progress review 8−1330
transmissive star coupler for single fibre cables, mixer rod power distrib. inhomogeneities 8−46832
transverse light coupling, from GaAs laser 8−18045
truncated parabolic-index, with minimum mode dispersion, anal. 8−38000
UK optical fibre communication system feasibility trials *(German)* 8−33877
UK Post Office junction and trunk network applications for optical fibre systems *(German)* 8−38016
undersea fibre-optic cable link performance 8−46807
vibration measurement using flexible coherent fibre probe 8−25975
vibration-induced modulation in bent optical fibre waveguide 8−1405
vitreous oxides, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
water contamination, diffusion of OH in core and H_2O in cladding, transmission props. 8−42420
waveguide and cable parameter meas. techniques *(German)* 8−33860
wavelength dispersion, difference method measurement 8−37974
wavelength division two-way fibre optic transmission expt. using micro-optic duplexers 8−22194
zero dispersion wavelength, pulse delay meas. 8−30064
zero material dispersion wavelength determ. by pulse delay meas. 8−1322
(Al,Ga)As LEDs, high-radiance double-heterostructure for optical fibre links 8−37991
$Ga_{1-x}Al_xAs$ transparent LED, optical wavelength multiplex transmission system appl. 8−30063
GeO_2 doped silica, low loss single mode fibre, CVD *(Japanese)* 8−37979
Na_2O-B_2O_3-SiO_2 low-loss optical fibre prep. by double crucible technique *(German)* 8−33929
Na_2O-B_2O_3-SiO_2:GeO_2 medium-loss graded-index preform fabrication by phase separation and leaching *(German)* 8−33930
Nd:glass fibre optical quantum image amplifier 8−1261
Nd:YAG fibre laser, self-contained LED-pumped single-crystal 8−1264
Si alignment chips for optical fibre cable connector 8−1411
SiO_2 *(German)* 8−33869
SiO_2, coated silica fibres, tensile strengths of 1 km lengths 8−1384
SiO_2, drawing, neck-down shape prediction from furnace temp. distrib. 8−5594
SiO_2, drawing using ZrO_2 induction furnace 8−1446
SiO_2 fibre, CW tunable near IR Raman oscillator 8−1235
SiO_2, fused, for linking very large astronomical telescope array 8−32342
SiO_2, fused silica fibres, high-strength epoxy-acrylate coated, dynamic and static fatigue 8−1385
SiO_2, intrinsic attenuation 8−30067
SiO_2 multimode fibre stimulated Raman scatt. obs. 8−1396
SiO_2:F, silica fibres, numerical aperture and attenuation, drawing from preforms 8−1449
SiO_2:F fibre preform plasma chemical deposition *(German)* 8−33926
SiO_2:F fibre preparation by plasma-activated CVD *(German)* 8−33927
SiO_2:Ge single mode fibre, low loss transmission of high speed pulse signals at 1.29 μm 8−42409
SiO_2:GeO_2 graded-index fibres, without index dip, fabrication by CVD method 8−9431
SiO_2:GeO_2 intrinsic attenuation 8−30067
SiO_2:Ge(P) fibres, pulse delay meas. in zero-material-dispersion region 8−46769
SiO_2:P_2O_5 intrinsic attenuation 8−30067
SiO_2-B_2O_3(P_2O_5)(GeO_2), wavelength dispersive props. and composition in optical fibres 8−33793

optical films
see also antireflection coatings
absorption coefficients meas. by ATR spectroscopy 8−37073
absorption coefficients meas. by laser calorimetry 8−25905
achromatic metal-dielectric mirror coating, computer synthesis 8−46750
adherent dielectric coatings of diamond-turned mirrors 8−33810

optical films continued
black coatings on high-temp. alloys, for central-receiver, solar-thermal power systems 8−18071
buffer layer theory, effect of a single layer in stack of dielectric layers 8−33800
chirp reversal, optical integration in degenerate four-wave mixing 8−46730
dielectric thin film multilayer systems, polarisation effects and use in laser physics *(German)* 8−33912
directional coupler phase tuning by chalcogenide glass film loading 8−1373
dye molecule monolayer displaced from metal surface, light refl., coupling with metal surface modes 8−48246
evaporated, optical thickness monitoring 8−5591
film refractive index and thickness meas., error anal. of SYNCANG and SYNCWANG methods 8−8439
homogeneous and inhomogeneous films, produced by cosputtering, optical, mechanical and chemical props. 8−6849
interference coating deposition by Balzers BA-710 vac. system, photometric monitoring 8−46850
laser cylindrical resonator thermal distortion due to surface absorbed energy *(Russian)* 8−13729
layered coating synthesis, optimisation formulae 8−25946
mechanical strength of optical components, film effects 8−1318
metal-dielectric interference mirror coatings, high mech. strength 8−30043
metal-dielectric thin film coatings, designing, applications 8−30042
metallic, structure-related optical characteristics in visible and UV 8−35217
metallic film, IR reflectivity, mirror appl. 8−5536
multilayer antireflection coatings 8−33797
multilayer optical film thickness analyser 8−32785
multilayer stack reflectance derivatives, fast computation method 8−46508
opaque layered system, complete absorpt. of transverse mag. waves 8−39615
photometric standards and coatings, retrofefl. meas. 8−25940
polymer films, plasma polymerisation, light propag. expt. *(Japanese)* 8−6846
polymeric, preparation and optical properties meas., by integrated optical techniques 8−27342
polymers for optical waveguide and dye laser, prep. and characts. *(Japanese)* 8−5551
refractive index meas., modified Abeles method *(Italian)* 8−1427
semileaky anisotropic thin-film optical waveguides and mode filters 8−13799
single layer gradient refr. index film, ang. refl. 8−5538
solar collector coatings, for heating and cooling systems 8−30045
thickness monitoring using quartz cryst. monitor 8−5592
thin film and integrated optics review, theory, expt. techniques, waveguides 8−22220
transmittance standards in spectrophotometry, semi-transparent metallic thin films use 8−32852
transparent conducting coatings, book contrib. 8−10587
triethyl methacryloxystannane, protection from biological overgrowths 8−18034
Ag, high temp. stabilisation using SiO_2 8−1319
Ag, photodissolution in amorphous As_2S_3 8−26737
Ag, surface roughness determ. from light scatt. meas. 8−5541
Al-SiO_2 layered system, complete absorpt. of transverse mag. waves 8−39615
Al_2O_3, film form. by reactive HF sputtering with voltage bias 8−3045
Al_2O_3-Al, multiphase thin films, correlation between optical props. and chemical/metallurgical constitution 8−19588
As-S amorphous film, photo-induced optical changes, annealing effect 8−27345
Au-MgO cermet, dielectric constant and selective solar absorption 8−2937
CdS-ZnS(CdSe), film, light transmittance spectra, comparison with Schott GG 495 glass filter 8−33838
Cr, ultrafine particles, coatings for selective absorpt. of solar energy, efficiency 8−18060
Cu_2O, electroless deposition 8−27419
FeO ultrathin homogeneous absorbing films, ellipsometric nucl. microanalysis data analysis, opt. consts. *(French)* 8−11011
In_2O_3:Sn, electroreflectance effect, theory and expt. 8−6800
In_2O_3:Sn film, RF sputtered, effect of O_2 press. during deposition on props. 8−19664
$(In_{1-x}Sn_x)_2O_{3-y}$, pyrolytic selective coating, Sn additions effect 8−43499
$LiNbO_3$, film lightguide, pulse signal convolution in acoustooptic interaction *(Russian)* 8−1345
$LiNbO_3$, LPE on $LiTaO_3$ substrate, using Li_2O-V_2O_5 flux 8−44031
MgF_2 coated blazed Al grating, complete absorpt. of P-polarised specific wavelength light 8−25957
Ni-Al_2O_3 composite film, selectively absorbing, optical props. 8−6798
$Pb_xSn_{1-x}I_2$, thin films, photosensitivity, ageing and annealing effects *(Russian)* 8−6804
Si, polycrystalline, film thickness meas., visible spectral reflectance analysis 8−32786
Si-CaF_2, dielectric constant and selective solar absorption 8−2937
Si-MgO, dielectric constant and selective solar absorption 8−2937
Si_3N_4, film, absorption, refr. index, freq. dispersion 8−48248
Si_3N_4 on Si, optical waveguide, fabrication, propag. consts. 8−33826
SiO_2, film form. by reactive HF sputtering with voltage bias 8−3045
SnO_2 CVD film form. mechanism 8−38977
Ta_2O_5, film form. by reactive HF sputtering with voltage bias 8−3045
UF_4 optical interference layers, electron-beam decomposition 8−34541
W-MgO cermet, dielectric constant and selective solar absorption 8−2937
WO_3-MoO_3, amorphous, electrochromic optical absorpt., expt. results and model 8−27341
$WO_{2.7}H_y$ film, colouring, comp. depend. 8−15239
ZnS:Mn on SnO_2/glass transparent conductive base, surface morphology effects on electroluminesc. *(Russian)* 8−48238
ZnS-MgF_2 dielectric film, laser irrad. and microscopic inhomogeneities 8−2157
ZnS-MgF_2(SrF_2), dielec. films, transparent, microscopic inhomogeneities and optical breakdown 8−10844
ZnS-Mn sublimated phosphor films, annealing effects *(Russian)* 8−43949

optical films continued
ZnS-SrF_2 dielectric film, laser irrad. and microscopic inhomogeneities 8−2157
ZnTe MBE thin film growth, elec. and optical props. 8−47887

optical filters
see also light absorption; optical films; optical isolators; spatial filters
band-pass filters for violet-blue region, glass characts. *(German)* 8−13802
birefringent, tuning filters without secondary peaks 8−29994
camera, wide-field filter, for astronomical appl. 8−49335
chirped gratings in broad band filters, theory 8−25994
CRT displays, viewability improvement, using optical absorptive filters 8−24820
dielectric multilayer systems for optical appls., computer program synthesis *(German)* 8−46788
differentiation by spatial filtering 8−1171
electro-optic thin film periodic waveguide switch and amplitude modulators anal. 8−22215
eye protection filter small dioptric powers local variation determ. *(German)* 8−27937
far IR narrow-bandpass interference filters, prod. and performance 8−5558
Faraday filter, freq. locking of CW dye laser to Na D-lines 8−5487
fibre nonlinear equalisation by shaping filter *(German)* 8−33882
fibre transmission system filtering prism *(Japanese)* 8−9441
fluorescence angiography, colour and black and white, use of interference filters 8−48856
glass filter, simulating CIE spectral tristimulus value $\bar{z}(\lambda)$ 8−30037
glasses with band-pass characts. for red spectral region 8−25936
image-forming objectives and colour filters, application and mounting *(Hungarian)* 8−9424
interference, commercial, defects in transmission profiles 8−25952
interference coating deposition by Balzers BA-710 vac. system, photometric monitoring 8−46850
interfernece filter characteristics and specification 8−46773
IR dispersion filters, crystal-air, spectral characts. *(Russian)* 8−5581
laser detection using tunable acoustooptic filters 8−29159
low-pass light filter, using Polaroid film type H32 for GaAs beam 8−33853
Lyot filter element for astronomical spectrogram calibration 8−36466
metallic film, IR reflectivity, mirror appl. 8−5536
multilayer interference filter, calcs. allowing for weak absorption *(Russian)* 8−13812
multiple image formation by sampling Fraunhofer diffr. patterns 8−1334
narrow band, computer controlled filters for solar astronomy *(Russian)* 8−16292
narrow band interference filter, spectral transmission curve meas. 8−297
narrow band interference filters in system, energy anal. 8−16846
narrow-bandpass interference filters, appl. for Tokamak plasma spectroscopy 8−26326
neutral density filters, for UV-vis. spectrophotometry, calibration 8−45734
OCR by spatial filtering with light beam deflection 8−1370
operating principles based on energy transfer between coupled orthogonally polarised EM waves *(French)* 8−33896
photoresist, negative, as phase profile material for near IR, IR spectrophotometric meas. 8−37953
point spread function of systems with parabolic filters, effects of defocusing 8−13776
selective interferometer filter, beam splitter designs 8−30093
semileaky anisotropic thin-film optical waveguides and mode filters 8−13799
spectral intensity filtering for image recognition 8−46529
spectrophotometer transmittance transfer standards 8−45728
temporal frequency spectrum, optical filtering 8−33695
Therm-O-lux 85 film, reduction of thermal interference from photolamps 8−41302
transmission spectrophotometry, standardisation in UV and visible regions 8−32850
transmittance standards in spectrophotometry, semi-transparent metallic thin films use 8−32852
tunable acousto-optic filters, review 8−5570
tunable coupler filter, composed of coupled nonidentical $LiNbO_3$ strip waveguides, description 8−38083
waveguide, laminar, 4-layer, dielectric, S-type, propag. characts., mode filtration *(Russian)* 8−30078
waveguide mode filters using coupling between two nonidentical waveguides 8−46757
C large unsupported film, prod., as UV filter 8−38092
CdS-ZnS(CdSe), film, light transmittance spectra, comparison with Schott GG 495 glass filter 8−33838
Ce-Ti containing glass for cut-on filters in visible region 8−13803
Cu-PbI_2 photosystems, Fabry-Perot type interf. filter 8−46738
HCl, isotopic transfer laser, intercavity cold gas isotope filter 8−46590
Hα, for solar photography 8−40833
In_2O_3:Sn, selective transparent film, for solar collector, efficiency 8−33836
NiO doped glass, improved band-pass characts. 8−42394
PbF_2-Na_3AlF_6, interference filter prod. for near UV *(French)* 8−25974

optical frequency conversion
see also optical harmonic generation; optical parametric devices
inhomogeneous media, efficiency of freq. conversion processes 8−30024
IR upconversion to visible, detect. method for astronomy 8−45240
IR upconvertor for astronomical imaging 8−7883
laser beam, spectral analysis, photomixing method 8−46698
laser frequency synthesis 8−12675
laser system for optical wave mixing expts. 8−5521
lithium formate, mixing of Nd laser radiation for coherent picosecond source, 350 to 680 nm 8−13762
lithium formiate, active spectroscopy under conditions of double-w-k-resonance *(Russian)* 8−33777
parametric, in readout systems without memory 8−1302
parametric image upconversion, thickness aberrations investigation rel. to multi-transverse mode pump 8−13765
polarization modulated light, freq. mixing detection using periodic analyzers 8−5433
real time linewidth meas. of tunable multiatom. CO_2 laser 8−9405

optical frequency conversion continued
relativistic electron bunch, freq. conversion on refl., efficiency 8−1143
ring laser, synchronisation region width calc. *(Russian)* 8−46681
semiconductor, non-linear optical props. of band charge carrier gas 8−33775
similitude theory 8−46710
submillimetre tunable HCN laser sideband generation, mixing with klystron radiation 8−46714
ternary semiconductor crystals for nonlinear optical applics., review 8−33782
time evolution operators and Feynman diagrams appl. 8−18004
two-photon resonant Rayleigh-type optical mixing and relax. 8−42380
upconversion with stochastic pumping, photon statistics 8−22168
whisker diodes sub-MM receivers, antenna characts. 8−12755
Ag_3AsS_3, proustite, freq. conversion of CW chem. HF laser radiation 8−30023
$AgGaS_2$, up-conversion of 10.6 μm radiation into visible 8−33783
CO, liq., IR four-wave mixing 8−18006
CO-O_2 liq. mixture, IR four wave sum and difference freq. generation 8−33771
$CaCO_3$, third order nonlinear optical difference frequency generation 8−22176
CdS, third order nonlinear optical difference frequency generation 8−22176
Cs vapour, CO_2 laser freq. conversion by dye laser radiation mixing *(Russian)* 8−22175
CuCl, light mixing induced by giant two-photon absorpt. of excitonic mols. 8−42383
GaAs, polaritons, surface nonlinear interactions, Green's function theory 8−42379
H, 97.2 nm generation by reson. freq. mixing *(Russian)* 8−46723
p-H_2 cooled gas, 16 μm source using four-wave mixing and stimulated Raman scatt. 8−1298
InSb, optical mixing by mobile carriers 8−25920
KH_2PO_4, third order nonlinear optical difference frequency generation 8−22176
$LiIO_3$, difference freq. generation tunable under dispersive phase-matching conditions 8−46726
$LiIO_3$, freq. conversion of CW chem. HF laser radiation 8−30023
$LiIO_3$, IR radiation generation, difference freq. mixing of N_2 and dye laser laser radiation 8−37942
$LiIO_3$, mixing of Nd laser radiation for coherent picosecond source, 350 to 680 nm 8−13762
$LiNbO_3$, freq. conversion of CW chem. HF laser radiation 8−30023
$LiNbO_3$, third order nonlinear optical difference frequency generation 8−2 176
$LiNbO_3$/CdSe system, 16 μm tunable source 8−9414
$NH_4H_2AsO_4$, freq. doubling of CW tunable dye laser 8−17965
$NH_4H_2PO_4$, harmonic and sum freq. generation, tunable CW UV radiation prod. 8−46712
Na, vap., sum frequency generation, via reson. quadrupole transition, theory 8−42385
Na vapour, conversion of He-Ne laser emission *(Russian)* 8−33776
Na vapour, quantum counter, IR detection 8−30016
Na vapour, two-photon reson. four-wave mixing 8−46716
RbH_2PO_4, harmonic and sum freq. generation, tunable CW UV radiation prod. 8−46712
TeO_2, nonlinear optical susceptibility, antisymm. components 8−13755
TiO_2, third order nonlinear optical difference frequency generation 8−22176
ZnO, third order nonlinear optical difference frequency generation 8−22176

optical glass
absorption coefficients at 632.8 nm, intracavity laser meas. 8−8454
alkali-$PbSiO_3$ optical fibres, high aperture, double-crucible preparation 8−1450
apochromat, four-lens three-colour, glass selection for design 8−13783
band-pass filters for violet-blue region, glass characts. *(German)* 8−13802
blanks, stresses and birefr. changes with dimensions 8−30100
borosilicate photochromic glasses, photosensitivity rel. to AgCl particle shape 8−31223
chalcogenide glass two-layer low-absorpt. antirefl. coating, for KCl laser window 8−37927
crown glass, triple-layer antirefl. coating in visible region 8−13777
crystallisation, reducing agent effect 8−46736
Faraday effect in transducer material, comparison with quartz 8−48149
fibre, epoxy-acrylate coated, strength and static fatigue 8−1386
fibre, high-temperature fatigue strength and OH^- stress-induced corrosion 8−1387
fibre, UV-cured, epoxy-acrylate coated, environmental effect on long-term strength 8−5582
fibre preform, high silica, continuous fabrication process *(Japanese)* 8−37978
filter glass, simulating CIE spectral tristimulus value $\bar{z}(\lambda)$ 8−30037
filter glasses with band-pass characts. for red spectral region 8−25936
fluorophosphate melt, disintegration of vitreous C 8−30101
fused silica, GeO_2-, P_2O_5-, B_2O_3-doped fibres, IR characts. *(Japanese)* 8−37981
glass-Na vap. interface, dye laser frequency locking by selective refl. 8−29992
gradient index optical lenses, use, design, fabrication and refr. meas. 8−13780
laser induced pre-threshold changes, electron microscopy 8−29999
laser irradiated glass surface catastrophic optical breakdown development dynamics *(Russian)* 8−2951
laser pulse heating, softening and hardening points obs. 8−33794
light scattering in optical glasses at microinhomogeneities *(German)* 8−46734
long range refractive index fluctuations, before and after annealing, light scattering exam. 8−13772
mechanical strength, antireflection or protective film effect 8−1318
mechanical strength values, symm. bending test 8−46737
optical glass containing PbO, effect of Al_2O_3/Na_2O ratio on rate of ion exchange 8−44377
phase separated, opt. props. of elongated phases 8−27179
photochromic, holographic data recording optimisation, diffr. efficiency 8−25829
Pyrex, refr. index-matching soln. 8−12519

optical glass continued
quartz glass, hydroxyl-free, for low-loss fibre waveguides, γ-irrad. effects 8−13773
refractive index, effects of alkali oxide comp. changes *(Russian)* 8−22182
refractive index-density relationship changes assoc. with reannealing 8−27175
silicate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
silicate glass, single mode optical fibre, at zero dispersion wavelength, exam. 8−38043
single-mode optical fibres with different B_2O_3-SiO_2 compositions 8−1392
spottability determ., reflectometric method 8−30102
superachromatization, glass combination selection 8−1315
surfaces joined by optical contact, spectral absorpt. of water layer 8−46852
ultrapure glass preparation for optical waveguides, review 8−3086
waveguide fabrication, by elec. field controlled ion exchange 8−38094
Ag halide photochromic glass:Cu^{2+}, characterisation of Cu ions 8−5530
Ag halide photochromic glass, darkening mechanisms under pulsed laser excitation 8−25938
Ce-Ti containing glass for cut-on filters in visible region 8−13803
Ge-As-Se, appl. in 8 to 12 μm thermal imaging system 8−25935
Ge-Sb-Se glass, physical props., purification method for Sb, Se from surface oxides 8−46735
Na_2O-SiO_2:CeO_2, photochromic glass, form. and decay kinetics of absorpt. centres 8−13774
NiO doped, improved band-pass characts. 8−42394
P_2O_5 glasses for laser amplifiers and optical isolators 8−25885
phosphate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
SiO_2, coated silica fibres, tensile strengths of 1 km lengths 8−1384
SiO_2, fused, absorption edge meas. 8−43887
SiO_2, fused silica fibres, high-strength epoxy-acrylate coated, dynamic and static fatigue 8−1385
SiO_2 glasses, opt. consts. in IR and vacuum UV 8−27238
SiO_2:F, silica fibres, numerical aperture and attenuation, drawing from preforms 8−1449
SiO_2-$B_2O_3(P_2O_5)(GeO_2)$, wavelength dispersive props. and composition in optical fibres 8−33793
SiO_2-GeO_2, refr. index and density, comp. depend. 8−23424
ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304

optical harmonic generation
see also lasers
alkali metal vapours, fifth harmonic generation, saturation by picosecond pulses 8−33774
barium formate, nonlinear optical susceptibility tensor, Maker fringes 8−13751
cholesteric liquid crystal, phase-matched third harmonic generation efficiency 8−30021
dipotassium tartrate single crystal, SHG 8−13757
dye laser, tunable, improved freq. doubling for 217-360 nm 8−33781
fixed intensity approximation *(Russian)* 8−9410
fourth harmonic generation of Nd:YAG laser radiation 8−17972
gas, harmonic generation by divergent radiation *(Russian)* 8−22170
L(+) glutamic acid halogen acid salts, crystallographic, optical and calorimetric meas., halide effect 8−34505
inhomogeneous media, efficiency of freq. conversion processes 8−30024
intracavity SHG of Nd^{3+}:YAG laser, amplitude- and phase-freq. characts. 8−25884
ionic grouping theory of electro-optical and nonlinear optical effects of crystals *(Chinese)* 8−27183
laser pulse duration measurement, 0.1 to 100 psec., nonlinear autocorrelation methods 8−46702
layered compounds, SHG at 0.6943 and 1.06 μm, energy gap depend. 8−30019
lithium formiate, active spectroscopy under conditions of double-w-k-resonance *(Russian)* 8−33777
metals, SHG by surface polaritons, theory 8−9416
methanes, halogenated, nonlinear optical polarisability, bond-bond interaction role 8−18010
nonlinear second-order crystal processes, electro-optic, piezo-optic tuning 8−46718
piezoelectric crystal, optical SHG with surface plasmons 8−18008
plasma, Nd:glass laser produced, 2nd to 5th harmonic lines obs. 8−30480
pyroelectric, uniaxial, spontaneous polarisation, calc. from results of optical meas. 8−27162
quartz, struct. transitions, optical SHG and γ-ray diffr. results 8−14459
rare earth iodates, crystallographic and nonlinear optic data 8−6044
second harmonic and subharmonic generation, master eqn. approach 8−33773
semiconductor, non-linear optical props. of band charge carrier gas 8−33775
ternary semiconductor crystals for nonlinear optical applics., review 8−33782
uniaxial crystal, noncollinear SHG, temporal characts. anal. of short laser pulses 8−22171
Ag_3AsS_3, proustite, freq. conversion of CW chem. HF laser radiation 8−30023
$AgGa(Se_{1-x}S_x)_2$, crystal growth, phase studies, optical props. 8−48305
AlN film, nonlinear optical susceptibility SHG expts. 8−30012
$BaBi_4Ti_4O_{15}$, SHG, temp. depend. ferroelec.-ferroelec. transition 8−15121
$Ba_2TiSi_2O_8$, fresnoite, unsuitability for phase matched SHG 8−46721
CO-O_2-SF_6, liquid, phase matched IR third harmonic generation 8−42384
$CaCO_3$, calcite, quadrupole nonlinear coeff. dispersion meas. 8−37943
$CdGe(As_{1-x}P_x)_2$, crystal growth, phase studies, optical props. 8−48305
$Cd_{16}Ge_4S_{24}$, SHG obs. 8−46719
$Cd_{14}P_4S_{24}$, SHG obs. 8−46719
$Cd_{13}P_4S_{22}I_2$, SHG obs. 8−46719
$Cd_{16}Si_4S_{24}$, SHG obs. 8−46719
Cs vapour, 3rd and 5th harmonic generation of Nd laser radiation quasi-reson. conditions *(Russian)* 8−25926
CsD_2AsO_4, SHG, electro-optic and piezo-optic tuning 8−46718

optical harmonic generation continued
- CsD_2AsO_4, temporal power variation of SHG of Q-switched YAG laser radiation 8−25922
- $Cs(D_xH_{1-x})_2AsO_4$, soln. cryst. growth, optical absorpt. and SHG phase match data 8−11095
- CsH_2AsO_4, laser accessory for freq. doubling 8−46725
- GaAs, polaritons, surface nonlinear interactions, Green's function theory 8−42379
- GaN, nonlinear susceptibility and coherence length, SHG meas. 8−25924
- Hg, vap., two photon reson. tripling of Nd laser fourth harmonic 8−30014
- KD_2PO_4, Nd:YAG laser radiation freq. doubling 8−46615
- KH_2PO_4, 1.06 μm stable conversion into fourth harmonic, using composite medium master oscillator 8−46724
- KH_2PO_4, laser accessory for freq. doubling 8−46725
- KH_2PO_4, struct. transitions, optical SHG and γ-ray diffr. results 8−14459
- $KTiOPO_4$, nonlinear optical props., freq. doubling of 1.06 μm laser radiation 8−42386
- Li, vap., two-photon coherent propag., third harmonic generation 8−30020
- $LiIO_3$, freq. conversion of CW chem. HF laser radiation 8−30023
- $LiIO_3$, laser accessory for freq. doubling 8−46725
- $LiN_2H_5BeF_4$, linear and nonlinear optical props. *(French)* 8−33778
- $LiNH_4SO_4$, phase transitions, temp. depend. of NMR, spontaneous polarisation, birefringence and SHG 8−10191
- $LiNH_4SO_4$, press.-temp. phase diagram, NMR and SHG meas. 8−23690
- $LiNbO_3$, freq. conversion of CW chem. HF laser radiation 8−30023
- $LiNbO_3$, laser accessory for freq. doubling 8−46725
- $MgBaF_4$, nonlinear optical susceptibility tensor, Maker fringes 8−13751
- $NH_4H_2AsO_4$, SHG, CW UV radiation prod. 8−46712
- $NH_2H_2PO_4$, temporal power variation of fourth harmonic generation of Q-switched YAG laser radiation 8−25922
- $NH_4H_2PO_4$, 90° phase matching temp., refr. index freq. and temp. depend. 8−46720
- $NH_4H_2PO_4$, harmonic and sum freq. generation, tunable CW UV radiation prod. 8−46712
- $(NH_4)_2SO_4$, SHG expts. on microscopic origin of permanent dipoles 8−1299
- Na vapour, direct ninth harmonic conversion of ps laser pulses 8−5526
- Na vapour, seventh harmonic generation 8−18009
- Na-Ar, nonlinear optical 5th order susceptibility meas., VUV harmonic generation 8−42381
- RbH_2PO_4, harmonic and sum freq. generation, tunable CW UV radiation prod. 8−46712
- $SrBi_2Ta_2O_9$, SHG, temp. depend. ferroelec.-ferroelec. transition 8−15121
- Te, high efficiency SHF of 12.8 μm laser radiation 8−25923
- Xe-Ar, 3547 to 1182 Å conversion efficiency limited by Kerr-induced dispersion 8−37940

optical images
see also aberrations
- apodisation for max. Strehl ratio and specified Rayleigh limit of resolution 8−5425
- apodiser, optimum, simulation by binary filters 8−5539
- astronomical images, PDS microdensitometer processing for astrometry 8−16306
- automatic microimage analyser, MORPHOQUANT 8−37053
- binary filters simulating apodizers, expt. results 8−46780
- blurred image, sharpness improvement and multiplication 8−1173
- broad-band coherent imaging 8−5424
- coded aperture imaging, analogical deconvolution appl. to nucl. medicine *(French)* 8−35943
- coded aperture imaging with uniformly redundant arrays 8−37812
- coherent light observation, resolvable degrees of freedom 8−13666
- concave holographic grating, imaging properties *(Japanese)* 8−37971
- conjugate wavefront generation and image reconstruction by four-wave mixing 8−13746
- coronograph, external occulting disc, scattered light reduction 8−36455
- defective periodic objects, self-restoration of autoidolon 8−29902
- degraded image restoration, periodic nonsinusoidal vibr. degradation, filter function 8−1169
- discrete binary representation, halftone dot profile and aliasing 8−9335
- discretisation using holographic filter, spectral analysis *(Russian)* 8−37809
- edge coding and detection using directional masks 8−42289
- electron micrograph, image processing systems, random noise removal 8−12791
- extended objects, microscope imaging using apodised condenser and annular source 8−280
- grazing incidence optics, total transverse aberration function 8−45765
- holograms of diffuse objects, autocorrel. of transmittance 8−1185
- holographic grating, imaging props. 8−5563
- holographic lens image quality, estimation criteria 8−25824
- iconics and its basic goals 8−46527
- information content of image, physical limitations 8−33697
- interferometric two-dimens. imaging of rotating objects 8−1176
- Kron electrographic camera, spurious image mistaken as nebula 8−8101
- lens aspherical effect on image defects *(German)* 8−9332
- lens imaging properties and OTF, Jones notation 8−25945
- lenslet array with periodic sampling structure, for image form. 8−37964
- light radiography application to measurement of density of hollow-charge jet in Cu *(French)* 8−44344
- linear filtering operation, image forming process 8−22089
- Mars, Viking lander camera data, image processing 8−20649
- maximum entropy image restoration method, deterministic anal. 8−9336
- microscopic imaging analysis applied to phase, schlieren and interf. microscopy 8−45688
- mirror scanning, 4th order matrix operator formulation *(Russian)* 8−18037
- multiple image formation by sampling Fraunhofer diffr. patterns 8−1334
- multiple imaging through nonredundant arrays 8−22095

optical images continued
- obscured circular pupil imaging system, included power 8−46520
- obscured pupil imaging system, OTF and point spread function 8−25809
- one-dimensional coded apertures, applications 8−45746
- partially coherent illumination, imaging of relatively strong objects, linear transfer theory 8−22091
- phase distributions in images and Fraunhofer diffr. patterns prod. by non-aberrant lens 8−1172
- phase gratings, coherently illuminated, defocused diffr. images 8−46523
- photographic image quality, scattered light effect 8−16884
- positive image production on biazide-polymer based photoresist. films *(Russian)* 8−16887
- random medium, image resolution limitation 8−37813
- reconstruction from hologram, field diffracted by transparent object identity 8−37826
- reconstruction of partially coherent objects from mutual intensity samples 8−9333
- recording on magnetic film, banded domain structure, effect of recording field strength on energy characts. *(Russian)* 8−19297
- restoration, pseudo-inverse, singular value matrix decomposition algorithm *(Russian)* 8−37810
- retinal image light distrib., cat 8−48790
- sampling expansion of bandlimited function 8−17863
- scale transfer characts. *(Russian)* 8−37962
- scanning and conventional imaging systems, basic equivalence 8−46534
- schlieren system, colour images of inhomogeneous transparent media 8−33905
- schlieren system, phase object projection, imaging characts., recording conditions 8−25977
- sharpness adjustment, teleobjective types characteristics *(Hungarian)* 8−12780
- sharpness criterion, rel. to redundant spacing interferometry 8−5427
- space filtering algorithm, influence on signal of optical system misalignment *(Russian)* 8−37815
- speckle, properties and applications *(Japanese)* 8−22085
- speckle contrast, depend. on object surface profiles 8−1168
- speckle contrast measurement in and near image plane 8−42287
- speckle interferometry fundamentals and appl. *(Czech)* 8−29148
- speckle noise and object contrast, detection thresholds eval. technique 8−5434
- speckle patterns rel. to object surface profile, computer simulation 8−13660
- speckle phenomenon fundamental image processing and evaluation *(Czech)* 8−29147
- speckle reduction in coherent imaging, two-step process 8−37819
- spectroscopic system, OTF meas. and image correction 8−37083
- stereo image processing, control system 8−4728
- straight edge coherent imagery, with Straubel apodisation filters 8−25808
- straubel apodisation filter systems, effects of defocusing on point spread function 8−25804
- super-resolution derivation by analytical continuation methods 8−29915
- telescope, weak object image distorted by atm. effect, restoration possibility *(Russian)* 8−32349
- turbulence degraded image reconstruction, by spectral ratio meas. 8−9334
- Viking 1975 Mars lander interactive computerized video stereophotogrammetry 8−20650
- wavefront plot, aberrations, point spread function, three dimens. *(German)* 8−46521

optical information processing
see also spatial filters
- A/D conversion and page composition for holographic memory 8−5436
- acousto-optic correlators, spatial or time integrating, review 8−9341
- active feedback optical processor, using coherent source and liq. cryst. light valves, design 8−22204
- analogue computing, past, present and future 8−46531
- annular coded-aperture images, decoding techniques 8−37818
- aspectrograms, produced with hexagonal lens raster, props. 8−46528
- automatic microimage analyser, MORPHOQUANT 8−37053
- biological specimen pattern recognition, by real-time optical processor 8−40454
- book, incoherent processing 8−42294
- book, optics and information theory 8−5435
- cervical cancer detection, comparison of coherent optical transform processing systems 8−48922
- coded aperture imaging, analogical deconvolution appl. to nucl. medicine *(French)* 8−35943
- coherent light source angular coordinates, meas. using received wave phase front 8−46526
- coherent optical feedback technique, multiplicative disturbance suppression 8−22094
- coherent optical processing cervical cytological samples 8−36007
- coherent optical processing equipment cervical cytological samples screening 8−36006
- coherent optical processing of biological cells, exam. of Fourier spectrum analyzer with optical transducer 8−36008
- colour edge detection, co-ords. selection 8−5432
- complex signal addition by matched spatial filtering 8−29905
- complex-valued linear operations on complex valued data using incoherent light 8−5423
- composite photographic-human visual system, spatial-freq. filtering effects in performance 8−4725
- computer holograms, space multiplexing 8−17874
- computerised scanning device, for 'Zenit' photogrammetric automaton *(Russian)* 8−21102
- conference, Jerusalem, Israel (Aug. 1976) 8−33712
- correlation, precision of detail recognition *(German)* 8−9340
- correlators, real-time and memory devices using acousto-optic processing 8−46533
- cross-correlation of complex exponentiated input data 8−42290
- cytological preparation image processing, filter construction *(German)* 8−36026
- cytological preparations, optical real-time filtering *(German)* 8−36025
- differentiation by spatial filtering 8−1171
- digital signal processing 8−33681

optical information processing continued
- discrete binary representation, halftone dot profile and aliasing 8−9335
- discretisation using holographic filter, spectral analysis *(Russian)* 8−37809
- edge coding and detection using directional masks 8−42289
- edge enhancement of optical images, by Fourier transform optical system 8−33680
- electro-optical nonlinear Fabry-Perot resonator, for optical signal processing 8−42460
- electron microscopy, optical Fourier transformation of two-dimens. image signals *(German)* 8−32932
- electron microscopy of biomacromolecules, image analysis *(Czech)* 8−31983
- electronic speckle pattern interferometry, optimal signal processing 8−16837
- entropy expression for max. entropy image restoration 8−42283
- experiment set for undergraduate students 8−28885
- Fabry Perot resonator containing electrooptical element, light processing appls. 8−38001
- filtering, background noise attenuation, spectrum anal., geological appl. *(French)* 8−9338
- folded spectrum processor, signal demodulation and radar processing appls. 8−5429
- four-component system design 8−42282
- Fourier transform program, two-dimensional *(Japanese)* 8−9330
- generalised sampling theorem for Dirac Δ functions, appl. to computer-generated transparencies 8−42284
- hazes, information provision on particle size distrib. of brightness and polarisation phase functions *(Russian)* 8−44998
- heterodyne signal reception anal. *(Russian)* 8−46522
- Hilbert transformation of phase object, optical simulation 8−1174
- hybrid image processing 8−25810
- hybrid image processing based on coherent/incoherent lights 8−33689
- hybrid optical and electronic image processing 8−33690
- hybrid optical-digital radiography system for lung disease detection 8−11753
- iconics and its basic goals 8−46527
- image enhancement for objects embedded in scatt. media, mammary growth diagnosis appl. 8−40288
- image processing by spatial freq. spectrum phase modulation *(Korean)* 8−22090
- image reconstruction, projection completion methods 8−42285
- image reconstruction, projection completions methods, computational examples 8−46524
- image reconstruction, turbulence degraded by spectral ratio meas. 8−9334
- image reconstruction and partially coherent objects from mutual intensity samples 8−9333
- image reconstruction by modified back projection methods, reconstruction error determ. 8−33682
- image reconstruction from kinoforms and distorted holograms *(Russian)* 8−13664
- image reconstruction from partial Fourier transform 8−33691
- image registration limits, generalised model *(Russian)* 8−37811
- image restoration, following periodic nonsinusoidal vibr. degradation, filter function 8−1169
- image restoration, pseudo-inverse, singular value matrix decomposition algorithm *(Russian)* 8−37810
- image subtraction in real time, incoherent illumination 8−33677
- image-convertor camera, high-speed, computer treatment of images 8−42295
- incoherent 8−46519
- incoherent method, fully parallel, high-speed, for performing discrete Fourier transforms 8−33684
- industrial X-ray film information processing methods *(German)* 8−15637
- integrated optical RF spectrum analyzer, feasibility 8−5431
- integrated signal processor, using geodesic thin film lenses 8−42475
- inverse radon transform, for image construction systems 8−42288
- laser beam application *(Japanese)* 8−1170
- LF signal optical processing procedure 8−9343
- liquid crystal light valve for coherent optical data processing 8−38041
- liquid crystal light valve operation and appls. 8−46826
- Mars, Viking orbiter images IPL processing 8−20679
- maximum entropy image restoration method, deterministic anal. 8−9336
- mechanical impulse testing techniques, computer evaluation, high-speed film recording 8−44343
- Mellin transforms, 1-D, coherent optical technique 8−5422
- micro-optoelectronic parallel processors *(Russian)* 8−46517
- microdensitometer with minicomputer connecting facilities 8−21198
- microobjects dimensions determining adaptive tracking algorithm appl. *(Russian)* 8−21094
- noise problems in image processing by spatial filtering 8−37817
- noisy blurred image restoration by smoothing spline filter 8−33679
- nonlinear image processing, binary pulse position encoding 8−29906
- numerical holography application 8−33692
- optical multiple-invariant space-variant processors 8−42279
- perfect image correction by unsharp masking 8−33693
- phase distributions in images and Fraunhofer diffr. patterns prod. by non-aberrant lens 8−1172
- phase reconstruction problem in light and electron microscopy 8−25811
- phase tracking, Fourier series and estimation appl. 8−25812
- photochromic tracer film, measurements using POLLY, film reading computer system 8−42696
- photodetector matrices and scanistors for hologram information processing, switching transients 8−45703
- photogrammetric automation 'Zenit' automatic processing of line images *(Russian)* 8−21106
- photogrammetric automaton 'Zenit', program-control module for interference coordinate measuring system *(Russian)* 8−21103
- photogrammetric automaton 'Zenit' positioning, electromechanical system *(Russian)* 8−21101
- photogrammetric system 'Zenit', read-out procedures design, for images with convex boundaries *(Russian)* 8−21105
- photogrammetric system 'Zenit', scanning spot intensity distribution *(Russian)* 8−21104
- photographic noise in holographh appls. *(Italian)* 8−22088
- photometric signal processing unit based on hybrid fast instrumentation amplifier 8−41342
- picture coding without point by point sampling 8−33678
- pulsed signals of variable length detection in correlated interference, S/N ratio 8−37816
- quantum communication channels, statistical model, asymptotic relations 8−33687
- radiology and nuclear medicine image processing and synthesis *(German)* 8−40325
- random pulse train processing by linear filter *(Russian)* 8−46518
- real time grid coding and interlacing, for image subtraction 8−33694
- real-time multichannel optical spectral analysis, by liq. cryst. display 8−38042
- real-time optical Fourier spectrum analysis using acousto-optic diffr. 8−5430
- recent trends 8−33713
- reciprocity relation derived from Helmholtz eqn. 8−1167
- reconstruction from projections via circular harmonic expansion 8−42286
- sampled Fourier transform hologram, interpretation, simplification techniques 8−1181
- sampling imaging systems, linear gradient model for suppression of aliasing 8−33686
- segmentation method of detecting cellular images using colour information *(Japanese)* 8−11783
- space filtering algorithm, influence on signal of optical system misalignment *(Russian)* 8−37815
- space variant optical correlators, accuracy and space bandwidth 8−17864
- speckle images quantised to two levels, recovery of fringe visibility 8−12104
- speckle noise and object contrast, detection thresholds eval. technique 8−5434
- speckle phenomenon fundamentals *(Czech)* 8−29147
- spline functions for image restoration 8−42280
- statistical reversal methods of linear transforms. *(Russian)* 8−1179
- stimulated Raman scattering, reconstruction of wavefront and real volume image 8−30018
- surface acoustooptic interaction for information processing 8−42461
- temporal frequency spectrum, optical filtering 8−33695
- thin film waveguide component interconnection and signal processing 8−5584
- two-dimensional high accuracy signal processor 8−46532
- visualisation of wavefront shape, shadow instrument with subtraction, appl. *(Russian)* 8−37966
- volume hologram representation of space-variant systems 8−33696
- volume holograms in far field zone 8−17867

optical instrument testing
- *see also aberrations*
- linear coma, optimum balanced, influence on disc spread functions 8−37814

optical instruments
- *see also colorimeters; coronagraphs; ellipsometers; holographic instruments; light interferometers; optical microscopes; optical prisms; photometers; polarimeters; refractometers*
- aberroscope, using artificial astigmatism, Taylor polynomial representation of wave abberation surface, for eye aberrations 8−35837
- Babinet compensator, modified, using interference-colour method, for small retardation meas. 8−16827
- contrast enhancement viewer for film 8−16879
- cuvette attached to UR-20 spectrophotometer for recording refl. spectra of adsorbed mols. 8−298
- directional spectral reflection on plane surfaces meas. device *(German)* 8−12745
- human eye optical characteristics *(Hungarian)* 8−11641
- lens centring devices, high accuracy, appls. *(French)* 8−33924
- nondestructive thermal testing, scanning and printing head 8−44329
- ophthalmological instrument design and construction, for eye diagnosis 8−15918
- ophthalmoscope, hand-type, supplementary unit for photoelectric measurements 8−48907
- photokeratoscope for corneal curvature meas. 8−3624
- scale transfer characts. *(Russian)* 8−37962
- spring actuated parallelogram as vibr. freq. converter 8−29150
- stereo-ophthalmoscope 110, for viewing of fundus oculi 8−48905
- stereo-ophthalmoscope 110, stereophotography of fundus 8−48906
- vision aids, training and practice effects on performance 8−11770

optical interferometers *see light interferometers*

optical isolators
- 1,1-difluoroethane, high intensity transmission characts., for possible appl. in CO_2 amplifier gain isolation 8−42387
- 1,2-difluoroethylene, high intensity transmission characts., for possible appl. in CO_2 amplifier gain isolation 8−42387
- Faraday cell for fusion laser; mag. field calc. 8−13719
- gas isolator mixes for CO_2 laser system 8−46663
- near IR Faraday rotation isolators 8−18042
- retropulse isolator for CO_2 laser light 8−9388
- saturable absorbers, laser multipass power amplifier stabilisation in CO_2 system 8−46664
- saturable absorbers, stabilisation of CO_2 laser triple-pass power amplifier system 8−46619
- semileaky thin-film optical waveguides, guided-radiation mode coupling analysis 8−1372
- $CdCr_2S_4$, hot-pressed, optical isolation appl. at 10.6 μm, intrinsic absorpt. props. 8−42368
- p-Ge broadband passive isolator for CO_2 laser system, pulse shaping 8−46662
- p-Ge:Ga, saturation behaviour at CO_2 laser wavelengths 8−1307
- P_2O_5 glasses for laser amplifiers and optical isolators 8−25885
- SF_6 based broadband gas isolator, for high power CO_2 lasers, design and evaluation 8−42339

optical Kerr effect
- Fabry-Perot interferometer, transient behaviour 8−33787
- laser passive mode-locking and Q-switching with optical Kerr effect modulator 8−9403
- molecular crystals, self-induced nonlinear optical rotation 8−1308
- multiphoton absorption, Kerr nonlinearity, cone-type light beam struct. 8−33790

optical Kerr effect continued
nematogens, isotropic phase, direct obs. of picosecond mol. reorientation 8−1991
4-phenyl n-pentyl ester, Nematel 105, nematogen, isotropic phase, Rayleigh scatt. and mol. reorientation 8−34429
$LiIO_3$, Raman induced Kerr effect with elliptical polarisation 8−42392
Xe-Ar, 3547 to 1182 Å conversion efficiency limited by Kerr-induced dispersion 8−37940

optical links
see also optical communication equipment
2.1 km optical cable link installation, TV and telephonic transmission expt. *(German)* 8−33890
8.448 Mb/s optical cable feasibility trial *(German)* 8−33888
9 km fibre-optic telephone transmission system 8−42435
16 and 32 Mb/s short-haul high-performance optical data links 8−1421
32 Mb/s step-index optical fibre repeater equaliser *(German)* 8−33881
32Mb/s optical fibre transmission system planning and expt. 8−1418
44.7 Mb/s fibre optic transmission system expts. 8−1420
140 Mb/s fibre-optic field demonstration system *(German)* 8−33889
140 Mb/s optical fibre transmission system 8−42436
400 Mb/s optical fibre communications, integrating and transimpedance front end performance comparison *(German)* 8−33879
400Mb/s SELFOC fibre transmission system expt. 8−1419
acoustooptic FM and freq. shifted heterodyne CO_2 laser system 8−5568
analogue fibre optic commandable communication system, 650 MHz 8−46819
analogue fibre optic data link, hardened, construction and analysis 8−30057
analogue fibre optical systems, linearised LED and laser transmitters 8−46818
avionic multiterminal data link, fibre-optic interconnection system 8−46805
bidirectional central couplers, for links with fibre bundles 8−46809
Chicago, Bell system eval. 8−46821
colour multiplexing in fibre waveguide links 8−42444
communication technology, evaluation under normal telephone system conditions 8−30061
conference, optical fibres and integrated optics, London, England (May 1977) 8−38063
data transmission, using inexpensive fibre links 8−42413
digital data transmission, design criteria and experimental results *(Rumanian)* 8−46791
Earth-space-Earth retroreflector link, scintillation statistics 8−11996
fibre, 140 Mbit, experimental use of GaAs laser transmitter *(French)* 8−30088
fibre, Canadian development w.r.t. economics 8−42408
fibre, for T1 PCM telephone carrier system 8−9458
fibre, LED as semicond. junction transceiver 8−42410
fibre 140 Mbit/s feasibility trial over 5.75 km for main telecommunication network use 8−30076
fibre cable construction, installation, and testing 8−46797
fibre cable development, robust, installation and jointing development and experience 8−9460
fibre cable transmission performance in operational ducts *(German)* 8−33864
fibre cables for use in ocean, design rel. to stresses 8−42439
fibre communication lines, optoelectric systems on injection lasers 8−42464
fibre communication lines, use of semicond. lasers and avalanche photodiodes 8−46793
fibre communication system, A-7 ALOFT economic analysis, EM interf. and pulse tests 8−42448
fibre communication system, cost model 8−42447
fibre communication systems in Japan 8−46815
fibre communications system, installation in Chicago, USA *(German)* 8−38006
fibre components, ccts. 8−30054
fibre connectors, hot forming versus epoxy bonding of bundles, single fibre techniques 8−42482
fibre data link, high bit rate using InGaAsP 1.3 μm LED 8−46825
fibre data link, integrated industrial, circuit and system considerations 8−46817
fibre data transmission system, operational 18-channel 8−46823
fibre digital transmission system, 2 km, for field use at 20 Mb/s 8−38064
fibre interconnection components 8−46812
fibre leakage induced by non-destructive methods 8−42450
fibre light guide optimum parameter determ. 8−38023
fibre link systems, UK expts. 8−42462
fibre long distance link, injection laser transmitter appl. 8−42355
fibre multiterminal data system for aircraft, based on time division multiplexing 8−46811
fibre optic connector system characteristics, aerospace user's viewpoint 8−46804
fibre optic sonar link, multichannel 8−42446
fibre optics, practical problems *(Swedish)* 8−25988
fibre optics, single mode, and integrated optics, for optical communication 8−42469
fibre optics for defence appls. in UK 8−42440
fibre optics for military appls., review and assessment 8−42438
fibre optics tasks of NASA, review 8−42441
fibre optics telecommunication applications 8−42432
fibre system with linear intensity modulation, bandwidth limitation 8−1339
fibre systems, Soviet studies *(German)* 8−25972
fibre technology for military aeronautic appl. *(French)* 8−46813
fibre transmission applications to military and industrial systems 8−38021
fibre transmission lines, use of microoptical switches 8−38085
fibre transmission links 8−46772
fibre transmission system, for Command and Control System 280 8−42445
fibre transmission system components, baseband frequency response meas. system 8−42404
fibre transmission systems comparsion, 0.8 to 1.4 μm 8−46824
fibre transmission systems design 8−1352
fibre transmissions of 100 Mb/s and 400 Mb/s PCM signals 8−1323

optical links continued
fibre-optic cable pulse dispersion and attenuation meas. *(German)* 8−33859
fibre-optic LED and laser source and Si photodetector development 8−42430
fibre-optic transmission system, UK Post Office feasibility trial 8−1417
fibres, single- and multimode, fundamental mode signal transmission 8−42442
French PTT system comparative assessment of requirements and available systems *(French)* 8−42422
full duplex transmission link over single strand optical fibre 8−1341
hybrid digital optical fibre transmission system, terminal equipment and reshaping/regenerative repeaters *(German)* 8−33880
Italian local digital network applicability of optical cables *(German)* 8−33886
Las Vegas telephone installation, 4.5 km fibre optic cable 8−46822
laser beam appl. at 0.63 micron wavelength, expt. 8−38022
laser diodes for fibre optic communication and data link systems 8−46637
laser propagation experiment in low visibility atmosphere 8−46703
military, local distribution communication, use of plastic clad/fused silica fibre 8−9457
military optical fibre communications 8−42433
multichannel, GaAs laser source package 8−1266
multichannel data link, using AlGaAs DH LED *(German)* 8−38014
multichannel GaAs laser array output synchronisation 8−42417
multimode electro-optic guiding for single fibre data links, system design 8−38065
multimode optical fibres, effect of cladding 8−30050
multipath time dispersion theory of optical network 8−22207
optical fibre, 5 Gbit/s multiplexer 8−18044
optical fibre analogue/digital communication system with 5 MHz bandwidth *(German)* 8−30062
optical fibre cables, longitudinal stress in fibres due to twisting in manufacture, anal. 8−30048
optical fibre nonlinear equalisation by shaping filter *(German)* 8−33882
optical fibre properties, signal to noise ratio, freq. response, dispersion effects, communication system design appl. 8−9435
optical fibre telephone carrier systems 8−42463
photodetector optimisation for radiation environments 8−29158
pulse interval modulation optical fibre communication system field expt. 8−1424
repeater section lengths rel. to transmitter power and fibre dispersion *(German)* 8−38012
scintillator-fibre optic system, for high bandwidth radiation diagnostics 8−46820
Second European Conference on Optical Fibre Communication, September 1976, review *(Italian)* 8−5552
SELFOC fibre 400 Mb/s optical transmission system 8−1353
short-range fibre optics 8−46786
short-range optical fibre system applications *(German)* 8−33885
single laser diode CW output power limitation *(German)* 8−37886
single mode fibre, 800 Mbit/s transmission expt. 8−30058
surface wave acousto-optical device appl. 8−38040
T-coupler for multimode optical fibres 8−42457
telephone, experimental system operating at 140 Mb/s 8−1321
telephone systems, fibre links in Europe 8−46781
UK Post Office junction and trunk network applications for optical fibre systems *(German)* 8−38016
undersea fibre-optic cable link performance 8−46807
wavelength division two-way fibre optic transmission expt. using micro-optic duplexers 8−22194
$Al_xGa_{1-x}As$-GaAs LED design and characterisation for fibre-optic communications 8−46796
SiO_2:Ge single mode fibre, low loss transmission of high speed pulse signals at 1.29 μm 8−42409

optical masers *see lasers*

optical materials
see also glass; optical films; optical glass
corundum, optical, polished, surface layer obs. by IR reflection spectra *(Russian)* 8−19458
data storage material requirements and possibilities *(German)* 8−25937
IR detector materials, irreversible laser damage 8−25914
IR materials, laser residual absorpt. 2 to 10 μm, review 8−25906
IR materials, optical phenomena, conf., Annapolis, MD, USA (Dec. 1976) 8−25933
IR window materials, optical phenomena, book contrib. 8−9420
laser window materials, surface and bulk absorpt., photoacoustic meas. 8−25912
leucosapphire, spectral absorption coeff., 0.25-1.25 micron, up to 1800K, and 3.5-5.2, up to 1200K 8−27204
metal IR window materials, diamond machinability 8−5586
metal mirrors for CO_2 laser fusion systems, material constraints and fabrication 8−5476
metal polishing and lapping 8−5587
metal surfaces for laser mirrors, ion polishing and vac. annealing 8−5588
metals for mirror substrates, manufacturing processes, review 8−5542
Perspex for astronomical telescope lens and mirror manufacture 8−36458
photodichroic materials, writing vol. amplitude holograms 8−17871
photopolymers, for holographic recording, using photopolymer material, redox sensitized 8−13674
photoresist, negative, as phase profile material for near IR, IR spectrophotometric meas. 8−37953
plastic optical components and systems 8−25967
radioisotope methods and neutron activation anal. of waveguide materials 8−7286
ruby, spectral absorption coeff., 0.25-1.25 micron, up to 1800K, and 3.5-5.2, up to 1200K 8−27204
semiconductors, laser window materials, residual lattice absorpt., freq. and temp. depend. 8−25910
solar mirror materials, reflected beam profile characterisation 8−33814
thermal strain of optically uniaxial and biaxial crysts. 8−46733
transparent materials, absorpt. coeffs. meas., interf. effects 8−46699
transparent materials, low-modulus, mech. props. determ. method 8−5704
Ag_3AsS_3, proustite, cryst., vibr. spectra 8−48172

optical materials continued
$AgGaSe_2$, seeded Bridgman growth of crack-free crysts., thermal expansion coeff. 8−11101
$Ba_2NaNb_5O_{15}$, birefr. material, thermal cond. determ. by optical method 8−18851
$Ba_2NaNb_5O_{15}$ crystal, high optical quality, and optical absorption coeff. meas. 8−30036
$Ba_2NaNb_5O_{15}$, Gd substitution, effect on linear thermal expansion, possible BSN replacement 8−43153
$BaSO_4$ white reflectance standard, Kubelka-Munk optical props. 8−4675
$Ba_xSr_{1-x}Nb_2O_6$, struct. and dielec. props., isomorphic substitution effect 8−27165
$Bi_{12}SiO_{20}$, optical quality, Czochralski growth 8−31324
$Bi_{12}SiO_{20}$ photoconductive electrooptic crysts. for time average holographic interferometry 8−25813
$CaCO_3$, Iceland spar, polarizing prism, struct. defects effect 8−18065
CaF_2, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911
CaF_2, protection from biological overgrowths 8−18034
CaF_2, thermal expansion, 60-300K 8−33791
$CdCr_2S_4$, hot-pressed, optical isolation appl. at 10.6 μm, intrinsic absorpt. props. 8−42368
CdTe, absorbing precipitates, catastrophic laser damage threshold estimate 8−25913
CdTe, laser window material, vap. deposition 8−27391
$CsCuCl_3$, optical props. rel. to IR electro-optical modulator appl. 8−42393
$Cs(D_xH_{1-x})_2AsO_4$, soln. cryst. growth, optical absorpt. and SHG phase match data 8−11095
CsI, crysts., microplasticity mechanism 8−30696
$Gd_2(MoO_4)_3$, spontaneous birefringence, pulsed field switching, compression effect, domain movement 8−27187
Ge, thermal expansion, 60-300K 8−33791
α-HIO_3, near IR absorpt., influence of deuteration 8−27237
$Hg_{1-x}Cd_xTe$, homogeneous single cryst., growth by modified Bridgman technique 8−39682
Hg_2Cl_2, cryst., birefringence and dichroism, 200-500 nm and far IR 8−27257
KBr, plate, distortions due to 10.6 μm laser irrad., interferometric obs. 8−46697
KCl, absorpt. coeff. meas., using pulsed CO_2 laser, calorimetric method 8−18028
KCl, laser produced shocks rel. to material damage 8−31285
KCl, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911
KCl, photoelastic consts. at 10.6 μm, interferometric and polarimetric meas. 8−25934
KCl plate, distortions due to 10.6 μm laser irrad., interferometric obs. 8−46697
KCl, thermal expansion, 60-300K 8−33791
KCl, zone refined single crystal growth for high power CO_2 laser optics 8−22181
KCl:Cu, additively-coloured crysts., for hologram recording plates *(Russian)* 8−29914
KCl:K, F-centre coloured, for highly efficient holographic storage 8−37833
KCl:RbCl, $SrCl_2$, IR window material, cryst. growth and props. 8−31333
KH_2PO_4, near IR absorpt., influence of deuteration 8−27237
KH_2PO_4, thermal expansion, 60-300K 8−33791
LiF_2, protection from biological overgrowths 8−18034
α-$LiIO_3$, cryst. growth of high piezoelec. and optical quality 8−31313
$LiIO_3$, visible and UV refr. indices 8−19439
$LiNbO_3$, cryst., US vibrating laser beam diffr. *(Russian)* 8−31172
$LiNbO_3$, laser-induced optical damage, electrostatic obs. 8−18030
$LiNbO_3$, thermal expansion, 60-300K 8−33791
$LiNbO_3$:Ti, dopant conc., refr. index profile rel. to integrated optics 8−5583
$LiNbO_{31}$ Li_2O diffusion for chemical control of laser induced optical damage 8−46693
$LiNb_{1-y}Ta_yO_3$, Czochralski grown, refr. index, 5893-10600 Å, and zero birefr. 8−31166
$MgAl_2O_4$, spinel materials press forged, mech. props., IR appl. 8−39722
MgF_2, thermal expansion, 60-300K 8−33791
MgF_2:Ni, growth by vertical gradient freeze method, in self-sealing graphite crucibles 8−31334
MgO:Cu, dopant conc., refr. index profile rel. to integrated optics 8−5583
NaCl, plate, distortions due to 10.6 μm laser irrad., interferometric obs. 8−46697
$Na_2Nd_2Pb_6(PO_4)_6Cl_2$, laser material, flux growth *(French)* 8−35288
PLZT ceramics, electro-optic characts., w.r.t. future instrument applics. *(German)* 8−33792
$Pb_5Ge_3O_{11}$, Czochralski growth, secondary phase formation 8−3027
$PbHPO_4$, single cryst., growth, optical props., ferroelec. transition 8−35285
$Pb_{1-x}Hg_xS$ film, IR detector material, struct. and IR props. 8−26775
SmS film, laser beam threshold recording energy density meas. method 8−5520
SrF_2, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911
$SrTiO_3$, flame fusion growth of optical quality crysts. 8−11099
TeO_2, visible and UV refr. indices 8−19439
ZnS CVD windows for forward looking IR radar systems 8−46816
ZnS(Se), thermal expansion, 60-300K 8−33791
ZnSe, CVD, laser window material, impurity absorpt. meas. 8−25909
ZnSe, IR absorpt., temp. depend. 8−48155
ZnSe, laser window material, multiphonon absorpt. temp. depend., calorimetric meas. 8−25907
ZnSe, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911

optical microscopes
see also optical microscopy
automatic microimage analyser, MORPHOQUANT 8−37053
freeze drying microscope stages 8−45681
holographic, theory and appls., review 8−45690
holographic interferometric, for dynamic systems obs. 8−45685
holographic lens assisted system, resolution tests 8−46539

optical microscopes continued
interference microscope, VELOMET interphako, for optical path difference measurement 8−37054
IR laser and defectograph, semicond. flow detection 8−3299
laser Doppler microscopes for flow vel. meas. 8−37052
laser microbeam microscope, neuronal cell culture appl. *(German)* 8−3694
molecular microprobe, microscope system 8−45686
phase-locked interferometric, design and construction 8−45687
reflected-light microscope, optical system effect on stray image light 8−45682
scanning, contrast and resolution, nonlinear effects 8−29154
scanning, increased depth of focus using slit aperture, MTF degradation 8−45689
scanning, resolution, contrast and depth of focus improvements 8−29155
scanning and conventional imaging systems, basic equivalence 8−46534
stereophotography, using camera slit lamp, ophthalmic applications 8−48904
two-coordinate measuring microscopes development 8−21213
UV microscope for polarised light, determ. of birefringence, linear dichroism and optical rotary dispersion *(German)* 8−29152
virometer, real time virus detect. and identification in biological fluids 8−7555

optical microscopy
see also optical microscopes
Allende meteorite, occurrence of Fe-Ni-Cr-S-O compounds *(French)* 8−32411
ATP measurement in single red blood cells using firefly biolum. reaction 8−48951
automatic image analyser, performance, appls. *(German)* 8−4691
automatic image analysis, variables and errors, definition and quantitative description, nuclear carbons appl. *(German)* 8−25296
automatic structure analyser, EPIQUANT, linear anal. of histologic preparations 8−40443
brittle coating, ductility meas., four point bend test 8−48577
ceramic nuclear fuel, porosity characterization, optical and electron microscope exam. 8−44302
cinemicroscopy, beam deflection as alternative to light shuttering 8−21214
colour schlieren technique 8−29151
conference, Reston, VA., USA (Apr. 1977) 8−45683
cover-slip and mounting-slide with graticule for light microscope and SEM exam. 8−29153
dispersion staining technique for microscopical particle anal. 8−24855
existence of β to α_m phase transformation 8−44123
eyepiece graticule, for quantitative microscopy 8−37055
fluorescent microscopical technique in diagnostic microbiology 8−20339
garnet bubble materials, low loss, mag. domain wall dynamics 8−10738
graphite fibre reinforced epoxy matrix laminates, microscopical anal. 8−3288
holocamera, clinically useful, for 3-D microscopy of unanaesthetised eye 8−48863
holographic interferometric microscopy methods, for dynamic systems obs. 8−45685
imaging analysis applied to phase, schlieren and interf. microscopy 8−45688
incoherent extended object imaging by polarising microscope with crossed polarisers 8−16841
IR radiometric microscope technique for melt growth kinetics determ. 8−34453
microneurology, appl. of colour TV as surgery teaching aid 8−40396
neuronal interconnection meas., semiautomatic system design 8−44742
neutron fluence meas. using fission foils of ^{235}U, ^{238}U, ^{237}Np used for neutron fluence meas. 8−13177
optical glass containing PbO, effect of Al_2O_3/Na_2O ratio on rate of ion exchange 8−44377
petrographic method of determ. of quantitative relation between phases in microcryst. structs. 8−35608
phase microscopy techniques, review 8−45684
phase reconstruction problem 8−25811
phosphorescence microscopy of cells 8−3454
photomacrography and photomicrography, oblique transmitted light techniques 8−306
photometry of moving objects at resolution limit, theoretical considerations, exploitation in expt., stereometry 8−8441
photomicrographs, high quality image prod. 8−24881
photomicrography with colour films, colour reproduction *(German)* 8−20338
refractive index automatic profiling 8−46836
refractive index determ. of thin films by Nomarski differential interference contrast microscopy 8−24849
semimonductor dislocation Burgers vector exam., birefringence method 8−30626
small particle identification, review 8−48739
solid surface characterisation techniques, review 8−22945
specimen preparation ion beam techniques 8−24778
stearic acid, single cryst. growth mechanism 8−30562
steel, carbide cracking as source of acoustic emission 8−19872
steel, complex alloy, exam. of temper brittleness 8−44209
steel, pearlitic or spheroidal plastic deform. and fracture *(French)* 8−35448
steel-polymer wear mechanism during fretting corrosion 8−35522
stereology, quadrat choice for geometrical struct. determ. of two-phase specimen 8−12793
tooth-profile error of cylindrical gear wheels 8−168
vesicle visualisation in semi-thin sections by heat removal of epoxy resins 8−24194
Al, cavitation erosion in water flow, initial stage 8−27648
Al, fatigue crack propag., grain size effect *(Japanese)* 8−39889
Al-Cu (4.5 wt.%) alloy, controlled electropotential corrosion in NaCl soln., microstruct. exam 8−39948
Au, monodisperse sol, ordered struct. obs. 8−3384
C materials, optical microscopy, reflection, interference colours, terminology 8−42871
$CaWO_4$, crystal growth from soln. in Na_2WO_4 melts, by continuous cooling, growth kinetics exam. 8−48303

optical microscopy continued
Co-Fe (2.92 to 30.05 wt.%), determination of phase equilibrium diagram *(Japanese)* 8-48374
CuPt alloy, equiatomic, ordering processes, anisothermal annealing exam. *(Japanese)* 8-39765
Fe, atomically clean, N_2 treatment, corrosion inhibition 8-19954
α-Fe, cold rolled, hydrostatic press. effect on microstructural changes during creep 8-39871
α-Fe, exam. of structural defects due to shock waves, and induced hardness 8-48427
Fe-Ni-C (19 to 30, 0.04 to 0.8 wt.%) alloys, transformation of martensite in austenite, optical and electron microscopic exam. *(Russian)* 8-35382
Fe-Ni-C (19.5, 0.73 wt.%), banded struct. formed by deform., TEM and optical obs. 8-39869
Fe-WO_3 system, struct. phase exam. by optical microscopy and X-ray diffr. 8-31389
$Fe_{80}B_{20}$, amorphous, crystallization 8-42917
GaSe, basal plane orientation determ. in vertical Bridgman grown single crysts. 8-19658
Ge-Te, exam. of new compound, using light microscopy and X-ray diffr. exam. 8-48383
$K_2Cr_2O_7$, thermal props. thermal anal. and X-ray diffr. obs. 8-30752
NH_4Cl, order-disorder transition, slip bands 8-22848
$Na_2Mg_6Si_8O_{22}F_2$, fluoramphibole, fibrous, crystn. from gas phase, mechanism 8-34451
SiC, reaction bonded, microstruct. characterisation 8-48353
Y_2O_3 film in Y-Y_2O_3-Au junction, defect struct. and local conduction 8-26970
ZnS, crystal, layered struct. microscopic observations *(Japanese)* 8-38725
ZnS vapour grown crystals, morphology and structure 8-42937
Zr, creep, optical and electron metallographic anal., 473 to 873K 8-39986

optical model (nuclear) *see nuclear optical model*

optical modulation
acoustic sensor, single optical fibre interferometric 8-38161
acousto-optic bulk interactions in thin film waveguides, for GHz modulators 8-42471
acousto-optic modulator, improved contrast using spatial filtering 8-9448
acousto-optic modulator, wide bandwidth, design procedure 8-5569
acousto-optic modulators, nonreciprocal transmission phenomena 8-33898
acousto-optical modulator for laser beam position sensor 8-46705
active feedback optical processor, using coherent source and liq. cryst. light valves, design 8-22204
angle modulated optical signals, parameter meas. *(Russian)* 8-37047
angular displacement meas. by photoelec. amplitude-phase modulation method 8-16774
birefringence modulator devices for sensitive polarisation determ. 8-8437
bistable optical devices 8-46763
chirp reversal, optical integration in degenerate four-wave mixing 8-46730
coherent-radiation spectral power density unit reproduction, USSR standard 8-37957
coupled waveguide modulator with pn-junction, strip loaded channel waveguide, design 8-46843
coupled-waveguide optical modulators *(Japanese)* 8-46789
directional coupler switch, electrooptic, used as amplitude modulator, exam. 8-42467
displacement meas. by interferometers with electro-optical modulators *(Russian)* 8-12667
Doppler frequency discriminator applic. in laser velocimeter 8-26220
dye laser 5890 Å CW output, temporal compression using Na vapour delay line 8-46688
efficient intensity modulator 8-22190
electro-optic thin film periodic waveguide switch and amplitude modulators anal. 8-22215
electro-optical active components for guided light 8-42470
electro-optical crystals, space-time light modulation 8-18056
electro-optical modulator use in or outside cavity for laser freq. shifting or stabilisation 8-5512
electromechanical modulator with synchronous motor 8-13806
electrooptic analogue-digital conversion, using channel waveguide modulators 8-38051
ellipsometry, wavelength-scanning polarisation-modulation, practical considerations 8-41343
ellipsometry, wavelength-scanning polarisation-modulation, sample imperfection effect 8-24845
emissivity, measurement for low temp. sources, flux double modulation method 8-45634
Fabry-Perot non-linear optic media devices, instability and regenerative pulsation phenomena 8-46685
Faraday rotator and modulator, IR, CaVG polycryst. appl. 8-10900
ferromagnetic medium, magnetised, unattenuated refracted wave propag., optical modulation appl. *(Russian)* 8-25774
fibre communication technology, state of art *(Czech)* 8-5575
fibre material dispersion meas. by baseband modulated envelope detection 8-1368
fibre waveguide, transmission characts. of microwave-modulated radiation 8-25985
frequency chirped pulse compression using phonon-polariton propag. modes 8-46689
gas laser, degree of excitation determ. 8-1285
gas laser radiation, internal modulation by acoustic surface waves 8-25901
hologram electronic heterodyne recording and processing using phase modulated reference waves 8-46537
image processing by spatial freq. spectrum phase modulation *(Korean)* 8-22090
injection lasers operated with HF modulation, intensity fluctuations calc. 8-22123
integrated electro-optical A/D convertor, using branching waveguide modulator channels 8-42474
integrated optical logic circuits, using electrooptic switches and modulators 8-38089
integrated optics and guided wave devices, review 8-42468
interferometry, 10 μm, linear phase restitution *(French)* 8-12749

optical modulation continued
interferometry, phase modulation, expt. process to restore phase sign and value 8-32869
laser, acousto-optical at microwave frequencies 8-1282
laser beam wavelength, automatic reading by wavelength-modulation technique *(Japanese)* 8-1286
laser cavity dumping using antiresonant ring and electrooptic phase modulator 8-17980
laser diode modulator using current switching bipolar transistors 8-1288
laser frequency modulation, single-mode 8-13737
laser passive mode-locking and Q-switching with optical Kerr effect modulator 8-9403
laser pulse generation and modulation devices 8-25899
lens centring error tolerance study *(German)* 8-33806
light-controlled light modulator, fast resonantly enhanced, for laser beam modulation 8-5509
liquid crystal as IR modulator 8-25970
liquid crystal light valve operation and appls. 8-46826
Mach-Zehnder interferometer, switch, integrated optical format 8-38084
mechanical light modulator, harmonic anal. of noise spectrum 8-1362
micromechanical light modulator array fabricated on Si, laser display appls. 8-9433
micromechanical light modulator array fabricated on Si 8-1433
microoptical switch, Mach Zehnder interferometer, for use with optical fibre transmission lines, exam. 8-38085
microwave holographic imaging through aberrating media with phase-modulated ref. beam 8-42303
microwave modulated laser velocimeter for meas. speed of diffusely refl. objects 8-4599
modulator freq. response calibration, signal level control appl. 8-33833
multimode electro-optic guiding for single fibre data links, system design 8-38065
multimode optical fibre incoherent chirp pulse transmission 8-1374
Nd laser, ns pulse length continuous control, appl. to Nd laser 8-1280
noise immunity of optical signal reception with unstable modulator characts. 8-46690
nonlinear Fabry Perot devices, integrated optic format 8-38087
optoelectronic devices, lecture 8-25990
photoresist film, negative, index and surface simultaneous modulation 8-37951
polarisation scrambling using photoelastic modulator, appl. to linear dichroism meas. 8-4683
polarization modulated light, freq. mixing detection using periodic analyzers 8-5433
pulse interval modulation semiconductor laser communication system 8-9331
ring laser, CW oscillation in presence of passive medium, stability 8-37913
SAW acousto-optical light diffraction grating, gas laser tuning *(Russian)* 8-33759
schlieren system, phase object projection, imaging characts., recording conditions 8-25977
selective modulation radiometer for gaseous pollutant remote sensing *(French)* 8-20550
semiconductor laser direct PCM improvement by optical feedback 8-1287
semiconductor sheet, free carrier confinement for IR modulation 8-25969
semiconductor stripe laser high-speed modulation, noise, and nearfield meas. *(German)* 8-37923
semiconductor thin film waveguides, radiation modulation by stationary phase gratings *(Russian)* 8-22209
semiconductor waveguide switches, and modulators, review of development progress 8-38045
semileaky thin-film optical waveguides, guided-radiation mode coupling analysis 8-1372
sensitivity of optical metrology using time modulation, electronically generated limitation 8-16828
slip-ring for transmission of transducer signals 8-13814
solid laser array spatially-coherent beam formation and mode locking 8-37898
surface acoustooptic interaction for information processing 8-42461
surface wave acousto-optical modulator, for optical link 8-38040
switch/modulator, optically activated, using photoconductor and two channel waveguides 8-1437
turbulent atmosphere, optical DPSK system performance 8-42293
vibration-induced modulation in bent optical fibre waveguide 8-1405
$Al_yGa_{1-y}As$-$Al_xGa_{1-x}As$, electrooptic rib waveguide modulators and switches 8-38046
$Al_yGa_{1-y}As_{1-x}Sb_x/GaAs_{1-x'}Sb_{x'}$, buried heterojunction electroabsorption modulator, report of operation 8-38044
CO_2 laser, Stark effect modulation by iodomethane 8-17992
CO_2 laser, vibr. energy transfer by current modulation 8-1204
CO_2 laser modulation Si diode characteristics 8-42364
CO_2 laser self-modulation by means of nonlinear absorbing filters, anal. 8-37925
CdS, fast optically controlled modulator using two-photon magnetoabsorpt., for CO_2 laser 8-13736
$CsCuCl_3$, optical props. rel. to IR electro-optical modulator appl. 8-42393
GaAS-$Al_xGa_{1-x}As$, DH laser and modulation developments *(German)* 8-37903
GaAlAs DHS laser, direct modulated from 260 Mbit/s to 1.4 Gbit/s, monomode operation 8-46601
GaAs DH injection laser, modulation behaviour, appl. in high bit-rate fibre optical communications 8-1281
GaAs DH laser, high speed direct modulation, multimode operation effects 8-13738
GaAs laser diode, for optical communication systems *(German)* 8-37919
GaAs-$Al_xGa_{1-x}As$, single-mode rib waveguide switches electro-optical modulation 8-46839
GaAs-$Al_xGa_{1-x}As$ buried-heterostructure laser, wideband optical sources *(German)* 8-37904
GaAs-$Al_xGa_{1-x}As$ DH laser, modulation with coherent light injection *(German)* 8-37922
GaAs-$Al_xGa_{1-x}As$ injection laser, direct modulation and spectral props. *(German)* 8-37921

- **optical modulation** continued
  - GaP acoustooptic pulse modulator 8−46814
  - GaP-Al$_x$Ga$_{1-x}$P, DH electrooptical strip modulator *(Russian)* 8−1344
  - p-Ge, broadband modulation of 3 μm light by 10 μm light 8−42389
  - p-Ge sheet, free carrier confinement for IR modulation 8−25969
  - He-Ne laser, optical heterodyning of spontaneous emission 8−29995
  - InGaAsP-InP DH lasers, direct modulation 8−42363
  - In$_2$O$_3$:Sn film, electroreflectance effect, theory and expt. 8−6800
  - KD$_2$PO$_4$, cryst. high-freq. modulation in Pockels cell, acoustic phenomena 8−1336
  - KD$_2$PO4 transmission line Pockels cells, optical rise time meas. 8−46778
  - KH$_2$PO$_4$, cryst. high-freq. modulation in Pockels cell, acoustic phenomena 8−1336
  - KH$_2$PO$_4$, KD$_2$ PO$_4$ crystals used for laser control, acoustic vibr. suppression 8−1363
  - LiNbO$_3$ electrooptic light modulator 8−1349
  - LiNbO$_3$ planar waveguide, light beam switching and modulation using built-in dielec. channel 8−46840
  - LiNbO$_3$:Ti, electrooptical modulator and switch *(French)* 8−30074
  - LiNbO$_3$-Ge, acoustooptic modulator for CO$_2$ lasers 8−42365
  - NH$_4$H$_2$PO$_4$, total internal refl. diffr.-type modulator as laser cavity switch 8−5511
  - Nd:YAG actively mode-locked laser, short pulse generation for laser fusion 8−9404
  - PLZT ceramic, optical gate, dielec., optical props., electro-optical effect meas. 8−42418
  - PLZT transparent ceramic laser modulator *(German)* 8−5553
  - ZnS leaky waveguide electro-optic modulator limitations 8−22218
- **optical modulators** *see modulators; optical modulation*
- **optical noise measurement**
  - avalanche photodiode receiver sensitivity, specification and testing *(German)* 8−38015
  - semiconductor stripe laser high-speed modulation, noise, and nearfield meas. *(German)* 8−37923
- **optical parametric amplifiers**
  - brightness standard, use of vac. fluctuations 8−13759
  - fixed intensity approximation *(Russian)* 8−9410
  - inhomogeneous media, efficiency of freq. conversion processes 8−30024
  - lithium formate crystal, optical phase configuration 8−5524
  - picosecond parametric light source, narrow output spectrum, high pulse rate 8−33780
  - ps light pulse length determ. by parametric amplification in nonlinear crysts. 8−1306
  - quantum statistical properties, amplification and generation 8−46717
  - LiNbO$_3$, two properly aligned crysts., narrow-band tunable IR pulse prod. 8−42382
- **optical parametric devices**
  - *see also optical parametric amplifiers; optical parametric oscillators*
  - image convertor with freq. rise, phase aberrations *(Russian)* 8−9455
  - image upconvertors, matrix method for anal. 8−46727
  - internal CW parametric upconversion using Ar laser and LiNbO$_3$ 8−42376
- **optical parametric oscillators**
  - *see also lasers*
  - doubly resonant 4-photon-oscillator, phasemismatching and double refr., threshold pump power *(German)* 8−22166
  - four-wave mixing, resonantly enhanced, pump intensity requirement 8−9412
  - intracavity polariton parametric oscill., stimulated Raman emission 8−30026
  - laser oscillator bandwidth, role of spontaneous emission, teaching 8−41114
  - single cavity, energy characts. at strong absorpt. of nonresonant waves *(Russian)* 8−13754
  - tunable picosecond pulse generation 8−22169
  - Ag$_3$AsS$_3$, proustite, multistage conversion of pump energy into low-freq. radiation 8−30022
  - LiIO$_3$, multistage conversion of pump energy into low-freq. radiation 8−30022
  - LiIO$_3$, stimulated Raman scatt. competition 8−18016
  - LiNbO$_3$, multistage conversion of pump energy into low-freq. radiation 8−30022
  - LiNbO$_3$/CdSe system, 16 μm tunable source 8−9414
- **optical prisms**
  - achromatism of optical wedge of holographic elements *(Russian)* 8−13787
  - alignment testing in converging beams 8−30044
  - beam expander for dye laser, dispersion 8−17968
  - deviation prism interferometric testing 8−30095
  - fibre transmission system filtering prism *(Japanese)* 8−9441
  - glass prism compact structure producing optical delay, laser pulse duration meas. 8−46702
  - laser absorption spectroscopy with ATR plates for biomed. use *(German)* 8−36084
  - monochromator, Littrow prism, wavelength calibration 8−25950
  - multiple prism beam expander for short-cavity dye laser 8−1250
  - plastic optical components and systems 8−25967
  - refractive index meas. using critical angle method 8−30071
  - refractometer, PR2 Pulfrich, prism developments 8−24848
  - spectroscopy, resonant internal-refl. prism, using surface, guided and Fabry-Perot EM waves 8−41358
  - surface EM wave coupling efficiency, prism gap height depend. 8−33914
  - triple frame camera, with beam-splitting prism 8−37097
  - wedge compensator for automatic control system 8−13808
  - CaCO$_3$, Iceland spar, polarizing prism, struct. defects effect 8−18065
  - GaAs laser array to channel groove waveguide coupling prism 8−38067
- **optical projectors**
  - holographic, small formal hologram to large-screen projection appl. *(Russian)* 8−29918
  - light valve projection systems classification 8−33812
  - liquid crystal light valve operation and appls. 8−46826
  - multispectral projector, colour synthesis instrument for evaluating multispectral photographs 8−40688
  - optical image immobiliser, Hollogon Skanner, cinematography appl. 8−37087
  - polymer, composition coatings for rubbing mechanisms 8−29198
- **optical projectors** continued
  - Schlieren, phase image reflection, coherent light source *(Russian)* 8−38025
  - schlieren system, phase object projection, imaging characts., recording conditions 8−25977
- **optical properties of substances**
  - *see also acousto-optical effects; birefringence; brightness; cathodochromism; colour; dichroism; dielectric function; electro-optical effects; electrochromism; magneto-optical effects; optical constants; optical Kerr effect; optical rotation; optical saturation; optical susceptibility; photochromism; piezo-optical effects; pleochroism; reflectivity; thermo-optical effects*
  - amber, natural, optical strength and laser induced rupturing 8−7039
  - benzene, soln., light deflection, near crit. point, due to gravitational effect 8−2818
  - liquid crystal, lecture on optical props. 8−35118
  - microwave radiation, kinetic theory of interaction with diatomic gas, j=0, j=1 transitions 8−9750
  - microwave radiation, kinetic theory of interaction with polyatomic gas 8−9749
  - photon kinetic equation for Doppler line broadening, soln. 8−9751
  - quartz:Ge, optical and piezoelectric props., ang. distrib. *(Russian)* 8−23404
  - As-S amorphous film, photo-induced optical changes, annealing effect 8−27345
  - GaAs, optical cond. of free carriers 8−19436
- **optical pumping**
  - *see also lasers; multiphoton spectra*
  - active mirror and disc amplifiers, laser glasses, physical props. 8−42337
  - alkali atom+alkali atom, laser-induced ionis. collisions 8−5333
  - anharmonic molecules, vibr. relax. under strongly pumped conditions, anal. theory 8−5328
  - atom, gaseous, ground and excited states, review *(Japanese)* 8−25489
  - atomic gas, laser irrad., field avoided crossings, new transition channels 8−33477
  - atomic three-level system, interaction with pump fields 8−33718
  - atoms, optimum excitation *(Russian)* 8−13474
  - atoms, strongly driven by laser, emission spectra 8−42017
  - chloromethane-d$_3$, and isotopic forms, optically pumped mm laser transition assignments, 792 micron line 8−42328
  - commercial dye laser design and pumping configurations 8−25889
  - coumarin dye laser, flashlamp-pumped, picosecond pulses at 520 nm *(French)* 8−42335
  - cyanine dye laser excitation by giant single pulses *(Russian)* 8−46596
  - 1,1-difluoroethylene, complete freq. coverage for submm. laser spectroscopy 8−25860
  - 1,1-difluoroethylene, optically pumped mm laser transition assignments 8−42328
  - difluoroethylene, submm. wave amplification 8−29941
  - doubly resonant 4-photon-oscillator, phasemismatching and double refr., threshold pump power *(German)* 8−22166
  - dye, excited singlet-state absorpt. effect on lasing 8−17930
  - dye, lasing and amplified spontaneous emission on excitation by high-power N$_2$ laser *(Russian)* 8−25869
  - dye DFB laser, N$_2$ laser pumped, external mirror effect on characts. 8−42352
  - dye IR laser, Nd:YAG laser pumped, continuously tunable 10810 to 12160 Å 8−22139
  - dye laser, actively mode-locked, flashlamp pumped, streak camera obs. of pulses 8−22158
  - dye laser, by N$_2$ laser, spectral narrowing 8−25903
  - dye laser, by wall ablation lamps, high energy design 8−29961
  - dye laser, flashlamp pumped, injection locking without longit. mode matching 8−33760
  - dye laser, flashlamp pumping 8−29970
  - dye laser, power scaling effects under high power laser excitation 8−46595
  - dye laser, Xe ion laser pumped, tunable output in blue region 8−46621
  - far IR CW lasers, optically pumped, review 8−46588
  - far IR pulsed lasers 8−46589
  - flash lamp high-power radiation for laser pumping, interaction with cooling fluid 8−13718
  - fluoromethane, and other optically pumped lasers, dynamic Stark effect 8−17911
  - fluoromethane, laser pumped, overtone fluoresc., intermode energy flow 8−37673
  - fluoromethane, single-mode optical pumping, superradiant far IR emission 8−42329
  - gas laser, two-photon spatially periodic pumping, excitation threshold and output power *(Russian)* 8−13693
  - N-heterocyclics, radiationless transitions, vibronic coupling effect 8−33543
  - iodomethane, and deuterated, submm. wave amplification 8−29941
  - IR active molecules, homogeneous excitation by laser pulses 8−9202
  - isotope separation, by selective laser-induced mol. vibr. excitation effect on reaction kinetics 8−33627
  - jet stream dye laser, mode locked synchronous pumping, near IR ps pulses 8−17948
  - laminated active laser element, thermal stresses produced by longit. nonuniform pumping *(Russian)* 8−5474
  - laser dyes, inert gas halide laser pumped, photochem. stability 8−33733
  - laser pumping by pulsed lamp *(Russian)* 8−22138
  - laser-excited atoms deflection by elec. field, isotope separation appl. 8−955
  - methanol, far IR laser lines pumped by CO$_2$ laser sequence lines 8−9369
  - methanol, far IR laser transitions, small signal gain meas. 8−22114
  - methanol, submm. wave amplification 8−29941
  - methyl alcohol, and deuterated forms, complete freq. coverage for submm. laser spectroscopy 8−25860
  - methyl chloride, far IR laser lines, vibr. isotopic shift value 8−42055
  - methyl fluoride, stimulated emission at 9.75 μm following two-photon excitation 8−42323
  - millimetric-wave high-power optically-pumped laser performance and applic. 8−5469
  - millimetric-wave optically-pumped laser CW performance 8−5468
  - molecular excitation, laser induced, effect of chem. reactions 8−21979

optical pumping continued
molecular gas, laser irrad., field avoided crossings, new transition channels 8−33477
molecular laser development 8−13732
molecular lasers, 11-17 μm 8−46581
molecule, collision-induced emission with laser irrad., cooperative chemical and optical pumping 8−22012
molecule, spherical-top, rot.-vibr. transition moments in excited states 8−25639
multi-level excitation theory, analytic approximations 8−29922
multilevel system, band type, excitation dynamics in laser field *(Russian)* 8−21980
N-level system in strong monochromatic field 8−29923
pentacene, narrow band laser excitation, fluoresc. decay, optical free induction, dipole moment 8−21956
polyatomic molecule, multiphoton excitation from many rot. states by IR laser pulse 8−21986
positive ions, RF spectroscopy, using optical pumping, review 8−1107
pulse gas-discharge lamp appl. to optical pumping of YAG:Nd laser *(Bulgarian)* 8−33795
rhodamine 6G laser, short-cavity, excited by electron beam pumped CdS laser 8−25887
roto-vibrational molecular laser, optically pumped, rate eqn. model 8−37874
ruby CW laser, pumping by Ar ion laser 8−1253
semiconductor, saturated, dielectric response 8−10384
six-level model, triplet-triplet pumping 8−25870
small molecule, IR laser induced collisional pumping 8−25630
small molecule IR laser induced collisional pumping 8−25629
spectrometer, two-photon, based on flashlamp-pumped dye lasers 8−16860
submillimetre, optically pumped lasers 8−46587
submillimetre laser, two-photon transitions 8−22112
superconductivity destruction by optical pumping, theory 8−47905
three-level atom, multiphoton absorpt., finite bandwidth laser influence 8−25841
two-level system, adiabatic rapid passage, narrow IR saturation resons., book contrib. 8−9419
upconversion with stochastic pumping, photon statistics 8−22168
waveguide gas lasers 8−5490
α-Al_2O_3:Cr^{3+}, electronic Raman transition from optically pumped excited state 8−39531
Ba, diamagnetic Zeeman effect, 20-40 kG, induced config. mixing 8−17608
Ba II resonance level lifetime meas. by pulsed laser excitation of ion beam 8−25480
Ba^+, optical pumping and saturable absorpt. of fast ion beam superimposed on continuous laser beam *(French)* 8−5179
Br_2, optically pumped laser, operation 8−25858
CO_2, optical pumping in stimulated Raman scatt., tunable laser emitting at 14,16 μm, theory 8−46568
CO_2, pure and CO_2-He mixture, optically pumped continuously tunable lasers 8−13678
CS_2, fluorescence due to laser excitation, Hanle effect 8−25628
Cl_2, resonance fluoresc. by Ar ion laser excitation 8−42122
Cs isotopes, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
Cs+Cs^+, charge exchange cross-section, temp. depend. 8−9244
Cs_2+He(Ne)(Ar)(Kr)(N_2)(CH_4), collision-induced dissoc., atom-mol.-exchange optical pumping 8−22008
Cs*($6D_{3/2}$)+Cs($6S_{1/2}$), preferential excitation transfer from laser populated state 8−37732
D_2O laser, superradiant line obs., 235, 280, 97 and 98 μm 8−1215
D_2O oscillator, zigzag pumped, superradiant 66 μ emission 8−33743
D_2O, single-mode optical pumping, superradiant far IR emission 8−42329
GaAs, DFB laser, with two-dimens. Bragg reflectors 8−1252
GaAs, low-temp. absorption spectrum in presence of optical pumping 8−15188
GaAs, optically pumped, absorption spectrum, band filling, hot electron effects 8−31199
GaN, stimulated emission under high one and two quantum excitation 8−35171
H, ionisation threshold for excited states in uniform elec. field 8−37607
HF, IR laser induced collisional pumping 8−25629
HF, IR laser induced collisional pumping 8−25630
He+water (cyanomethane), afterglow, excitation and quenching reactions, optical pumping 8−35690
^{3}He, optically oriented nuclei, in two-chamber cell, NMR linewidth obs. 8−17591
^{3}He, optically oriented nuclei, maser excitation and characts., appls. 8−17891
^{3}He, optically oriented nuclei, in two-chamber cell, spin maser appls. 8−17892
Hg_2, optical pumping, continuous emission obs. 8−5296
$^{199}Hg^+$ isolated ions, mag. hyperfine spectrum 8−29760
Ho:$LiYF_4$, 750 nm laser oscill., flashlamp and dye laser pumping 8−9386
Ho^{3+}:YAG, 2.09 μm stimulated emission, resonant pumping by Nd laser 8−17944
K_2, optically pumped, relax. in at. collisions 8−17765
Li seeded in acetylene-air flame, optoacoustic pulses, energy transfer from laser excited atoms 8−25490
NH_3, high power pulse laser pumped optically by CO_2 laser radiation 8−46631
NH_3 laser, 12.08 μm emission, CO_2 laser pumped, temp. depend. 8−46582
NH_3 laser, compact, high-efficiency optically pumped 8−5492
$^{15}NH_3$, optically pumped by CW sequence band CO_2 laser, far IR laser emission 8−46578
N_2O-CO_2, optically pumped transfer lasers, continuously tunable 8−13678
Na, excited state photon echo relax. 8−37606
Na, Lorentzian power broadening by optical pumping 8−17613
Na, optical pumping, Hanle effect 8−33475
Na, population change induced by laser radiation, hook method 8−33476
Na seeded in acetylene-air flame, optoacoustic pulses, energy transfer from laser excited atoms 8−25490

optical pumping continued
Na, spin polarisation in flames by optical pumping, mag. reson. transitions 8−29762
^{23}Na, ground state g_j factor, meas. from weak-field Zeeman spectra 8−33469
Nd compounds, diode pumped miniature laser 8−9392
Nd:$CaY_3Mg_2Ge_3O_{12}$, CAMGAR low threshold CW room temp. laser operation at 0.941 μm 8−1234
Nd:YAG fibre laser, self-contained LED-pumped single-crystal 8−1264
Nd:YAG solar pumped laser for space communications 8−46645
Nd:YAG space laser communication system, K-Rb arc lamp pump 8−46646
Ne, $1s_5$, depopulation effects, dye laser fluoresc. obs. *(French)* 8−41996
Ne, optical pumping of metastable ($2p^53s^3P_0$) state 8−25486
OH ($A^2\Sigma^+$)+H_2(N_2)(Ar), collisionally induced population change rates, laser-induced fluoresc. obs. 8−5326
OH, NO, NO^+, inverted populations due to moving bodies and ejected gas, upper atm. 8−32265
Rb isotopes, short-lived, determ. of nucl. spins by β radiation detected optical pumping 8−37262
Rb+Xe, interatomic spectrum, theoret. and exptl. obs. 8−9112
^{87}Rb resonant frequency change, due to spectral profile of pumping light 8−45590
SF_6, collisionless fluoresc., 16 μm, following laser pumping, vibr. quasi-continuum 8−42111
SF_6, inhibition of homogeneous condensation by vibr. excitation, isotope separation appl. 8−37688
SF_6, multiphoton pathways, rot.-vibr. transition moments in excited states 8−25639
SF_6, vibrational-translational relaxation, depend. on intensity of selective laser excitation *(Russian)* 8−9235
SF_6Ar, multiple photon excitation, saturation and linear absorpt., pulsed optoacoustic detect. 8−42148
Sr, autoionising doubly excited Rydberg states 8−33479
Sr II, resonance level lifetime meas. by pulsed laser excitation of ion beam 8−25480
Tm^{3+}:YAG, 2.014 μm, stimulated emission, resonant pumping by Nd laser 8−17944
XeF* and other rare gas excited complexes, optical excitation device 8−13629
YVO_4:Nd, stimulated emission cross-sections at 1064 and 1342 nm 8−39575

optical quantum generators *see lasers*

optical radar
see also remote sensing by laser beam
aerosol measurements with calibrated two- and three-freq. lidars 8−36334
airborne lidar, continuous long-distance system, flight tests *(German)* 8−36338
airborne lidar, multidisciplinary, planned operation 8−36335
analogue computing, past, present and future 8−46531
atmopsheric scattering of lidar pulses, four-component polarisation meas. 8−44996
atmosphere observations at Kingston, Jamaica, using lidar system 8−36284
atmospheric multiple backscatt. and depolarisation obs. 8−36292
ceilometer using low-power laser radar 8−24390
containerisation of heavy lidar system for environmental protection control 8−36336
differential absorption CO_2 lidar, for ethylene remote meas. 8−49122
differential absorption lidar from Space Shuttle, for atm. trace constituents meas. 8−45179
differential lidar system, alternate-pulse wavelength switching of dye laser 8−25890
dye laser differential lidar for atm. SO_2 and NO_2 conc. meas. 8−32250
echo-signal calc. allowing for multiple scattering from cloud *(Russian)* 8−49137
forward looking IR radar system, effect of ZnS CVD windows 8−46816
geometrical form factors for lidar function, atm. backscatt. 8−37936
hydrometeor backscattering cross sections, meas. at 6328 Å 8−49135
IR extinction meas. using lidar, with CO_2 laser radiation 8−40655
JROE II LIDAR, meteorological instrument, atmospheric gas component measurements *(Italian)* 8−3957
laser satellite-tracking, Ondrejov station site evaluation 8−36418
lidar, continuous wave, atmospheric visibility meas. 8−40651
lidar observation of smoke and dust clouds, at 0.7 μm, 10.6 μm 8−49181
lidar observations of high plains thunderstorm precipitation 8−32167
LIDAR observations of plume diffusion at Rancho Seco Generating Station 8−11991
lidar Raman spectroscopy of atmosphere *(Russian)* 8−24387
long range injection laser radar 8−5549
multiple atmospheric parameter meas. laser radar system 8−4009
oil spills remote detection using laser-excited Raman backscatt. and backscatt. fluoresc. 8−32242
oil water pollution detect. using scanning lidar system *(Russian)* 8−32123
photocounting radar analysis, optimum photon detect. 8−27956
pulsed laser rangefinder using CO_2 TEA laser 8−46760
pulsed ranging, meas. accuracy improvement 8−25951
Raman lidar for quantitative pollutant meas. from stationary source 8−36291
S/N ratio statistics, signals with specific energy and var. duration 8−17866
stack plume obs. by laser radar *(Japanese)* 8−11990
stratosphere, O_3 vertical profile determ. by lidar sounding from ground 8−11972
theory and methods for atmospheric composition meas. *(Japanese)* 8−16206
turbulence compensating tracking system, lead angle effects 8−33763
visibility measurements, atmosphere extinction coeff. extraction accuracy 8−24369
Na, K, mesospheric abundances, simultaneous nighttime lidar meas. 8−36239

optical resolving power
see also optical instrument testing
apodisation for max. Strehl ratio and specified Rayleigh limit of resolution 8−5425
butt-joined fibre component combination, resolution 8−30079
camera, remote sensing, film and solid-state-array types comparison w.r.t. imagery 8−4723
coherent light observation, resolvable degrees of freedom 8−13666
coherent optical system, resolving power enhancement by aperture synthesis 8−25987
electron micrograph, image processing systems, random noise removal 8−12791
fibre near-field scanning technique resolution limit *(German)* 8−33856
Fourier transform hologram spectrograph, parameters 8−37858
holographic microscopy, lens assisted system, resolution tests 8−46539
image formation, super-resolution derivation by analytical continuation methods 8−29915
Large Infrared Telescope on Spacelab 8−12070
mammographic X-ray screen sensitivity and resolution 8−7449
phase angle effect on resolution of two coherently illuminated points 8−33683
phase contrast objective, point spread functions of annular phase filters 8−25805
polarimeter, precision, systematic errors, instrumental errors *(German)* 8−272
random medium, image resolution limitation 8−37813
scanning microscope, contrast and resolution 8−29154
telescope, weak object image distorted by atm. effect, restoration possibility *(Russian)* 8−32349
telescope with severe aberration, MTF for speckle interferometry 8−12103
toroidal diffraction grating, monochromatic image of entrance slit, form., theory *(Russian)* 8−12770
two-frequency microwave holographic imaging with axial resolution 8−1184

optical rotation
see also Faraday effect; Kerr magneto-optical effect; rotational isomerism
4-n-alkoxybenzylidene-4′-methylalkylanilines, chiral nematic cryst., mesorphic behaviour and binary systems 8−2000
amino acid racemization, appl. to geochronology and geothermometry 8−20341
biopolymers, studied by circular dichroism and optical rot., review 8−44457
chiral molecules, averaged discriminatory interactions, chem. effects 8−13562
chiral molecules containing ^{57}Fe, Mossbauer expts., optical activity analogy 8−27124
cholesteric liquid crystal, influence of orientational order 8−42900
cholesteric liquid crystal, microstruct. rel. to optical props. 8−47240
cholesteric liquid crystal, optical rotatory power using multiple scaling 8−27176
cholesteric liquid crystal film, optical rotating power near cholesteric to smectic A transition 8−10865
cholesteric liquid crystals, gyrotropy, region of electron absorption bands 8−10866
crystal, anisotropic, circ. dichroism, modulated polaris. spectra 8−23429
electrogyration rel. to birefr. 8−27190
enantiomeric compounds, optical purity, prod. by β-decay 8−40459
ethylene, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
fibre waveguide, Brillouin and Rayleigh scatt. meas. 8−30085
L(+) glutamic acid halogen acid salts, crystallographic, optical and calorimetric meas., halide effect 8−34505
homogeneous wave energy flux under conical refraction and induced gyrotropy 8−17861
inhomogeneous birefringent optically active medium, polarisation evolution 8−9328
lactams, optical rot. strength, sector rules 8−17737
lactones, optical rot. strength, sector rules 8−17737
lens-mirror reflector system, optical rotation multiplier *(Russian)* 8−46745
mesogens, chiral, liq. cryst. phase transition temp. 8−2241
molecular crystal symmetry props. from optical activity and gyrotropic birefringence calc. *(French)* 8−42941
molecular crystals, self-induced nonlinear optical rotation 8−1308
molecules, optically active, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
nematic liquid crystals, mixtures with optically active substances, stable inhomogeneities and diffr. gratings 8−1988
peptides, optical rot. strength, sector rules 8−17737
poly L-lysine, temp. induced conformation transition in solns., optical rotary meas. 8−46474
polydisperse system, rotatory diffusion const., electro- optic decay curve, size distrib. 8−20079
polymer, optically active stereoregular, conform. props., rel. to config. 8−33644
Q-switched pulse stretching by intracavity nonlinear ellipse rot. 8−17991
QED theory of differential scatt., Rayleigh scatt. of circularly polarised light, two chromophores model 8−9157
Raman spectroscopy, recent advances, reivew 8−41359
single-mode fibre birefringence and optical activity obs. 8−1394
Sodium ammonium tartrate, L- and D-mol. energy difference, parity violation 8−25744
sugars, detect. in HPLC systems using polarimetry, refractometry and optical rot. 8−48734
tunnel centres, resonant optical orientation, kinetic eqn. *(Russian)* 8−43911
two-level system, optical rotary saturation 8−13770
UV microscope for polarised light, determ. of birefringence, linear dichroism and optical rotary dispersion *(German)* 8−29152
Bi, parity non-conserving optical rot., Weinberg-Salam relativistic central field theory vs. obs. 8−953
Bi, parity nonconserving optical rot. upper limit, obs. vs. Weinberg-Salam theory 8−952
CdP_2, birefringence and optical activity 8−15143
p-CdP_2, Faraday rot., inherent optical activity dispersion *(Russian)* 8−35119

optical rotation continued
CdS, spontaneous optical activity in exciton spectrum *(Russian)* 8−35167
$CsCuCl_3$, optical props. rel. to IR electro-optical modulator appl. 8−42393
H_2O_2, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
$LiNbO_3$, hologram, light diffr. with electro-optical rot. *(Russian)* 8−1190
$NaBrO_3$, cryst. chirality and optical rotation sense 8−10026
$NaBrO_3$, optically active, crystal atomic struct. remeas. 8−10009
$NaClO_3$, cryst. chirality and optical rotation sense 8−10026
$NaClO_3$, optically active, crystal atomic struct. remeas. 8−10009
$(Pb_xBa_{1-x})_5Ge_3O_{11}$, electrogyration, and dielectric props. 8−19444
$Pb_5Ge_3O_{11}$, uniaxial ferroelectric, optical activity dispersion 8−48141
Si, X-ray rot. polarisation, absorpt. crystal orientation effects 8−47206
ZnP_2, birefringence and optical activity, dispersion 8−2821

optical saturable absorption
$^1\Sigma$ state, anomalous Zeeman effect, Doppler-free standing wave saturated resonance, book contrib. 8−9279
atomic collisions, vel. changing, saturation spectroscopy, internal coherences 8−42245
1,1-difluoroethane, high intensity transmission characts., for possible appl. in CO_2 amplifier gain isolation 8−42387
1,2-difluoroethylene, high intensity transmission characts., for possible appl. in CO_2 amplifier gain isolation 8−42387
Doppler-free two photon and saturation spectroscopy, using thermionic detector 8−46465
enhanced photon bunching from saturable absorber 8−37948
fluoremethane, saturable absorpt. of CO_2 laser radiation, theory 8−37946
gas isolator mixes for CO_2 laser system 8−46663
homogeneously broadened transition, shape of absorpt. line *(Russian)* 8−46729
iodomethane-d_3, ν_2 band, laser Stark saturation spectra 8−42125
laser multipass power amplifier stabilisation in CO_2 system 8−46664
laser power amplifier stabilisation by saturable absorbers, eight-beam CO_2 system 8−46619
methyl fluoride, passive Q-switching of CO_2 laser 8−9402
molecule, optical transient signals, saturation dips 8−18020
Na-coloured intracavity flame, in dye laser, mode competition 8−46594
optical feedback effects on saturated absorpt. signals, suppression by phase modulation of refl. light 8−21225
polymethine pyrylium dye, IR saturable-absorbing, transient visible absorption 8−33784
rare earth phthalocyanine solutions, bleaching by ruby laser beam 8−30030
rhodamine 6G in soln., photochem. stability 8−37878
semiconductors, light absorption, amplification and luminescence, saturation effects *(Russian)* 8−13771
solvated electrons in alcohols, spectral broadening, laser saturation 8−31750
spectroscopy, recoil component intensity, level degeneracy *(French)* 8−12762
three-level atom, optically dressed, in spectroscopy 8−962
two-level system, adiabatic rapid passage, narrow IR saturation resons., book contrib. 8−9419
ultrashort-pulse generation by lasers with saturable absorbers 8−46687
waveguide, laser, pump efficiency, saturation effects 8−17981
Al_2O_3, thermoluminescence, optical bleaching/stimulation effects following irrad. 8−43940
As_2S_3, amorphous semicond., photo-induced optical and structural changes *(Japanese)* 8−47244
Ba, time-resolved saturated absorption expt., collisions effects 8−29758
Ba^+, optical pumping and saturable absorpt. of fast ion beam superimposed on continuous laser beam *(French)* 8−5179
CO_2, anomalous Zeeman effect, nonlinear optical techniques, book contrib. 8−9279
CO_2, heated, for passive Q-switching of CO_2 laser 8−25900
Cs_2, 6250 Å band recorded using thermionic detector 8−46465
p-Ge, broadband modulation of 3 μm light by 10 μm light 8−42389
p-Ge broadband passive isolator for CO_2 laser system, pulse shaping 8−46662
Ge, positive, CO_2 TEA laser mode locking 8−46694
p-Ge:Ga, saturation behaviour at CO_2 laser wavelengths 8−1307
I saturable absorber, transmission tests using AO coupled Ar-ion laser 8−30031
I_2, dynamic friction coeff. meas. by saturation spectroscopy, radiative lifetimes 8−18368
I_2, stabilisation of He-Ne laser 8−1270
I_2 warm walled cell, freq. stabilisation of He-Ne laser freq. standard *(French)* 8−42343
$^{127}I_2$, hyperfine struct. in electronic spectrum, saturated absorption spectroscopy 8−37645
$^{127}I_2$, laser stabilisation, gas cell 8−17971
$^{127}I_2$, weakly saturable absorber for He-Ne laser, high contrast power reson. 8−29976
InSb, absorpt. saturation by nonequilib. electron-hole plasma, luminesc. 8−9418
$LaCl_3$:Pr^{3+}, hyperfine struct. of 6011 Å line, laser-induced absorpt. line narrowing 8−15196
NO, laser mag. reson. and IR-RF double-reson. near 5.3 μm 8−5258
N_2O, anomalous Zeeman effect, nonlinear optical techniques, book contrib. 8−9279
Na, population change induced by laser radiation, hook method 8−33476
Na vapour, quantum counter, IR detection 8−30016
SF_6 based broadband gas isolator, for high power CO_2 lasers, design and evaluation 8−42339
SF_6, refl., absorpt. and transmittance depend. on irradiance at normal incidence 8−13769
SF_6Ar, multiple photon excitation, saturation and linear absorpt., pulsed optoacoustic detect. 8−42148
Si, brightening and darkening wave generation by Nd:glass laser 8−18023
Xe, 3.51 μm broadening due to velocity-changing collisions 8−37597
ZnTe: group I element, absorption saturation *(Russian)* 8−35183

optical saturation
see also optical saturable absorption
alkali metal vapours, fifth harmonic generation, saturation by picosecond pulses 8−33774
atomic vapours, stimulated electronic Raman scatt., saturation of tunable IR lasers 8−37941
dimethyl ether, optical saturation characts., using CO_2 laser radiation 8−30027
fluorotrichloromethane, optical saturation characts., using CO_2 laser radiation 8−30027
rotary saturation 8−13770
semiconductor, saturated, dielectric response 8−10384
single atom detection by saturated optical nonresonant emission spectroscopy 8−31741
spectroscopy, lineshape, vel. changing collisions *(French)* 8−12765
stimulated Raman scattering with saturation, transient regime theory *(Russian)* 8−22174
two-level atom, phase transition induced by laser field *(Russian)* 8−29924
CaCl, free radical, $A^2\Pi$-$X^2\Sigma^+$ system obs. by saturation spectroscopy 8−46353
(Ga,Al)As transverse mode stabilised laser, direct obs. of saturation behaviour of spontaneous emission 8−46600
NH_3, decay of saturation reson., IR ν_2 as Q(8,7) transition 8−25609
NH_3, mol. alignment relax. rate, laser saturation reson. technique 8−25755
SF_6, refl., absorpt. and transmittance depend. on irradiance at normal incidence 8−13769

optical self-focusing
see also electrostriction; Kerr electro-optical effect; self-trapping
Argus two beam system, 5 TW performance 8−46656
lattice vibration nonlinear interaction with powerful light beam 8−46711
optical waveguides with var. refr. index 8−46837
randomly inhomogeneous medium, incoherent beam *(Russian)* 8−18025
transparent solid target, self-focusing effect on plasma generation 8−30460
wave mutual focusing in media with quadratic nonlinearity 8−30033
weakly nonlinear media, spatial and temporal self-focusing, ray theoretic anal. 8−18026

optical storage devices
see also holography
correlators, real-time and memory devices using acousto-optic processing 8−46533
holographic, based on injection lasers *(Russian)* 8−37824
holographic, holograms writing and reading at various wavelengths, expt. *(Russian)* 8−37825
holographic, with data search functions *(Russian)* 8−37823
holographic memories used for data storage 8−25818
photodichroic materials, computer polarisation holography appl. 8−42299
AsGe chalcogenides, amorphous semicond. layers for recording information *(German)* 8−42395

optical stores
see also holography
digital holograms, optimum quantisation 8−33699
Fourier transform hologram, alignment and design conditions 8−29901
hologram memory redundancy evaluation by spatial and defect permittance 8−1197
holographic information search, storage structure 8−29920
holographic information search system storage structures and technical feasibility *(Japanese)* 8−37829
holographic Kanji-character memory system 8−9351
holographic memory optoelectronic system, holographic beam splitter form. 8−17882
holographic memory readin system parameter optimisation *(Russian)* 8−13670
Kanji character generation by holographic memory system 8−37854
laser storage, recording and retrieval systems 8−33688
magnetic film, banded domain structure, effect of recording field strength on energy characts. *(Russian)* 8−19297
material requirements and possibilities *(German)* 8−25937
memory system principles and descriptions *(German)* 8−29910
recording of optical data in absorbing materials, effective depth determ. *(Russian)* 8−29908
volume amplitude holograms in photodichroic materials 8−17871
CdS:Cu, Cd, data storage, optical and photoelec. reading 8−1193
Cr_7Te_8 film, optical and magneto-optical props., appl. as storage medium 8−23545
$Ge_{13.3}Te_{61.7}As_{19}$ film, amorphous, characts. of optical switching 8−18031
$Ge_{15}Te_{81}As_4$ film, amorphous, characts. of optical switching 8−18031
$Ge_{15}Te_{81}Sb_2S_2$ film, amorphous, characts. of optical switching 8−18031
$Mn_{0.75}Ti_{0.25}Bi$ films as magnetooptic storage medium, mag. interferogram recording 8−19288

optical susceptibility
see also nonlinear optical susceptibility
bromomethane, dielectric susceptibility at radio frequencies 8−14123
chloromethane, dielectric susceptibility at radio frequencies 8−14123
conjugated hydrocarbon chains, linear and nonlinear elec. susceptibilities calcs. 8−19437
cyanomethane, dielectric susceptibility at radio frequencies 8−14123
fluoromethane, dielectric susceptibility at radio frequencies 8−14123
iodomethane, dielectric susceptibility at radio frequencies 8−14123
lithium ammonium tartrate, piezoelec., proper ferroelastic transition 8−2812
modulation spectroscopy, anal. of Kramers-Kronig relations 8−23423
semiconductor, disordered, photodielectric effect 8−6413
triglycine fluoroberyllate, thermodynamic props. 8−15123
$Gd_2(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
$Ho_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
KH_2PO_4, central peak susceptibility and US propag. near T_c 8−15125
$Nd_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
Si, diamag. and dielec. susceptibility, temp. depend. 8−10646
$Sm_{2x}Gd_{2(-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164

optical susceptibility continued
$Tb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
$Yb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164

optical systems
see also adaptive optics
acousto-optical modulator for laser beam position sensor 8−46705
active feedback optical processor, using coherent source and liq. cryst. light valves, design 8−22204
alignment testing in converging beams 8−30044
apodiser, optimum, simulation by binary filters 8−5539
astronomical instruments, optical anal. 8−32629
atmospheric baffling system, high rejection, terrestrial meas. of performance 8−7802
beam-guide lines, elec. length instability 8−46748
Bragg cell laser Doppler velocimeter, increase in optical power by using multiwavelength lasers 8−34211
channel transmission calc., matrix method 8−18033
coherent optical system, resolving power enhancement by aperture synthesis 8−25987
colour scanner imagermfor colour picture reproduction 8−42415
deflection mapping technique for convective diffusion study in falling drops 8−42690
defocused system with shaded apertures, performance 8−5535
double focon, concentration factor 8−1316
farfield method for temp. depend. study of US induced birefringence in liquids 8−16826
fixtures for mounting on optical bench 8−13822
focused beam approach for SF_6 dissoc. by multiphoton IR absorption 8−42369
four-component system design for optical data processing 8−42282
fundamental chromatism coefficients 8−1317
high-speed non-impact printer, optical character generation requirements 8−21246
hyperbolic cone-channel condenser system 8−33811
imaging systems, equivalence between scanning and conventional types 8−17862
incoherent electro-optical meas. systems with arbitrary stops and misfocusing *(German)* 8−1366
large F-number optical system, focal spot shift 8−1175
laser optical system, influence of imperfections on signal in space filtering scheme *(Russian)* 8−37815
lens array for extended coherent light source *(Russian)* 8−30040
lens aspherical effect on image defects *(German)* 8−9332
lens-mirror combinations with max. conc. 8−9422
MTF measurement using positive photoresists, cross sectional features 8−9337
multiple imaging through nonredundant arrays 8−22095
negative system astigmatism and coma anal., third order aberration theory appl. *(Russian)* 8−30039
oceanography, integrating optics and sonar for deeply towed vehicle 8−45045
optical bench accessory for distance meas. and positioning 8−21111
optoelectronic Kvant classifier for aerosol dispersion anal. 8−12739
pancratic system with mechanical compensation, design *(Russian)* 8−37961
pancratic systems with linear and nonlinear relations between component motion, comparison 8−13782
phase imaging systems, chromaticity, luminous efficiency 8−33824
photographic recording system for three-dimensional trajectory of luminous pointlike object 8−12671
plastic optical components and systems 8−25967
point spread function of systems with parabolic filters, effects of defocusing 8−13776
reflector illumination estimation using electronic calculator *(Croatian)* 8−16835
refracting sphere system, skew ray tracing *(German)* 8−9322
scanning and conventional imaging systems, basic equivalence 8−46534
scanning system with reflecting elements, angular distortions 8−37965
shadow instrument with subtraction, wavefront shape visualisation *(Russian)* 8−37966
sighting devices for colour images of transparent inhomogeneous medium 8−22199
speckle noise and object contrast, detection thresholds eval. technique 8−5434
straubel apodisation filter systems, effects of defocusing on point spread function 8−25804
thermal imaging systems, optical components testing 8−33911
truncated sinusoidal test and exptl. MTF meas. 8−25806
velocity sensor, for liquid flow *(Russian)* 8−1759
wedge compensator for automatic control system 8−13808

optical telescopes *see telescopes*

optical testing
see also optical instrument testing; optical workshop techniques
8.448 Mb/s optical cable feasibility trial *(German)* 8−33888
alignment chuck for optical fibres, light transmission characteristic determination appl. 8−30090
alignment of mirrors and prisms in converging beams 8−30044
aspherical lenses, side band Ronchi test, hologram appl. 8−33798
beam-guide lines, elec. length instability 8−46748
camera window for aerial photography large interferometer for testing 8−13821
conic mirrors, caustic coordinates in Platzeck-Gaviola test 8−33799
contact lens, soft, in-office meas. 8−7339
deviation prism interferometric testing 8−30095
fibre cable construction, installation, and testing 8−46797
fibre diameter checking, laser interference method 8−18080
fibre diameter meas. using microprocessor based system 8−1443
fibre fractographic anal. of fracture surface, after proof stressing, SEM exam. 8−38093
fibre inhomogeneous dispersion, direct meas. method 8−1400
fibre refractive index profile meas., nondestructive transverse interference method 8−38024
fibre strength tests, pulling machine construction 8−33931
fibre tensile strength testing 8−42481
fibre with polymer cladding, Raman spectrum 8−30073
fibre-optic cable manufacture, testing, and installation *(German)* 8−33863
field plotting of optical fields using single-mode optical fibre 8−30097

optical testing continued
flat mirrors, flatness meas. theory, Foucault method 8–33802
glass, spottability determ., reflectometric method 8–30102
glass, surfaces joined by optical contact, spectral absorpt. of water layer 8–46852
graded-index fibre differential mode attenuation meas. 8–1403
interference surface testing with quarter-wavelength sensitivity 8–32870
interferometric testing method with computer-generated holograms, aberration balancing 8–46845
large azimuthal telescope, primary mirror testing in observatory 8–20642
laser diode fabrication reproducibility *(French)* 8–42357
lens design and testing for laser systems, assets and liabilities 8–46753
lens evaluation for 35 mm cameras, MTF based test method 8–41363
lens sphericity non-contact testing method *(German)* 8–5534
metal mirror, diamond turned, optical figure inspection by interferometry 8–5545
metal surface, diamond turned, finish meas. by differential light scatt. 8–5544
mirror, plane lattice point light source appl. *(Japanese)* 8–9463
mirror, primary, of large azimuthal telescope, testing by Hartmann method 8–20641
mirror reflection coefficient meas. instrument 8–18036
mirror surfaces for solar power stations, specular reflectance obs. 8–13786
multimode optical fibre dispersion rel. to wavelength, frequency-domain meas. 8–1401
null Ronchi grating from spot diagrams 8–5548
objectives in large scale production 8–18035
ophthalmic lens distortion display 8–7338
optical communication testbed 8–33925
optical fibre, rapid Δ meas. by refr. index tuning 8–13792
optical fibre transmission meas. technique using time dispersion of Cerenkov radiation 8–5557
optical fibres, backscattering method, compact optical test unit *(German)* 8–30098
optical fibres, breaking strain estimation for long lengths of fibres 8–30060
photoelastic coating method of meas. stress and strain 8–1614
photoelectric photometer for point spread function energy conc. meas. 8–30099
point spread function of systems with parabolic filters, effects of defocusing 8–13776
Sayce test chart, modified design 8–16877
Schmidt correction plates, aspherical surfaces 8–20643
semiconductor radiation sources testing, coherence analysis, meas. system with Michelson interferometer *(Polish)* 8–33762
single mode fibre coupling to semiconductor laser, fibre strength tests 8–33900
steep aspheric surface measurement, holographic comparison test 8–42402
surface mapping with quarter wavelength fringes 8–46846
surface profile testing with set of spherometers, math. analysis 8–13823
thermal imaging systems, optical components testing 8–33911
transmission holographic bench, for qualitative and quantitative analysis *(Rumanian)* 8–46545

optical transfer function
analytic recurrence procedure for computing cross-multiplication coeffs. 8–13667
astronomical speckle interferometry, defocusing effects 8–40834
atmospheric correlation scale meas., spatial freq. modulation of stellar images 8–40661
coherent optical feedback technique, multiplicative disturbance suppression 8–22094
colour image form., optical transfer functions for tristimulus values 8–33685
contrast enhancement viewer for film 8–16879
electron microscope, coherence in bright field microscopy of weak objects 8–32955
electron microscope, contrast transfer for tilted and conical bright field illumination 8–37115
eye, accommodation microfluctuations, IR optometer recorder *(French)* 8–7463
eye, subjective meas. of monochromatic aberrations 8–35837
fibre OTF meas. method *(French)* 8–42458
fibre transfer function meas., swept-frequency technique 8–1375
fibres, graded index, with mode scramblers, spliced, OTF 8–33832
FORTRAN program for MTF calc. 8–25807
imaging of relatively strong objects in partially coherent illum., linear transfer theory 8–22091
imaging system with obscured pupils, OTF and point spread function 8–25809
imaging systems in water, point and beam spread functions 8–5426
industrial X-ray film information processing methods *(German)* 8–15637
lens evaluation for 35 mm cameras, MTF based test method 8–41363
lens imaging properties and OTF, Jones notation 8–25945
microchannel plate X-ray image intensifier, image resolution 8–35937
microdensitometer temporal reponse, MTF determ. 8–32904
MTF determination from edge response function, single step calc., appl. to computerised tomography 8–35938
MTF in radiography, screen sharpness quantum noise depend. 8–20261
MTF measurement using positive photoresists, cross sectional features 8–9337
objectives in large scale production, testing 8–18035
obscured circular pupil imaging system, included power 8–46520
one-dimensional coded apertures, applications 8–45746
phase contrast objective, point spread functions of annular phase filters 8–25805
photographic image quality, scattered light effect 8–16884
point spread function of systems with parabolic filters, effects of defocusing 8–13776
radiography, straight-line tomography, linearising mechanisms 8–35934
radiological imaging system line spread function and MTF determ., effect of finite slit 8–24118
random medium, image resolution limitation 8–37813
retinal image light distrib., cat 8–48790

optical transfer function continued
scanning microscope, increased depth of focus using slit aperture, MTF degradation 8–45689
space variant systems, holography using phase coded reference beams 8–33698
speckle interferometry, image reconstruction of single stars 8–32350
spectroscopic system, OTF meas. and image correction 8–37083
STEM, imaging of phase objects *(German)* 8–32931
step-index fibre baseband equalisation 8–1371
straubel apodisation filter systems, effects of defocusing on point spread function 8–25804
telescope with severe aberration, MTF for speckle interferometry 8–12103
thermal imaging systems, optical components testing 8–33911
tomodensitometry, image quality 8–44589
truncated sinusoidal test and exptl. MTF meas. 8–25806
wavefront plot, aberrations, point spread function, three dimens. *(German)* 8–46521

optical variables control
film, optical thickness monitoring 8–5591
film, optical thickness monitoring using quartz cryst. monitor 8–5592
laser beam intensity control circuit 8–9394
wedge compensator for automatic control system 8–13808

optical variables measurement
see also colorimetry; densitometry; light velocity measurement; optical noise measurement; photometry; polarimetry; Q-factor measurement; refractive index measurement; streak photography; turbidimetry
absorption coefficients, meas. by photoacoustic spectroscopy 8–24864
absorption coefficients, small values, automated calorimeter and scanning Doppler interferometer 8–45680
absorption coefficients at 632.8 nm, intracavity laser meas. 8–8454
absorption coefficients meas. by transmission emittance and calorimetry 8–24839
absorption coefficients meas. of transparent materials, interf. effects 8–46699
absorption coefficients of film coatings, laser calorimetric meas. 8–25905
absorption of laser materials, static profile calorimetry meas. 8–25908
absorption of laser window materials, calorimetric meas. of CO wavelengths 8–25911
automatic power-spectrum density meter for pulsed laser beam 8–45698
baseband frequency response meas. system, for fibre transmission system components 8–42404
birefringence dispersion in glass, meas. with Babinet compensator using white light 8–27177
birefringence small area change real-time detection *(Japanese)* 8–15938
circular dichroism in presence of birefr. and linear dichroism, meas. method 8–27178
crystal scattering, meas. installation 8–4673
dental material transparency meas. device 8–31975
fibre, zero material dispersion wavelength determ. by pulse delay meas. 8–1322
fibre and measurement technique *(Japanese)* 8–22200
fibre attenuation and dispersion meas. techniques and interpretation pitfalls 8–1399
fibre inhomogeneous dispersion, direct meas. method 8–1400
fibre material dispersion meas. by baseband modulated envelope detection 8–1368
fibre transfer function meas., swept-frequency technique 8–1375
fibre wavelength dispersion, difference method measurement 8–37974
field plotting of optical fields using single-mode optical fibre 8–30097
graded-index fibre differential mode attenuation meas. 8–1403
graded-index optical waveguide mode-dependent attenuation meas. 8–46774
high power continuous laser emission meas. appls., pyroelectric ceramic appl. *(Russian)* 8–16845
laser calorimetric data analysis for surface and bulk absorpt. determ. 8–25904
laser freq. and vel. of light meas., interference methods, accuracy 8–17997
laser mirror reflectivity meas. technique, precision 8–17947
laser pulse duration measurement, 0.1 to 100 psec., nonlinear autocorrelation methods 8–46702
laser pulse energy meas., liquid calorimeter *(Russian)* 8–22163
laser radiation fluctuation-spectrum recording for USSR state standard 8–45696
laser radiation pulse-length monitor testing, precision test system 8–45697
laser sources coherence, meas. system with Michelson interferometer *(Polish)* 8–33762
laser wavelength determ., random/systematic errors statistical estimation 8–17996
laser wavelength meter for pulsed or CW lasers, Fizeau interferometer system 8–46701
laser-fusion expts., calorimeters for meas. of ions, X-rays and scatt. radiation 8–16800
light absorption, quantitative high press. cell, variable thickness *(German)* 8–12769
light transmission characteristics of optical fibres, alignment chuck design 8–30090
liquid absorption cell, for pulse energy meas., digital readout *(Russian)* 8–18000
luminescent screens, resolution determ. with thermal quenching 8–21131
maximum spectral luminous efficacy determ. *(Chinese)* 8–16831
mirror reflection coefficient meas. instrument 8–18036
multimode optical fibre, group delay meas., swept frequency tech. *(Japanese)* 8–37984
multimode optical fibre dispersion rel. to wavelength, frequency-domain meas. 8–1401
optical fibre, graded index, differential mode attenuation meas. 8–13797
plastics, filled and reinforced, optical const. determ. 8–19472
polymer film, stretched, interpretation of polarised absorption and emission spectra of molecules 8–1012
polymeric thin film, by integrated optical techniques 8–27342
reflection coeff. of laser mirrors, of Fabry-Perot interferometer *(Russian)* 8–1237

optical variables measurement continued
scattered light measurement for lenses and spectacle lenses *(German)* 8−46746
scattering from single particle, photodiode array meas., appl. to biological cell anal. 8−28146
sensitivity of metrology using time modulation, electronically generated limitation 8−16828
step index multimode fibre, baseband frequency measurement, mode scrambler technique *(Japanese)* 8−37983
thin films condensed onto cold substrate, prism-film coupler for in vacuo investigation 8−24873
UV microscope for polarised light, determ. of birefringence, linear dichroism and optical rotary dispersion *(German)* 8−29152
UV radiation, accurate measurement techniques 8−37954
wavelength measurement with self-calibrating grating spectrograph 8−24869
weak light flow, analysis of measurement methods *(Russian)* 8−45694

optical waveguide components
see also optical couplers; optical isolators
branching waveguide mode order convertor 8−1379
chirped gratings in broad band filters, theory 8−25994
electro-optic thin film periodic waveguide switch and amplitude modulators anal. 8−22215
electro-optical active components for guided light 8−42470
electron-beam and photolithographic fabrication of guided-wave optical components 8−13818
fibre switches for fault terminal isolation 8−46833
integrated optical circuits, thin film technology appls. 8−38068
integrated optics and guided wave devices, review 8−42468
modulator, coupled waveguide *(Japanese)* 8−46789
polariser, using anisotropic cladding *(Japanese)* 8−18047
semiconductor waveguide switches, and modulators, review of development progress 8−38045
TE-TM mode splitter for optical waveguides, glass comp., r.f. sputtered fabrication 8−46841
thin film waveguide component interconnection and signal processing 8−5584
$Al_yGa_{1-y}As$-$Al_xGa_{1-x}As$, electrooptic rib waveguide modulators and switches 8−38046
$Bi_{12}SiO_{20}$, optically controlled multimode planar switch 8−42476
GaAs-$Al_xGa_{1-x}As$, single-mode rib waveguide switches electro-optical modulation 8−46839
$LiNbO_3$ TE-TEM light mode convertor using acousto-optic interaction, expt. 8−46794
$LiNbO_3$:Ti, diffused, branched waveguide efficient intensity modulator 8−22190
$LiNbO_3$:Ti, electrooptical modulator and switch *(French)* 8−30074

optical waveguide theory
see also guided light propagation
anisotropic inhomogeneous medium with axial symm., mode struct. 8−18069
asymmetric-slab optical waveguide losses due to refractive index inhomogeneities 8−1381
bent step index fibre, optical power flow 8−30092
Bragg cylindrical fibres, confined lossless optical propag. 8−38062
Bragg effect waveguide coupler analysis 8−33827
chirp pulse transmission characts. in a dielectric waveguide 8−9438
circularly curved graded index fibre, optical beam propag. 8−25973
cladded parabolic index profile waveguide, model for stripe-geometry laser 8−22205
coupling coeffs. in strongly coupled dielectric waveguides 8−1356
coupling efficiency between two multimode optical fibres analysis 8−46766
curved dielectric waveguide loss and appl. to rectangular dielectric channel 8−1354
curved fibre, single mode, radiation of discrete beams 8−18041
curved multimode waveguide, geometrical optics shape of nonmeridional rays *(German)* 8−5566
curved single-mode fibre, field deformation 8−37972
curved step index fibre, integrals 8−1340
curvilinear multimode optical waveguide statistical tolerance calc. 8−1361
cylindrical, two-layer, light depolarisation, theory and expt. *(Russian)* 8−9454
cylindrical dielectric optical waveguides, hybrid mode classification 8−1358
DFB waveguide laser theory, Green's function approach 8−5504
dielectric slab waveguide, radiation pattern determ. due to refractive index fluctuations 8−22216
dielectric tube waveguide, cutoff freqs. derivation under weak guidance 8−18059
diffused corrugated waveguide, diffr. emission and excitation of E and H-waves 8−25984
diffused optical waveguide numerical analysis and applications 8−1377
diffused strip-loaded waveguide, modal analysis by variational method 8−46776
disc waveguide, coupled power theorem and orthogonality relations 8−38003
discrete radiation from curved single-mode fibres, comparison of theories 8−33847
distributed feedback waveguide structure, refl., emission and transmission calcs. 8−13819
fibre, broadband signal response 8−33818
fibre, near square law, propag. characts., perturbation analysis 8−22202
fibre, near square law type, propag. consts. perturbation anal. 8−33891
fibre, pulse broadening, inter- and intramodal dispersion 8−5547
fibre, refractive index profile, Marcatili condition derivation and interpretation 8−22193
fibre, self focusing, rectangular and Gaussian pulse propag. 8−33831
fibre, step or graded index, refr. index dip effect on propag. 8−18053
fibre intensity profile distortion, due to index profile determ., near field method 8−37977
fibre mode coupling coeffs. determ. using fibre resonator 8−5560
fibre mode excitation, using extended two-dimensional theory *(French)* 8−5546
fibre splice loss, Gaussian power model 8−46828
fibre theory, review 8−1351
fibres, gradient-index, numerical analysis *(German)* 8−5550

optical waveguide theory continued
fibres, pulse distortion at wavelength of dispersion min. 8−22187
fibres, radially inhomogeneous, vectorial wave anal. using finite elements method 8−37999
fibres, single-mode limit with arbitrary refractive-index profile, formula 8−46771
fibres, truncated index with minimum mode dispersion, anal. 8−38000
Fraunhofer diffraction by bundled fiber-optical waveguides 8−25978
Gaussian light beam propagation in thin films 8−33817
geodesic waveguide lens anal., ray tracing 8−13778
graded index fibre, guided modes, asymptotic theory 8−9447
graded-index fibres, tunnelling rays in pulse propag. 8−18057
incoherent lightguide transmission, radiance diminution, Hamiltonian ray optics analysis 8−46787
inhomogeneous dielectric waveguides, generalized WKB approach 8−1359
inhomogeneous slab, propag., rigorous soln. 8−18055
inhomogeneous waveguide lens anal. 8−5561
junction between infinitely conducting metallic guides, transmission and refl. of modes, total refl. *(French)* 8−9451
lossy fibre propagation, leaky-mode radiation field computation *(German)* 8−33867
Luneburg lens index profile for planar waveguide 8−5562
matching optical dielectric waveguides 8−1357
mechanical stress effect on transmission characts. of clad fibre 8−5579
metal shielded optical fibre transmission characteristics 8−1369
metal-diffused, laser beam/acoustic surface wave interaction, TE-TM mode conversion 8−42411
modal characts. determ. for integrated optics 8−1439
modal dispersion in optical fibres with any numerical aperture and doping profile 8−1391
multilayer circular waveguide, negative dispersion and strong higher order filtering 8−13809
multilayer dielectric waveguide, effective index nonlinearity 8−9446
multilayered waveguide, attenuation and tunnelling coeffs. for leaky rays 8−38002
multimode, variable dia., light propag. 8−33894
multimode fibre, beam evolution 8−42443
multimode fibre, finite-bandwidth propag. 8−42456
multimode fibre, optimum index profile w.r.t. mode coupling 8−18054
multimode fibre, ring shaped and graded index with central dip, dispersion evaluation 8−42455
multimode fibre, wavelength depend. propag. 8−38018
multimode fibres, loss mechanisms of leaky skew rays 8−46768
multimode graded fibre, near and far field power distribs. 8−1337
multimode lightguide, time dependent propag. 8−13801
multimode optical fibres, transmission characts. *(German)* 8−30069
multimode optical waveguide propagation and interference effects *(Japanese)* 8−46764
multimode randomly bent fibres, ray theory of impulse response 8−22208
multimode step index fibre, excess loss due to outer layer 8−9430
normalised cut off frequency, asymptotic evaluation, with quadratic index variation 8−9443
optimum parameter determ. 8−38023
parabolic fibre cutoffs 8−13800
parabolic-index slabs and fibres with bent axes, radiation losses 8−46758
perturbed, propagation constants calc., leaky waves along W-type slab waveguide *(Japanese)* 8−42423
planar ion exchange waveguides, TE and TM mode analysis, using WKB calculations 8−9444
planar waveguides and fibres, book 8−42426
plastic waveguide, characts. exam. *(German)* 8−38007
power attenuation calc., in bent multimode step index slab and fibre waveguides 8−25961
power launching analysis in multimode opt. waveguide with graded refractive index, appl. 8−46767
randomly gradient fibres with irregular bends, optical mode propagation and scattering 8−1325
scattering from core region of dielec. slab waveguide, radiation pattern 8−22197
SELFOC fibre, non-Gaussian laser beam propag. 8−1335
semileaky thin-film optical waveguides, guided-radiation mode coupling analysis 8−1372
short fibre, leaky modes effect on response 8−9449
single-mode optical fibre microbending loss and pulse distortion analysis 8−1395
single-mode radially inhomogeneous fibre, propag. modes 8−22206
step index fibre, Lambertian source, impulse response 8−33819
stratification method in numerical anal. of transmission parameters 8−1324
surface wave line, dielec. obstacle on impedance jump 8−18063
surface wave propag., in optical fibre, influence of bulk losses and bulk dispersion 8−33892
surface waveguiding structures, radiation from circular bend between discontinuities 8−1355
weakly guiding three layer slab, attenuation coeff. 8−5567

optical waveguides
see also optical fibres; optical waveguide components
absorption spectroscopic technique using waveguide loss meas. 8−45729
acoustooptic guided wave Bragg diffr., optical pulse compression, light beam scanning 8−38053
active dielectric, symmetric first-order Bragg interactions 8−46765
Brillouin scattering in thin film waveguide 8−35153
bulk acousto-optic interactions in thin film waveguides, for GHz modulators 8−42471
channel waveguide array, coupled to integrated CCD, fabrication and operation 8−38077
channel waveguide coupling with fibres on Si substrate 8−46761
communication, errors in determ. of output signal parameters 8−1365
conference on integrated and guided wave optics, Salt Lake City, UT, USA (Jan. 1977) 8−38072
conical light pipes with smooth and mosaic ends for photomultiplier 8−1328
corrugated waveguides and lasers, improved coupled mode analysis 8−46842
coupling to heterojunction laser, transition struct. fabrication 8−38029
coupling to waveguides with linearly tapered horns, theory 8−33917

optical waveguides continued
  cylindrical, two-layer, light depolarisation, theory and expt. *(Russian)* 8−9454
  detection of light in dielec. waveguide by photodiode through direct evanescent field coupling 8−30094
  dye high gain mm. bore laser, transverse mode control in waveguide resonator 8−1268
  electrooptic analogue-digital conversion, using channel waveguide modulators 8−38051
  electrooptic phased array light beam deflector, application to analogue-digital conversion 8−38052
  Epitaxial waveguide laser with distributed second-order feedback by electron excitation *(Russian)* 8−29973
  fabrication, electric field controlled ion exchange in glass 8−38094
  ferrite-dielectric optical waveguide, azimuthally magnetised, theoretical characteristics *(Russian)* 8−22211
  ferrite-dielectric optical waveguides, longitudinally magnetised, theoretical characteristics *(Russian)* 8−18061
  ferrite-garnet film, waveguide light propag. charact., integrated optics appl. *(Russian)* 8−1346
  ferroelectric materials, use in guided wave devices, review 8−38048
  film refractive index and thickness meas., error anal. of SYNCANG and SYNCWANG methods 8−8439
  focon raster lightguide for transmission onto photomultiplier photocathode, optimisation 8−13805
  free electron laser, amplification in spatially periodic optical waveguide 8−37865
  Fresnel lens in thin film waveguides 8−38075
  gas waveguide lasers, props. and current-voltage characts. of discharges 8−1208
  glass fibres as optical waveguides 8−1332
  graded-index optical waveguide mode-dependent attenuation meas. 8−46774
  gyrator, thin-film waveguide, theoretical analysis 8−25993
  hollow rectangular dielectric waveguide laser resonator and external spherical mirrors, coupling radiation 8−37914
  holography with guided reference and/or reconstructing wave 8−1198
  integrated electro-optical A/D convertor, using branching waveguide modulator channels 8−42474
  integrated optical channel waveguide array for CCD parallel signal injection 8−37996
  integrated optical circuits, selective LPE 8−6868
  integrated optical device for Hadamard transformation 8−22221
  integrated optics and guided wave devices, review 8−42468
  integrated optics review 8−1429
  laminar, 4-layer, dielectric, S-type, propag. characts., mode filtration *(Russian)* 8−30078
  laser, coupled waveguide, as optical oscillator 8−9399
  laser, pump efficiency, saturation effects 8−17981
  low loss waveguides, transient radiation effects, Cherenkov radiation, absorpt., in fibres 8−30055
  monolithic integration of laser and amplifier/detector by twin-guide struct. 8−42466
  offset straight integrated optical waveguides, length optimisation of S-shaped transition 8−46838
  optical communication testbed 8−33925
  optically pumped waveguide gas lasers 8−5490
  periodic dielectric rod array optical delay equalisation characteristics 8−5578
  phase profiles, waveguides and gratings by optical methods 8−38071
  planar diffused waveguide, WKB approx. for refr. index profile determ. 8−30086
  planar ion exchange waveguides, TE and TM mode analysis, using WKB calculations 8−9444
  planar multilayered structure, resonant polarization conversion and beam shift 8−1438
  planar waveguides and fibres, book 8−42426
  plastic light guides development for high optical power transmission *(German)* 8−33913
  plastic optical components and systems 8−25967
  plastic scintillation counter with air light guide 8−29713
  polymer films, plasma polymerisation, light propag. expt. *(Japanese)* 8−6846
  polymer films, prep. and characts. *(Japanese)* 8−5551
  polymeric thin films appl., preparation and optical properties meas. 8−27342
  quartz, fused, waveguide struct. form. by H_2^+ ion irrad. 8−18072
  radioisotope methods and neutron activation anal. of waveguide materials 8−7286
  reflective coating for optical waveguides with abrupt turns 8−30059
  ridge waveguide, multilayer side cladded light propag. 8−33835
  semiconductor lasers, stripe geometry, waveguide props. 8−29954
  semiconductor sheet, free carrier confinement for IR modulation 8−25969
  semiconductor thin film waveguides, radiation modulation by stationary phase gratings *(Russian)* 8−22209
  semileaky anisotropic thin-film optical waveguides and mode filters 8−13799
  submerged diffused waveguide prep., refr. index distrib. determ. 8−18068
  submillimetre wave laser waveguides 8−5505
  superconducting weak links induced by optical guided waves 8−14886
  switch/modulator, optically activated, using photoconductor and two channel waveguides 8−1437
  TE channel waveguide, CO_2 optical gain, discharge-related limitations 8−17951
  tensile strength, dependence on sample length, Weibull distribution figures 8−30084
  thick, highly multimode, fast fabrication method 8−18043
  thin film and integrated optics review, theory, expt. techniques, waveguides 8−22220
  transparent magnetic material, wave props. of domain wall 8−48011
  two-layer low mode dielectric waveguide, field config., temp. depend. 8−25983
  ultrapure glass preparation, review 8−3086
  underground optical waveguide air refractive index thermal fluctuation obs. 8−9452
  variable refractive index waveguides 8−46837
  AlGaAs twin guide struct., monolithic integration of laser and laser amplifier or detector 8−38082
  AlGaAs-GaAs, DH laser, with bent guide of planar struct. 8−1256

optical waveguides continued
  As-S film, guided light reversible control by electron beam irrad. 8−1331
  $Bi_{12}TiO_{20}$, RF sputtered epitaxial film on $Bi_{12}GeO_{20}$, for optical waveguiding 8−9462
  CO_2 TE laser, waveguide, role of elec. field to press. ratio 8−17901
  CO_2 waveguide amplifiers, temp. depend. of small signal gain and saturation power 8−46569
  CO_2, waveguide laser, gain calcs. 8−25849
  CO_2 waveguide laser, pulsed operation 8−42353
  CO_2 waveguide lasers, high-power, high-press., photoionisation-stabilised 8−46641
  Cu light pipe, submm. wave transmission, and refl. of surfaces 50-10 cm^{-1} 8−18050
  DCN, CW submm. waveguide laser, high volumetric efficiency 8−42351
  (GaAl)As-heterostruct. stripe lasers, light/current characts. and near field shifts, waveguide self focusing effects 8−29952
  $Ga_xAl_{1-x}As$ layer, optical guiding in Bragg configuration 8−1431
  GaAs double cavity laser, with branching output waveguides, exam. 8−37918
  GaAs, electroabsorpt. avalanche photodiode, waveguide detector for 1.06 μm 8−16842
  GaAs-$Al_xGa_{1-x}As$, single mode optical rib waveguides, MOS control of switches 8−1432
  GaAs-$Ga_{0.8}Al_{0.2}As$ layered struct., LPE, optical surface waves 8−48244
  GaAs-$Ga_{1-x}Al_xAs$ DH laser, curved stripe, operation and appl. 8−42341
  GaAs-GaAlAs heterostructure injection lasers, room temp. operation with curved stripe waveguides 8−37909
  p-Ge sheet, free carrier confinement for IR modulation 8−25969
  He-Ne waveguide lasers, props. and current-voltage characts. of discharges 8−1208
  $In_xGa_{1-x}As$ epitaxial layer, waveguiding at 1.06 μm, losses 8−18052
  $LiNbO_3$, chemical control of optical damage, due to laser beams 8−38056
  $LiNbO_3$ corrugated optical waveguide, electrooptic scanning of coupled light 8−38050
  $LiNbO_3$ diffused waveguides, optical insertion loss meas. 8−38054
  $LiNbO_3$ diffused waveguide, with exponential profile, metal-clad and dielec. overlay effects 8−46755
  $LiNbO_3$, diffusion waveguide, acousto-optic mode conversion at surface wave freqs. *(Russian)* 8−1348
  $LiNbO_3$, film lightguide, pulse signal convolution in acoustooptic interaction *(Russian)* 8−1345
  $LiNbO_3$, laser induced optical damage, pyroelec. contrib., electrostatic obs. 8−37935
  $LiNbO_3$ optical branch and switch fabrication, by diffusion layer of Ti 8−33834
  $LiNbO_3$ planar waveguide, light beam switching and modulation using built-in dielec. channel 8−46840
  $LiNbO_3$, Ti diffused planar waveguide, WKB approx. for refr. index profile determ. 8−30086
  $LiNbO_3$ Ti-diffused C-plate waveguide with metal cladding, buffer layer effects 8−25956
  $LiNbO_3$ waveguide, diffusion of Ti, exam. by electron probe anal. and X-ray diffr. 8−47588
  $LiNbO_3$, waveguide form. technique, using organometallic soln. diffusion sources 8−38099
  $LiNbO_3$:He, ion implantation, optical waveguide form., refr. index changes 8−46762
  $LiNbO_3$:Ti, dopant conc., refr. index profile rel. to integrated optics 8−5583
  $LiNbO_3$:Ti, fabrication and waveguiding props. 8−30091
  $LiNbO_3$:Ti optical waveguide, technique for suppressing Li_2O out-diffusion 8−18040
  $LiNbO_3$:Ti optical waveguide diffusion profile, AES obs. *(German)* 8−33876
  $LiNbO_{31}$ Li_2O diffusion for chemical control of laser induced optical damage 8−46693
  $LiNb_xTa_{1-x}O_3$ stripe waveguides, fabrication, physical and optical props. 8−38055
  $LiNdP_4O_{12}$, glass clad, slab waveguide laser 8−46625
  $LiTaO_3$:Cu, waveguide with periodic electrodes, mode conversion 8−33840
  MgO:Cu, dopant conc., refr. index profile rel. to integrated optics 8−5583
  Nb_2O_5, passive components, electron-beam and photolithographic fabrication 8−13818
  Nd:YAG, single freq. laser with waveguide resonator 8−1277
  Si monolithic optical integrated circuits for laser system applications 8−1436
  Si_3N_4 on Si, fabrication, propag. consts. 8−33826
  $(Y,Gd)_3(Fe,Ga)_5O_{12}$, thin film lightguide, noninteracting mode conversion *(Russian)* 8−1347
  ZnS leaky waveguide electro-optic modulator limitations 8−22218

optical workshop techniques
  blank fabrication for large azimuthal telescope primary mirror, work program 8−16302
  blank shaping by free grinding method, system of allowances 8−46849
  camera objective matching with film channel in serial prod., tolerances 8−16885
  chemical spray silvering of optical components 8−25995
  diamond machining of IR window materials 8−5586
  diamond turning, state of the art update 8−46853
  diamond turning fabrication of IR optical components 8−5590
  diffraction grating production, three-dimens. for integrated optics 8−42480
  electron beam evaporator, UELI-1, for optical industry 8−46847
  electron-beam and photolithographic fabrication of guided-wave optical components 8−13818
  far IR narrow-bandpass interference filters, prod. and performance 8−5558
  fibre breaking tool 8−5585
  fibre bundle drawing from double crucible 8−33920
  fibre coating concentricity improvement by tapered nozzles *(German)* 8−38095
  fibre coating technique improvement 8−5593

optical workshop techniques continued
fibre connectors, hot forming versus epoxy bonding of bundles, single fibre techniques 8−42482
fibre cutting machine for rectangular and circular fibres 8−33932
fibre drawing, CO_2 laser system limitations 8−1447
fibre drawing, diameter control improvements 8−1445
fibre drawing, neck-down shape prediction from furnace temp. distrib. 8−5594
fibre drawing using ZrO_2 induction furnace 8−1446
fibre fabrication by CVD 8−33922
fibre fabrication by improved CVD method 8−1448
fibre fabrication by isothermal plasma-activated CVD *(German)* 8−33928
fibre optic sheet form. by selective photopolymerisation, appl. in image guiding equipment 8−42477
fibre splicing using CO_2 laser, thermal conditions 8−13820
fibre tip lens fabrication and smoothing 8−33923
fibre-optic cable manufacture, testing, and installation *(German)* 8−33863
film transport rollers, fabrication accuracy improvement 8−18077
fine wire free standing grid fabrication 8−5559
furnace drawn silica fibres, contamination reduction 8−33918
glass, blanks, stresses and birefr. changes with dimensions 8−30100
glass fibre manufacture, smooth fracture faces, using incandescent wire 8−38098
glass fibre manufacture using CVD *(German)* 8−33933
gradient index optical lenses, use, design, fabrication and refr. meas. 8−13780
grinding of large spherical surfaces with annular tool 8−18074
honeycomb optical tables development 8−18073
interference coating deposition by Balzers BA-710 vac. system, photometric monitoring 8−46850
interferometric fabrication of diffraction grating and optical waveguide coupler 8−1440
IR polariser grid prod. process *(Russian)* 8−46795
laser diode fabrication reproducibility *(French)* 8−42357
lens centring devices, high accuracy, appls. *(French)* 8−33924
machine, semiautomatic, for ruling circular scales 8−46851
mask synthesis, for diffr. limited waveguide Luneburg lenses 8−38076
masked MBE, GaAs-$Al_xGa_{1-x}As$ film prod. 8−38100
metal coating of optical fibres, for strengthening and surface protection 8−30103
metal polishing and lapping 8−5587
metal surface ion polishing for laser mirrors 8−5588
metals for mirror substrates, manufacturing processes, review 8−5542
microfabrication techniques for integrated optics, review 8−38091
mirror machining of nonconventional shapes, for laser systems 8−5589
multimode fibres, recent advances in production 8−30096
operational control optimisation in element prod. start up 8−18078
optical fibre packaging in loose fitting tubes of orientated polymer 8−1338
parabolic mirrors, fast off-axis, design and fabrication 8−46741
photoresist microlens production for semiconductor lasers 8−9398
Polirit, commercially produced, for optical surface polishing, phys., chem. and tech. props. 8−46848
spherical diamond tool, durability 8−18075
splicing of single mode fibres 8−1442
square wave grating with μm dimensions, reactive sputter etching 8−33921
submicron structures, National Research and Resource Facility at Cornell 8−38101
surface plastic deformation treatment, tool design for 8−13824
surface shaping by successively corrected mask method 8−18076
ultrapure glass preparation for optical waveguides, review 8−3086
US cleaning of optical fibres, deleterious effect 8−33821
waveguide fabrication, by elec. field controlled ion exchange in glass 8−38094
waxicon design and fabrication 8−5543
Al, polygon construction via diamond cutting 8−33919
As_2S_3 thin film, diffr. grating production, using laser photolithographic process, image evaluation 8−42479
$Bi_{12}TiO_{20}$, RF sputtered epitaxial film on $Bi_{12}GeO_{20}$, for optical waveguiding 8−9462
C large unsupported film, prod., as UV filter 8−38092
$LiNbO_3$, waveguide form. technique, using organometallic soln. diffusion sources 8−38099
$LiNbO_3$:Ti optical waveguides, fabrication and waveguiding props. 8−30091
Na_2O-B_2O_3-SiO_2 low-loss optical fibre prep. by double crucible technique *(German)* 8−33929
Na_2O-B_2O_3-SiO_2:GeO_2 medium-loss graded-index preform fabrication by phase separation and leaching *(German)* 8−33930
SiO_2:F, silica fibres, numerical aperture and attenuation, drawing from preforms 8−1449
SiO_2:F fibre preform plasma chemical deposition *(German)* 8−33926
SiO_2:F fibre preparation by plasma-activated CVD *(German)* 8−33927

optical zone plates
dielectric mirrors, reflection and wavefront shaping, limits of coexistence 8−46747
holographically made zone plates and gratings, for X-ray microscope 8−37855
one-dimensional coded apertures, applications 8−45746

optics
see also aberrations; adaptive optics; atmospheric optics; fibre optics; Fourier transform optics; geometrical optics; holography; integrated optics; nonlinear optics; optical elements; physical optics; quantum optics
book, optics and lasers 8−22079
history, contributions of Isaac Newton and Carl Friedrich Gauss *(German)* 8−4453

optimal control
see also dynamic programming; game theory; maximum principle; predictive control
attitude control of space vehicle descent to surface of atmosphere-less planet 8−16265
BWR power plant, direct cycle, low sensitivity controller study 8−8947
BWR turbine, simulation 8−737
Earth-Mars-Venus orbital transfer minimal flight time calc. 8−4090
end-temperature in semi-infinite rod, distributed parameter optimal control problem 8−13886

optimal control continued
heart ejection process, model, stroke volume calc. appl. *(German)* 8−3631
initial state transformation, using gradient restoration algorithms, hypersonic flow with axisymmetric body appl. 8−4474
interstellar travel, optimum transfer in uniform motion 8−20614
Mars entry vehicle, lifting spacecraft control and ballistics 8−16264
minimum weight disk design 8−36821
nuclear reactor, point-model, heuristic approach to reinforcement learning control 8−46144
nuclear reactor system fixed end-point problem suboptimal control, perturbation theory appl. *(Japanese)* 8−33259
power reactor Xe oscillations control problem *(German)* 8−46153
problems with constraints, transformation methods of an exponential function type 8−12541
proton synchrotron, CERN, online function generation optimisation 8−834
pulsed MHD convertor, threshold energy characts. for elec. power production with resistive load 8−1908
river aeration system subject to random disturbances, feedback structure 8−16078
river network artificial aeration methods 8−36203
space vehicles, optimal thrust of cruise engines in interorbit flights 8−4069
starship, single-stage constant-power, optimal exhaust vel. programming 8−20613
thermodynamic systems 8−29071

optimal systems
composite sheets, fixed upper bound on number of layers 8−30177
holographic memory readin system parameter optimisation *(Russian)* 8−13670
reinforced concrete deep beams, optimal force transmission 8−34009

optimisation
see also mathematical programming; minimax techniques; minimisation
abrupt transformation, data partitioning, cluster anal. optimisation 8−36956
acoustic logging in cased wells, simulation rel. to excited wave freq. optimisation *(Russian)* 8−40707
activation analysis, optimisation, computer-selected conditions 8−15740
aerospace, optimum low-thrust multiple rendezvous between inclined orbits 8−4086
analytical chemistry, time sharing computers, data processing and optimisation appls. *(German)* 8−35750
apodiser, simulation by binary filters 8−5539
basic metrological operations, validation and optimisation 8−41264
beam resting on elastic foundation, optimum shape design with normal stress restrictions *(Polish)* 8−22267
biological system, sequential actions model 8−44441
BWR, feasibility study of core management system by data communication 8−13254
BWR, optimal in-core fuel management using OPTLWR computer code 8−17363
BWR, quasioptimum fuel assembly loading, hierarchical level scheme 8−29609
chemical first order kinetic data anal., optimisation method 8−12500
chemical reaction kinetics optimisation method, simultaneous reactions anal. *(French)* 8−19994
chromatography, multicomponent sorbents, composition, computer optimisation 8−27842
cylinders, elastic doubly connected hollow, min. weight design for given torsional, flexural rigidities 8−18172
diatomic molecule production, using matrix isolation spectroscopy, optimisation 8−46462
digital holograms, optimum quantisation 8−33699
discrete Kalman filter, rel. to inverse thermal conductivity problem 8−5628
district heating systems, optimal conditions of combining fossil fired and nuclear power plants 8−37457
elastic continuum dynamic response determ. using modal anal. 8−8242
elastic structures, computer automated synthesis for minimum struct. weight 8−34015
ferromagnetic materials, magnetisation curved optimal analytical representation, automatic choice method *(Italian)* 8−47998
first-order kinetic model, optimal design of experiments to estimate parameters 8−15650
fission reactor fuel, U enrichment, optimal blending 8−13309
flow in lung and vascular tree structs., optimisation of diameters and bifurcation angles 8−11683
gravity networks, optimisation *(German)* 8−15950
heat exchanger design, w.r.t. heat transfer efficiency *(Russian)* 8−16789
heat flow inequalities, appl. optimisation problem involving free boundaries 8−13889
hemispherical electrostatic 180° deflector, optimisation *(French)* 8−21269
hot-film anemometers, freq. optimisation theory 8−26218
hypersonic body shape optimisation, principal approx. methods 8−5765
ionography, optimisation of design parameters 8−31888
LMFBR, 1500 MW, breeding perfomrance optimisation of He-bonded carbide fuel 8−17325
LMFBR, enrichment and control optimization for reactivity losses during burnup 8−21692
LMFBR, high power, optimisation by nonconvex programming mathematical model 8−41810
LMFBR, pin diam. optimisation in heterogeneous vs. homogeneous core 8−8892
LWR, optimal power profile fuel management 8−37411
magnetic bubble generator modelling and optimisation 8−6547
mass separator, plasma-optical model, optical props. optimisation 8−16894
MHD combustion, operating mode aspects 8−18388
MHD conduction channel, optimal operating characts. calcs. *(Russian)* 8−47190
multiconfiguration wave functions, optimisation 8−33411
multielement flame spectrometry, flame condition optimisation 8−31723
nondeliverable fabrication plant fuel material with various enrichment, determ. of optimal comp. 8−13312

- **optimisation** continued
  - nuclear energy for combined electricity and district heating prod. 8-37459
  - nuclear power plant, optimal operating conditions 8-37427
  - nuclear reactor power distrib. flattening, burn up optimisation *(Japanese)* 8-17397
  - nuclear reactor protective system, optimum supervision intervals and order of supervision 8-37419
  - nuclear steam turbines for power prod., district heating, desalination 8-37438
  - optical constants, ATR meas., 2-polarisation method, accuracy, optimisation 8-45673
  - optical film, layered coating synthesis, optimisation formulae 8-25946
  - optimal design of dynamically loaded continuous structs. 8-38185
  - orbital transfer, optimal, low-thrust, limited power, elliptical orbits 8-4087
  - PCM optical fibre communication system numerical aperture optimisation *(German)* 8-38017
  - phase diagrams optimisation by least squares method using simultaneously different types of data 8-6143
  - photodetector optimisation for radiation environments 8-29158
  - photodetector parameters in interference measuring devices 8-16844
  - proportional counters in X-ray fluorescence spectrometer, optimisation of energy response 8-40792
  - quartz filter resonators with energy trapping, optimum design 8-32663
  - refrigerators for superconducting power transmission lines, He, w.r.t. cost and reliability 8-24802
  - remote sensors, signal correction optimisation considering internal noises *(Russian)* 8-16191
  - reservoir, information value 8-49060
  - satellite orbit determ. by astromeas. optimisation 8-16279
  - satellite-borne IR scanning radiometer obs. of stratosphere, optimum field view and spacing 8-16201
  - sound and vibration fields suppression, synthesis of systems 8-9494
  - spherical mirror solar collector, geometrical concentration determ. *(French)* 8-33808
  - stiffened cylinders under torsion with axial compression 8-26065
  - structural wt. optimisation, optimality criteria and mathematical programming 8-26029
  - superheavy elements, prod. method optimisation 8-46103
  - Tokamak fusion reactor, dynamic model for energy optimisation of cycled reactor 8-13318
  - Universal Products Code supermarket scanners, pattern optimisation 8-42297
  - viscoelasticity, linear, scalar and vector-valued optimisation 8-5665
  - CO$_2$ TEA laser, optimum operational conditions with double discharge at atm. pressure *(Bulgarian)* 8-33720
  - GaAs-Al$_x$Ga$_{1-x}$As proton-isolated DH laser, threshold current optimisation *(German)* 8-37905
  - Nd:glass lasers, optimisation for 1-10 ns pulses operation 8-46651
  - Pu fuel cycle back end services, utility optimisation model 8-41845
  - Xe transient processes optimisation, interrelation of various problems 8-17295
  - Zn spectral line breadth from pulsed supply hollow cathode discharge 8-33471
- **optimization** *see optimisation*
- **optimum control** *see optimal control*
- **opto-isolators**
  - displacement transducer 8-24783
- **optoacoustic spectroscopy** *see photoacoustic spectroscopy*
- **optoelectronic devices**
  - *see also opto-isolators; photoelectric devices*
  - fibre optic, sound reading systems for cine projectors *(Russian)* 8-312
  - human motion 3-dimens. monitoring by optoelectronic means, calibration and meas. 8-31913
  - HV electrical meas. by optical methods 8-24822
  - III-V semiconductor materials preparation technology *(Czech)* 8-3037
  - III-V semiconductors for optoelectronic appls., review 8-30975
  - incremental transducer description and design problems *(French)* 8-21121
  - lecture 8-25990
  - light curtain for measuring speed trajectory, of object *(German)* 8-12738
  - micron scaled cathodoluminescence with SEM, review 8-23537
  - optomechanical/electronic unit, for measuring photodetector parameters 8 284
  - revolution counter for X-ray tube anodes *(German)* 8-12678
- **optrons** *see opto-isolators*
- **OPW calculations**
  - binary alloys, and intermetallic cpds., struct. and stability, ab initio pseudopot. calcs. 8-34460
  - completely orthogonalised plane wave method, model pseudopotentials *(Russian)* 8-34740
  - Ag (111) surface, photoemission, final states 8-11080
  - Al, magnetoresistance size effect, effect of cyclotron orbit nature 8-47767
  - Al-Ga(Ge)(Mg)(Si)(Zn)(Ag), dil., Dingle temp. calc. 8-39005
  - (SN)$_x$, electronic struct., X-ray and UV photoemission obs., OPW and pseudopot. calcs. 8-6832
  - (SN)$_x$, electronic struct. and opt. props. 8-6256
- **OR** *see operations research*
- **orbital calculation methods**
  - *see also APW calculations; atomic orbitals calculations; CNDO calculations; EHT calculations; GO calculations; GTO calculations; HMO calculations; INDO calculations; KKR calculations; LCAO calculations; MINDO calculations; molecular orbitals calculations; OPW calculations; PNO calculations; PPP calculations; STO calculations*
  - atom, orbital rel. to total SCF energies, HF SCF approx. formula 8-21837
  - configuration interaction method formulation for triplet states 8-37536
  - D$_{4h}$ symmetry, even and odd parity orbital combination Clebsch-Gordan coefficients 8-45514
  - equivalent spherical harmonics 8-41911
  - function expansion about displaced centre 8-17556
  - many-body system, effect of increasing N *(French)* 8-37539
  - matrix element formulas, off-diagonal hypervirial and off-diagonal Hellman-Feynman methods 8-33409
  - MNDO method, approx. and parameters 8-910
- **orbital calculation methods** continued
  - MNDO results for H-, C-, N-, and O-containing mols. 8-911
  - molecule, orbital rel. to total SCF energies, HF SCF approx. formula 8-21837
  - molecule, orbtial and total SCF energies, Ruedenberg's formula evaluation 8-37537
  - multipole expansion of diatomic overlap method, 2-electron integral evaluation 8-908
  - NDO schemes, calc. of largest mol. integrals over orthogonal hybrid orbitals 8-41956
  - nonbonded interactions, density response theory, appl. to rot. barriers 8-41913
  - nonperturbative open-shell many body formalism, core-valence separation and nonorthogonal basis sets 8-896
  - orthogonality, radial orbitals, energy invariance 8-84
  - reduced density matrices, permutational symmetry 8-41912
  - Slater-transform-Preuss functions, appls. 8-37547
  - spin optimised SCF general spin orbitals, theoretical formulation 8-5125
  - thermochemical parameters, orbital model, quantum mech. theory 8-31675
- **orbitals, atomic** *see atomic structure*
- **orbitals, molecular** *see molecular energy levels*
- **order-disorder changes** *see order-disorder transformations*
- **order-disorder transformations**
  - alkylammonium compounds with perovskite-type layer struct., symmetry of lattice vibrs. 8-22797
  - alloy, BCC, order-disorder transform. in surface layers, theory *(Russian)* 8-19739
  - alloys, AB stoichiometry, mean field theory of ordering 8-2233
  - alloys, substitutional disorder description within supercell model 8-26479
  - binary ordering alloy, gas absorption, correl. effects *(Russian)* 8-47525
  - bitransitions, two-level disordered systems 8-43102
  - chromocene, heat capacity meas., phase transitions 8-38853
  - classification of struct. transforms., using coupled double-well model 8-14443
  - colloidal systems, ordering, statistical mech., theory 8-23968
  - diethylammonium cadmium chloride, X-ray study of structural phase transition 8-2055
  - dimethylammonium cadmium chloride, soft modes, order-disorder transition model 8-22817
  - electrostatic energy of disordered distribs. of vacancies or altervalent ions 8-9995
  - ferroelectric, order-disorder model, thermodynamic props. 8-10856
  - fluorite crystals, disorder at high temp., Brillouin scatt. 8-2866
  - fluorite crystals, Raman scatt., anharmonicity and high temp. disorder effects 8-35132
  - free energy, order-parameter expansion appl. to some phase transition model 8-43099
  - graphite, intercalation compounds with alkali metals and halogens, intralayer crystal struct. and order-disorder transform., electron diffr. 8-26540
  - graphite intercalation compounds with K, Rb, Cs, resistivity anomalies and phase transform. 8-26839
  - ice, VII to VIII transition, lattice model 8-10187
  - kinetic Ising model with quenched relaxing impurities, crit. dynamics 8-10167
  - kinetic theory, master equations *(Russian)* 8-47498
  - latex, monodisperse, mechanical props. 8-48701
  - lattice gases of hard core molecules having two orientations, phase transitions 8-29059
  - lipid membranes, orientational phase transitions with mol. config. change 8-14444
  - molecular crystal spin model for orientational phase transition 8-30735
  - multirhythm system, transition in causal dynamics 8-4580
  - naphthalene-TCNB (PMDA), Raman spectra orientational disorder, charge transfer cryst. 8-19459
  - organic molecular crystal, phase transforms. obs. using TEM, electron beam damage 8-34621
  - n-paraffin, rotator phase transformation, lattice dynamics Helmholtz free energy 8-34585
  - physics of transitions, introduction 8-26660
  - polyethylene oxide ionic complexes 8-47251
  - polystyrene, monodisperse latex, shear US meas. 8-31711
  - semi-infinite system, Landau-Ginzburg theory 8-47500
  - static precursor nuclei, anomalies in high temp. superconductors, ferroelectrics, organic conductors 8-10165
  - p-terphenyl, Raman scatt., order-disorder phase transition 8-43841
  - TGS:Cr^{3+}, EPR obs. of fluctuations near phase transition 8-43820
  - thermal expansion tensor for crysts. showing order-disorder transition, temp. depend. *(French)* 8-34636
  - AgBiS(Se)$_2$, polymorphism and defects, electron microscopy 8-2254
  - Ag$_2$HgI$_4$, 51°C, sound vels. and dielec. losses 8-10129
  - Ag$_2$SbS$_3$, order-disorder phase transition, NQR and spin-lattice relax. expts. 8-47523
  - Au-Ag-Cd pseudobinary alloys, thermodynamic study of order-disorder and martensitic transform. 8-48399
  - Au$_4$V, effect of structural changes on phys. props. 8-31400
  - Cu-Ga alloys, massive phase ξ tempering, kinetics, order-disorder transform. *(French)* 8-44118
  - Cu-Mn, positrons as probe of phase transforms. 8-31401
  - β-Cu-Zn-Al, ordering, TEM obs. 8-39768
  - Cu$_3$Au, ordering process, cluster size evolution 8-39766
  - CuPt alloy, equiatomic, ordering processes, anisothermal annealing exam. *(Japanese)* 8-39765
  - Fe-Co, equiatomic, atomic order, Mossbauer study *(French)* 8-27135
  - Fe-Co (25-35%), ordering, Cr addition effects, Mossbauer expts. *(Russian)* 8-19741
  - Fe-Co (30-70 at.%), comp. depend., neutron diffr. expts. 8-15393
  - Fe-Ga, solid soln., order-disorder transform. *(French)* 8-3121
  - Fe$_x$NbS$_2$, ordering of Fe atoms 8-38650
  - Hg$_{3-\delta}$AsF$_6$, one-dimens. phonons and phase-ordering phase transition, neutron scatt. expts. 8-26644
  - KAg$_4$I$_5$, ionic conductivity and heat capacity near T$_c$ 8-47584
  - KCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8-14434
  - KCN-KCl mixed system, dielec. props. meas. 8-15112

order-disorder transformations continued
KCN-KCl mixed system, Raman spectra obs. 8−15113
$MgFe_2O_4$, sintered, cation ordering, grain size effects 8−39763
$Mn_{0.25}NbS_2$, mag. anomaly rel. to struct. disordering 8−43557
$ND_4Cl:Cu^{2+}$, high-press. EPR, order-disorder transitions 8−19310
$NH_4Ag_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
NH_4Cl, electro-optical props. near order-disorder transition 8−31173
NH_4Cl, order-disorder transition, slip bands 8−22848
$NH_4UO_2(NO_3)_3$, Raman spectra 6-293K, phase transition 8−27220
Na, adsorbed on W(110) plane, ordering, theoretical anal. 8−18892
NaCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
NaCN, Raman spectrum, hydrostatic press. effects 8−6663
$NaNO_3$, disordered, temp. depend. of Raman spectra, Rayleigh wing scatt. 8−31209
Ni, H chemisorption, order-disorder transitions on (111) surface, LEED observation 8−47668
Ni-Fe alloy, atomic and mag. ordering, cluster variation calc. *(Russian)* 8−15391
$Ni_{1-x}Al$ solid solution, vacancy ordering exam. by electron diffr. after annealing 8−3123
Ni_3Al, Mossbauer experiments on homogeneity 8−48395
Ni_3Fe, Mossbauer effect 8−10811
Ni_3Fe, ordered and disordered states, strain hardening characts., temp. depend., multiple slip case *(Russian)* 8−15421
Ni_3Mn, at. ordering during annealing, mag. field effect 8−15394
Ni_4Mo, statistically homogeneous ordering, computer-simulated field ion images 8−9991
O adsorbed on W, order-disorder transition, theory 8−38811
$PbHPO_4$, protonic order-disorder transition 8−26478
Pd-H alloys, X-ray diffr. study, β-phase anomaly near 50K 8−26496
$(Pd_{0.67}Fe_{0.33})_{1-x}Au_x$, ordering effects on mag. props. *(Russian)* 8−47942
$RbAg_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
$RbNO_3$, single cryst., DC cond., dielec. and thermophys. props., temp. depend., transitions interpret. 8−26682
S, monoclinic, order-disorder transition, X-ray struct. determ. 8−30750
$SnCl_2.2H_2O$, protonic order-disorder transition, H-bond vibr. Raman spectra temp. depend. 8−23437
$SrCl_2$, high temp. powder neutron diffr., transition to highly conducting phase 8−47586
Ti_3Al-(Nb), ordering transform. and mech. props. 8−31402
V-S system, order-disorder transition of metal vacancies, statistical thermodynamics 8−43012
V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
VN_{1-x}, vacancy ordered structure in cubic mononitride phase, transition entropy determ. 8−43011
ZrO_2-Y_2O_3, phase equilibria and ordering 8−48385

ores *see minerals*

organic acids *see organic compounds*

organic compounds
see also free radicals; macromolecules; organic semiconductors; organometallic compounds; plastics; polymers; proteins; Rochelle salt; waxes
acenaphthene, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
acenaphthene, vibronic spectra, electronic-vibr. interactions 8−1021
acenaphthene in n-alkane matrices, Shpolskii spectra fluorescence 8−9190
acenaphthylene, anisotropic mesophase during refluxing carbonization 8−14274
acenaphthylene, orientational disorder, spectroscopic exam. 8−14670
acetaldehyde, matrix isolation spectra using tunable diode laser 8−45739
acetaldehyde+CO_2, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
acetaldehyde-d_1(-d_3), fragmentation processes, H scrambling, photoionis. mass spectra 8−42139
acetaldoxime, photoelectron and far UV absorpt. spectra 8−17712
acetamide, effect of small additions of water struct., from permittivity obs. 8−9937
acetic acid, dil. soln., dielectric polaris., linear correlation factor 8−6624
acetic acid, effect of impurities on US relaxation 8−10130
acetic acid, methyl group dynamics, NMR 8−29802
acetic acid, PVT props., 448.15-603.15K, press. up to 10 MPa 8−14455
acetic acid, self association, IR spectra, book contrib. 8−21931
acetic acid, sound vel. meas. at 5 to 20 kHz in small-volume cells 8−9516
acetic acid, thermal cond. meas. using Peltier effect 8−45615
acetic acid, viscosity of dissociating vapour 8−5840
acetic acid dimer, vibr. spectra at low temp., Witkowski-Marechal theory 8−46314
acetic acid-d_0, -d_1, -d_4, H bonding in solid, IR spectra, vibr. and librational modes 8−43843
acetic acid-d_4, adsorbed on TiO_2 (rutile) IR obs. 8−30827
acetic anhydride-CS_2 binary liq. mixture, crit. behaviour of elec. resist. 8−6422
acetic anhydride-cyclohexane binary liq. mixture, crit. behaviour of elec. resist. 8−6422
acetone, adsorption on water-preadsorbed alkali halide *(Japanese)* 8−18897
acetone, condensation in presence of instabilities, photographic study 8−10180
acetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
acetone+H(2S), collisional quenching, mass spectral obs. 8−25685
acetone complex with Br_2, electronic absorpt. spectral calc. *(Russian)* 8−37628
acetone oxime, photoelectron and far UV absorpt. spectra 8−17712
acetone-benzene(cyclohexane), vap.-liq. equilibria 8−30745
acetone-chloroform solution, Monte Carlo calcs. for interface struct. with directed intermol. forces *(Russian)* 8−1975
acetonitrile, ν_2, ν_3 and $2\nu_3$ bands, vibr. relax., Raman spectra of liq. and dil. soln. 8−9154
acetonitrile, liq., mol. pair-correl. function, X-ray and neutron diffr. 8−26420

organic compounds continued
acetonitrile-carbon tetrachloride-n-butanol, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
acetonitrile-CS_2 binary liq. mixture, crit. behaviour of elec. resist. 8−6422
acetonitrile-toluene-n-butanol, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
acetophenone, enolate anion, electron photodetachment cross-section resons. 8−5298
acetophenone, triplet-triplet energy transfer naphthalene-d_8, in EPA rigid soln., donor phosphoresc. decay 8−10971
acetyl chloride, liq., proton spin-lattice relax., temp. depend. 8−39435
acetyl cyanide-d_1, microwave spectra, r_s, r_0-struct. 8−13491
acetyl halide-titanium tetrahalide adducts, coordination, IR and Raman spectra 8−42050
acetyl iodide, photodissoc., secondary product decomposition 8−25636
acetyl radical, photofragment spectroscopy, collision dynamics 8−25636
N-acetyl-valine, NMR of solid, ^{14}N-^1H dipolar spectra, NH bond length 8−48055
3- and 4-acetylamino-N-methylphthalimide, in alcoholic solns., phosphoresc. decay laws 8−17709
acetylcholine asynchronous release by motor nerve impulse, mediated by conventional Ca^{2+} channel 8−11638
acetylene, abundance in Jupiter atmosphere 8−16337
acetylene, adsorbed on Ni (111), vibr. spectra from electron energy loss *(French)* 8−34696
acetylene, adsorbed on type 13X zeolites, inelastic neutron scatt. 8−14584
acetylene, adsorption on polycryst. and (0001) single cryst. Re surfaces 8−38947
acetylene, adsorption on Pt (111), cooxidation, AES *(German)* 8−14619
acetylene, and deuterated derivative, adsorbed on Ag exchanged zeolite, inelastic neutron scatt. 8−6229
acetylene, average mol. polarisability, Frost model wavefunctions calcs. using p-type Gaussians 8−41924
acetylene, chemisorbed on W, IR vibration spectroscopy using refl. inelastic electron scatt. 8−14603
acetylene, chemisorbed on W(110), rehybridization 8−31289
acetylene, chemisorption on Rh (111) and (100) surfaces, LEED, AES and thermal desorption meas. 8−38951
acetylene, electron impact ionis., valence electron momentum distribs. 8−33617
acetylene, electron impact ionisation, valence orbitals, momentum distrib. and correl. effects 8−5361
acetylene, geometry optimisation, using bond function augmented basis sets 8−905
acetylene, IR spectra, rot. and vibr. struct. 8−21922
acetylene, molecular charge density contours for cryst. struct. 8−38645
acetylene, on Pt surface, electron energy loss spectra, surface vibrs. 8−15701
acetylene, Q-branch of CARS, form and width alteration due to press. *(Russian)* 8−29795
acetylene, Q-branches, high resolution pulsed CARS 8−17676
acetylene, Raman spectra, high resolution using laser source 8−42072
acetylene, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
acetylene, vibr. freqs., MINDO/3 calcs. 8−13429
acetylene+Ar^{2+}, reactions in flow-drift tube, rate consts. 8−15664
acetylene+Bi($6^4S_{3/2}$), absolute rate consts., time-resolved reson. fluoresc. meas. 8−27731
acetylene+Cl, reaction kinetics, stratospheric implication 8−31618
acetylene+O_2 detonation products, enhancement of CO laser gain measurements 8−33729
acetylene+OH radical, reaction rate consts. meas. 8−35663
acetylene+Si*, collisional quenching, reson. line absorpt. expt. 8−46297
acetylene+SO_2, photochem. reactions, rate consts. 8−23956
acetylene adsorption on Ni(111), chemisorbed O_2 effects, CH formation 8−18902
acetylene-air flame, energy transfer from laser excited Na, Li, optoacoustic pulses 8−25490
acridine, T-T absorpt. build-up, following picosec. pulse singlet excitation, in gas phase 8−9161
acridizinium ion, fluoresc. quenching by external heavy atom, via charge-transfer complex 8−42112
acrolein, detect. in subway air 8−36273
acrolein, triplet state vertical and adiabatic excitation energies, CI calcs. 8−9083
acrylonitrile, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
acrylonitrile-dimethylaminoethyl methacrylate membrane, as burn wound covering 8−44676
actinium (III) axalate decahydrate, lattice consts. 8−2102
actinomycin-DNA bindings, first-neighbour specificities, circular dichroism 8−3442
adamantane, crystalline, lattice and sub-grain boundary self-diffusion coeffs. meas. 8−6179
adamantane, growth rate from vapour, variability under const. conditions 8−34452
adamantane, nucl. spin echoes ^{13}C magnetisation and intermol. dipolar coupling 8−35062
adamantane, order cubic F43m phase, X-ray diffuse scatt. 8−38684
adamantane, plastic cryst., Rayleigh scatt. of Mossbauer radiation 8−27125
adamantane, proton-enhanced NMR, magic-angle spinning, polarisation transfer 8−19349
adenine nucleotide content of human blood platelets after γ-irrad. 8−28021
adenosine 5′-monophosphate, UV resonant Raman spectra 8−48756
adenylyl 3’-5’ adenosine, conform. equilib., Raman temp. jump obs. 8−8450
ADP, role of respiratory chain in oxidative phosphorylation 8−15795
ADP induced mitochondrial absorbance changes rel. to ATP synthesis 8−27908
air-acetylene flame, atom form., theory 8−7208
L-α-alanine, cryst., cationic radicals, EPR 8−11537
l-alanine incorporation in TGS crysts., orientation depend. 8−42938
alanine-d_3, vibr. circ. dichroism, mechanism 8−33505
alcohol, dielec. const., hindered mol. rot. influence 8−43767

organic compounds continued
  alcohol homologous series, ^{1}HT$_{1}$-relax. time, paramagnetic, diamagnetic shift reagent effects *(German)* 8−43673
  alcohol monolayer on water, eqn. of state 8−6195
  alcohol solutions, fluoresc. damping curves in reson. quenching by one-photon counting method 8−10978
  alcohol-active soln., assoc. soln. thermodynamics, H^{e}, V^{e} curves 8−31671
  alcohol-inert soln., assoc. soln. thermodynamics, enthalpy, Gibbs free energy 8−31670
  alcohol-solvent, associated, excess free energy and enthalpy of mixing 8−31680
  alcohols, α-particle impact, 0.3-2.0 MeV, O stopping cross-sections 8−17753
  alcohols, dil. solns., dielec. loss and relax., microwave and sub-mm. wave absorpt. obs. *(German)* 8−23396
  alcohols, electrochem. oxidation, kinetic isotope effect *(German)* 8−15681
  alcohols, self-association in binary mixtures, 2-const. model, vap. press. meas. *(German)* 8−18532
  alcohols, self-diffusion, flow meas., 25-65°C 8−2278
  alcohols+Sc(La)(Y), O atom abstraction, product internal state distrib., fluoresc. study 8−48643
  aldosterone action mechanism and phospholipase A 8−24053
  aliphatic acids, interaction with phosphine 3R hydrochloride, IR and electron spectra *(Russian)* 8−21930
  aliphatic alcohols, interaction with phosphine 3R hydrochloride, IR and electron spectra *(Russian)* 8−21930
  aliphatic chlorocarbons, electron impact dissoc., ≲10 eV, negative ion prod. 8−5359
  aliphatic nitroxyl radicals, quenching of triplet state aromatic hydrocarbons, energy transfer 8−35651
  aliphatic short chain compounds, oxidation and degradation by hypereazeotropic nitric acid 8−37431
  aliphatic unsaturated normal hydrocarbons, positron annihilation time spectra, polarisability depend. 8−6806
  alkali alkanoates, phase relationships and thermal behaviour branching effects 8−43111
  alkali atom+alkyl oxide cross-sections, hard-sphere model 8−7176
  alkali n.-alkanoates, long-chain, ethanolic solns., solubility temp. depend. 8−15724
  n-alkane, adsorption energy of mols. on long-chain even n-alkane crysts., rel. to cryst. growth kinetics 8−42933
  n-alkane, long-chain even, adsorpt. energies of n-alkane mols., rel. to cryst. growth kinetics 8−42933
  n-alkane binary mixtures, infinite dilution activity coeffs. 8−15695
  alkane chain internal rot. correlation times, from ^{13}C T$_{1}$ data 8−17688
  n-alkane-dimethylsiloxane mixtures, shear viscosity press. depend. 8−30775
  n-alkanes, Bender eqns. of state 8−26656
  alkanes, diamag. susceptibility, graph theoretical anal. 8−33449
  alkanes, electron mobilities through liq. and critical regions 8−2536
  n-alkanes, hydrophobic effect, dil. soln. struct. and thermodynamic props., semi-empirical model 8−20060
  alkanes, linear, elec. struct., evolution of electronic level towards band struct. *(French)* 8−5282
  alkanes, linear, electronic struct., electronic relax. during photoemission *(French)* 8−5283
  alkanes, liquid, press. induced changes in mol. conform. 8−9269
  alkanes, mixtures, order, enthalpy of mixing, calorimetric obs. *(German)* 8−18773
  alkanes, molecular topology, branching, distance matrix, information theoretic calcs. 8−25405
  n-alkanes, obs. and anal. of depolarised Rayleigh doublet 8−35154
  n-alkanes, orientational phase transitions with mol. config. change 8−14444
  alkanes, tritiated, fragmentation by β-decay, dissoc. of daughter species 8−31669
  alkanoate, Li, Na, K and Rb salt mixtures, DSC anal. 8−10192
  alkene-halogen compounds, assoc., matrix isolation vibrational spectra, appls. 8−46416
  alkenes, diamag. susceptibility, graph theoretical anal. 8−33449
  n-alkenes, photoelectron spectra, MINDO/1, MINDO/3 and Fenske-Hall calcs. 8−5285
  alkenes, substituted, core electron binding energy shifts, σ- and π-relax. energies 8−29750
  p,p′-n-alkoxyazoxybenzene homologous compounds, nematic, DC Kerr constants 8−27185
  p-n-alkoxybenzoic acid, homologs, principal mol. polarisabilities calc., refr. indices of nematic mesophase meas. 8−2004
  p-alkoxybenzoic acids, nematic liq. cryst., proton spin lattice relax., mol. dynamics 8−34425
  4-n-alkoxybenzylidene-4′-methylalkylanilines, chiral nematic cryst., mesorphic behaviour and binary systems 8−2000
  alkoxylbenzoic acids, orientation in their nematic state 8−42903
  alkyl ammonium manganese chloride, birefringence, two-dimens. mag. behaviour, magneto-optical meas. 8−31175
  alkyl bromides, and perfluorinated mols., Br branching ratios, broadband flash photolysis 8−27787
  alkyl cadmium, valence and core electron energies, photoelectron spectra, ab initio calc. 8−25613
  alkyl chlorides, proton affinity correl., ab initio SCF calc., MINDO/3, STO and G basis sets 8−33421
  alkyl halides, depolarisation thermocurrent obs. of main relax. around glass transition 8−27158
  alkyl iodide molecules, photodissoc. by 254 nm radiation 8−3354
  alkyl sulphides, C-S stretching vibrs. 8−25533
  alkyl trichloroacetates, solns., intramol. rot., permittivity and dielectric loss, microwave meas. 8−31145
  4′-n-alkyl-4-cyanobiphenyls, dielec. dispersion 8−2798
  4-n-alkyl-4-cyanobiphenyls, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
  p-alkyl-p′-cyanocyclohexylcyclohexanes, thermotropic nematics with positive dielectric and negative diamag. anisotropy 8−34435
  p-n-alkyl-p′-n-alkoxytolanes, hydrostatic pressure effects, phase transitions *(French)* 8−14448
  alkylammonium compounds with perovskite-type layer struct., symmetry of lattice vibrs. 8−22797
  alkylammonium tetrachloromanganate (II) IR and Raman spectroscopic exam. 8−31189

organic compounds continued
  alkylene-di-ammonium cadmium chloride, influence of C atoms and metal ions on structural phase transitions 8−2256
  4-n-alkylphenyl 2′-chloro-4′-(6-n-alkyl-2-naphthoyloxy)benzoates, synthesis and liq. cryst. props. 8−34433
  (+)-4-n-alkylphenyl-4′-(4″-methylalkylbenzoyloxy)benzoates, optically active, synthesis and effect on liq. cryst. display props. 8−1997
  allene, C-C double bond rot. barrier, ab initio open-shell restricted SCF calc. 8−1099
  allene, photoionisation and threshold photoelectron photoion coincidence obs. 8−21981
  allene, transition state for internal rot., HF/STO-3G calcs. with correlation energy corrections 8−25430
  allene+O(^{3}P), absolute rate consts. meas., 297-439K 8−7196
  allene-d$_{4}$, Raman and IR spectra, rot.-vibr. bands, ground state constants 8−25545
  allyl free radical decay, in irrad. polyethylene, const. diffusion controlled rate const. 8−15651
  allyl radical, ab initio SCF solns., doublet stability 8−33423
  allylmethylether, thermal and IR laser induced unimol. decompositions 8−20012
  π-allyls, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
  amiloride effect on rabbit colon Na transport blocked and reversed by p-chloromercuribenzene sulphonate 8−44479
  amine, chemisorbed on metal or oxidised metal, surface ionisation, mass spectra expts. 8−2360
  amine solutions, US analysis method 8−7277
  amines, caged, multiphoton ionisation, two-photon transition resons. 8−33558
  amines, detection by chemiluminescence analyser 8−40094
  amines, self-association in binary mixtures, 2-const. model, vap. press. meas. *(German)* 8−18532
  amines+O(^{3}P), rate consts. temp. depend., 298-440K 8−48616
  amino acid photodegradation in presence of TiO$_{2}$ 8−11531
  amino acid racemization, appl. to geochronology and geothermometry 8−20341
  amino acids, ^{15}N-labelled, nanomole isotopic assay by collision induced dissoc. MS 8−20095
  amino acids, aq. solns. EPR of spin-trapped radicals, hydrated electron reactions 8−27796
  amino acids, dissolved, in seawater, rel. to organic pollution 8−44883
  amino acids, polycryst., proton mag. relax. and mol. motion 8−20139
  3-amino-N-methylphthalimide, in polar-nonpolar solvent mixture fluorescence band struct. 8−15213
  aminoacetonitrile, microwave rot. spectrum, quadrupole hyperfine struct. 8−17658
  ^{11}C-1-aminocyclopentane carboxylic acid, tumour location, clinical trials with single photon detect. 8−31895
  α-aminoisobutyric acid, cryst., γ-irrad., cation radicals, ESR obs., SCF-MO-INDO calcs. 8−11537
  aminophenols, photographic development, rate/conc. relationship 8−21244
  aminophthalimides, dynamic dipole induced interactions in absorption spectra 8−13553
  aminosilane stationary phase, for HPLC separation of polynuclear aromatic compounds 8−35747
  ammonium benzoate, IR spectrum, cryst. struct. 8−19455
  ammonium bioxalate monohydrate spontaneous parametric scatt. spectra, polariton wave vector and Stokes lines analysis 8−43885
  ammonium hydrogen bisbenzoate, IR spectrum, cryst. struct. 8−19455
  ammonium hydrogen glutarate, H bonding, vibr. spectra 8−43860
  ammonium Rochelle salt, first order phase transition 8−43818
  AMP, cyclic, postsynaptic modulation of excitatory process in sympathetic ganglia 8−27931
  cAMP−induced struct. changes in erythrocyte membrane, spin-probe study 8−31779
  3-amyl alcohol, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
  anilides of 1-piperidine carboxylic acids, CDCl$_{3}$,CHCl$_{3}$ solns., intramol. easily polarisable H-bonds, IR spectra 8−25523
  aniline, in benzene, polar dielectric system, RF cond. and dipole moment 8−2788
  aniline, prereson. Raman effects, intensity enhancement mechanism 8−42069
  aniline, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
  aniline, vibronic perturbations of UV spectrum 8−37654
  aniline yellow, dye soln., photothermal spectroscopy 8−32808
  1-anilino-8-naphthalene sulphonate, bound to chloroplast membrane, fluoresc. study of proton and cation effects 8−24034
  1,8-anilinonaphthalene sulphonate, aq. and ethanolic solns., excited singlet state decay pathway 8−17703
  anils, cryst., high-press. optical effects 8−31170
  anils, polystyrene soln., high-press. optical effects 8−31171
  p-anisidine soln., dielectric const., loss and relax., dipole moment 8−43782
  anisole and -d$_{3}$, Raman spectra, low freq. vibrs., torsional barrier 8−25543
  anthracene: tetracene cryst., triplet-state EPR for isolated mol. orientation 8−26583
  anthracene:acridine(carbazole), fluoresc., structural traps for singlet excitons 8−19542
  anthracene:tetracene, delayed fluorescence excitation spectra 8−39594
  anthracene, 340-310 nm absorption spectrum dichroism, masked ^{1}L$_{b}$-^{1}A$_{1}$ transition 8−17685
  anthracene, α-particle tracks, excited states, creation and evolution 8−43934
  anthracene, γ-irrad., radical pairs EPR detection 8−31664
  anthracene, carbonyl derivatives, triplet state population, picosec. laser obs. 8−13544
  anthracene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
  anthracene, EPR linewidth of triplet excitons 8−15011
  anthracene, excitation and propagation of phonons, luminesc. meas. *(Russian)* 8−35202
  anthracene, film substruct., vacuum deposited, low temp. luminesc. *(Russian)* 8−15226
  anthracene, harmonic force fields, bond orders, normal coord. anal. 8−25418

organic compounds continued
anthracene, in stretched polythene films, molecular distribution determ. 8−27298
anthracene, intermol. relax. energies, UPS 8−31304
anthracene, lattice parameters press. depend., elastic consts. 8−38686
anthracene, light polarisation depend. on energy transfer from excited to emitting mols. *(German)* 8−37677
anthracene, melt and dil. soln., UV spectra, line broadening and shift vibr. struct. 8−17684
anthracene, optical determ. of vapour conc., vap. press. and heat of sublimation 8−22840
anthracene, orientation in polyethylene film, linear dichroism 8−29864
anthracene, polymorphic forms, generation by repeated slip 8−34457
anthracene, pure and d_n, PMMA soln., triplet lifetimes, 77-300K 8−25594
anthracene, radiation-induced topotactic conversion from di-para-anthracene, low temp. TEM obs. 8−35710
anthracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
anthracene, scintillation response to deuteron bombardment, energy, temp., and deuteron direction depend. *(German)* 8−6779
anthracene, singlet-triplet absorpt. spectra, 2-300K, photoexcitation spectra 8−43890
anthracene, spectral evidence for green incipient dimers after photo-oxidation and photodimerisation 8−15687
anthracene, temperature independent intersystem crossing 8−39030
anthracene, thin film vacuum deposited, exciton reflection spectra *(Russian)* 8−15194
anthracene, triplet energy migration in polystyrene matrix, rate meas. 8−35185
anthracene, triplet exciton trapping by dislocations 8−30871
anthracene crystal, stimulated emission and Raman scatt. 8−1303
anthracene crystal, triplet exciton absorpt., high resolution photoconductivity spectroscopy 8−10504
anthracene crystals, carrier trapping in deformed surface region 8−47806
anthracene crystals, local biexciton formation, luminesc. spectra *(Russian)* 8−2428
anthracene glass, excess electron optical absorption spectrum model, band shape 8−33500
anthracene like crysts., charge-transfer electron-exciton bound states, theory 8−10365
anthracene mol. cryst., exciton-lattice interaction and exciton absorption line shape 8−18968
anthracene plate, ballistic propagation of phonons *(Russian)* 8−34582
anthracene thin films, struct. rel. to substrate temp., thickness, condensation rate 8−30845
anthracene-β-sulphonic acid, 340-310 nm absorption spectrum dichroism, masked ^1L_b-$^1A_1$ transition 8−17685
9-anthracene-$(CH_2)_n$-N,N-dimethylaniline, electrogenerated chemiluminesc., intramol. exciplex form. 8−11503
anthracene-acridine, order parameters and lattice energy, mean field approx. 8−22688
anthracene-dimethylpyromellitimide, CCT crystals, mag. field effect on fluorescence 8−19543
anthracene-PMDA, charge transfer cryst., 2K, zero-phonon lines, singlet spectra 8−23484
anthracene-TCNB charge transfer crystal, orientational phase transition, EPR, Raman spectroscopy exam. 8−26817
anthracene-tetracyanobenzene, triplet exciton annihilation, mag. double reson. *(Russian)* 8−19380
anthracene-tetracyanobenzene charge-transfer complex, RYDMR of triplet excitons annihilation 8−39448
anthracene-tetracyanobenzene cryst., triplet excitons, zero-field EPR splitting temp. depend. 8−10748
anthracene/TCNB, charge-transfer cryst., fluoresc., 1.2-300K, mobile triplet excitons 8−43913
anthracenes, anthronyl substituted, solvent-assisted form. of luminesc. intramol. exciplexes 8−25589
anthracenes, long-lived luminesc. in solid state *(German)* 8−23528
anthracenes, nonradiative relax. of higher excited triplet states, double excitation obs. 8−29805
anthranilic acid, solid, amino group reorientation, PMR second moment obs. 8−35046
anthraquinone, in Shpolskii matrices, triplet state spin-lattice relax. rates 8−21952
anthrone, 533 nm excited state absorpt. kinetic, triplet quenching solvent, internal conversion, vibr. relax. 8−21935
p-(9-anthryl)-N,N-dimethylaniline derivatives, excited emitting states in polar solvents, fluoresc. 8−5263
antimalarials, interaction with coenzyme-Q_{10}, theory 8−27885
arachidate monolayers, optical props. integrated optics meas. 8−35214
arginine, polycryst., proton mag. relax. and mol. motion 8−20139
aromatic acids, mixtures, quantitative anal. by ^{13}C NMR 8−31716
aromatic aldehydes, and deuterated forms, $n\pi^*$ and $\pi\pi^*$ assignments in 0-0 band, pot. surface method 8−9197
aromatic compound-carbon tetrachloride, liq. mixture, sound vel. theories 8−2199
aromatic compounds, isothermal recomb. fluoresc., decay kinetics 8−29809
aromatic compounds, two-stage photoionisation in solns., UV laser irrad. effects *(Russian)* 8−13556
aromatic compounds mixture, charge transfer equilib. consts., adiabatic ionis. energies, entropy changes 8−37738
aromatic esters derived from naphthalene, liqs. cryst. props. 8−47235
aromatic hydrocarbons, aqueous micellar soln., triplet state room temp. phosphoresc., hydrophillic quenchers 8−9181
aromatic hydrocarbons, in organic glasses, nonphotochemical burning, impurity site relaxation 8−25548
aromatic hydrocarbons, penetration into graphite intercalation cpds. of alkali metals *(French)* 8−27433
aromatic hydrocarbons, singlet energies, correlation with anion radical protonation 8−40064
aromatic hydrocarbons, triplet state quenching by nitroxyl radicals, energy transfer 8−35651
aromatic isomers, analysis by IR spectroscopy, preconcentration, separation and computer techniques 8−31730
aromatic molecules, UV photoelectron spectroscopy, basic concepts, spectra 8−17715
aromatic molecules in O_2 matrices, singlet-triplet absorpt. spectra 8−17683

organic compounds continued
aromatic-hydrocarbon crystals, model for fission of singlet excitons into triplet-exciton pairs 8−14672
N-aryliminophosphorane, XPS spectra, satellite lines obs. 8−37680
N-arylsulphilimines, XPS spectra, satellite lines obs. 8−37680
asparagine, polycryst., proton mag. relax. and mol. motion 8−20139
astaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
atmospheric micropollutants in precipitation in Norway 8−36262
ATP effect on Na pump activation by external cations in squid axon 8−35818
ATP measurement in single red blood cells using firefly biolum. reaction 8−48951
ATP synthesis rel. to ADP induced mitochondrial absorbance changes 8−27908
auramine O, fluoresc. efficiency, solvent viscosity effects at high press. 8−9188
auramine single crystal, lifetime and mobility of photogenerated charge carriers 8−2516
9-aza-bicyclo (3,3,1)nonan-3-one-9-oxyl, dimerisation, ESR, NO radical pair exchange 8−19330
2-azanoradamantane N-oxyl, crystal-plastic transition, plastic crystal struct. exam. 8−2100
aziridine, anhydrous and hydrated, inversion calc. 8−9272
azo dye sulphonates and analogs., aqueous solns., surface tensions 8−47641
azo dyes, cis-trans photochem. isomerisation 8−27785
azoalkanes, fluoresc., solvent isotope effect 8−25591
azobenzene, foreign particle behaviour during growth 8−47264
azoethane, in hydrocarbon glass, 77K, photoisomerisation, matrix memory effect, quantum yield 8−7213
azoethane, pyrolysis, master eqn. for rate coeff. 8−48612
azomethane, trans-cis isomerisation, INDO-SCF and CI calc. 8−25440
p-azoxyanisole, depend. of phase transition temp. on thickness 8−26669
azoxybenzene, nematic liq. crystal, elastic consts., varying mag. field and temp. 8−18540
azoxybenzenes, nematic, mag. susceptibility, orientational order parameter 8−34426
azoxybenzenes, nematic, refr. index, birefringence, internal field 8−34427
bacteriochlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
bacteriochlorophyll monolayer quantum yield and image contrast in photoelectron microscopy 8−44453
barium formate, nonlinear optical susceptibility tensor, Maker fringes 8−13751
barium stearate film, thickness measurement using Talbot effect 8−9321
bases, biologically important, and derivatives, optical crystallographic props. 8−3449
basketene, electron diffr. determ. of struct. 8−37764
BBOA, smectic B phase, containing 4 ferrocene derivatives, ^{57}Fe Mossbauer study 8−27136
BBOT, time-depend. fluoresc. depolarisation, mol.-rot., slip boundary conditions in soln. 8−9179
benzalazine, thermal expansion, lattice consts. meas. 8−47539
benzaldehyde, and deuterated forms, in p-xylene, 4.2K, $n\pi^*$ phosphoresc. assignments 8−9197
benzaldehyde, prereson. Raman effects, intensity enhancement mechanism 8−42069
benzaldehyde, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
benzaldehyde derivatives, Raman intensities obs., phenyl ring-carbonyl group conjugation 8−29792
benzaldehydes, in mixed cryst., T_1/T_2 interstate interactions, modulation polaris. phosphoresc. spectra, 4.2K 8−9185
benzaldehydes in EBBA liq. cryst., NMR, mol. struct., reorientation and order matrix 8−5251
benzene, ^1H chem. shift tensor, proton mag. shielding anisotropy 8−19348
benzene, γ-irrad., radical pairs EPR detection 8−31664
benzene, γ-radiolysis, phenyl radical intermediate, spin trapping, EPR 8−7218
benzene, adsorption on graphitized C black, exptl. determ. of models 8−6216
benzene, adsorption on Ir (110) surface 8−38961
benzene, and -d_6, $^1B_{2u}$ excited state, force field, normal coords. 8−5193
benzene, Brillouin scatt., cryst. at 0°C, elastic consts. 8−43882
benzene, chemisorpt. on Ni(100) and (111), LEED and high resoln. electron energy loss spectra 8−6224
benzene, chemisorption on (111) surface of Pt, LEED and Auger spectroscopy obs. 8−30823
benzene, coherent polarisation spectroscopy of Raman scatt. 8−13758
benzene, crystalline, press.-vol.-temp. relations 8−22819
benzene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
benzene, dielec. const. meas. using 3-terminal meas. cell 8−21170
benzene, droplet vaporisation in moderately-high temp. stationary media, Chang model 8−34609
benzene, electron impact, electronic energy levels, (below 7 eV) obs. 8−17807
benzene, electron impact-induced generalised oscill. strength, 400 eV, 500 eV, momentum change depend. 8−1088
benzene, excited electronic states, variable angle electron impact spectroscopy 8−13612
benzene, fluoresc. quantum yield in soln., dipole-dipole interaction 8−25598
benzene, fluoresc. quenching by pulsed proton irrad. of cyclohexane soln. 8−5270
benzene, free convection heat transfer in tube at supercrit. press. 8−42518
benzene, hypersound propagation temp. depend., Mandelshtam-Brillouin spectra meas. 8−31210
benzene, IR spectra, vibr. exciton cluster states, percolation and pairwise interactions 8−43844
benzene, isothermal compressibility 8−47461
benzene, isotropically mixed crysts., singlet and triplet exciton percolation theory 8−26818
benzene, Jahn-Teller active states, vibronic struct., vibr. perturbation, spectral obs. 8−13440

organic compounds continued
benzene, liq., light scatt. coeff. determ., absolute method 8−2868
benzene, liq., stimulated Raman scatt. 8−29172
benzene, liquid, numerical exam. of neutron quasielastic scattering 8−9938
benzene, liquid, visible absorpt. expt. using wavelength-modulation spectroscopy 8−24868
benzene, normal vibr. anal. 8−13487
benzene, partially ordered solid, NMR line shape, orientational distrib. 8−35048
benzene, photoelectron spectra, HAM/3 MO calcs. 8−13414
benzene, Raman and IR spectra at high press. 8−35127
benzene, reson. Raman cross sections, forbidden electronic transitions, depolaris. ratios 8−42075
benzene, S_1 state, mode to mode vibr. energy flow, low pressure fluorescence spectra exam. 8−25664
benzene, secondary ion reactions, branching ratios 8−40035
benzene, self-diffusivity data 8−6169
benzene, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
benzene, soln., light deflection, near crit. point, due to gravitational effect 8−2818
benzene, third-order nonlinear electric susceptibility, from CNDO wavefunction 8−37558
benzene, unoccupied orbitals, excitation energy, electron affinity, HAM/3 MO calcs. 8−13415
benzene, vapour, thermal conductivity, 300-700K 8−38444
benzene, vibr. freqs., MINDO/3 calcs. 8−13429
benzene, vibr. relax. in soln., ν_1 C-H stretching band Raman spectra 8−25540
benzene, X-ray photoelectron spectra, C 1s shake-up struct., PPP CI calc. 8−42126
benzene+$Li^+(Mg^+)$, relative level excitation, orbital ang. momentum quantum number depend. 8−25688
benzene+$O(^3P)$, reaction product identification by mass spectrometer 8−7185
benzene+OH, cross mol. expt., product anal., 300K 8−44353
benzene$(-d_6)$, prereson. Raman effects, intensity enhancement mechanism 8−42069
benzene derivatives, carbon tetrachloride dil. soln., electrooptical quantities, ellipsoidal cavity model *(French)* 8−35114
benzene film, vacuum UV absorpt. spectrum, 1100-2500 Å, effect of deposition temp. 8−23542
benzene liquid core in hollow quartz fibre, stimulated Raman scatt. 8−30087
benzene molecules, bound positrons, time spectrum of positron annihilation 8−42248
benzene soln., UV Raman scatt., forbidden states 8−9155
benzene triplet state, self quenching, effect on naphthalene internal conversion rate estimate 8−25586
benzene vapour, slow neutron scatt., effect of pressure total interaction cross section 8−17273
benzene with 2,2-diethoxypropane, excess enthalpy *(French)* 8−11542
benzene X-ray diffr. pattern and liq. models using C-H group scatt. factors 8−6004
benzene-^{13}C, liq., vibr. spectra, band assignments 8−13500
benzene-acetone donor-acceptor pair, energy transfer cross sections rel. to generalised oscill. strengths 8−46452
benzene-CS_2 mixture, third-order nonlinear susceptibility ratio by CARS 8−46713
benzene-cyclohexane, solution, self-diffusion, capillary cell meas. 8−34637
benzene-cyclohexane, vap.-liq. equilibria 8−30745
benzene-cyclohexane (methane) vapour mixture, excess enthalpy meas. appl. of differential-flow mixing calorimeter 8−12700
benzene-d_0, -d_6, intramol. vibr. energy relax. calcs. 8−33574
benzene-d_0,-d_6, phosphoresc., Boltzmann population and spin-lattice relax., decay processes 8−31230
benzene-d_3, gas phase Raman spectrum, E′ and E″ species, Coriolis consts. *(French)* 8−5235
benzene-d_6:benzene-d_0, phonon side bands of specular optical transitions 8−26649
benzene-d_6, liq., Raman spectra vibr. relax. and band widths 8−23440
benzene-d_6, solubilization in hexadecyltrimethylammonium bromide aq. soln., D NMR 8−24015
benzene-ethylene glycol-sodium dioctylsulphosuccinate emulsion, effect of added water on stability 8−40082
benzene-hexa-n-alkanoates, disc like mols., highly ordered lamellar liquid crysts. 8−14279
benzene-nitrobenzene, liq., stimulated Raman scatt., intensity changes, selective excitation 8−13753
benzene-toluene, solution, self-diffusion, capillary cell meas. 8−34637
benzened_0:phenol, phonon side bands of specular optical transitions 8−26649
benzenes, adsorbed, IR multiple refl. spectra recording via cuvette attached to spectrophotometer 8−298
benzenes, trisubstituted, valence force fields, normal modes of planar vibrations *(French)* 8−37626
benzenesenol, CCl_4 soln., PMR, barrier to internal rot. 8−1006
benzil, heat capacity near phase transition 8−2250
benzil triplet-anisole, reversible exciplex form., phosphorescence, photostationary and transient obs., simulation 8−9182
benzil-benzene, dil. soln., thermodynamic equilib., ebulliometric investig. 8−18752
benzimidazole, excited states, solvent interactions, fluoresc. obs., rel. to chromophore 8−37670
benzo(a)-pyrene, separation and struct. resolution by thin layer chromatography-mass spectrometric meas. 8−7270
benzoate derivatives, m-cyano or m-halogeno synthesis and mesomorphic props. 8−1990
benzoic acid, dimer, cryst., IR and Raman spectra, vibr. assignments 8−31191
benzoic acid, used to test adiabatic heat capacity small sample low temp. calorimeter with automatic data acquisition system 8−12697
benzoic acid-water, liquid fluidised bed, mass transfer at low Reynolds number 8−9698
benzophenone, fluoresc. quenching and intermol. intersystem crossing, nonlinear press. depend. 8−25603
benzophenone, melt growth kinetics, determ. using IR radiometric microscope 8−34453

organic compounds continued
benzophenone, sensitised crosslinking, polymerisation, UV curing, IR investig. 8−35709
benzophenone $^3(n,\pi^*)$, and isotopic forms, in 4,4′-dibromodiphenylether, level anticrossings, ODMR obs. 8−2772
benzophenone-d_{10}, $^3(n,\pi^*)$ state, containing ^{13}C, in 4,4′-dibromodiphenylether, hyperfine ENDOR spectrum 8−42102
benzotriazole, corrosive protection coating of Cu against SO_2 attack 8−11385
benzoxazole, laser action at 330 nm 8−29949
2-benzoyl-1,3,4-triphenyl-1-cyclopentanol, cryst., thermal vibr. of mols., rigid body anal. 8−38787
benzyl, circular dichroism 8−27178
benzyl carbonium ion, internal rot. barrier, MINDO/2(3) forces method 8−9078
benzynes, geometry optimisation by generalised Hartree-Fock 8−25427
biacetyl, SO_2 photosensitised phosphoresc., triplet energy transfer 8−25608
biaryls, model, mol. vibronic circular dichroism 8−37665
biazide-polymer based photoresist. films, positive image production *(Russian)* 8−16887
bicyclo[3.1.0]hex-2-ene, microwave spectra, rot. consts., ring struct. and config. 8−42041
bicyclo[3.1.0]hexane, zero-point average struct., microwave spectra and electron diffraction 8−25738
bilirubin, aq. soln., pulse radiolysis 8−48761
1,1′-binaphthyl, conformational changes, picosec. dynamics 8−25625
biphenyl, electron mobility and photogeneration temp. depend., polaron hopping 8−19033
biphenyl, growth rate from melt *(Japanese)* 8−23605
biphenyl-p-ethylbenzoate, high press. mesomorphic and polymesomorphic transitions 8−18750
biphenylene, harmonic force fields, bond orders, normal coord. anal. 8−25418
2,4-biphenylpentane, depolaris. Rayleigh scatt., optical anisotropy 8−27245
bis(diethylamino)dithiaboretane, cryst. struct., bond lengths and angs. X-ray diffr. obs. 8−18628
bis(trifluoromethyl)disulphide, chemisorpt. on clean Ni surface 8−14595
bis(trifluoromethyl)peroxide, gas and solid, Raman, IR spectra, internal rot. barrier of CF_3 8−29789
bis-styryle dyes, lasing characts. 8−42333
bis-styryles, sulphonated, laser dyes, CW operation in blue and violet spectral region 8−42334
1,3-bisdiphenylene-2-(p-chlorophenyl)-allyl, antiferromag. resonance, antiferromag. phase transition 8−6579
bisphenol-A-polycarbonate, hole transport meas. in solid soln. 8−43438
bispyrrol-indigo, π-electronic struct., PPP-type calc. and config. anal. 8−21855
Black Sea sediment cores, organic geochemistry 8−49040
boroxines, trioxadiborolanes, evidence for aromaticity from mass spectral and NMR meas. 8−9172
brilliant green dye, dielec. const. and loss meas., 10^2 to 10^5 Hz 8−6622
brom phenol blue aqueous soln., irradiation induced discolouring as dose meas. 8−41866
bromanil and radical anion, Raman and IR freq. shifts 8−33516
1-bromo-2,3 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2,4 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2,4-dimethylbenzene, liq., IR and Raman spectra 8−42049
1-bromo-2,5 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2,6 dimethylbenzene, IR vibr. spectrum, internal modes, overtones, combination freqs. 8−9146
1-bromo-2, 4-dinitrobenzene, cryst., ^{79}Br NQR Zeeman effect 8−2765
2-bromo-4-nitrotoluene, IR absorpt. spectra, vibr. assignments 8−42048
2-bromo-5-nitrotoluene, IR absorpt. spectra, vibr. assignments 8−42048
bromoacetylene, microwave spectrum, dipole moment 8−17660
bromobenzene, in EBBA, ^1H NMR and NQR of D, geometric struct. 8−17689
bromochlorodifluoromethane+Ar excited, IR spectra, matrix isolation study, C-F stretching fundamentals 8−37632
bromodifluoromethyl radical, IR matrix isolation spectrum, stretching fundamentals 8−27788
bromoethane, and -d_5, first s-Rydberg transitions 8−42094
bromomethane, ab initio SCF MO calcs., ionis. pots., dipole moment, config., electronic props. 8−1104
bromomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
bromomethane, dielectric susceptibility at radio frequencies 8−14123
bromomethane, IR spectra, $2\nu_2$, $2\nu_5$ and $\nu_2+\nu_5$ 8−42059
bromomethane, second dielectric virial coeff. of polar gas, temp. depend. *(German)* 8−26234
bromomethanes, ^{13}C-Br spin-spin coupling consts., isotope effects 8−13522
2-bromopropene, barriers to internal rotation 8−9273
2-bromostearic acid, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
N-bromosuccinimide lone-pair struct., photodetection spectra 8−37684
α-bromotoluene, liq., IR absorpt. spectrum 8−979
bromotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8−37766
bromotrifluoromethane, photoelectron spectra, spin-orbit splitting, vibr. fine struct. 8−21974
bromtrinitromethane, electron diffr. study of gas phase mol. struct., rot. isomerism 8−1080
α-bungarotoxin effect on transmitter release at neuromuscular junction 8−44496
1,3-butadiene, absolute rate consts. meas., 297-439K 8−7196
butadiene, $J_{c\text{-}h}$ spin-spin coupling const., bond length depend. 8−37660
1,3-butadiene, matrix isolation, trapping from thermal mol. beam, IR spectra 8−46330

organic compounds continued
1,3-butadiene, molecular vibration, mean. square amplitude, extreme value determ. 8−25507
trans-butadiene, multiphoton transitions, multiphoton ionisation, thermal lensing spectroscopy 8−33559
butadiene, oscillator and rotatory strengths, RPA in ab initio calc. 8−25617
butadiene, photoelectron spectra, HAM/3 MO calcs. 8−13414
butadiene, unoccupied orbitals, excitation energy, electron affinity, HAM/3 MO calcs. 8−13415
1,3-butadiene, UV spectra, polarisation of strongest Rydberg transitions 8−46360
1,3-butadiene+OH, absolute rate consts. 8−23927
butadienes, optical activation energy and dipole moment, electron repelling and attracting groups 8−46341
butane, condensation in porous bulk media 8−47510
n-butane, decomposition in RF discharges, 10-40 torr 8−3318
butane diol, asymm. dielectric dispersion, 1-25000 MHz 8−15092
n-butane-CO$_2$ mixture, oxidation under RF discharge conditions 8−15670
1,4-butanediol, low freq. dielectric dispersion, charge carrier hopping anal. 8−43772
butanediol 1, 3, associated liq., correl. between acoustic and dielectric relaxation times 8−9925
butanediol-1,3, viscoelastic props., digital correlation Brillouin scatt. 8−2865
n-butanol, adsorpt. on PAN-based C fibres, surface characts. 8−48694
t-butanol, aq. soln., excess heat capacity, H bonding 8−3362
n-butanol, at Hg/solution interface, diffusion layer theory, exptl. test 8−35701
t-butanol, influence on ferric yield of Fricke dosimeter 8−11736
1-butanol, IR and Raman spectra, vibr., conformers 8−25532
2-butanol, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
t-butanol-CCl$_4$, excess thermodynamic functions, 15, 30 and 45°C, composition depend. *(Russian)* 8−31677
t-butanol-water, X-ray scatt. intensity composition depend., soln. struct. 8−6005
cis-butene-1, microwave rot. spectrum, centrifugal distortion effects, rot. consts. 8−9137
butoxybenzylidene-aminobenzonitrile, crystalline and liq. cryst. states, low freq. spectra 8−34437
sec-butyl acetate+OH, reaction rate const., in irrad. NO$_x$ mixture 8−7171
t-butyl alcohol, aq. solns., US relax. freqs., clathrate-hydrate model 8−30704
t-butyl alcohol, struct. determ. from vibr. spectra, H-bonding and heat of mixing *(Russian)* 8−3368
t-butyl chloride, solid phases, mol. motion, cold neutron scatt obs. 8−26460
tert-butyl sulphide, UV spectra, assignments 8−46359
n-butylamine, adsorpt. on PAN-based C fibres, surface characts. 8−48694
butylated hydroxyanisole, diffusion in liq. polyethylene, gas chromatography determ. 8−2277
butylated hydroxytoluene, diffusion in liq. polyethylene, gas chromatography determ. 8−2277
t-butylbenzene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
n-butyraldoxime, photoelectron and far UV absorpt. spectra 8−17712
n-butyric acid, adsorpt. on PAN-based C fibres, surface characts. 8−48694
butyric acid, viscosity of dissociating vapour 8−5840
caffeine, inhibition of anodic dissolution of Cu (100) in acidic CuSO$_4$ soln. 8−27672
caffeine, UV PES, constitutive subunits, methylatron effects 8−29798
caffeine in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
calcination methods, for spectrochem. anal. *(Russian)* 8−23997
calcium bromide hexamethanol solvates, cryst. struct. *(French)* 8−34500
calcium copper acetate hexahydrate, CaCu(CH$_3$COO)$_4$.6H$_2$O and CaCu(CD$_3$COO)$_4$.6H$_2$O, antiferromag. transition obs. 8−2680
calcium oxalate, biological mineralisation mechanism 8−31764
calcium stearate, Van der Waals forces, direct meas. 8−43461
calcium tartrate tetrahydrate:VO^{2+}, optical absorption spectrum 8−6713
dl-2,3-camphanedione, elec. cond., brittle-to-plastic region, cond. jump 8−39169
dl-camphene, self-diffusion, effect of impurities, radiotracer and plastic deform. study 8−43177
dl-camphor oxime, elec. cond., brittle-to-plastic region, cond. jump 8−39169
camphor separated optical isomers, inverted IR Lamb dips, IR-RF double reson. obs. 8−21951
d-camphor systems, mol. reorientation dynamics, Raman spectra 8−31178
dl-camphoric anhydride, elec. cond., brittle-to-plastic region, cond. jump 8−39169
carbamides, electronic absorpt. spectra, expt. and CNDO calcs. *(Russian)* 8−37647
carbazole, crystalline, room temp. afterglow 8−27314
carbazole, mol. orbital study, spin-unrestricted, donor and acceptor states 8−9077
carbene in polydiacetylene, zero field splitting parameter 8−27075
carbocyanine dyes, sterically hindered short-lived isomers, laser photolysis study 8−40063
carbocyanine dyes, triplet state quenching by nitroxyl radical, charge transfer complexing 8−25585
carbon tetrabromide, ordered, polymorphism 8−22700
carbon tetrabromide, phase I cryst. struct. 8−18626
carbon tetrabromide, phase II cryst. struct. 8−18623
carbon tetrabromide, valence-shell MO calc. with pseudopot. 8−907
carbon tetrachloride, isotropically selective dissoc. by NH$_3$ laser radiation 8−17815
carbon tetrachloride, liq. and plastic cryst. phases, thermodynamic props., light scatt., US propag. 8−2863
carbon tetrachloride dil. solns., ellipsoidal cavity model, electro-optical quantities *(French)* 8−35114
carbon tetrachloride liq. struct., TOF pulsed neutron diffraction using electron linac 8−18504
carbon tetrachloride soln. of Br, adsorpt. of Br on C 8−10273

organic compounds continued
carbon tetrachloride with 2,2-diethoxypropane, excess enthalpy *(French)* 8−11542
carbon tetrachloride-chloroform (methyl cyanide) solutions, anisotropic light scatt., interactions between solvent and solute mols. 8−27239
carbon tetrachloride-cyclohexane mixture, Dufour effect, Onsager heat-mass reciprocal relation 8−34638
carbon tetrachloride-EBBA, binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
carbon tetrafluoride, compressed gas, ν_1 vibr. Raman line 8−32884
carbon tetrafluoride, valence-shell MO calc. with pseudopot. 8−907
carbonaceous chondrites, organic polymer anal. rel. to organic matter origin in early solar system 8−20767
carbonyl compounds, core electron binding energy shifts, σ- and π-relax. energies 8−29750
carbonyl fluoride, laser excited IR fluoresc. C=O and C-F stretching modes 8−21960
d-3-carene, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
carnauba wax, and rosin mixtures, hetero- to homocharge transition, temp. depend. *(Japanese)* 8−35082
β-carotene, in CS$_2$, reson. Raman spectra, room temp. 8−35803
trans-β-carotene, Raman excitation profile spectra, prereson. region 8−33514
β- carotene, valence bands, XPS obs. 8−24030
carotenoids related to visual chromophore, electronic struct., band shape model 8−20142
dl-carvoxim, order parameters and lattice energy, mean field approx. 8−22688
CBOOA, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
CBOOA, nematic phase laser light scatt., mag. field depend., crit. deform. *(Japanese)* 8−2826
CBOOA, smectogenic, cryst. and mol. struct. determ. 8−2103
CBOOA, temp. depend. of apparent viscosity and density 8−18542
cellobiose, vibr. spectrum, freq. calcs. *(Russian)* 8−21909
cellophane film condenser transducer, operation in air, 0-100 kHz 8−42509
cellulose, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
cellulose nitrate, detect. of ion beam in HV electron microscope 8−45755
ceresin wax magnetoelectret, X-ray diffr. pattern 8−6014
cetyltrimethylammonium bromide, aq. soln., mol. conform., laser Raman spectra 8−21934
cetyltrimethylammonium bromide, micelles, solubilised nitroxide spin probes, ESR 8−21950
chiral substituted dibenzo|b,f|1,4-diazocines in nematic MBBA, helical twisting power 8−34431
chloranil, neutron superlattice reflection, soft phonon and central peak scatt., phase transition 8−18732
chloranil and radical anion, Raman and IR freq. shifts 8−33516
chlorinated hydrocarbons in ambient air, washout effect and diurnal var. 8−28305
2-chloro-3-fluoro-1-propene, struct. and conformers, force field and vibr. amplitudes 8−25747
4-chloro-3-nitrobenzotrifluoride-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
4-chloro-3-nitrotoluene, IR absorpt. spectra, vibr. assignments 8−42048
4-chloro-3-nitrotoluene-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
3-chloro-diphenyl-dimethylsulphoxide, diagonalized tensor of rot. diffusion, main components *(German)* 8−31121
z-chloro-p-nitroaniline, soln., dielectric const., loss and relax., dipole moment 8−43782
chloroacetanilides, NQR freqs., torsional vibr., temp. var. 8−2766
α-chloroacetic acid, ^{35}Cl and ^{37}Cl pure NQR, H bonding, isotope effects 8−27111
chloroacetoacetanilides, NQR freqs., torsional vibr., temp. var. 8−2766
chloroalkanes, modified Urey-Bradley force field calcs. 8−25500
2-chloroanisole, and sulphur analogue, benzene dipole moment anal. 8−25748
chloroaromatics, mol. crysts. Cl atom pot. energy calcs. 8−42948
p-chlorobenzene, and deuterated forms, in p-dibromobenzene and p-dimethoxybenzene, 4.2K, $\pi\pi^*$ phosphoresc. assignments 8−9197
chlorobenzene, self-diffusivity data 8−6169
chlorobenzene in EBBA, ^{1}H, D NMR and NQR, geometric struct. 8−17689
chlorobenzene-d$_0$, -d$_1$, mol. reorientation and D nucl. relax. time, temp. depend. 8−39424
p-chlorobromobenzene, spectral meas. of static interaction changes in molecular crystals *(Ukrainian)* 8−6708
p-chlorobromobenzene in p-dichlorobenzene cryst., absorpt. spectra, mol. clusters static interaction 8−15198
chlorocarbon industry impact on atmospheric O$_3$ layer 8−40648
chlorodifluoromethyl cation, transient species, matrix isolation spectra 8−48635
3-chlorodiphenyl, in dipolar aprotic solvent, internal rot. barrier, ^{13}C T$_1$, obs. 8−29860
chloroethane+T, recoil reaction, 5×10^{-2} torr 8−44389
chloroethane-d$_1$, laser multiphoton dissoc., intramolecular isotope effect 8−17733
chloroethylene, CO$_2$ laser absorption, Stark modulation 8−17671
chlorofluorocarbene, ($^1A''$) state, radiative lifetime, quenching rate, press. depend., laser-induced fluoresc. obs. 8−5259
chlorofluoroethanes, gas, photoabsorption cross-sections, 46-100 Å 8−42095
chlorofluoromethanes, atm. O$_3$ depletion, two-dimens. time-depend. model 8−24341
chlorofluoromethanes, contradiction of stratospheric O$_3$ depletion prediction 8−49099
chlorofluoromethanes, gas, photoabsorption cross-sections, 46-100 Å 8−42095
chlorofluoromethanes in lower stratosphere, latitudinal profiles 8−44989
chloroform, liq., crit. fluctuations, proton spin relax. obs. 8−19358
chloroform, liq., light scatt. coeff. determ., absolute method 8−2868
chloroform, liq., X-ray diffr., struct. of mol. in liq. 8−26421
chloroform, rot. rough sphere friction, hydrodynamic boundary conditions 8−9926

organic compounds continued
chloroform-carbon tetrachloride mixture, Lennard-Jones pots., mol. dynamics calcs. 8−34418
chloroform-carbon tetrachloride solutions, anisotropic light scatt., interactions between solvent and solute mols. 8−27239
chloroform-d$_1$+H*→HD+CCl$_3$, hot atom reaction, threshold energy meas. 8−44356
chloroform-d, liq., neutron diffr., struct. of mol. in liq. 8−26422
chloroform-d and di-n-butyl ether, complex formation, IR spectra, book contrib. 8−21931
chloroform-d-acetonitrile-d$_3$, IR spectra liq. and solid at −180°C. *(French)* 8−15154
chloroform-n-hexane, liq. mixture, radiolysis, mechanism, rate consts. 8−20039
p-chloromercuribenzene sulphonate blocking and reversal of amiloride effect on rabbit colon Na transport 8−44479
chloromethane, and isotopes, $\nu_2+\nu_3$ band, Coriolis reson. with $\nu_3+\nu_5$ band *(French)* 8−5229
chloromethane, dielectric susceptibility at radio frequencies 8−14123
chloromethane, second dielectric virial coeff. of polar gas, temp. depend. *(German)* 8−26234
chloromethane-d$_2$, microwave spectrum, rot. consts. 8−9140
chloromethane-d$_3$, and isotopic forms, optically pumped mm laser transition assignments, 792 micron line 8−42328
chloromethane-d$_3$, multiphoton IR C-Cl dissoc. classical trajectory calc. 8−11532
chloromethoxyyaniline, NQR freqs., torsional vibr., temp. var. 8−2766
chloromethyl methyl ether, on-column reaction GC determ. in ambient air 8−20093
o-chloronitrobenzene-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
4-chlorophenol+N,N-dimethylmethanesulphonamide, assoc., PMR 8−23941
2-chlorophenol and sulphur analogue, benzene dipole moment anal. 8−25748
chlorophyll, mol. electronic excitation interactions, transition monopole theory 8−22016
chlorophyll, photooxidation, triplet state mechanism 8−27791
chlorophyll, photosynthesis mechanism, upconversion, EPR and O$_2$ evolution data anal. 8−35811
chlorophyll, transfer of electronic excitation energy from monomer to dimer *(Russian)* 8−27289
chlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
chlorophyll A low-intensity two-step absorpt. in vivo 8−35801
chlorophyll a of photosystem II, fluoresc. when electron transport on acceptor side is blocked 8−7324
chlorophyll adsorption films, electrochem. behaviour 8−31778
chlorophyll fluorescence changes in isolated broken chloroplasts and involvement of elec. double layer 8−44464
chlorophyll pigments, aggregated forms in soln., spectral-luminesc. characts. *(Russian)* 8−23529
chlorophyll-a, nonlinear absorpt. spectra 8−25522
chlorophyll-a, photoinduced electron transfer to duroquinone in micellar soln., charge separation 8−23955
chlorophyll-a arrays, exciton transition calculations 8−35802
chlorophylls, luminesc. analysis of triplet states *(Russian)* 8−27288
chlorophylls, triplet state ESR, fine struct. and rate consts. determ. 8−25574
chlorophylls, triplet state ESR, fine structs. and rate consts. determ. 8−25575
2-chloropropane, conformation, vibr. spectrum, from simple harmonic force field 8−33494
1-chloropropane, formation of chlorohexanes by ion-mol. reactions in radiolysis 8−27802
2-chloropropane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
2-chloropyrimidine, CS$_2$ soln., mol. reorientation, ^{1}H, ^{13}C nucl. mag. relax. 8−27105
N-chlorosuccinimide, lone-pair struct., photodetection spectra 8−37684
chlorotriflouromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
chlorotrifluoromethane, IR absorption spectrum, binary overtone and combination bands 8−46342
chlorotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8−37766
chlorotrifluoromethane, photolysis, transient species, matrix isolation spectra 8−48635
chlorotrinitromethane, electron diffr. study of gas phase mol. struct., rot. isomerism 8−1080
cholesterilcinamate, low press. phase transition temp. change, relative transparency *(Russian)* 8−2242
cholesterol, adsorbed monolayer on aerosil, IR spectra 8−15753
cholesterol modulation of Aplysia neurone elec. activity 8−7329
cholesterol transmembrane movement in human erythrocytes, radioactive tracer expt. 8−3459
cholesteryl alkanoates, orientational order, spectral depend. of circular dichroism 8−26437
cholesteryl chloride, depolarised light transmission, microstructural changes 8−22647
cholesteryl chloride, optical rotatory power using multiple scaling 8−27176
cholesteryl chloride-myristate, liq. cryst., mag. aligned, mag. aligned, anisotropic US propag. 8−42895
cholesteryl crotonate, depolarised light transmission, microstructural changes 8−22647
cholesteryl methacrylate, mono- and polymer, liq. cryst. order 8−9942
cholesteryl myristate, density of smectic, cholesteric, blue, isotropic phases 8−42897
cholesteryl myristate, high press. mesomorphic and polymesomorphic transitions 8−18750
cholesteryl nonanoate, high press. mesomorphic and polymesomorphic transitions 8−18750
cholesteryl oleate, isotropic liq. cryst., shear viscosity 8−26668
cholesteryl oleate (linoleate), solid-solid transition, glass transition, cryst. nucleation temps., DSC obs. 8−34604
cholesteryl oleyl carbonate, isotropic liq. cryst., shear viscosity 8−26668
cholesteryl oleyl carbonate, optical rotatory power using multiple scaling 8−27176

organic compounds continued
cholesteryl p-acryloyloxybenzoate, mono- and polymer, liq. cryst. order 8−9942
chromophore, excited state, solvent interactions, fluoresc. obs. 8−37670
chrysene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
cinnamaldehydes, electronic spectra, CNDO CI calcs. 8−29774
clathrate deuterohydrates, ^{1}H NMR lineshape of tunnelling methyl group, <5K 8−46370
clathrate hydrates, identification from NMR line shapes 8−27861
cobalt, phthalocyanine, sublimed film, absorption spectra and association 8−48174
cobalt sulphate hexacarbamide, cryst. struct. 8−34507
coenzyme-Q$_{10}$, interaction with antimalarials, theory 8−27885
colchicine, cryst. struct., multiple soln. direct methods 8−34384
cometary nuclei, simulation of UV effects *(Russian)* 8−32406
complex molecule solutions, stimulated emission, light quenching *(Russian)* 8−33735
concanavalin A binding to cell membrane of Herpetomonas samuelpessoai, UV effect 8−48835
conjugated hydrocarbon chains, linear and nonlinear elec. susceptibilities calcs. 8−19437
conjugated molecules, resonance Raman spectra calc. 8−984
copper 1,4-butanedisulphonate tetrahydrate, struct. 8−18630
copper acetate, use as lasant for Cu vapour laser 8−25854
copper acetates, antiferromag. exchange coupling, superexchange mech. 8−39310
copper benzoate, antiferromag. reson. below 1K, Neel temp. determ. 8−39407
copper benzoate, spin 1/2 system, one-dimensional nucl. relax. 8−39427
copper formate tetrahydrate, antiferroelec., dielec. anisotropy 8−43768
copper formate tetrahydrate, short-range order, diffuse neutron scatt. 8−15124
copper phthalocyanine, autoionisation in electron energy loss spectra 8−35232
copper phthalocyanine, chlorinated, stacking disorder 8−34622
copper phthalocyanine, sublimed film, absorption spectra and association 8−48174
copper phthalocyanine α-β phase transform., heat of transform., DTA investig. *(German)* 8−30754
copper porphine, Xα multiple scatt. calcs., EPR and electronic spectra 8−13426
copper sulphate tricarbamide, $CuSO_4.3CO(NH_2)_2$, cryst. struct. determ. 8−34506
copper tetraphenyl porphyrins, mag. diluted, EPR meas. 8−39391
coronene, electron escape depths and absorpt. coeffs. 8−23580
coronene, fluorescence spectra, zero field line splitting *(Russian)* 8−17604
coronene, metastable inert gas atom impact, surface electron emission energy distrib. 8−43970
coronene, polycrystal, photoemission 8−27367
coronene, solution in bromobutane, Zeeman effect in phosphoresc. at laser $T_1 \leftarrow S_0$ excitation 8−37679
coronene, triplet mol. in n-heptane Shpol'skii sites, distortion and orientation meas. by MIDP 8−37668
coronene-rhodamine 6G, energy transfer in PMMA matrix, fluoresc., temp. depend. 8−13539
coronene-TCNQ, solid complexes, spectra, stoichiometry 8−23435
cortisol, gas phase fragmentation, high voltage scanning field desorption obs. 8−3320
coumarin, aq. soln., response to high LET radiation from $^{10}B(n,\alpha)^7Li$ reaction 8−24149
coumarin, aqueous solution, fast neutron irrad., dosimetry appl. 8−44613
coumarin dye laser, flashlamp-pumped, picosecond pulses at 520 nm *(French)* 8−42335
coumarin laser dyes, stability, lasing characts. obs. 8−1223
CPHB, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
0-cresol+OH$^-$, gas phase reaction, 299-435K, kinetics and mechanism 8−11515
cryptocyanine, soln., $S_2 \rightarrow S_0$ fluoresc. 8−13541
cryst., IR spectra in polarised light, cryst. struct. 8−27223
crystal growth from soln., computer simulation 8−30558
crystal violet, fluoresc. efficiency, solvent viscosity effects at high press. 8−9188
CT complex, equilib. distances and stabilisation energy, PCILO calc. 8−41963
cumene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
cumene, droplet vaporisation in moderately-high temp. stationary media, Chang model 8−34609
cupric formate tetrahydrate, uniaxial stress effect on dielec. props. 8−48125
cyanine dye laser excitation by giant single pulses *(Russian)* 8−46596
cyanine fluorescent dye membrane probe effects on cell props., rel. to bacterial chemotaxis 8−35815
1-cyano-1,3-cyclopentadiene, microwave spectrum, rot. consts., dipole moment 8−42043
4-cyano-4'-octyloxybiphenyl, nematic-smetic-A transition, optical birefr. temp. coeff. 8−47505
9-cyanoanthracene, cryst., excimer emission, spectra, photochem. and multiphonon processes 8−10914
9-cyanoanthracene, metastable crystal, red excimer emission 8−6757
cyanobenzylidene octyloxyaniline, director bend mode behaviour near nematic to smectic-A phase transition 8−1985
cyanobiphenyl, meas. near nematic-isotropic transition temp. 8−43219
4-cyanobiphenyl derivatives, deuterated, transition temp. meas. 8−14449
cyanogen adsorbed on (100) surface, electron energy loss spectrum 8−14592
cyanohexatriyne detection in Heile's Cloud 2 at SHF 8−41018
cyanomethane, collisional rot.-line widths and shifts, microwave region 8−25619
cyanomethane, dielectric susceptibility at radio frequencies 8−14123
cyanomethane+He, afterglow, excitation and quenching reactions, optical pumping 8−35690
cyanomethane-EBBA, binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743

organic compounds continued
- cyanotriacetylene, interstellar, discovery, implications for theories of interstellar molecule formation 8−41029
- cycasin, cryst. growth and struct. 8−18631
- cyclobutadiene(-d_1), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8−13429
- cyclobutadiene iron tricarbonyl, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
- cyclobutane+T, recoil reaction, 5×10^{-2} torr 8−44389
- cyclobutenedione derivatives, photoelectron spectra, 2p lone pair delocalisation 8−46392
- cyclodextrin, α and β, positronium decay, test of freq. vol. model 8−19592
- cyclododecanone, photolytic biradical anomalous CIDNP enhancement, pulse spin echo NMR obs. 8−46369
- cycloheptane, loss angle, temp. depend., 9 and 36 GHz 8−48114
- 1,3,5-cycloheptatriene, singlet→singlet (triplet) excitation, electron impact energy loss spectra 8−46451
- cycloheptatrienes, substituted, photoisomerisation, rate consts. 8−35708
- cyclohexanal, liq., viscoelastic and structural relax., US rel. and absorption meas. 8−26634
- cyclohexane, adsorption on graphitized C black, exptl. determ. of models 8−6216
- cyclohexane, dielec. const. meas. using 3-terminal meas. cell 8−21170
- cyclohexane, liq. and solid, mobility of excess charge carriers 8−2489
- cyclohexane, loss angle, temp. depend., 9 and 36 GHz 8−48114
- cyclohexane, NMR spin-lattice relax., periodically-irrad. system, master eqn. predictions 8−43664
- cyclohexane, on Ni and Pt, C-H stretch vibration, broadened and softened, dehydrogenation 8−47666
- cyclohexane, plastic-phase, NO-doped, heterogeneous solid soln., mag. reson. evidence 8−34449
- cyclohexane, Raman spectra intensity analysis, electrooptical parameters transferability 8−29820
- cyclohexane, solid, neutron scatt. spectra using inverted geometry, white beam, t. of f. spectrometer 8−34395
- cyclohexane, thermal cond. and sp. ht. under press. 8−22906
- cyclohexane, vap. press. from 451K to crit. temp. and press. 8−47512
- cyclohexane+benzene, excess volume 8−47527
- cyclohexane+n-hexane, effect of pressure on excess enthalpies at 298.15K 8−48689
- cyclohexane-acetic anhydride binary liq. mixture, crit. behaviour of elec. resist. 8−6422
- cyclohexane-benzene (methane) vapour mixture, excess enthalpy meas., appl. of differential-flow mixing calorimeter 8−12700
- cyclohexane-d_0, -d_{11} ^{13}C-^{1}H coupling constant 8−13519
- cyclohexane-d_6, solubilization in hexadecyltrimethylammonium bromide aq. soln., D NMR 8−24015
- cyclohexane-methanol, crit. opalescence, AC elec. field effect 8−35159
- cyclohexane-NO_2-air mixtures, photochem. particulate form. 8−11529
- cyclohexanol in soln., coop. mol. orient. rel. to OH proton chem. shift 8−1974
- cyclohexanone, solid, phase behaviour, at press. up to 3 kbar, DTA 8−43108
- cyclohexylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724
- cyclooctatetraene, effect on lasing props. of rhodamine 6G 8−13698
- cyclopentadienone, photoelectron spectra, ionisation pot., PERTCI method and obs. *(German)* 8−42130
- cyclopentadienyl cation, geometry optimisation by generalised Hartree-Fock 8−25427
- cyclopentane, electron mobilities through liq. and critical regions 8−2536
- cyclopentane, solid, neutron scatt. spectra using inverted geometry, white beam, t. of f. spectrometer 8−34395
- cyclopentane+isomeric octanes, excess volume 8−47527
- cyclopentanol, solid, phase behaviour, at press. up to 3 kbar, DTA 8−43108
- cyclopentanone, solid, phase behaviour, at press. up to 3 kbar, DTA 8−43108
- cyclopenta[h]cycl[4.2.2]azine, photoelectron and visible, and UV spectra 8−5286
- cyclopentene, ring puckering, semi-empirical and ab initio calcs. 8−9065
- cyclopropane, electron correlation, double SCF method 8−17575
- cyclopropane, $J_{c\text{-}h}$ spin-spin coupling const., bond length depend. 8−37660
- cyclopropane, lattice vibrs., IR and Raman spectra, 4 to 78K 8−27209
- cyclopropane, liq., mol. dynamics, self-diffusion, quasielastic neutron scatt. and NMR spin-echo meas. 8−10201
- cyclopropane, unoccupied orbitals, excitation energy, electron affinity, HAM/3 MO calcs. 8−13415
- cyclopropane, vibr. energy transfer processes, laser induced fluorescence exam. 8−25663
- 1,1-cyclopropane-d_2, rearrangement, collisional vibr. energy transfer, temp. depend. 8−15668
- cyclopropanone, electronic struct., UV photoelectron spectrum 8−33428
- cyclopropenyl radical and anion, planar, E state pot. surfaces, CI and SCF calcs. 8−5155
- cyclopropyl carbinyl cation, internal rot. barrier, MINDO/2(3) forces method 8−9078
- cyclopropyl chloride, ab initio SCF-MO calc., electronic and mol. struct. 8−25425
- cysteine, polycryst., proton mag. relax. and mol. motion 8−20139
- cytosine, cryst., electron damage, electron microscope study 8−22762
- cytosine derivatives, photosensitised induction by H-addition radicals in frozen aqueous soln. 8−20146
- cytosine hydrochloride, cryst. growth, crystallographical parameters 8−14332
- cytosine monohydrate, cryst. growth from aq. soln., elec. props. 8−3007
- cytosine monohydrate, single cryst., γ-irrad., ion radical recomb., EPR 8−15776
- decahydronaphthalene-H_2O, liq.-liq. phase equilib., crit. phenomena 8−18764
- decalin, cis- and trans-, diffusion in liq. polyethylene, gas chromatography determ. 8−2277
- n-decane-nitrobenzene critical system, US absorpt. meas. 8−6126

organic compounds continued
- decanoic acid, mol. config. change in cryst., IR spectra, normal coord. anal. 8−33506
- decanol, dynamic mol. struct. in cyclohexane-d_{12}, ^{13}C NMR 8−33519
- decanol, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
- n-decanol-CCl_4, excess thermodynamic functions, 15, 30 and 45°C, composition depend. *(Russian)* 8−31677
- L-p-decyloxybenzylidene-p′-amino-2-methylbutyl-cinnamate, ferroelec. smectic liq. cryst., electro-optical effect 8−39527
- 2-deoxy-D-erythro-pentonic acid solution from alkali-labile site in γ-irrad. DNA 8−20144
- deuteromethane, solid, thermal expansion *(Russian)* 8−26698
- dextrans, surface adsorpt. on human red cell membrane 8−15799
- p,p′-di-n-butylazobenzene, high press. mesomorphic and polymesomorphic transitions 8−18750
- di-t-butyl nitroxide, in benzene, solvent-solute interactions, ESR, DNP 8−17698
- di-t-butyl nitroxide radical, in soln., proton relax., meas. of H-bonding 8−27103
- N,N′-diacetyl-1,2,1′,1′-tetrahydro-1,1′-diisoquinoline, cryst. and mol. struct. 8−2106
- 3,6-diacetylamino-N-methylphthalimide, in alcoholic solns., phosphoresc. decay laws 8−17709
- diacetylene single crystals, photopolymerisation, optical transmission spectroscopic exam. 8−27757
- diacyl peroxides, photochem. decomp. for matrix isolation study of IR spectra of alkyl radicals 8−33510
- dialkyl ammonium cadmium chloride, influence of C ions and metal ions on structural phase transition 8−2256
- dialkyl ammonium manganese chloride, influence of C ions and metal ions on structural phase transition 8−2256
- dialkylammonium compounds, $(C_nH_{2n+1}NH_3)_2MX_4$, cryst. growth solubility, and props. 8−43999
- dialkylammonium manganese tetrachloride, quasi two-dimensional antiferromag., temp. depend. of absorption spectra 8−43894
- diamantane, low temp. soft librational mode, Raman spectra exam. 8−30730
- 4′,6-diamidino-2-phenylindole, use for fluorescent microscopical technique in diagnostic microbiology 8−20339
- diamino-quinone, π-electronic struct., PPP-type calc. and config. anal. 8−21855
- diammonium oxalate monohydrate, NMR spectra, ^{13}C-^{13}C interaction, chemical shift effects 8−29800
- dianthracene, photodissoc., electronically excited products 8−27790
- dianthronylidene ethane, luminescent excimer geometries, intermol. shift 8−27294
- diarylalkane, in isooctane soln. triplet excimer form., phosphoresc., delayed fluoresc., triplet-triplet absorption 8−25597
- α,ω-diarylperfluorpolienes, X-ray spectra, phase transition temp. depend., struct. and mesomorphic props. *(Russian)* 8−38621
- 4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
- 1,4-diazaphenanthrene, zero-field splitting, basic triplet states, H bond effects 8−5366
- 1,4-diazatriphenylene, zero field splitting, basic triplet states, H bond effects 8−5366
- diazo compounds, continuous tone diazotype imaging films, model 8−32911
- diazomethane, electronic struct., least energy dissoc. path to CH_2 and N_2 products 8−5131
- dibenzo[a,d]cycloheptene, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
- dibenzyl: naphthacene, cryst., ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
- dibenzyl, US velocity and absorption near melting point 8−6127
- dibenz[b,f]azepine, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
- diborane, density distribution of bonding electrons, simple refinement 8−18574
- p-dibromobenzene, cryst. electronic and vibr. energy transfer and relax. 8−31229
- p-dibromobenzene, in p-dichlorobenzene cryst., absorpt. spectra, mol. clusters static interaction 8−15198
- o-dibromobenzene, r_α-struct. determ. from PMR with ^{13}C satellites, bond lengths and angles 8−25560
- p-dibromobenzene, static interaction changes in molecular crystals *(Ukrainian)* 8−6708
- dibromodifluoromethane+Ar excited, IR spectra, matrix isolation study, C-F stretching fundamentals 8−37632
- dibromofluorobenzene, IR absorpt. spectra, vibr. assignments 8−17665
- dibromofluoromethane, photolysis, IR matrix isolation spectra of CF_2Br free radical 8−27788
- dibromomethane, IR spectra, local mode description for overtone spectra 8−42047
- 1,4-dibromonaphthalene, S_0 to T_1 exciton transition, optical dephasing time and lineshape function 8−15183
- 1,4-dibromonaphthalene, space group C_{2h}^5, triplet excitons energy band struct. 8−6276
- (1,4)-dibromonaphthalene, triplet exciton scatt., absorpt. spectra 8−6696
- 1,4-dibromonaphthalene, triplet-triplet exciton annihilation in quasi-1-dimens. cryst. 8−27297
- dibutyl phthalate, absolute evaporation rate meas. 8−2244
- dichloro-benzofuran in PCN, anal. by MS-GC *(Japanese)* 8−35767
- 2,6-dichloroacetanilide, NQR, cryst. struct., band character 8−6596
- 3,6-dichloroaniline, soln., dielectric const., loss and relax., dipole moment 8−43782
- 2,4-dichloroanisole and sulphur analogue, benzene dipole moment anal. 8−25748
- p-dichlorobenzene, ^{35}Cl NQR spectrum using digital freq. modulation 8−21189
- p-dichlorobenzene, α, β and γ forms, cryst. struct. and pot. energy 8−38685
- p-dichlorobenzene, Cl-Cl interactions at 100K, isotropic pot. functions calcs. 8−18578
- p-dichlorobenzene, cryst., Raman spectra , intensity of low freq. line 8−2846
- p-dichlorobenzene, nuclear dipole absorpt. signal, under quadrupole reson. saturation conditions 8−48082
- o-dichlorobenzene, r_α-struct. determ. from PMR with ^{13}C satellites, bond lengths and angles 8−25560

organic compounds continued
p-dichlorobenzene, spectral meas. of static interaction changes in molecular crystals *(Ukrainian)* 8−6708
3,5-dichlorobenzyl mercaptan, PMR, barrier to rot. about C-C bond 8−17696
dichlorobromobenzenes, IR absorpt. spectra, vibr. assignments 8−17665
dichlorocarbene, $^1B_1$ state, radiative lifetime, quenching rate, press. depend., laser-induced fluoresc. obs. 8−5259
1,1-dichlorocyclopropane, ab initio SCF-MO calc., electronic and mol. struct. 8−25425
dichlorodifluoromethane, conc. meas. in stratosphere 8−32171
dichlorodifluoromethane, dissociation by CO_2 laser radiation into trifluorochloromethane 8−40062
dichlorodifluoromethane, IR multiple-photon laser-induced decomposition, Cl and Cl_2 form. 8−40066
dichlorodifluoromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
dichlorodifluoromethane, vertical profile meas. in seawater *(German)* 8−3814
dichlorodifluoromethane+Ar excited, IR spectra, matrix isolation study, C-F stretching fundamentals 8−37632
dichlorodifluromethane, dissoc. into metastable fragments following electron impact excitation 8−37757
1,2-dichloroethane, orientationally disordered crystal., mol. orientation 8−34448
1,2-dichloroethane+benzene(toluene)(p-xylene), liq., molar heat capacities 8−18787
dichloroethane-EBBA, binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
1,2-dichloroethylene, photodissoc., photoisomerisation, sensitised laser-induced reactions 8−7179
1,2-dichloroethylene, recoil tritium reactions 8−3360
dichlorofluorobenzene, IR absorpt. spectra., vibr. assignments 8−17665
dichloromethane, IR spectra, local mode description for overtone spectra 8−42047
dichloromethane, liq. and dil. CCl_4 soln., far IR spectra and Rayleigh scatt. for planar itinerant oscillator 8−47229
dichloromethane, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
dichloromethane-EBBA, binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
2,4-dichlorophenol and sulphur analogue, benzene dipole moment anal. 8−25748
2,2-dichloropropane, thermodynamic and structural studies of polymorphism 8−18571
dichroic dye in chiral nematic host, visible absorpt., pitch relationship 8−48193
9,10-dicyanoanthracene, exciplexes, electronic struct. by electro-optical expts. 8−25581
dielectric liquids, high-field electron transport *(Japanese)* 8−2495
diemthyl sulphoxide-H_2O-NaCl system, DTA exam. of primary ice phase field 8−48382
6,6′-diethoxy-thioindigo, cis⇌trans isomerisation, nanosecond flash photolysis and steady state methods, triplet state 8−35648
p-diethoxybenzene, ^{13}C shielding tensors determ. by NMR from powder patterns 8−25556
2,2-diethoxypropane with heptane, benzene and carbontetrachloride, excess enthalpy *(French)* 8−11542
diethyl ether, adsorption on water-preadsorbed alkali halide *(Japanese)* 8−18897
diethyl malonate-polystyrene system, osmotic compressibility and correlation range near crit. point 8−6694
3,3′-diethyl-2,2′-selenacyanine-$[TCNQ]_2$, elec. cond., and quasi-two-dimensional mag. props. 8−6564
1,1′-diethyl-4,4′-quinocyanine iodide, S_0-S_1 transition, relax. time meas. by reson. Rayleigh technique 8−42374
N,N′-diethyl-p-nitroso aniline, dil. benzene soln., dielec. props., microwave region, mechanisms 8−35085
diethylammonium cadmium chloride, X-ray study of structural phase transition 8−2055
diethylammonium manganese chloride, T_1 and T_2 meas. by LODESR 8−15064
diethylammonium manganese tetrachloride, quasi two-dimensional antiferromag., magnon sideband in absorption spectra 8−43895
N,N-diethylaniline-pyrene, photochem. polarisation transfer, scalar paramagnetic exchange mechanism 8−25557
diethylcarbonate, liq., alkoxy group internal torsion, extended micro-wave/far IR anal. 8−19457
diethylene glycol, absolute evaporation rate meas. 8−2244
diethylene glycol, associated liq., US absorpt. and hole theory 8−10124
diethylene glycol, asymm. dielectric. dispersion, 1-25000 MHz 8−15092
diethylene glycol diethyl ether, aq. mixtures, miscibility, enthalpy of mixing, solvation *(German)* 8−18779
3,3′diethylthiacarbocyanine iodide-rhodamine 6G, mixed dye laser system, laser and fluorescence behaviour 8−25876
3,3′-diethylthiatricarbocyanine iodide, cryst. and molecular struct. 8−26554
p-difluorobenzene, $^1B_{2u}$-^1A_g transition, two-photon spectra 8−46408
1,2-difluoroethane, gauche-trans conformers, IR and Raman spectra, vibr. 8−17667
1,1-difluoroethane, high intensity transmission characts., for possible appl. in CO_2 amplifier gain isolation 8−42387
1,2-difluoroethane, matrix isolation, trapping from thermal mol. beam, IR spectra 8−46330
1,2-difluoroethylene, high intensity transmission characts., for possible appl. in CO_2 amplifier gain isolation 8−42387
1,1-difluoroethylene, optically pumped, complete freq. coverage for submm. laser spectroscopy 8−25860
1,1-difluoroethylene, optically pumped mm laser transition assignments 8−42328
difluoroethylene, optically pumped submm. wave amplification 8−29941
difluoromethane, IR spectra, local mode description for overtone spectra 8−42047
diglycine nitrate, dielec. relax. in paraelec. and ferroelec. regions 8−31149
dihaloethanes, CNDO/2-type calc., FORCE method, relative stability, intramolecular atomic interaction energies 8−41957

organic compounds continued
p-dihalobenzene, mixed cryst., Raman spectra, phonons and vibr. excitons, criteria for solid solns. 8−43840
dihaloethylene, CNDO/2-type calc., FORCE method, relative stability, intramolecular atomic interaction energies 8−41957
dihalogenoacetylene radical cations, $C_2X_2^+$, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17679
1,4-dihalonaphthalenes, binary solid solns. lattice stability, mol. motions 8−31182
9,10-dihydroanthracene, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
dihydromuconic acid, C=C bond, ^{13}C shielding tensor, NMR meas. 8−1005
dihydroporphin free base, in n-octane cryst., zero-field optically detected mag. reson., triplet state kinetics 8−42103
2,4-dihydroxy benzoic acid, PMR obs., proton second moment, 77 to 383K effect of OH group rot. 8−10784
diimide, trans-cis conversion in lowest excited states, SCF calcs. 8−46284
o-diiodobenzene, r_α-struct. determ. from PMR with ^{13}C satellites, bond lengths and angles 8−25560
diiodomethane, IR spectra, local mode description for overtone spectra 8−42047
diketomorpholine, cyclodepsipeptide, cryst. and mol. struct. 8−2104
2,6-dimenthylnaphthalene, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
dimesitylboranes, phenyl substituted, absorption and emission 8−27311
p-dimethoxybenzene, ^{13}C shielding tensors determ., by NMR from powder patterns 8−25556
dimethyl aniline, photoionisation by vac. UV laser *(Russian)* 8−9205
dimethyl disulphide, chemisorpt. on clean Ni surface 8−14595
dimethyl ether, optical saturation characts., using CO_2 laser radiation 8−30027
dimethyl ether-trioxane mixtures, condensation-elimination ion-mol. reactions obs. 8−23939
2,2-dimethyl propane+Na, rainbow scatt. at thermal energy, anisotropic pot. 8−29837
dimethyl propane diol, dioxane soln., asymm. dielec. dispersion, 1-25000 MHz 8−15092
dimethyl sulfone, X-irrad. cryst., ESR spectrum 8−3351
dimethyl sulphoxide, form. of $(CH_3SOCH_3)_2H^+$ and $CH_3.CH_3SOCH_3^+$ in ICR mass spectrometry, proton affinity 8−3319
dimethyl thioether+OH, reaction rate consts., 299-430K 8−35653
S,S-dimethyl-N-4-nitrophenylsulphilimine, XPS spectra, satellite lines obs. 8−37680
N,N′-dimethyl-p-methyl aniline, dil. benzene soln., dielec. props., microwave region, mechanisms 8−35085
dimethylacetylene, solid-solid phase transition, NMR meas. 8−6583
dimethylallene, excited states, microwave spectrum and strong Coriolis coupling 8−9141
dimethylamine+OH, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
dimethylaminophenyl-(methylene)$_n$-(1-pyrenyl), intramolecular charge transfer, heteroexcimer formation processes 8−27783
dimethylammonium cadmium chloride, soft modes, order-disorder transition model 8−22817
dimethylammonium iron bromotrichloride, canted spin system, mag. susceptibility meas. 8−39303
N,N-dimethylaniline, laser seed cpds., photoionisation and photoabsorpt. characts. 8−13688
9,10-dimethylanthracene, conc. solns., fluoresc. quenching by anthracene and derivatives 8−17711
9,10-dimethylanthracene derivative, intramol. fluoresc. quenching, attached CBr_3 groups 8−42113
N,N-dimethylbenzamide+$POCl_3$ reaction products, Raman spectra 8−7199
4-4′ dimethylbenzophenone, ^1H spectrum using multiple pulse decoupling-magic angle spinning NMR probe 8−12735
dimethylboric anhydride, IR and Raman spectra, vibr. and struct. 8−25531
2,2-dimethylbutane, electron mobilities through liq. and critical regions 8−2536
dimethylcarbonate, liq., alkoxy group internal torsion, extended micro-wave/far IR anal. 8−19457
1,1-dimethylcyclopropane-d_0,-d_6, internal rot., Raman spectra 8−985
trans-dimethyldiazene-1, 1, 1-d_3, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
trans-dimethyldiazene-d_0,d_6, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
N,N-dimethylformamide+$POCl_3$ reaction products, Raman spectra 8−7199
N, N-dimethylformamide based electrolytes, for Al foil electrolyte capacitors *(Slovene)* 8−31641
N,N-dimethylmethanesulphonamide+phenol (chlorophenol), assoc., PMR 8−23941
dimethylnaphthalene, growth rate from melt *(Japanese)* 8−23605
dimethylnitrosamine, in aq. soln., detect. and meas. by laser Raman spectroscopy 8−15725
dimethyloropane+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
3,3-dimethyloxetan, far IR spectra, ring puckering vibration 8−42058
dimethylphosphine, microwave spectra, internal rot. barrier 8−5205
2,2-dimethylpropane, electron mobilities through liq. and critical regions 8−2536
dimethylsulphide, Raman spectra, torsional pot. consts. and kinetic coeffs. 8−5233
dimethylsulphide-d_3, two interacting C_{3v} rotor system, mol. coupling parameters, Raman spectra 8−42074
dimyristoyl lecithin lipid vesicles, sonicated, ^{13}C relax. times model for gauche-trans isomerisation 8−33520
α,α-dinaphthylalkane in isooctane soln., excimer phosphoresc., delayed fluoresc., triplet-triplet absorption 8−25597
2-(2′,4′-dinitrobenzyl)-pyridine, photochromism, ns laser absorption spectra 8−48138
2-(2,4-dinitrobenzyl)pyridine, powdered sample, kinetic photochromic characts. 8−23957
1,8-dinitronaphthalene, orthorhombic, cryst. struct., X-ray determ., 22 and 97°C 8−6048
dioxan, aq. mixtures, miscibility, enthalpy of mixing, solvation *(German)* 8−18779

organic compounds continued
dioxan-cyclohexane-chloroform, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
dioxirane, decomposition products, mass spectrometric obs. 8−11504
dioxirane, form. in O_3+ethylene reaction, identification by microwave spectra 8−15659
dipalmitoyl phosphatidylcholine monodomain samples with varying concs. of water and other ingredients, prep. 8−15780
1,2-dipalmitoylglyceride, DTA and X-ray diffr., polymorphism *(French)* 8−43008
dipeptides, aliphatic, EPR studies of direct photolysis 8−48678
diphenyl:(benzophenone, naphthalene), triplet exciton diffusion, phosphoresc. obs. 8−10964
diphenyl, US velocity and absorption near melting point 8−6127
diphenyl ether, dil. solns., dielec. loss and relax., microwave and submm. wave absorpt. obs. *(German)* 8−23396
diphenyl mixture, superheated cap. and liq., enthalpy, press. depend. 8−42702
1,6-diphenyl-1,3,5-h-hexatriene and derivatives in n-paraffins, electronic spectra and fluoresc. 8−13509
diphenyl-benzene, dil. soln., thermodynamic equilib., ebulliometric investig. 8−18752
N,N′-diphenyl-m-phenylenediamine, crystal and mol. struct., X-ray diffr. 8−47312
N,N′-diphenyl-p-phenylenediamine, current carrier traps, space-charge-limited currents 8−47799
diphenylamine, spherol crystals, morphology and growth 8−18567
9,10-diphenylanthracene, luminesc. quantum yield, fluoresc. spectra polarisation effect, solvent viscosity depend. 8−27303
diphenylene sulphide, phosphoresc. vibronic struct., solvent heavy at. effect 8−17710
1,1-diphenylethylene, adsorbed on porous Vycor glass, reson. Raman spectrum, surface species identification 8−42066
1,6-diphenylhexatrienes, electronic and fluoresc. spectra, solvent effects, 77K 8−21959
1,3-diphenylisobenzofuran, rubrene sensitised photooxidation, efficiency meas. 8−27792
diphenylketyl radical, fluoresc. lifetime and quantum yield, organic matrix, 77-130K 8−42110
diphenyloctatetraene, two-photon spectra, ^1A_g state confirmation 8−17736
2,5-diphenyloxazole, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
2,5-diphenyloxazole, phosphoresc., 77K, solvent effect 8−42118
p,p′-diphenylsulphines, (He I) photoelectron spectra, assigned by perturbational mol. orbital and CNDO/2 calcs. 8−46396
dipotassium tartrate single crystal, SHG 8−13757
N,N′-disubstituted piperazinium diiodide-AgI, binary salts, ionic cond. study *(French)* 8−2293
ditetraethylammonium manganese bromide $^4T_1$ excited state, absorpt., MCD, Jahn-Teller model 8−43907
ditolylmethane, boiling in circuit system, effect of intense electric field *(Russian)* 8−46887
dodecan-1-ol+n-hexane, vap. press. and thermodynamic props., 298.230 to 342.824K 8−47528
n-dodecane, diffusion in liq. polyethylene, gas chromatography determ. 8−2277
n-dodecane-dichlordiethyl ether, stratified solns., depolarisation of scatt. light 8−10910
n-dodecane-n-hexane, 'ideal' mixture, viscosity, theory *(German)* 8−22882
DPPH, exchange integral determ. by ESR in weak Zeeman fields 8−2740
DPPH, polycryst., forbidden EPR transition 8−48044
drugs, analysis by IR spectroscopy, preconcentration, separation and computer techniques 8−31730
DTPA for U(VI) removal from rat body, decontamination efficiency 8−44617
DTPP for U(VI) removal from rat body, decontamination efficiency 8−44617
dye, adsorbed on ZnO electrode, sensitisation mechanism, from reson. Raman spectrum 8−42066
dye molecule monolayer displaced from metal surface, light refl., coupling with metal surface modes 8−48246
dye solns., alcoholic, stimulated emission in blue and violet regions *(Russian)* 8−25874
dye solns., two-component, before-relax. energy transfer and absorpt. spectra overlap 8−27285
dye solution, fluoresc. yield, photoacoustic determ. method 8−42117
dye solution, polarisation of stimulated emission *(Russian)* 8−25872
dye solutions, light-induced quenching of spontaneous and stimulated emission *(Russian)* 8−27290
dye solutions, mixed, energy transfer and conc. depolarisation of fluoresc. 8−25583
dye-detergent model systems, degree of fluoresc. polarisation 8−27287
dyes, methyl orange, red and yellow corrosion inhibition of Al alloys 8−44255
dyes, photographic emulsion spectral sensitisation, latent image form., subcond. band events 8−32905
dyes in organic solvents of high viscosity, diffusion coeffs. 8−10203
EBBA, crystallisation and melting of metastable solid crystalline phases 8−2240
EBBA-non-mesogenic binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
echtblau saltz dye, dielec. const. and loss meas., 10^2 to 10^5 Hz 8−6622
EDDIP for U(VI) removal from rat body, decontamination efficiency 8−44617
EEBAC-TBBA, mixed liq. cryst., layer thickness of smectic-B phases 8−38822
n-eicosane-n-docosane mixtures, positron lifetime spectra as function of temp. for various solid mixtures 8−18768
electron donating, PMR spectra, paramag. shifts induced by N_2O_4 *(Russian)* 8−21946
enniatin B, DLLLLL-stereoisomer, molecular and cryst. struct. 8−25745
eosin, in glycerine-water mixture, excitation and emission peaks, concentration shifts 8−33540
1,2 epoxy propane, adsorpt. on PAN-based C fibres, surface characts. 8−48694
organic compounds continued
erythrosin, aq. soln., polarisation of fluoresc. spectra, aggregation of mols. 8−31227
erythrosin in water-acetone, subnanosecond fluoresc. lifetime meas., environmental effects 8−5268
erythrosine dye, vibrational decay and fluoresc. in S_1 excited state 8−25605
ester vapours, reactions with OH radicals, reaction rate consts. determ. at 292K 8−27729
ethane, ab initio MRD-CI calc., 14-25 eV PES region, Rydberg states 8−41962
ethane, barrier and one electron charge transfer states in strong orthogonal group function theory 8−13421
ethane, chem. shift, paramagnetic term, Pople formalism calcs. 8−21945
ethane, conc. meas. in nonurban troposphere 8−32184
ethane, condensation in porous bulk media 8−47510
ethane, decomposition in RF discharges, 10-40 torr 8−3318
ethane, emission detect. on Neptune but not on Uranus 8−16344
ethane, force consts., model potential function vs. mol. orbitals calcs. 8−29829
ethane, force consts., vibr. stress and isotope effects 8−21897
ethane, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
ethane, gas-liquid crit. pt. region, depolarised light scatt. 8−34612
ethane, geometry optimisation, using bond function augmented basis sets 8−905
ethane, high resolution IR spectrum using $Pb_{0.93}Sn_{0.07}Te$ laser 8−33511
ethane, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
ethane, nonlinear IR absorpt. spectra 8−13492
ethane, two-channel dissoc., dynamical effects, classical trajectory study 8−40042
ethane, vibr. freqs., MINDO/3 calcs. 8−13429
ethane, viscosity and thermal cond. of liquid and gas, correl. eqns. 8−26715
ethane+H, chemical reaction, 357-544K 8−7198
ethanediol, dielec. props., 10 MHz-70 GHz, 10-40°C 8−43769
ethanes, substituted, dielec. relax. by intramol. motion 8−23391
ethanol, aq. subcooled soln., acoustic phenomena during nucleate boiling 8−10181
ethanol, boiling heat transfer coefficients, heater plate thickness effects 8−34124
ethanol, cooling fluid for flash lamp, interaction with high-power lamp radiation 8−13718
ethanol, effect of small additions of water struct., from permittivity obs. 8−9937
ethanol, evap. rate var. with vap. press. 8−18758
ethanol, plural glass-transitions, thermodynamic functions 8−38820
ethanol, positronium form., unsolvated electron effects 8−17826
ethanol, semiquantitative model for electron conc.-dose depend. in glassy matrix 8−20034
ethanol, soln., excess electron optical absorption spectrum model, band shape 8−33500
ethanol, stimulated Raman scatt. of tunable Raman freq. generation 8−33772
ethanol, thermodynamical Gruneisen parameter, press. depend. 8−14479
ethanol, US studies of mol. relax. 8−22790
ethanol+Na, reaction rate determ., rel. to cleaning from LMFBP components 8−21689
ethanol glass, 4K γ-irradiated, presolvated electron photoconductivity 8−47827
ethanol-CS_2 mixture, in external transverse resonator, stimulated Rayleigh wing scatt. line, anomalous shift 8−13763
ethanol-d_0,-d_1, solvated electrons reacting with scavengers, inverse isotope effects 8−31751
ethanol-water, inversion of Kirkwood-Buff thery 8−27807
ethanol-water mixtures, hydrophobic interaction, scaled particle theory 8−22625
ethanol-water mixtures, specific volume, compressibility, viscosity, up to 3200 bar, 15, 25°C 8−10113
ethene, chem. shift, paramagnetic term, Pople formalism calcs. 8−21945
ethene+Kr liq. mixture, thermodynamic excess functions 8−48690
ether, thermodynamical Gruneisen parameter, press. depend. 8−14479
ether-water mixtures, miscibilities, enthalpy of mixing, solvation *(German)* 8−18779
ethers, α-particle impact, 0.3-2.0 MeV, O stopping cross-sections 8−17753
ethoxysilanes, adsorption on BK 7 glass, IR spectra *(German)* 8−30834
ethyl alcohol, solution, struct. determ. from vibr. spectra, H-bonding and heat of mixing *(Russian)* 8−3368
ethyl cation, rearrangement pseudorotation modes, reaction mechanisms, permutation theoretic anal. 8−44369
ethyl cellosolve acetate on wafer surface, trace analysis 8−3433
ethyl isocyanide, thermal isomerisation in presence of at. gases, vibr.-translational energy transfer 8−23924
ethyl lactate, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
ethyl n-dodecoate, photocapillary effect, temp. depend. *(Russian)* 8−34682
ethyl trichloroacetate, in non-polar solvents, dielectric const., dielec. loss meas. 8−2796
ethyl trichloroacetate, soln., dielectric props. and relax. mechanisms at microwave freqs. 8−15089
ethylacetate, thermal and IR laser induced unimol. decompositions 8−20012
ethylamine+OH, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
ethylbenzene, oxidation, complex network calcs. 8−11497
ethylbenzole, thermal cond., 30-400°C, 1-10^3 kg cm^{-2} 8−26739
ethylcellosol, aq. soln., light scatt. rel. to conc. fluctuations *(Russian)* 8−3450
ethylchloride, d_0-d_5, microwave spectra, elec. field gradient tensor at Cl nucleus *(German)* 8−46325
ethylebenzene, chem. thermodynamic props. 8−40074
ethylene, μ, ρ and T-surfaces, global behaviour, rel. to catastrophe theory 8−26226

organic compounds continued
ethylene, π-electron system, self-consistent many-body theory 8−25432
ethylene, adsorbed on Ni (111), vibr. spectra from electron energy loss *(French)* 8−34696
ethylene, adsorption on Ir (110) surface 8−38961
ethylene, adsorption on polycryst. and (0001) single cryst. Re surfaces 8−38947
ethylene, adsorption on Pt(100) 8−18905
ethylene, air pollution monitoring, by CO_2 laser system 8−49182
ethylene, average mol. polarisability, Frost model wavefunctions calcs. using p-type Gaussians 8−41924
ethylene, C-C double bond rot. barrier, ab initio open-shell restricted SCF calc. 8−1099
ethylene, chemisorption on Rh (111) and (100) surfaces, LEED, AES and thermal desorption meas. 8−38951
ethylene, decomposition in RF discharges, 10-40 torr 8−3318
ethylene, dimer interaction, lattice energy, multipole expsn., at.-at. pots. 8−9218
ethylene, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
ethylene, excited states, continuum embedded, SCF-stabilisation approach 8−928
ethylene, gas, virial coeffs., from theory of system of nonpolar mols. of arbitrary symmetry 8−9743
ethylene, gas-liquid crit. pt. region, depolarised light scatt. 8−34612
ethylene, geometry optimisation, using bond function augmented basis sets 8−905
ethylene, high resolution heterodyne absorption spectra 8−267
ethylene, IR and near IR spectra, high press. cell meas. *(German)* 8−12769
ethylene, molecular charge density contours for cryst. struct. 8−38645
ethylene, multiphoton absorption, luminesc. and dissoc. in laser pulse field 8−1040
ethylene, multiphoton excitation from many rot. states by IR laser pulse 8−21986
ethylene, on Ni, C-H stretch vibration, broadened and softened, dehydrogenation 8−47666
ethylene, on Pt surface, electron energy loss spectra, surface vibrs. 8−15701
ethylene, photoelectron spectra, HAM/3 MO calcs. 8−13414
ethylene, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
ethylene, singlet Rydberg states, CI calcs. 8−33437
ethylene, unoccupied orbitals, excitation energy, electron affinity, HAM/3 MO calcs. 8−13415
ethylene, V←N transition origin determ. 8−13510
ethylene, valence XPS spectrum satellite struct., C(2s) region, correlation states 8−5278
ethylene, vibr. freqs., MINDO/3 calcs. 8−13429
ethylene+Bi($6^4S_{3/2}$), absolute rate consts., time-resolved reson. fluoresc. meas. 8−27731
ethylene+C^+, branching ratios 8−44354
ethylene+cis-N_2H_2, chem. reaction, intermediate geom. calcs. 8−35655
ethylene+F·(CH_3·), transition state, ab initio calc. 8−48640
ethylene+F, dynamics, stochastic reduction for reactions with complex form. 8−3315
ethylene+H→C_2H_5*, rate const., 198-320K, high press. 8−48618
ethylene+O, OH chemiluminesc., mechanism, rate const., mathematical model calcs. 8−48655
ethylene+Si*, collisional quenching, reson. line absorpt. expt. 8−46297
ethylene adsorbed on Ag exchanged zeolite, inelastic neutron scatt. 8−6229
ethylene bromide, liq., proton spin-lattice relax., temp. depend. 8−39435
ethylene episulfide+H→HS+ethylene, absolute rate parameters, flash photolysis reson. fluoresc. 8−3312
ethylene glycol, aq. soln., excess heat capacity, H bonding 8−3362
ethylene glycol, associated liq., US absorpt. and hole theory 8−10124
ethylene glycol, IR spectra, ab initio calcs., vibr. anal., conformations of isotopic modifications 8−5210
ethylene glycol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
ethylene molecules, long range forces in multipole expsn., ab initio calcs. 8−9219
ethylene oxide, cryst. symmetry, X-ray diffr., far IR and Raman spectra 8−35123
ethylene remote meas. using CO_2 differential absorpt. lidar 8−49122
ethylene-Ar mixtures for drift chamber appl. 8−25391
ethylene-ethane mixtures, boiling heat transfer 8−9535
ethylene-LiF complex, molecular orbital calcs., Li bonding exam. 8−29745
ethylenes, optical activation energy and dipole moment, electron repelling and attracting groups 8−46341
ethylidene-N,N′-diacetamide, interpretation of X-ray diffr. patterns, applic. of dynamic symmetry 8−47265
ethyltoluenes, fluoresc. and triplet state quantum yields, biacetyl method 8−37671
ethyne, chem. shift, paramagnetic term, Pople formalism calcs. 8−21945
ethyne, electron energy loss spectra, excited states investig., electron impact spectrometer 8−25756
ethynol, struct., isomerisation, ab initio SCF MO calcs. 8−41941
exciplexes, electronic struct. by electro-optical expts. 8−25581
ferrous formate dihydrate, sp. ht. 8−22865
ferrous oxalate dihydrate, Mossbauer spectrum, hyperfine fields 8−39483
ferrous oxalate dihydrate, reaction with sodium disilicate glass 8−11191
ferrous-formate dihydrate, mag. system model, mag. sp. ht. *(Japanese)* 8−31091
field ionisation mass spectrometry, review 8−35763
films, possible exptl. production in space 8−35304
fluoranil-macrocyclic polyether mol. complexes, configs., IR and NMR obs. 8−33529
fluoranthene, vapour, laser excited fluorescence 8−29807
fluoremethane, saturable absorpt. of CO_2 laser radiation, theory 8−37946
fluorene, photoconductive props., sample purity depend. 8−10508
fluorene conjugate bases, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523

organic compounds continued
fluorenone fluoresc. in plastic, high press. effects., quantum yield 8−25601
fluoroacetylene, and -d_1, vibr. Zeeman effect, g-factors 8−46391
o-fluoroaniline, conformation by microwave spectroscopy, rot. consts. 8−9144
fluorobenzene, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
fluorobenzenes, excited electronic states, variable angle electron impact spectroscopy 8−13612
fluorobenzenes, radical cations, B(π^{-1}) excited states, radiative relax. 8−13546
fluorobenzenes, substituted, cryst., ^{19}F NMR, chem. shift tensor meas. 8−10789
fluorobenzenes, UV photoelectron spectroscopy, basic concepts, spectra 8−17715
fluorocarbon emulsions, colloidal props. 8−48703
fluorocarbon monomers, plasma polymerisation 8−35304
fluorocarbons, world production and release, 1975, rel. to stratospheric O_3 8−3919
2-fluoroethanol-d_0,-d_1, IR spectra in Ar, N_2 and Ar-N_2 matrices, normal coordinate anal. 8−25538
fluoromethane, $^{13}CH_3F$ and $^{12}CH_3F$, vibr. energy transfer between ortho- and para-mols. *(Russian)* 8−29845
fluoromethane, and other optically pumped lasers, dynamic Stark effect 8−17911
fluoromethane, dielectric susceptibility at radio frequencies 8−14123
fluoromethane, fluid, second dielec. virial coeff. calc. 8−22449
fluoromethane, geometry optimisation, using bond function augmented basis sets 8−905
fluoromethane, in liq. O_2(Ar), vibr. energy relax. obs. 8−5208
fluoromethane, laser pumped, overtone fluoresc., intermode energy flow 8−37673
fluoromethane, multiphoton excitation from many rot. states by IR laser pulse 8−21986
fluoromethane, rotary photon echoes 8−25929
fluoromethane, second dielectric virial coeff. of polar gas, temp. depend. *(German)* 8−26234
fluoromethane, single-mode optical pumping, superradiant far IR emission 8−42329
fluoromethane, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
fluoromethane+Br($^2P_{3/2}$)($^2P_{1/2}$), photobromination 8−11535
fluoromethane+Cl^-(Br^-)(I^-), excitation functions, reactive scatt., eV region *(German)* 8−35677
fluoromethane+D(H)(O), reactions, selective vibr. excitation effects 8−35643
fluoromethane-d_0, -d_1, vibr. relax. in matrix, rot. effects, double reson. obs. 8−46375
fluoromethane-d_3, deuteron quadrupole coupling const. 8−33522
fluoromethane-d_3, laser Stark spectra, ν_6 band, vibr.-rot. consts., dipole moment 8−5277
fluoromethanes, dipole moment derivatives and infrared intensities, transferable polar tensors 8−17668
fluoromethanes, ionisation pots., SCF-multiple scatt.-Xα calcs. 8−5141
fluoromethanes, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
fluoromethylene+NO→HF+CNO, vibr. energy distrib., lasing action in dichlorofluoromethane-O_2 8−48644
fluoromethylene+O_2→HF+CO_2, vibr. energy distrib., lasing action in dichlorofluoromethane-O_2 8−48644
2-fluoropyridine, IR and Raman spectra, vibr. assignments 8−25534
fluorotrichloromethane, optical saturation characts., using CO_2 laser radiation 8−30027
formaldehyde, $^1A_2$-state, radiative and nonradiative decay calcs., rel. to photochem. decomp. 8−37669
formaldehyde, core ionisation, valence orbital relax. calcs. 8−5135
formaldehyde, electronic states, oscill. strengths calcs. 8−9095
formaldehyde, geometry optimisation, using bond function augmented basis sets 8−905
formaldehyde, in ρ Ophiuchi dark cloud complex, lifetime rel. to anisotropic light scatt. 8−8080
formaldehyde, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
formaldehyde, interstellar, absorpt. in Cassiopeia A direction 8−45381
formaldehyde, interstellar, detailed struct. in NGC 6334 mol. cloud complex 8−4324
formaldehyde, IR spectra, Coriolis-coupled ν_4, ν_6 and ν_3 fundamental bands 8−5227
formaldehyde, mag. rot. spectrum, singlet-triplet perturbations 8−25580
formaldehyde, mol. beam, vel. meas. by Doppler effect on RF spectrum splitting *(French)* 8−13627
formaldehyde, multipole expansion of diatomic overlap, MEDO calcs. 8−46264
formaldehyde, photodissoc., H_2 and CO relative quantum yields, 270-360 nm 8−44384
formaldehyde, photoionisation by vac. UV laser *(Russian)* 8−9205
C_{2v}-formaldehyde, Tamm-Dancoff approx., relativistic correction, vertical excitation energy, radiative lifetimes 8−9090
formaldehyde, vertical photoexcitation and photoionisation spectra, CI calc. 8−918
formaldehyde+CH_n^+, (n=Q-4), reactions at 300K 8−44357
formaldehyde+H_3O^+(H_3S^+)($HCNH^+$)($HCHO.H^+$), proton transfer, rate and equilib. consts. 8−48636
formaldehyde(-d_2), photolysis quantum yields, radical production, NO reactions, freq. depend. 8−44387
formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566
formaldoxime, photoelectron and far UV absorpt. spectra 8−17712
formamide, dielec. props., 10 MHz-70 GHz, 10-40°C 8−43769
formamide, low temp. electron density distrib. 8−34502
formamide-water soln. permeability of cellulose membrane 8−11557
formate bisurea dihydrate, magnetisation curves 8−23298
formic acid, adsorpt. and decomp. over Ni surface, obs. using combined SIMS-FDS-AES system 8−40076
formic acid, cryst. struct. at 98K 8−26555
formic acid, heteronuclear double reson., spin echo modulations 8−1009
formic acid, vap., laser lines identification 8−1222
formic acid, viscosity of dissociating vapour 8−5840

organic compounds continued
formyl chloride, photoelectron spectrum, vibr. struct., ionis. pots., assignments 8–9195
formyl chloride, rot. Zeeman effect of low-J transitions 8–25519
formyl fluoride+HF, multiple site reactivity, ab initio GO supermol. calc. 8–11498
formyl radical-d$_0$,-d$_1$, microwave spectroscopy, high field Zeeman effect 8–37631
freon 12, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8–14129
freon 22, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8–14129
Freon-11(-113)(-12), heat pipe working fluid, crit. heat/mass transfer 8–42517
Freon-12(22), gas, Rayleigh vol. scatt. coeffs., spectronephelometric meas. 8–14127
fructose, stereoviews and morphological data on microcrystals 8–18510
fumaronitrile exciplexes, photoisomeris. and photoionis, dissolved O$_2$ effect 8–27789
fungicides, in water, detect. by laser excited reson. Raman spectroscopy 8–31732
furan, gas, X-ray photoelectron spectra, satellite struct. 8–5281
gasoline, Mn determ. by AAS using N$_2$O-H$_2$ flame 8–15729
gasoline, sample preparation for P determ. by at. absorpt. 8–31729
gasoline additives, analysis by IR spectroscopy, preconcentration, separation and computer techniques 8–31730
geochemical indicators of palaeoenvironmental conditions of sedimentation 8–40539
glass, creep under shear with superposition of hydrostatic press. 8–31482
glutamate as transmitter of hippocampal perforant path 8–11635
glutamate Na-stimulated uptake in membrane vesicles of E. coli, role of ion gradients 8–48776
L-glutamic acid, solid, amino group reorientation, PMR second moment obs. 8–35046
L(+) glutamic acid halogen acid salts, crystallographic, optical and calorimetric meas., halide effect 8–34505
glutamine, polycryst., proton mag. relax. and mol. motion 8–20139
glycerides, high mol. wt. species prod. after contact with lunar grains 8–3333
glycerine, absolute evaporation rate meas. 8–2244
glycerine, sound vel. meas. at 5 to 20 kHz in small-volume cells 8–9516
glycerine solutions, fluoresc. damping curves in reson. quenching by one-photon counting method 8–10978
glycerol, aq. soln., excess heat capacity, H bonding 8–3362
glycerol, associated liq., correl. between acoustic and dielectric relaxation times 8–9925
glycerol, supercooled liq., dynamical struct. factor, Mossbauer spectroscopy 8–27126
glyceryl tristearate, soln. growth, surface entropy factor calc. 8–42934
glycine, cryst., cationic radicals, EPR 8–11537
glycine, electron-irrad. polycrysts., stable products obs. by ^{13}C NMR 8–15775
glycine zwitterion+water, interaction pot., ab initio SCF LCAO calc. 8–48747
glycogen, ^{3}H distribution in glycogen, haemoglobin and chromatin of mice drinking tritiated water 8–31910
glycogen and metabolising enzymes following radiation-induced atrophy in rat testes 8–15869
glycyl anion radical, in α-glycine cryst., struct., ESR obs. 8–33530
glycylglycines, isotope substituted, IR and Raman vibr. spectra 8–42051
glyoxal, lowest triplet state, excitation energies, electron correl. effects 8–5147
glyoxal, selected state photodissoc., vibronic effects, CO quantum yield, 1-10 torr 8–37691
glyoxal, triplet state excitation energy calc., modified CI method 8–37536
GMP, cyclic, possible mediation of slow excitatory postsynaptic pot. in sympathetic ganglia 8–27930
dGMP γ-irrad. in frozen soln., free radical form., computer EPR spectra anal. 8–31774
graphite, trifluoromethanesulphonate intercalate, prep. by anodic oxidation 8–27439
graphite-alkali metal-benzene ternary intercalation compounds thermal and X-ray anal. *(French)* 8–27434
guanadinium zinc sulphate:Cu^{2+}, EPR of Cu^{2+} at tetrahedrally coordinated Zn^{2+} sites 8–39388
guanidinium aluminium sulphate hexahydrate:Cr^{3+}, isotope effect, zero field splitting, vibr. coupling 8–6570
guanidinium aluminium sulphate hexahydrate, temp. depend. quadrupole coupling const. for ^{27}Al^{3+} and ^{71}Ga^{3+} 8–19368
guanidinium ion, rot. barriers, ab initio calcs. 8–41923
guanidinium uranyl sulphate trihydrate, new ferroelec., dielec. props. 8–43824
guanidinium uranyl sulphate trihydrate, X-ray diffr., crystal struct. 8–14331
guanidinium vanadium sulphate hexahydrate, low temp. mag. props., mag. sp. ht. *(Japanese)* 8–19268
guanidium salt, (C(NH$_2$)$_3$)$_2$Pt(CN)$_4$Br$_{0.23}$.H$_2$O, pseudo-one-dimens., solitary wave excitation 8–6307
haematoxylin, reagent for spectrophotometric determ. of As (V) 8–20104
1-halo-1-n-propylcyclohexanes, conform. equilib., and pot. barriers, IR spectra *(Russian)* 8–21928
1-haloalkanes, microwave spectra, conformation 8–21913
haloazulenes, S$_2$-state deactivation, intersystem crossing and heavy atom effects 8–13545
halocarbons, identification and meas. in troposphere and lower stratosphere 8–32186
halocarbons, meas. in air and water, W. Europe 8–36272
halocarbons, multiphoton dissociation, product identification 8–37694
halogenoacetylene radical cations, C$_2$HX$^+$, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8–17678
halogenobenzenes, dipolar liquid, far IR absorpt. rel. to Mori continued fraction for autocorrel. function 8–2875
halomethanes, 2.5 keV electron impact energy loss spectra, inner shell excitation 8–42232

organic compounds continued
halomethanes, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8–25624
halomethanes, second dielectric virial coeff. of polar gas, temp. depend. *(German)* 8–26234
halomethanes, UV photoelectron spectroscopy, basic concepts, spectra 8–17715
HBAB, temp. depend. of apparent viscosity and density 8–18542
HBT, liq. cryst., phase transitions, quenching effects obs. 8–22833
HBT liquid crystal, mag. susceptibility and anisotropy, smectic, nematic, isotropic phases 8–18748
hepanoate, Li, Na, K and Rb alkanoate mixture, DSC anal. 8–10192
α-(β-)heptacyclene, vibronic spectra, electronic-vibr. interactions 8–1021
n-heptane, boiling heat transfer coefficients, heater plate thickness effects 8–34124
n-heptane, loss angle, temp. depend., 9 and 36 GHz 8–48114
n-heptane, pseudoboiling mechanism, improved heat transfer 8–6152
heptane with 2,2-diethoxypropane, excess enthalpy *(French)* 8–11542
heptanoic acid, soln., US relax. *(German)* 8–22792
heptanol isomers, static permittivity and density, press. and temp. depend. 8–35078
p,n-hepthyloxybenzoic acid, smectic C liq. cryst., coherent light diffr. 8–1999
heptyl alcohol, associated liq., US absorpt. and hole theory 8–10124
n-heptyl cyanobiphenyl, near IR dichroic spectrum, using unpolarised radiation 8–27201
4-heptyl-4′-cyanobiphenyl, liq. cryst., dielec. props. *(French)* 8–10820
4′-n-heptyl-4-cyanobiphenyl, nematogenic liq. cryst., above T$_c$, Kerr effect response time, temp. depend. 8–34434
N-heteroarenium cations B, resonant, nonradiative energy transfer *(German)* 8–25659
heteroaromatic compounds, two-stage photoionisation in solns., UV laser irrad. effects *(Russian)* 8–13556
N-heterocyclics, radiationless transitions, vibronic coupling effect 8–33543
heteroorganic group III compounds, NQR expts., review 8–25565
hexachlorobenzene, Raman intensities, polarised scatt. from lattice rot. modes. 8–43845
hexachloroethane, surface roughening transition in vapour phase growth 8–2044
hexadecyltrimethyl-ammonium bromide, micelle form. in aq. soln., laser light scatt. 8–27825
n-hexadecyltrimethylammonium bromide micelles, ^{13}C relax. times model, for gauche-trans isomerisation 8–33520
2,4-hexadiyne, solid, methyl group tunnelling and torsion, neutron scatt. 8–18560
2,4-hexadyne-1,6-diol-bis-p-toluene sulphonate, fluoresc. of localized states in single crystal 8–6756
hexafluorobenzene, liquid sample freezing with quartz wool for neutron diffr. exam. 8–18502
hexafluoroethane, far IR multipole induced absorpt. 8–37639
hexafluoroethane+S$_2$, fluoresc. quenching and lifetimes of S$_2$ 8–46386
hexamethylbenzene, cryst., Raman spectra, intensity of low freq. line 8–2846
hexamethylbenzene charge-transfer complexes, heavy atom effect on radiative and radiationless transitions 8–25607
hexamethyldisilane, plastic deform., and diffusion of hexamethylethane-^{14}C 8–14510
hexamethylene tetramine in water-acetone soln., crystal growth kinetics 8–30554
hexamethylphosphortriamide, effect of small additions of water struct., from permittivity obs. 8–9937
hexan-l-ol+n-hexane, vap. press. and thermodynamic props. 298.230 to 342.824K 8–43129
hexane, liq., burning rate in small vessel, convection effect 8–35680
n-hexane, loss angle, temp. depend., 9 and 36 GHz 8–48114
n-hexane, superheated liq., US wave vel., adiabatic compressibility, heat capacity 8–2198
n-hexane and mixtures with n-pentane, nucleate boiling from tube arrays 8–22251
n-hexane-n-dodecane ‘ideal’ mixture, viscosity, theory *(German)* 8–22882
hexanetriol 1, 2, 6, associated liq., correl. between acoustic and dielectric relaxation times 8–9925
hexanoate, Li, Na, K and Rb alkanoate mixture, DSC anal. 8–10192
n-hexatriacontane, cryst. struct., γ-ray effects obs. 8–43048
hexyl alcohol, associated liq., US absorpt. and hole theory 8–10124
n-hexylamine-nickel di-acetylacetonate, ^{13}C nucl. spin relax., electron spin delocalisation 8–5248
hexyloxy-cyano-biphenyl, nematic liq. cryst. pretilt angle, temp. depend. 8–26432
4-n-hexyloxybenzilidene-4′-n-propylaniline, liq. cryst. phases, thermal and structural studies 8–1989
p,n-hexyloxybenzylideneamino-p′-chlorobenzene, liq. cryst., sp. ht. meas. 8–22831
HMTSF-TNAP, organic low temp. cond. 8–43368
HNBP, nematic, statistical mechanics, particle pots. and distrib. functions calcs. 8–2001
HOAOB, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8–42896
homotetrahedryl cation, rearrangement pseudorotation modes, reaction mechanisms, permutation theoretic anal. 8–44369
HxBPA smectic phases, X-ray diffr. and Raman spectra 8–6012
hydrocarbon, internal degrees of freedom, Eucken factor, effect on transfer props. 8–22445
hydrocarbon catalysis 8–11550
hydrocarbon chain, gauche-trans isomerisation, ^{13}C relax. times and nucl. Overhauser enhancement model 8–33520
hydrocarbon crystal, calc. of internal friction resulting from molecular defects 8–31448
hydrocarbon crystal structure calc. by molecular packing analysis 8–14303
hydrocarbon fuel flame, electron density determ. by Michelson interferometry 8–1890
hydrocarbon liq., effect of mol. struct., temp. and elec. field on electron mobility 8–2535
hydrocarbon-simple fluid gas streams, second virial coeffs. calcs. 8–1777
hydrocarbons, adsorption on Ni, C 2s levels, initial state shift 8–34703
hydrocarbons, boiling heat transfer 8–9535

organic compounds continued
hydrocarbons, C_1 to C_3, cryoscopic system for purity assessment in range 0 to −190°C 8−3418
hydrocarbons, deuterated, mol. polarisability and intermol. dispersion energy, 1-D delta pot. function 8−29862
hydrocarbons, gaseous, pyrocarbon deposition, kinetic model *(German)* 8−23851
hydrocarbons, high speed laser schlieren techniques 8−15093
hydrocarbons, in Gulf of Mexico, concs. in seawater at proposed deep-water port sites 8−44880
hydrocarbons, liq. mixtures, thermodynamics *(German)* 8−20047
hydrocarbons, mag. susceptibility and anisotropy *(French)* 8−37559
hydrocarbons, mol. thermodynamics, information-theoretic aspects 8−13409
hydrocarbons, Ni-catalysed decomp., morphologies and growth mechanisms of carbons 8−35679
hydrocarbons, substituted, monolayers on Pt (100) surface, AES quantitative anal., calibration 8−31724
hydrocarbons, thermodynamic props., multiparameter conformal solution theory 8−18796
hydrocarbons and halogen-hydrocarbons, solidified, solubility in liq. N_2, calc. by Preston-Prausnitz method 8−26686
hydrocarbons in surface sediments on Scotian Shelf 8−49008
hydrocarbons liq., geminate pair of charges, neutralisation escape with field depend. electron mobility 8−26865
hydrocarbons meas. in seawater, risk of contamination from Niskin sampling bottles 8−45039
hydrocyanic acid laser, 0.337 mm, for interferometric plasma density meas. 8−5922
hydrofluorocarbon monitoring using telluric absorption line *(German)* 8−49133
3-hydroxy-2-methyl-1,4-naphthaquinone, pH indicator *(Rumanian)* 8−23947
2-hydroxy-3-crotonyloxypropyl methacrylate, synthesis, copolymerisation with maleic anhydride, photocrosslinking *(Japanese)* 8−31376
α-hydroxycarboxylic acids, discovery in Murchison meteorite 8−45294
7-hydroxycoumarin, absorpt. and emission spectra, ionic forms 8−21955
7-hydroxycoumarine, one- and two-photon absorption, fluoresc. obs. 8−46407
7-hydroxycoumarine, two-photon visible absorpt. spectra, fluoresc. obs. 8−42147
hydroxyl protons, temp. depend. of chem. shift, in R-OH cpds. 8−35054
7-hydroxylepidone, solns., multiple fluoresc. emission 8−33547
hydroxymethyl radical, isotropic hyperfine coupling consts., temp. depend., nuclear vibrs. 8−35039
hydroxymethyl radical+solvated electron, reaction in methanol, dose and base effects 8−20043
hydroxymethyl radicals, adsorption on A-type zeolites, electron spin echo obs. 8−21947
hydroxypyridines, phosphoresc. emission, polarisation and lifetimes 8−31232
2-hydroxytropone, in β-cyclodextrin complex, UV circ. dichroism spectrum assignments, complex struct. 8−46358
hydroxyurea effect on Chinese hamster ovary cell X-ray induced division delay 8−31865
idolalkylamines, conformational varieties in cryst. 8−10030
indane, 271 nm spectrum, rot. band contour anal., puckering vibr. 8−1001
indenyl-Li ion pair in dimethoxyethane, ^{13}C NMR, temp. and counterion depend. 8−48062
indenyl-Na ion pair in dimethoxyethane, ^{13}C NMR, temp. and counterion depend. 8−48062
indocyanine green fluoresc. spectrum in blood and other solvents, rel. to angiography 8−28057
indole, and derivatives, temp. fluoresc. quenching, rel. to H_2O solvent struct. 8−5265
indole, fluoresc. polaris., solvent effects 8−33542
indole decapeptide luteinising hormone, high-press. liq. chromatography, fluorometric detect. 8−20096
indoles, excited states, solvent interactions, fluoresc. obs., rel. to chromophore 8−37670
indoles, fluoresc. anomalies, mixed valence-Rydberg states 8−17707
inductive-resonance energy transfer, heterogeneous electron level broadening *(Russian)* 8−23530
inositol, X-irrad., radical form. detection by ESR and ENDOR, oxidation process 8−27797
interstellar obs. using uncooled millimeter wave receiver *(Swedish)* 8−24461
interstellar organic compounds, origin and nature 8−24543
interstellar polysaccharides and related hydrocarbons, identification from IR spectra 8−28763
intersteller CH, radical form. obs. 8−28751
N-iododimethylamine, polymeric, mol. struct. exam. *(French)* 8−2101
iodomethane, and deuterated, optically pumped submm. wave amplification 8−29941
iodomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
iodomethane, collisional rot.-line widths and shifts, microwave region 8−25619
iodomethane, dielectric susceptibility at radio frequencies 8−14123
iodomethane, first s-Rydberg transitions 8−42094
iodomethane, Stark effect modulation of CO_2 laser 8−17992
iodomethane+K(Ba)→K(Ba)I+CH_3, products translational distrib., crossed beam reaction 8−31629
iodomethane-d_3, ν_2 band, laser Stark saturation spectra 8−42125
iodomethane-d_3($^{13}CD_3I$), 690 and 806 micron laser transitions 8−42328
iodonium cyclic compound, ESR signal *(Chinese)* 8−15025
^{125}I-iodoproflavine binding with DNA, double strand break induction 8−20145
2-iodopropene, barriers to internal rotation 8−9273
3-iodopropene, microwave spectra, rot. consts. and HFS 8−975
2- and 3-iodopyridine, IR and Raman spectra, vibr. assignments 8−25534
iodotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8−37766
iodotrifluoromethane, photoelectron spectra, spin-orbit splitting, vibr. fine struct. 8−21974
ionone, dipole moment determ. 8−27882

organic compounds continued
iron porphyrin chlorides, X-ray, EPR and mag. susceptibility obs., intermol. exchange interaction 8−10765
isobutane, condensation in porous bulk media 8−47510
isobutene-d_0, -d_6, torsional pot. functions, spectra anal. 8−25528
isobutyric acid-d_{10}-D_2O, coexistence curve, liq. densities 8−18780
isobutyric acid-H_2O, crit. mixture, partial molar vol., temp. depend. 8−18800
isobutyric acid-water critical mixtures, shear viscosity, pseudospinodal curves and scaling 8−22844
isocyanoacetylene theoretical study and rot. const. 8−33633
isocyanoethynyl radical, theoretical study and rot. const. 8−33633
isoeugenole, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
isopentane, thermodynamical Gruneisen parameter, press. depend. 8−14479
isopropanol, anodic oxidation *(Rumanian)* 8−19907
isopropanol, decomp. on α- and β-V_2O_5 bronzes, 186-300°C, kinetics and mechanism 8−11553
isopropanol, US studies of mol. relax. 8−22790
isopropylbenzene, IR spectra of oxidation products *(Rumanian)* 8−23838
isopropylbromide, thermal and IR laser induced unimol. decompositions 8−20012
isoxazolines, thermodynamics charact. of phase diagrams 8−23673
KEL-F, ^{19}F, spectrum using multiple pulse decoupling-magic angle spinning NMR probe 8−12735
kerosene+Fe_3O_4, ferrofluid, thermal and electrical cond. in mag. field *(Russian)* 8−6188
ketene, photoionis., ion fragmentation kinetic energy 8−9206
ketene→CH_2+CO, photodissoc. at 337 nm, visible fluoresc. of CH_2 8−42121
ketocarbene-ketene rearrangement, reaction path, ab initio calc. 8−20008
lactams, optical rot. strength, sector rules 8−17737
lactones, optical rot. strength, sector rules 8−17737
laser dyes, fluoresc. efficiency and standards 8−35205
laser dyes, fluorescence decay, aggregation effects 8−25879
laser dyes, inert gas halide laser pumped, photochem. stability 8−33733
lauryl alcohol, aq. subcooled soln., acoustic phenomena during nucleate boiling 8−10181
lecithin, adsorbed monolayer on aerosil, IR spectra 8−15753
lecithin cryst. growth rel. to mol. bilayer props. 8−31780
L_α-lecithin multilayers, shear-induced biaxiality near solid surfaces 8−24035
light elements, X-ray fluoresc. determ., matrix composition effects on line intensity 8−7257
d-limonene, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
lipid monolayer phase transitions, model 8−2338
liquid mixtures, positronium form., spur process 8−1113
liquids, low-to-medium loss, complex permittivity meas. at 285 GHz 8−15083
liquids, polar and nonpolar, entropies of vaporisation 8−26676
liquids with branched chain, dielectric const. temp. coefficient *(Japanese)* 8−35079
lithium acetate, methyl group dynamics, NMR 8−29802
lithium acetate, proton relax. study of nearly free methyl rotors 8−39428
lithium ammonium tartrate, piezoelec., proper ferroelastic transition 8−2812
lithium formate, mixing of Nd laser radiation for coherent picosecond source, 350 to 680 nm 8−13762
lithium formate crystal, dehydration, influence of hydrostatic press., ^7Li NMR 8−2758
lithium formate crystal, optical phase configuration 8−5524
lithium formate monohydrate, temp. depend. Raman spectra, H bonds 8−6673
lithium formate monohydrate, X-N difference density and structural parameters from different expts. 8−18627
lithium formiate, active spectroscopy under conditions of double-w-k-resonance *(Russian)* 8−33777
lithium perfluoro-octanoate-water system, liq. cryst. struct., self-diffusion, NMR 8−15036
lutein, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
2,6-lutidine-water, spinodal decomposition, light scatt. obs. 8−34625
magnesium bromide hexamethanol solvates, cryst. struct. *(French)* 8−34500
magnesium platinum oxalate, X-ray diffuse scatt., 1-D Peierls-Kohn anomaly and struct. transforms. 8−14680
malachite green in glycerol, subnanosecond fluoresc. lifetime meas., environmental effects 8−5268
maleic acid, behaviour during anodisation of Al 8−44262
maleic anhydride, struct., DRM microwave spectra, isotope shifts 8−21918
malonic acid-Ce(Br_3)$_3$, multiple stationary states in oregonator 8−20061
manganese acetate tetrahydrate, crit. relax. studied by HF mag. susceptibility 8−39299
manganese formate dihydrate, 2-D Heisenberg antiferromag., sp. ht. 8−14965
manganese stearate, mag. two-dimensional system, mag. susceptibility 8−10669
manganese stearate monolayer, two-dimensional mag., prep. and characterisation 8−31097
mannose lyoluminescence dosimetry in photon and fast neutron beams 8−15902
marine aerosols, organic and inorganic Cl gas concs. and particulate Cl size distrib. 8−32187
marine atmosphere particulate matter, organic C conc. and particle size distrib. 8−32139
marine sediments, nature and reactions of dissolved organic matter in interstitial waters 8−49039
MBBA, Brillouin scatt. in isotropic phase 8−2867
MBBA, dye activated, isotropic phase, induced Raman emission *(Russian)* 8−13766
MBBA, homotropic liq. cryst. growth 8−26439
MBBA, isotropic, depolarised Rayleigh doublet, de Gennes viscosity coeffs. 8−31207

organic compounds continued
MBBA, isotropic, obs. and anal. of depolarised Rayleigh doublet 8−35154
MBBA, laser radiation transmitted near isotropic transition, spatial coherence 8−18003
MBBA, liq. cryst., light scatt. and birefr. 8−22646
MBBA, nematic, order parameters meas. by Raman scatt. 8−6011
MBBA, nematic, statistical mechanics, particle pots. and distrib. functions calcs. 8−2001
MBBA, nematic, US attenuation anisotropy, temp. depend. 8−43071
MBBA, nematic liq. cryst., anisotropy of US attenuation 8−43070
MBBA, nematic liq. cryst., relaxation times for formation and break-up of Williams domains 8−34423
MBBA, nematic liq. cryst., temp. depend. of EHD instability 8−1998
MBBA, nematic phase, quasielastic and elastic 10 Å neutron scatt. 8−42904
MBBA, one dimens. dielectric-flexoelectric deformations 8−38616
MBBA, partially deuterated, D spin-lattice relax. 8−48070
MBBA, refr. index, high press. meas. 8−26428
MBBA, secondary light scatt. in low frequency field, in dielectric state 8−48147
MBBA, temp. depend. of apparent viscosity and density 8−18542
MBBA film, nematic liq. cryst., visible interaction of low-intensity US waves 8−10126
MBBA film, optical study of second dynamic scatt. regime *(Italian)* 8−15146
MBBA-EBBA, homotropic liq. cryst. growth 8−26439
MBBA-EBBA mixture, behaviour in alternating elec. field 8−26440
melamine, electron density, exponent refinement 8−38579
merocyanine dye monolayer on p-chloranil cryst. in sandwich cell, electrochromic detection of internal charges 8−11549
mesogens, chiral, phase transition temp. 8−2241
meta-toluylene-diamine, refr. index, equal-deflection method, UV laser rad. 8−29145
metalloporphyrin, vibronic coupling, Raman scatt. 8−21933
methacryloyloxyethyleneoxycarbonyloxypropylene, NMR relaxation mechanism *(German)* 8−33527
methane, $1B_1(1T_2)$ state, photodissoc., extended basis calcs. 8−9093
methane, 4350-10600 Å bands, intensity profile, vibr. assignments, rel. to major planets spectra 8−42084
methane, ^{1}H and ^{13}C mag. shielding, He and methane intermol. effects 8−37571
methane, γ-ray Compton profile meas. 8−25623
methane, μ, ρ and T-surfaces, global behaviour, rel. to catastrophe theory 8−26226
methane, ν_2 and ν_4 bands Coriolis interaction, using a general Hamiltonian formalism *(French)* 8−5192
methane, absorpt. bands in Uranus spectrum 8−45275
methane, adsorption on W (100) and (111), work function meas. 8−38963
methane, and -d_4, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
methane, aq. soln., Monte Carlo simulation of isothermal-isobaric ensemble 8−30531
methane, C X-ray spectrum meas. by soft X-ray spectrometer 8−24911
methane, collision-induced light scatt., spectral features 8−13493
methane, combustion, free turbulent jet form. 8−30329
methane, conc. meas. in nonurban troposphere 8−32184
methane, continuous coherent radiation in spatially separated fields 8−30007
methane, continuous coherent radiation obs. in spatially spaced fields *(Russian)* 8−9372
methane, core ionis., single orbital relax., LCAO MO SCF calcs. 8−29739
methane, CW coherent antiStokes Raman spectrum, ν_1 band, press. depend. 8−42377
methane, decomposition in RF discharges, 10-40 torr 8−3318
methane, dense gas, electron drift velocity 8−1785
methane, electron impact, H,D(2s,2p) prod. 8−42230
methane, electron impact dissoc., excitation of H Lyman β and Balmer α radiation 8−46450
methane, emission at 76 GHz obs. from Jupiter correl. with decameter activity 8−4140
methane, emission detect. on Neptune 8−16344
methane, excess electrons, zero-field mobility in dense gas 8−22452
methane, first detection in interstellar medium 8−16503
methane, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
methane, gas density fluctuations, orthopositronium annihilation rate depend. 8−37773
methane, geometry optimisation, using bond function augmented basis sets 8−905
methane, H-X bond position, correlation with electronegativity 8−9069
methane, heavy, cryst., temp. depend. of Debye-Waller factor, Monte Carlo calc. 8−47492
methane, IR spectra, 2862-3000 cm^{-1}, line positions and strengths 8−5217
methane, liq., compressed, self-diffusion coeff. temp. and density depend. calcs. 8−38864
methane, localised orbital construction for calcs. using multiconfigurational SCF methods *(Russian)* 8−922
methane, mag. struct. of vibr.-rotational transition, review of laser appl. to precision meas. 8−42246
methane, matrix isolation spectra using tunable diode laser 8−45739
methane, mol. collisions, energy transfer, multi-dimens. harmonic oscillator model 8−42174
methane, mol. force consts., parametric representation method 8−25503
methane, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
methane, molecular charge density contours for cryst. struct. 8−38645
methane, multipole expansion of diatomic overlap, MEDO calcs. 8−46264
methane, nonlinear laser spectroscopy, inside Doppler line *(Russian)* 8−21231
methane, nonlinear optical reson. shift in mag. field, vibr.-rot. transition 8−13549
methane, oxidation, complex network calcs. 8−11497
methane, oxidation in nonurban troposphere 8−32183

organic compounds continued
methane, phase II, IR and Raman spectra of ν_3 and ν_4 modes 8−2834
methane, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
methane, photoionis., ion fragmentation kinetic energy 8−9206
methane, possible microwave interstellar maser lines 8−41020
methane, prod. in Walvis Bay waters 8−28246
methane, proportional counter gas, primary ion pairs distrib. prod. by C-K_α source 8−29704
methane, proton mag. shielding const., HF perturbation theory 8−46258
methane, pyrolysis, spiral growth of pyrolytic C *(German)* 8−42931
methane, Raman spectra intensity analysis, electrooptical parameters transferability 8−29820
methane, rotational anal. of $(\nu_3+\nu_4)$ combination bands *(French)* 8−21900
methane, semiempirical electron impact ionis. cross-sections 8−1089
methane, shock-tube oxidation, equilibrium and nonequilibrium radiation emission 8−27760
methane, solid, thermal expansion coefficient and Gruneisen parameter 8−47540
methane, solid phase II Raman spectrum, lattice vibr. and ν bands 8−19456
methane, Stokes collision-induced Rayleigh scatt. 8−25546
methane, thermal diffusivity in critical region, Rayleigh scatt. obs. 8−34607
methane, tropospheric abundance and flux from Earth surface *(Russian)* 8−36223
methane, valence bond calc. convergence 8−9081
methane, vibration-rotation ν_3-ν_4 band, theoretical spectra 8−42037
methane, ZZ 8−46418
methane+$Cl^-(Br^-)(I^-)$, excitation functions, reactive scatt., eV region *(German)* 8−35677
methane+Cl, rate const., discharge flow-reson. fluoresc. meas. 8−7178
methane+Cs_2, collision-induced dissoc., atom-mol.-exchange optical pumping 8−22008
methane+F, reaction rate consts. rel. to stimulated emission 8−3317
methane+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
methane+H_2, rot. line width of vibr. bands 8−33552
methane+$H^-\rightarrow H^-$+methane, force decomposition anal. along reaction coord. 8−27741
methane+H, abstraction and exchange reactions, energy barriers, UHF-CI calcs. 8−11512
methane+inert gas ion, thermal energy charge transfer 8−37739
methane+Kr(Xe), ^{13}C-mag. shielding density depend. 8−9173
methane+$Li^+(Be^+)(B^+)$, single collision, time delayed autoionisation spectra 8−1067
methane+methane, intermol. pot., electron gas approx. calc. 8−9214
methane+methane, rot. line width of vibr. bands 8−33552
methane+methane (He)(Ne)(Ar), dispersion forces 8−13565
methane+N_2, liq., press. effect on excess thermodynamic functions 8−47494
methane+N_2, rot. line width of vibr. bands 8−33552
methane+$Ne^{m+}(N^{n+})$, K-shell vacancy prod. cross-section, charge state depend. 8−17751
methane+$O(^1D)$, rate consts., temp. depend. 8−27747
methane(-^{13}C), absorpt. spectra. optoacoustic laser meas. 8−37635
methane(-d_4), force field representation, equilib. struct. 8−42238
methane (-d_1,d_2,d_3,d_4) Raman electro-optical parameters, overlay least squares calcs. 8−42105
methane adsorption on Ti, W evaporated films, mutual replacement of CH_4, CO and NO *(Japanese)* 8−22949
methane formation, CO hydrogenation kinetics, using polycryst. Ni ribbon catalyst 8−40078
methane gas interferometer for coal mine safety 8−44423
methane solid, spin model for orientational phase transition 8−30735
methane-air flame, Raman scattering diagnostics of turbulent flow field 8−18328
methane-benzene (cyclohexane) vapour mixture, excess enthalpy meas. appl. of differential-flow mixing calorimeter 8−12700
methane-CO_2 mixture, oxidation under RF discharge conditions 8−15670
methane-d_0,-d_1,-d_2,-d_3,-d_4, ^{13}C NMR chem. shifts, coupling consts. 8−37657
methane-d_1, ν_6 band at 8.6 μm, vibr.-rot. band 8−21923
methane-d_1, in Jupiter, D/H and C/H ratios determ. 8−28572
methane-d_4, quantum crystal, growth from melt at low temps. 8−31319
methane-d_4, solid, phase I, II, acoustic phonon dispersion curve meas. by neutron inelastic scatt. 8−2212
methane-H_2 mixture, D isotope enrichment by flow discharge exposure 8−13343
methane-H_2 system in plasma reactor, exptl. and thermodynamic investig. *(French)* 8−15698
methane-He-Ne stabilised ring laser, freq. stability calcs. *(Russian)* 8−9401
methane-N_2-H_2 gas mixtures, RF discharge, vibr. and rot. anal. of CN, N_2 and C_2 8−5241
methane-O_2 aquamechanical foam, propag. characts. of detonation waves 8−31713
methane-stabilized He-Ne laser, low n noise laser tube characts. *(Japanese)* 8−25891
methane-trifluoromethane, liq.-liq. phase equilib., crit. phenomena 8−18764
methanes, halogenated, interacting segment model for elec. tensor props. 8−5111
methanes, halogenated, nonlinear optical polarisability, bond-bond interaction role 8−18010
methanes, substituted, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
methanethiol, ab initio force consts., anharmonic vibr. 8−21898
methanol, ab initio force consts., anharmonic vibr. 8−21898
methanol, adsorbed on CsCl(Br)(I), IR spectrometric obs. *(French)* 8−46343
methanol, adsorption on water-adsorbed alkali halide *(Japanese)* 8−18897
methanol, Compton profile meas., non-additivity of elastic and inelastic X-ray scatt. 8−43953
methanol, dielec. props., 10 MHz-70 GHz, 10-40°C 8−43769

organic compounds continued
methanol, droplet vaporisation in moderately-high temp. stationary media, Chang model 8−34609
methanol, effect of small additions of water struct., from permittivity obs. 8−9937
methanol, enantiomers, racemic mixture nucleation 8−26677
methanol, far IR laser lines pumped by CO_2 laser sequence lines 8−9369
methanol, far IR laser transitions, small signal gain meas. 8−22114
methanol, heat pipe working fluid, crit. heat/mass transfer 8−42517
methanol, influence on ferric yield of Fricke dosimeter 8−11736
methanol, interstellar masers, search for microwave emission 8−32543
methanol, methyl group, ^2H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methanol, molecular laser, optically pumped, development 8−13732
methanol, optically pumped submm. wave amplification 8−29941
methanol, photolysis, IR multiphoton decomposition processes 8−3358
methanol, positronium form., unsolvated electron effects 8−17826
methanol, solvated electron lifetime and reaction with hydroxymethyl radical, dose and base effects 8−20043
methanol, solvated electron yield and spur decay following electron irrad. 8−20042
methanol, thermodynamical Gruneisen parameter, press. depend. 8−14479
methanol, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
methanol, US studies of mol. relax. 8−22790
methanol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
methanol+CH_n^+, (n=Q-4), reactions at 300K 8−44357
methanol+H(2S), collisional quenching, mass spectral obs. 8−25685
methanol+OCS, rot. energy collisional transfer, M-depend., microwave double reson. 8−46435
methanol adsorbed on ZnO powder, appl. of XPS method for surface anal. 8−40104
methanol molecule enxlosed in β-quinol clathrate, mol. reorientation, diele meas. 8−2026
methanol reaction with Ru (110) surface, thermal desorpt. meas. 8−31685
methanol-benzene solutions, adsorption on carbon 8−14568
methanol-d_4, 869 micron laser transition 8−42328
methanol-water, assoc. mixture, rot. barrier solvent effect, CNDO/2 calc. 8−29861
methanol-water, heat of mixing, high-press. calorimetric obs. *(German)* 8−16797
methanol-water soln. permeability of cellulose membrane 8−11557
methoxybenzene+OH^-, gas phase reaction, 299-435K kinetics and mechanism 8−11515
8-methoxypsoralen detection in ocular lens, rel. to psoriasis treatment with photosensitising agent 8−15937
12-methoxypyridine, phosphoresc. emission, polarisation and lifetimes 8−31232
4-methyl 2,6-di-tertiary butyl phenol, change in barrier to methyl group rotation near cryst. surface 8−38634
methyl (CH_3D) group tunnelling in solids, quantum model rel. to two T_1 temp. depend. minima 8−2028
methyl acetate, liq., proton spin-lattice relax., temp. depend. 8−39435
methyl acetylene, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
methyl alcohol, and -d_3, far IR spectra of internal rot. 8−5222
methyl alcohol, and deuterated forms, complete freq. coverage for submm. laser spectroscopy 8−25860
methyl alcohol, sound vel. meas. at 5 to 20 kHz in small-volume cells 8−9516
methyl aniline, photoionisation by vac. UV laser *(Russian)* 8−9205
methyl anion, geometric struct., electron correlation effects, self-consistent electron pairs 8−22050
methyl bromide, liq., NMR relax., anisotropic mol. reorientation 8−2764
methyl chloride, ab initio force consts., anharmonic vibr. 8−21899
methyl chloride, ab initio SCF-MO calc., electronic and mol. struct. 8−25425
methyl chloride, far IR laser lines, vibr. isotopic shift value 8−42055
methyl chloroform, atmospheric residence times rel. to HO tropospheric concs. 8−32140
methyl cyanide, isotopically substituted species, IR spectra, vibr. freq. displacements, harmonic pot. function 8−42057
methyl cyanide, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
methyl cyanide-carbon tetrachloride solutions, anisotropic light scatt., interactions between solvent and solute mols. 8−27239
methyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
methyl fluoride, ab initio force consts., anharmonic vibr. 8−21899
methyl fluoride, passive Q-switching of CO_2 laser 8−9402
methyl fluoride, stimulated emission at 9.75 μm following two-photon excitation 8−42323
methyl group, ^2H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methyl group, NMR relax., spin rot. and chem. shift anisotropy effects 8−31117
methyl group, proton spin relax. due to intermol. proton coupling, reorientation 8−25564
methyl group dynamics, NMR 8−29802
methyl groups, detection of proton NMR at arbitrary temps. of tunnelling system 8−39432
methyl groups, reorientation in solids, nonexponential Zeeman relax. 8−6589
methyl iodide, and -d_1, dissolved in nematic phase, C-H bond orientation, ^{13}C NMR 8−46371
methyl iodide, in Ar and Kr, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
methyl iodide, liq., expt. comparison with rough sphere rot. diffusion model 8−30532
methyl iodide, liquefied gas solns. bound exciton model for Rydberg bands 8−31214
methyl iodide, rot. microwave spectra, nucl. quadrupole, spin-rot. and nucl. shielding tensors 8−42040
methyl iodide, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686

organic compounds continued
methyl iodide, UV absorpt. spectra, ionis. limit region, assignment 8−21940
methyl iodide+K(Rb), reaction cross sections 8−40043
methyl isocyanate, isomerisation RRKM theory using effective strong collision freq. 8−44365
methyl isocyanide, CO_2 laser induced isomerisation 8−35644
methyl isocyanide, intracavity CW dye laser state-selective activation of isomerisation 8−11533
methyl isocyanide, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
methyl isocyanide, thermal explosion, scaling laws 8−15676
methyl isocyanide, thermal isomerisation in presence of at. gases, vibr.-translational energy transfer 8−23924
methyl isocyanide-d_2, IR spectrum, rovibr., ground state struct. 8−25537
methyl nitrite, IR multiphoton dissoc., time resolved IR emission from prods. 8−29822
2-methyl pentanediol 2, 4, associated liq., correl. between acoustic and dielectric relaxation times 8−9925
methyl protons, NMR relax. in presence of chem. exchange 8−13515
methyl radical, isotropic hyperfine coupling consts., temp. depend., nuclear vibrs. 8−35039
methyl radical and anion, electron affinity determ., ab initio SCF and CI calcs. 8−5149
methyl radicals, reactions behind shock waves, UV absorpt. obs. 8−46362
methyl thiyl radical, emission spectrum, collisional quenching 8−13543
methyl trichloroacetate, soln., dielectric props. and relax. mechanisms at microwave freqs. 8−15089
3-methyl-1-butene+OH, absolute rate consts. 8−23927
methyl-containing mol. solids, proton NMR line shape, methyl group tunnelling 8−6588
methylamine, ab initio force consts., anharmonic vibr. 8−21898
methylamine, methyl group, ^2H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
methylamine, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
methylamine+CH_n^+, (n=Q-4), reactions at 300K 8−44357
methylamino cation+Ca, proton transfer reaction cross sections, 1-6 eV 8−20003
methylammonium chromium alum, single cryst., Cr^{3+} EPR, g-factor, hyperfine splitting 8−2729
9-methylanthracene, in acetylcellulose foil, time-depend. fluoresc. anisotropy, crit. transfer distance *(German)* 8−21964
1, 3,5-methylbenzene, coherent polarisation spectroscopy of Raman scatt. 8−13758
N-methylcarbamoyl chloride(-d_1), vibr. spectra, normal coord. anal. 8−33497
methylcyclohexane:styrene-d_0, -d_3, -d_5, d_8, fluorescence meas., 77K 8−25606
trans-methyldiazene, pot. function 8−33507
methyldisilylamine, and -d_3, vibr. assignment and barriers to internal rot., IR and Raman spectra 8−13496
methylene, photoelectron spectra, singlet and triplet state calcs. 8−42127
methylene, quadruple energy, self-consistent electron pairs with higher order effects 8−46276
methylene, singlet-triplet separation, configuration interaction study 8−13438
methylene, singlet-triplet splitting, ab initio calc. 8−5128
methylene blue, due soln., photothermal spectroscopy 8−32808
methylene blue dye, dielec. const. and loss meas., 10^2 to 10^5 Hz 8−6622
methylene chloride, liq., proton spin-lattice relax., temp. depend. 8−39435
methylene fluoride, ν_9 fundamental band, 9.4-μm CO_2 laser Stark spectroscopy 8−9191
methylene ketene, microwave spectrum, rot. and centrifugal distortion consts., dipole moment 8−17659
4-methylene-cyclohexadiene-2,6-one-1, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
methylene-d_0, -d_2, in Xe matrix, EPR, temp. depend. 8−5255
methylfluoride, anomalous behaviour of proton chemical shift in gas-liquid crit. region 8−39419
methylisoeugenole, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
methylmercury, equilib. concs. in Ottawa River sediments 8−11923
β-methylnaphthalene, kinetics and morphology of lamellar-spiral growth hillocks 8−18566
3-methylpentane, C-H stretching diagonal local mode anharmonicity, intermol. perturbation 8−25524
3-methylpentane-nitroethane, binary fluid, Rayleigh linewidth meas. near crit. point 8−48190
2-methyltetrahydrofuran glass, 77K matrix ENDOR line shape model and expt. 8−6600
N-methylthioacetamide(-d_1), reson. Raman spectra obs. and mechanism 8−17672
1-methylthymine single cryst., cond. determ. using proton-injecting solution electrodes 8−18825
microemulsion, H_2O-toluol-sodium dodecylsulphate-alcohol, diffusion coeff., light scatt. data 8−15722
molecular crystal, phase transforms. obs. using TEM, electron beam damage 8−34621
molecular solid, space group C_{2h}^5, triplet excitons energy band struct. 8−6276
monochlorobenzene, prereson. Raman effects, intensity enhancement mechanism 8−42069
monohalobenzenes, circularly polaris. Raman spectra, vibr. symmetries assignment 8−29787
monothioformic acid, cis-, trans-rotamers, rot. spectrum, force consts. and isotopically substituted struct. 8−9145
mucobromic acid, vibr. spectra, struct. 8−46326
mucochloric acid-d_0, -d_1, vibr. spectra, struct. 8−46326
trans,trans-mucodinitrile solid, NMR relax., mol. motions between unequal pot. wells 8−19353
trans,trans-muconodinitrile, mol. reorientation, unequal well pot. energy calcs. 8−26461
myoglobin+CO, recombination, kinetics meas. using minicomputer 8−7200

organic compounds continued
N,N′-dioxy-2, 6-diazoadamantane, exchange interaction, spin density delocalisation 8−9056
11-cis-N-methyl PRSB-benzene complexes, spectral props., CNDO/S calcs., bathochromic shift 8−31767
NAD.H, oxidative phosphorylation, role of respiratory chain 8−15795
naphthacene, electron escape depths and absorpt. coeffs. 8−23580
naphthacene, metastable inert gas atom impact, surface electron emission energy distrib. 8−43970
naphthalene:2-fluoronaphthalene, photoexcited triplet state X-traps, ENDOR meas. 8−39444
naphthalene:ββ′-dinaphthylethylene, stimulated emission suppression in phonon wing 8−2881
naphthalene:β-naphthyl-n-biphenylylethylene, cryst., ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
naphthalene: anthracene, cryst., triplet-state EPR for isolated mol. orientation 8−26583
naphthalene, γ-irrad., radical pairs EPR detection 8−31664
naphthalene, anion, cation and triplet, GO LCAO MO calcs. of electronic struct. 8−25416
naphthalene, cryst., low freq. Raman spectra, defects and lattice vibr., 80-320K 8−31194
naphthalene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
naphthalene, electron band hopping transition 8−39155
naphthalene, fluorescence quenching by biacetyl, effect of viscosity 8−29810
naphthalene, harmonic force fields, bond orders, normal coord. anal. 8−25418
naphthalene, in benzene, two-photon spectra 8−16860
naphthalene, in durene, photoexcited triplet state spin-lattice relax., local phonons effects 8−6605
naphthalene, in durene and perdeutero-naphthalene mixed crystals, photon-echo decay 8−42388
naphthalene, in stretched polythene films, molecular distribution determ. 8−27298
naphthalene, internal conversion rate, effect of benzene triplet state self-quenching 8−25586
naphthalene, isotopic mixed cryst., phospheresc., photoselection of pure initial triplet states 8−35189
naphthalene, lattice parameters, elastic consts., press. depend., neutron diffr. obs. 8−26558
naphthalene, mag. polarised electret, X-ray diffr. obs. 8−43775
naphthalene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
naphthalene, nonradiative transition rates, rot. struct. 8−42119
naphthalene, Raman intensities, polarised scatt. from lattice rot. modes. 8−43845
naphthalene, reson. Raman scatt. from non-totally symm. mode 8−37641
naphthalene, vap., Doppler free two-photon absorption spectra 8−5307
naphthalene crystal, external phonon modes, inelastic incoherent neutron scatt. spectra and computer calc. 8−34577
naphthalene radical anion+TCNQ, electron transfer reactions, theory 8−15661
naphthalene single crystal, 4.50 MeV α bombardment, scintillation response, planar channelling, blocking *(German)* 8−6780
naphthalene-α-naphthol eutectic, heat of fusion and excess thermodynamic functions 8−3104
naphthalene-catechol eutectic, heat of fusion and excess thermodynamic functions 8−3104
naphthalene-d_8:β-methylnaphthalene -d_{10}, phonon side bands of specular optical transitions 8−26649
naphthalene-d_8, metastable triplet states, spin-lattice relax. at high mag. fields, phosphoresc. meas. 8−15063
naphthalene-d_8, phonon dispersion meas. and calc. 8−2211
naphthalene-d_8, struct. facators, time of flight neutron diffr. 8−47212
naphthalene-d_8 triplet-triplet energy transfer from acetophenone, in EPA rigid soln., donor phosphoresc. decay 8−10971
naphthalene-h_8, and -d_8 mixed crystals, phosphoresc. excitation spectra of clusters 8−43914
naphthalene-h_8 and -d_8, gas phase far IR 8−37638
naphthalene-TCNB (PMDA), Raman spectra orientational disorder, charge transfer cryst. 8−19459
naphthalenes, substituted, dielectric relax. in solns. 8−2795
2-naphthalensulphonate, fluoresc. and phosphoresc., external heavy atom effect 8−29812
2-naphthol, aq. soln., proton transfer photoreaction kinetics, in singlet excited state 8−48671
β-naphthol, preresonance enhancement in CARS 8−29786
α-naphthol-β-naphthol eutectic, heat of fusion and excess thermodynamic functions 8−3104
naphthylamines, excited state pK_a* values, proton-induced fluorescence quenching 8−21958
β-naphthylmethyl amine, solvent-induced intramol. exciplex fluoresc. 8−25592
β-naptholate ion, preresonance enhancement in CARS 8−29786
natural gas, liq., thermodynamic props. for mixed fluid densities 8−18775
nematogens, enthalpy of fusion 8−22645
neodymium ethyl sulphate, magnetothermodynamics, absolute temp. scale, mag. moment and magnetization , below 0.5K 8−34984
neopentane, Brillouin scatt. near liq.-plastic cryst. transition 8−19495
neopentane, mol. motion in cryst., liq. and plastic phases, neutron scatt. obs. 8−6021
neopentane, steady state in flow pyrolysis, determ. individual rate consts. 8−35650
nickel octaethylporphyrin, vibronic coupling, Raman scatt. 8−21933
nickel octaethyltetrachloroporphyrin, vibronic coupling, Raman scatt. 8−21933
nigericin action, on bilayer lipid membranes, dimer mechanism 8−24048
nitro compounds in cyclohexane, electron attachment reaction rates from pulse radiolysis 8−31663
3-nitro-o-anisidine-o-nitroaniline, soln., dielectric const., loss and relax., dipole moment 8−43782
p-nitro-p′-methylbenzylidene aniline, polymorphism 8−18633
p-nitroaniline, cryst., electronic excited states, config. interaction calcs., UV spectrum 8−10913

organic compounds continued
p-nitroaniline, exciton level directional dispersion, absorpt. band profiles 8−48192
nitrobenzene, electric dichroism spectroscopy 8−1013
nitrobenzene, fluoresc. quenching of alternant and nonalternant polycyclic aromatic hydrocarbons *(German)* 8−21967
nitrobenzene, liq., ^{14}N and D NMR, ^{14}N quadrupole coupling const., environmental effects 8−48052
nitrobenzene, liquid, electrohydrodynamic convection, laser light scatt. exam. 8−14094
nitrobenzene molecules, bound positrons, time spectrum of positron annihilation 8−42248
nitrobenzene-cyclohexane system, viscosity and activation energy 8−26615
nitrobenzene-n-hexane, shear viscosity, critical conc. fluctuation rate, verification of renormalisation prediction 8−47514
nitrobenzenes, substituted ^{14}N-NQR, elec. field gradient of NO_2 8−21944
t-nitrobutane, phase, II, quasielastic neutron scatt. 8−26458
nitroethane, crit. soln. in cyclohexane, nonlinear dielectric effect 8−27152
nitroethane+O, H atom abstraction in discharge flow system 8−35671
nitroethane-3-methylpentane, binary liq., depolarised light scatt. at crit. point 8−39558
nitrogenated bicycle compounds, as source of interstellar 2200 Å absorpt. feature 8−12346
nitromethane, fluoresc. quenching of alternant and nonalternant polycyclic aromatic hydrocarbons *(German)* 8−21967
nitromethane, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
nitromethane, liq., proton spin-lattice relax., temp. depend. 8−39435
nitromethane, neat, external scale for ^{14}N NMR chem. shifts 8−24834
nitromethane, photodissoc., vibr. excited NO_2 form., fluoresc. obs. 8−37693
nitromethane+O, H atom abstraction in discharge flow system 8−35671
nitromethane(-d_3), CC ^{15}N NMR chem. shift references evaluation 8−24835
nitromethane-CS_2 binary liq. mixture, crit. behaviour of elec. resist. 8−6422
nitromethane-EBBA, binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
3-nitropyrene, triplet state, absorption spectra in soln. 8−33440
N-nitrosodimethylamine, trapping for GC/MS analysis 8−20094
p-nitrotoluene, in nematic mixture of octyl cyanobiphenyl, octyloxy cyanobiphenyl, dichroic exam. 8−27201
o-nitrotoluene-saturated hydrocarbon soln., critical exponent, permittivity meas. 8−22858
nitroxide spin probes, solubilised, ESR obs. in cetyltrimethylammonium bromide micelles 8−21950
NMBA, monoclinic, cryst. struct. and nonlinear optical props. 8−26560
nonadecane, mol. motion in solid, ^{1}H spin relax. 8−15048
nonanoic acid, soln., US relax. *(German)* 8−22792
nonanol, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
nondecane, plastic cryst., Rayleigh scatt. of Mossbauer radiation 8−27125
nonmethane hydrocarbons, photochemical effects in atmosphere 8−49090
noradrenaline local perfusion maintains visual cortical plasticity 8−35847
norbornadienes, LF vibr. modes of hydrogeneous ligands, incoherent inelastic neutron scatt. 8−6229
α-NPO in polystyrene, 77K phosphorescence *(Russian)* 8−27286
8OCB, nematic-smectic A transition, impurity effects 8−47507
7-8-OCB mixture, nematic-smectic A transition, impurity effects 8−47507
n-octadecane, surface charge decay 8−43463
octadecanol, normal, single cryst., lattice defects, X-ray topographic obs. 8−18650
octamethylcyclotetrasilazane, gas, liq., cryst., CCl_4 soln. IR and Raman spectra, assignments, struct. *(French)* 8−29790
octane, loss angle, temp. depend., 9 and 36 GHz 8−48114
octanol, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
4-n-octyl-4′-cyanobiphenyl, smectic A and nematic liq. cryst., refr. indices and order parameters 8−22644
octyloxybenzylidene-β-methyl-butyl-aniline, freely suspended ferroelec. smectic-C liq. cryst. film, light scatt. meas. 8−47236
octyloxycyanobenzylidene, smectic A, anomalous ordering, Landau-Peierls system 8−30538
olefin hydrocarbon vapour, thermal cond., 160 to 400°C 8−1783
oleic acid, absolute evaporation rate meas. 8−2244
optical purity origin in living beings, effects of β-decay 8−40459
oxalic acid dihydrate, NMR spectra, ^{13}C-^{13}C interaction, chemical shift effects 8−29800
oxalic acid dihydrate, pulsed excitation of luminesc. 8−27326
oxalyl fluoride, radiative and nonradiative transitions, self-quenching, unimol. dissoc. 8−17708
oxiranylidene, struct., isomerisation, ab initio SCF MO calcs. 8−41941
PAA, effect of mol. struct. on nematic liq. cryst., phase 8−42901
PAA, isotropic-nematic transition, appl. of integral eqn. for ang. distrib. function *(Russian)* 8−6147
PAA, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8−42896
PAA, methyl group rotation in solid and nematic phases, NMR obs. 8−6595
PAA, nematic molecular theory, orientation-averaged pair correlations 8−42905
PAA, solid state polymorphism 8−42945
PAA with deuterated methyls, nematic phase, quasieleastic neutron scatt. study of fast reorientations 8−14280
palladium bis-β-diketonates, IR and Raman spectra 8−46327
paradichlorobenzene, electronic struct., X-ray emission obs. 8−5246
paradiheptyoxyazoxybenzol, low press. phase transition temp. change, relative transparency *(Russian)* 8−2242
n-paraffin, rotator phase transformation, lattice dynamics Helmholtz free energy 8−34585
paraffin, shock compressed, vel. of sound meas. 8−10123

organic compounds continued
- paraffinic multilayer crystal, slightly bent, electron diffraction intensities, Patterson function 8−5993
- n-paraffins, solid and liq., Raman spectra, longitudinal acoustic vibr. mode 8−31183
- paraffins, solid and liquid, diamagnetic susceptibility 8−14923
- partial molar heat capacities, in aq. solns., additivity schemes calcs. 8−22861
- parylene disc, high-power glass laser interaction 8−9804
- parylene disc, irrad. by 1.06 μm laser beam Brillouin scatter 8−18430
- parylene discs, plasma prod processes 1.06 μm laser irrad. 8−18431
- PBLG, cholesteric, Rayleigh scatt. caused by orientational fluctuations, low. freq. light scatt. modes 8−19496
- pentacene, electron escape depths and absorpt. coeffs. 8−23580
- pentacene, evaporated on quartz, optical absorption, substrate temp. depend. 8−2932
- pentacene, in p-terphenyl, polarisability calcs., from Stark meas., anisotropic Lorentz approx. breakdown 8−5276
- pentacene, mol. dephasing, radiationless decay meas. by laser-acoustic diffr. spectroscopy 8−37667
- pentacene, narrow band laser excitation, fluoresc. decay, optical free induction, dipole moment 8−21956
- pentacene, polycrystal, photoemission 8−27367
- pentachloronitrobenzene crystal, anomalous microwave permittivity, IR absorption and Raman spectra *(Japanese)* 8−15169
- s-trans-1,3-pentadiene, photoisomerisation, excited state pot. energy curves, CIPSI calc. CNDO/2 parametrisation 8−11505
- n-pentane, electron mobilities through liq. and critical regions 8−2536
- pentane, thermodynamical Gruneisen parameter, press. depend. 8−14479
- n-pentane and mixtures with n-hexane, nucleate boiling from tube arrays 8−22251
- n-pentane-water interface, nucleate boiling 8−2342
- pentanoate, Li, Na, K and Rb alkanoate mixture, DSC anal. 8−10192
- pentaphenyl group V compounds, $(C_6H_5)_5M.{}^1/_2C_6H_{12}$, M=P, As, Sb, cryst. packing 8−9994
- p-n-pentyl p-cyanobiphenyl, resolution of acoustic image detector 8−46871
- 4-n-pentyl-4′-cyanobiphenyl, nematic liq. cryst., refr. indices and order parameters 8−22644
- 4-n-pentyl-4′-cyanobiphenyl, refr. index, high press. meas. 8−26428
- pentyl-cyano-biphenyl, nematic liq. cryst., pretilt angle, temp. depend. 8−26432
- pentylenetetrazole, synaptic action, selectivity for Cl cond. 8−7336
- peptide-Cu II interaction, EPR and optical absorpt. 8−27881
- peptides, ^{13}C NMR, review 8−24023
- peptides, optical rot. strength, sector rules 8−17737
- perdeuterobenzene, liquid, reorientation and spin-rotation interaction 8−39423
- perfluoro-1,3-butadiene, vibr. spectra, struct. and barrier to planarity 8−9147
- perfluoroalkyl halides, at. I form., quantum yields 8−3355
- perfluorocyclohexane, spin-lattice relax. during pulsed spin locking 8−39425
- perfluoromethylcyclohexane, ‘inert’ solvent, fluoresc. quenching of trimethylamine 8−46438
- perfluoromethylcyclohexane-tetrachloromethane, specific heat temp. depend., critical composition mixture near critical temp. 8−26689
- peroxyacetyl nitrate+OH, reaction rate const., in irrad. NO_x mixture 8−7171
- perylene, anthracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- perylene, cryst., fluoresc. at low temp. 8−27299
- perylene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
- perylene, disc, laser-irrad., plasma electron energy profile steepening, polarimetry obs. 8−34349
- perylene, electron escape depths and absorpt. coeffs. 8−23580
- perylene, harmonic force fields, bond orders, normal coord. anal., mean amplitudes calcs. 8−25418
- perylene, metastable inert gas atom impact, surface electron emission energy distrib. 8−43970
- α-perylene crystal, emission spectra, temp. variation and pair states 8−27300
- pesticide residues, gas chromatogram quantitation, using algorithms for microprocessor based integrator 8−27839
- pesticides, in water, detect. by laser excited reson. Raman spectroscopy 8−31732
- pesticides, sampling in ambient air, using polyurethane foam 8−20080
- petroleum, weathered, source identification using IR spectra and correl. coeffs. 8−15153
- petroleum gas, liq., thermodynamic props. for mixed fluid densities 8−18775
- petroleum-acetylene-O_2 combustion products, seeded, elec. cond., for MHD power plant 8−34256
- petroleum-water-gas mixture, in inclined stratum, nonstationary filtration, including gravity 8−1729
- phenanthrene, cryst., Raman spectra, intensity of low freq. line 8−2846
- phenanthrene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
- phenanthrene, growth rate from melt *(Japanese)* 8−23605
- phenanthrene, mol. cryst., thermolum. build-up 8−27334
- phenanthrene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
- phenanthrene-d_{10}, oriented in biphenyl, triplet zero-field splittings, conc. depend. 8−2773
- phenanthrene-dimethylnaphthalene mixture, growth rate from melt *(Japanese)* 8−23605
- phenazine: azulene, EPR, azulene triplet state 8−35024
- phenazine, T-T absorpt. build-up, following picosec. pulse singlet excitation, in gas phase 8−9161
- p-phenitidine, soln., dielectric const., loss and relax., dipole moment 8−43782
- phenol, adsorbed layer, inelastic electron tunnelling spectral lineshapes below 100 mK 8−31000
- phenol, self association, IR spectra, book contrib. 8−21931
- phenol, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
- phenol+N,N-dimethylmethanesulphonamide, assoc., PMR 8−23941

organic compounds continued
- phenol (oestrogen) compounds, high-press. liq. chromatography, fluorometric detect. 8−20096
- phenol derivatives, neutral aq. solns., flash photolysis, N_2O and alcohol effects 8−40065
- phenol NH_3, intermolecular H-bond, semi-empirical CNDO/2 8−13427
- phenol-formamide, intermol. H-bond, semiempirical CNDO/2, substituted derivatives 8−13427
- phenol-methanol, dimers CNDO/2 calcs.. H-bond energy 8−13428
- phenols, dil. solns., dielec. loss and relax., microwave and sub-mm. wave absorpt. obs. *(German)* 8−23396
- phenols, orthosubstituted, proton acceptor soln., PMR of H-bonding 8−13517
- 4-phenyl n-pentyl ester, Nematel 105, nematogen, isotropic phase, Rayleigh scatt. and mol. reorientation 8−34429
- N-phenyl-2-naphthylamine, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
- phenylalanine, polycryst., proton mag. relax. and mol. motion 8−20139
- phenylalkylamines, effect on frog muscle fibre end-plate current pot. depend. 8−31799
- phenylamine difluoride, and derivs., ^{19}F NMR 8−2754
- phenylcarbene, singlet and triplet ground states, rearrangement to cycloheptatrienacarbene, MINDO/3 calc. 8−13430
- phenylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724
- p-phenylene bis (p-substituted benzoates), cryst.-nematic transition, mol. struct. effects, DTA 8−47504
- phenylene compounds in n-paraffins, electronic spectra and fluoresc. 8−13509
- m-phenylene diacrylic acid, four-centre-type photopolymerisation in cryst. state, holographic appl. 8−37832
- p-phenylenebis(galvinoxyl)biradical, molar mag. susceptibility, 4-300K 8−47939
- d,l-α-phenylethylamine, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
- 2-phenylindole, liq. scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
- phenylpyrimidines, liq. crysts., synthesis and phys. props. 8−1995
- pheophytins, lowest triplet state, zero field splitting consts., decay rate consts., EPR determ. 8−27896
- phosphine 3R hydrochloride, interaction with aliphatic acids and alcohols, IR and electron spectra *(Russian)* 8−21930
- phospholipid bilayer membrane modified by valinomycin, volt. fluctuations 8−31777
- phospholipid monolayers, polymorphism 8−40120
- photoelectron spectroscopy, ionis. pots., MO models 8−17716
- phthalic anhydride, dendritic growth 8−18936
- phthalic anhydride, whisker growth in closed cryst.-vapour system 8−34734
- phthalic anhydride and halogen derivatives, phosphorescence spectra *(Japanese)* 8−48217
- phthalocyanine, dye photosensitiser for SiO_2 film MIM struct. 8−6408
- phthalocyanine, in n-alcanes and polyethylene, absorpt. and fluoresc. spectra, 4.2 and 77K 8−976
- phthalocyanine, sublimed film, absorption spectra and association 8−48174
- phthalocyanine, X-metal-free in polyvinylacetate, elec. field induced fluoresc. quenching, carrier photogeneration 8−48207
- phthalocyanines, lasing props. obs. 8−17931
- pinacyanole, dye photosensitiser for SiO_2 film in MIM struct. 8−6408
- d,l-α-pinene, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
- piperazinium-AgI binary salts, ionic cond. study *(French)* 8−2293
- piperidine intercalation with PbI_2, rel. to NQR, spin-lattice relax. temp. depend. *(Russian)* 8−27108
- pivalic acid, orientationally disordered crystal., mol. orientation 8−34448
- plastic scintillator, degree of fluorescence light polarisation, energy depend. *(German)* 8−37677
- platinum phthalocyanine single cryst., triplet state Zeeman effect, phosphoresc. 8−6747
- polar and H-bonding compounds, vap. press. behaviour, generalised treatment 8−2227
- polar molecules, in nonpolar solvent, dipole moments and relax. times 8−43782
- poly(γ-benzyl-D-glutamate), liq. cryst., tactoidal shell defects 8−22642
- poly(n-dodecyl L-glutamate), thermotropic polymorphism, low-angle X-ray diffr. *(French)* 8−34601
- poly (γ-benzyl-l-glutamate)-dioxane system, periodic struct. under elec. field 8−47234
- polyacenes, electronic transition bands, Franck-Condon factors, PPP SCF MO/CI calc. 8−33430
- polyamine, ligand interference preventive buffer appls., for Cu II ion selective electrode 8−20099
- polyaromatic molecule, high resolution dark-field images 8−26398
- polybutadiene, adsorption behaviour, surface tension exam. *(Japanese)* 8−31690
- polybutadiene-n-hexane-n-heptane soln., Rayleigh scatt., diffusion coeff., viscosity 8−15179
- polychlorinated biphenyls, sampling in ambient air, using polyurethane foam 8−20080
- polychlorinated naphthalenes, sampling in ambient air, using polyurethane foam 8−20080
- polycrystalline, charge carrier drift mobility 8−34835
- polycyclic aromatic hydrocarbons, alternant and nonalternant, fluoresc. quenching by nitro cpds. *(German)* 8−21967
- polycyclic aromatic hydrocarbons, in particles from coke oven, size distrib., health hazards 8−36268
- polycyclic aromatic hydrocarbons, matrix isolated, quasilinear Shpol’skii fluoresc. spectra 8−9189
- polyene band struct. calc., excitons in polyene chain 8−26816
- polyene derivatives, horizontal radiationless transitions, singlet-pot. and rot. angle, semi-empirical model 8−42109
- polyenes, energy spectrum, electron correlation effects 8−46279
- polyenic aldehydes, energy spectrum, electron correlation effects 8−46279
- polymer additives, analysis by IR spectroscopy, preconcentration, separation and computer techniques 8−31730
- polymethine, IR-140 laser dye, photoisomerisation processes 8−27800

organic compounds continued
polymethine dye lasers, mode-self-synchronisation, broadband, picosecond pulses *(Russian)* 8−29946
polymethine dyes, relax. mechanisms in picosecond range *(German)* 8−33737
polymethine dyes development for CW infrared output 8−1224
polymethine pyrylium dye, IR saturable-absorbing, transient visible absorption 8−33784
polymethinecyanines, symm. solvent effects on electronic struct., ^1H, ^{13}C NMR 8−13516
polymethinium dye, excitonic fluoresc., absorpt. trapping spectra 8−27302
α,ω-polymethylene diammonium metal (II) tetrahalides, cryst. growth, solubility and props. 8−43999
polymethylsiloxane-toluene gels, light scatt., compression moduli, cooperative diffusion 8−23970
polynuclear aromatic compounds, HPLC separation using aminosilane stationary phase 8−35747
polynuclear aromatic hydrocarbons, atom. distrib. 8−3934
polynuclear aromatic hydrocarbons, effluent toxicity from nuclear fuel reprocessing, rel. to carcinogenecity 8−5005
polynucleotide hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
polynucleotides, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
polynucleotides, single-stranded, reaction of O_2 with radiation-induced free radicals 8−48759
polynucleotides poly(A+U), double-stranded, radiolysis in presence of O_2 8−48760
polyolefins, elec. cond., review 8−26867
polypyridines, photoelectron spectra, SCF LCAO calcs. 8−33551
polysaccharide grain model for IR spectrum of interstellar maser OH 26.5+0.6 8−12342
POPOP, vap., electron energy loss spectra rel. to lasing 8−29947
porphin, electron spectra, PPDP/S approx. calc. *(Russian)* 8−13435
porphin, free base, in n-octane crystal, S_1 from S_0 transition, freq. shift and dephasing temp. depend. 8−25584
porphin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
porphyrin a, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
porphyrin free base in n-octane, $S_1 \leftarrow S_0$ transition homogeneous linewidth, photochemical hole burning 8−7217
porphyrin solns., quenching of excited states by nitro-cpds., donor-acceptor interactions 8−2899
porphyrins, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
porphyrins, determ. in blood by phosphoresc. of porphinatocopper(II) 8−11574
potassium acid phthalate, Raman spectra and lattice vibr., 77, 300K 8−27219
potassium bis(oxalato)beryllate, cryst. struct. *(French)* 8−34499
potassium hydrogen glutarate, H bonding, vibr. spectra 8−43860
prealbumin, human plasma, secondary struct. refinement from circular dichroism data 8−27888
prebiological compounds, form. in volcanic processes 8−40667
prebiotic terrestrial atmosphere, organic compounds prod. by far UV irradiation 8−40668
primitive Earth, volcanic processes role in organic compounds evolution 8−32230
proline, polycryst., proton mag. relax. and mol. motion 8−20139
propane, compressibility, virial coeffs., Burnett method 8−47083
propane, condensation in porous bulk media 8−47510
propane flame plasma, Langmuir probe teaching expt. 8−12456
propane-O_2 aquamechanical foam, propag. characts. of detonation waves 8−31713
propane-O_2 system with Ar, N_2 diluents, detonation wave instabilities 8−5762
propane-propene mixtures, compressibility, virial coeffs., Burnett method 8−47083
1-3-propanediammonium-$CuCl_4$, ferromag., antisymmetric and anisotropic exchange, EPR linewidth 8−10761
n-propanol, aq. soln., excess heat capacity, H bonding 8−3362
1-propanol, electron traps, prestabilised electron relax. model 8−27803
n-propanol, positronium form., unsolvated electron effects 8−17826
n-propanol, US studies of mol. relax. 8−22790
propanolol, (adrenergic blocking agent), high-press. liq. chromatography, fluorometric detect. 8−20096
propene, compressibility, virial coeffs., Burnett method 8−47083
propionic acid, viscosity of dissociating vapour 8−5840
proplyene oxide+C^+, branching ratios 8−44354
trans-p-n-propoxy-α-methyl-p′-cyanophenyl cinnamate, high press. mesomorphic and polymesomorphic transitions 8−18750
n-propyl acetate+OH, reaction rate const., in irrad. NO_x mixture 8−7171
propyl compounds, photolysis, photofragment free radicals, mass spectra *(Japanese)* 8−7220
n-propyl trichloroacetate, soln., dielectric props. and relax. mechanisms at microwave freqs. 8−15089
n-propylbenzene, broad band far IR absorpt., temp. depend. 8−2835
propylene, liquid, effect of libration transitions on sound absorpt. 8−2203
propylene glycol-isobutene (dimethyl siloxane), oligomeric liquid mixtures, transition to, polymer systems, thermodynamics 8−20048
protoporphyrin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
purine, powder, γ-irrad., dose-response curves 8−7215
purines, pyrimidines, orientation and transition moment directions of small planar molecules, in stretched polymer films 8−1015
purines in Murchison meteorite, search 8−7948
pyrazine, dimer interaction, lattice energy, multipole expsn., at.-at. pots. 8−9218
pyrazine, lowest triplet state, phosphoresc., intersystem crossing 8−5269
pyrazine, mol. struct. determ. from gas phase electron diffr., r_α struct. 8−25739
pyrazine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
pyrazine, $n\pi^*$ transitions, vibronic coupling 8−25501
pyrazine, phase transitions, sp. ht., X-ray diffr., LF vibr. spectra 8−43122
pyrazine, PMDR due to single defect species, vibronic structs. 8−19535
pyrazine, reson. Raman spectra, vibronic theory of Raman intensity 8−37643
pyrazine complexes with H_2O, Br_2 and I_2, electronic absorpt. spectra calc. *(Russian)* 8−37628
pyrene, cryst. struct., atom-atom pot. calcs., micro electron diffr. obs. 8−43007
pyrene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
pyrene, crystalline, EPR spectrum of triplet excitons 8−27076
pyrene, laser-induced two-photon photoionisation, simulation, double pulse investig. 8−37690
pyrene, low temp. phase transform., TEM obs. 8−22851
pyrene, micellar solns., fluoresc. quenching 8−25588
pyrene, space group $C_{2h}{}^5$, triplet excitons energy band struct. 8−6276
pyrene crystal, mechanism of structural phase transition 8−30757
pyrene vapour, laser excited fluorescence 8−29807
pyrene-h_{10}, -d_{10}, dual fluoresc. quenching by O_2 and NO 8−5266
pyrene-N,N-dimethylaniline heteroexcimer systems, micellar solns., fluoresc., photoinduced electron transfer 8−25590
pyrene-naphthalene complex radical cation, in γ-irrad. glass, visible spectrum obs. 8−44385
pyrene-PMDA complex, electron-phonon interaction, phosphoresc. 8−48208
pyrene-TCNE, vapour-grown cryst., transit-time meas. of photocarriers 8−39149
pyridazine, elec. field induced spectrum, $0_0{}^0$ band near 3752Å 8−17700
pyridenes ^{15}N NMR chem. shifts, paramag. relax. reagent effect 8−15042
pyridine, ^{13}C-^1H spin-spin coupling consts. 8−25562
pyridine, and -d_1, microwave spectra, mol. struct., rot. consts. 8−25517
pyridine, in benzene single cryst., electronic spectrum Stark modulation, dipole moment 8−29814
pyridine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
pyridine, photoelectron spectra, HAM/3 MO calcs. 8−13414
pyridine, proton-coupled ^{13}C J NMR, strong coupling 8−17691
pyridine, unoccupied orbitals, excitation energy, electron affinity, HAM/3 MO calcs. 8−13415
pyridine, vapour, $S_1(n,\pi^*)$ state fluoresc. 8−5267
pyridine+HCl, proton transfer interactions, NMR obs. 8−20007
pyridine adsorbed onto roughened Ag electrode, Raman band intensity 8−48160
pyridine and derivatives, CNDO/2 approx., unshared pairs of electrons 8−25443
pyridine cobalt chloride, $CoCl_2.2NC_5H_5$, quasione dimens. Ising system, thermodynamic props. 8−27042
s-trans-3-pyridinecarbaldehyde, microwave spectrum, assignments 8−21912
pyridines, substituted and N-oxides, dielectric relax. in solns. 8−6627
pyridinium pentasilver hexaiodide, solid, far IR refl. spectra, incoherent neutron scatt., low freq. optical modes 8−2291
pyridinium tetrachloromanganate II, luminesc. spectra, expt. and calcs. *(French)* 8−10967
2-pyridone, dimer, vibr. Hamiltonian for IR spectra of H bonding 8−37620
^{99m}Tc-pyridoxal-phenylalanine evaluation as hepatobiliary imaging agent 8−31893
^{99m}Tc-pyridoxal-phenylalanine evaluation as hepatobiliary imaging agent 8−31894
pyridyl imidazoline-1-oxyl radical, trifluoroacetic acid solns., ^1H scalar dynamic polaris. 8−23371
pyrimidine, $^1B_1$ state zero level fluoresc. decay, press. effects 8−13540
pyrimidine, and derivatives, intersystem crossing rates, triplet sublevel decay, vibronic coupling 8−5271
pyrimidine powder, γ-irrad., dose-response curves 8−7215
pyrimidines, substituted, UV irrad. in aq. solns., EPR of free radicals 8−40115
pyrimidines in Murchison meteorite, search 8−7948
pyromellitic N,N′-dimethyldiimide-anthracene, cryst. struct. determ. 8−2107
pyrrole, free radicals produced by X-irrad. and decay of tritium atom, EPR study 8−48676
pyrrole, gas, X-ray photoelectron spectra, satellite struct. 8−5281
pyrrole, ground state, (π-π*) state, ab initio SCF CI calcs. 8−33438
pyrrole, liq. and nonaq. solns., ^{14}N NQR, ^1H line shape anal. 8−6598
pyrylium, substituted, electronic struct., CNDO/S calcs. 8−29749
quasi one dimensional organic materials, microwave cond., dielectric const. *(Hungarian)* 8−26850
quinine bisulphate, aq. soln., abs. fluoresc. quantum efficiency, optoacoustic determ. 8−16849
quinine sulphate, acid soln., edge excitation red shift and proton migration 8−1028
quinolone laser dyes, stability, lasing characts. obs. 8−1223
quinoxaline, fluoresc. quenching and intermol. intersystem crossing, nonlinear press. depend. 8−25603
quinoxaline, zero-field splitting, basic triplet states, H bond effects 8−5366
quinoxalinones, new class of high-efficiency laser dyes 8−46597
rare earth ethyl sulphate nonahydrates:Gd^{3+}, $g_{\parallel}$, EPR obs. 8−35031
rare earth formate, IR spectra and phase transitions, under pressure 8−31179
rare earth phthalocyanine solutions, bleaching by ruby laser beam 8−30030
resorufin, in PMMA, site selection spectra, hole burning and Stark effect 8−9159
retinal, dipole moment determ. 8−27882
11-cis-retinal, donor energy effects on triplet-sensitized isomerization 8−3353
trans-retinal, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
retinal isomers, dark equilib. and photochem. 8−15771
retinal photoisomerisation mechanism for light-driven proton pump in H. halobium 8−35820
11-cis-retinal prep. by irrad. of all-trans-retinal and high press. liq. chromatography 8−40453

organic compounds continued
trans-retylidene-n-butylamine, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
rhodamine 6G, CW jet stream laser, high output power in visible and near UV 8−1249
rhodamine 6G, CW laser, passive-active mode locking 8−29993
rhodamine 6G, delayed fluoresc. of simple associates in polar and non-polar solvent mixtures *(Russian)* 8−48185
rhodamine 6G, effect of cyclooctatetraene on laser props. 8−13698
rhodamine 6G, emission kinetics in ps. range 8−13699
rhodamine 6G, in methanol, fluoresc. lifetime meas. 8−29811
rhodamine 6G, soln., triplet state lifetime determ., solvent effect 8−1225
rhodamine 6G, sub ns dye laser with optical pumping, spectral width, efficiency, tuning *(Russian)* 8−29974
rhodamine 6G, tunable freq. doubled CW laser using ADA 8−17965
rhodamine 6G+BBOT donor-acceptor system, intermol. electronic energy transfer 8−17702
rhodamine 6G activated polymer (liq.) films adjoining amplifying media, stimulated emission 8−17932
rhodamine 6G alcohol soln., two-photon absorpt. efficiency 8−13749
rhodamine 6G in ethanol, photobleaching mechanism *(Russian)* 8−48680
rhodamine 6G in PMMA, luminesc. greenhouse solar collector 8−13789
rhodamine 6G in soln., photochem. stability 8−37878
rhodamine 6G laser, short-cavity, excited by electron beam pumped CdS laser 8−25887
rhodamine 6G lasers, synchronized CW psec. pulse train generation at 2 independently tunable wavelengths 8−33758
rhodamine 6G soln., cyclooctatetraene effects on laser props. *(Russian)* 8−25875
rhodamine B, adsorption on ZnO single crystal, photooxidation, electrochem. meas. 8−31645
rhodamine B, in glycerine-water mixtures mol. agglomeration effect on fluoresc. polaris. spectrum 8−25595
rhodamine B, photosensitisation of Lexan:triphenylamine 8−34856
rhodamine B+heteroarenium cations, resonant, nonradiative energy transfer *(German)* 8−25659
rhodamine dyes, soln. induced singlet-singlet absorption spectra 8−46363
riboflavin, light-induced lysozyme binding 8−27899
RNA of Novikoff Hepatoma ascites cells, effects of sparsely-ionising radiation after in vivo labelling 8−7389
rose bengal, dye soln., photothermal spectroscopy 8−32808
rose bengal, excited state orientational relax., in protic and aprotic solvents 8−46383
rose bengale, fluoresc. polaris., solvent dipole moment effect 8−25596
rubidium hydrogen glutarate, H bonding, vibr. spectra 8−43860
rubrene, excited singlets, O quenching, singlet O formation 8−27792
salicylic acid, Raman active external modes *(French)* 8−23458
salicylideneaniline hologram, image reconstruction, reading beam not satisfying Bragg condition 8−37828
N-salicylideneanilines, photo- and thermo-chromic, ^{14}N quadrupole resonance temp. depend. 8−48077
samarium oxalate, IR and Raman spectra exam. *(French)* 8−48159
saturated hydrocarbon, and diamond cluster, ab-initio HF and PCILO calc., bond length 8−42951
scandium oxalate, IR and Raman spectra exam. *(French)* 8−48159
Schiff's bases, deuterated, transition temp. meas., comparison with normal compounds 8−14449
Schiff base compounds, cholesteryl esters, mesomorphic behaviour 8−1994
Schiff base esters, mesomorphic behaviour 8−1993
scirpene toxins, in animal feeds, chem. anal. 8−48707
in seawater, dissolved and particulate, meas. using automatic sampling buoy 8−49149
secondary light scatt. in low frequency field, in dielectric state 8−48147
selenoketene, formation, microwave spectrum, struct. determ. 8−25515
selenoketene, microwave spectra, 26.5-40 GHz, mol. config., bond angle and length 8−46322
serine zwitterion+water, interaction pot., ab initio SCF LCAO calc. 8−48747
silacyclopentane, Raman spectra, pot. energy surface, barrier to interconversion 8−25541
silanes, diamagnetic susceptibility, semiempirical calcs. 8−17820
silicon tetramethoxide, prep. from metal alkoxide, props. as precursor of oxide glass 8−48700
sodium acetate, methyl group, ^{2}H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
sodium acetate trihydrate, whisker growth on membrane in aq. soln. 8−30854
sodium ammonium tartrate, improper ferroelec. transition anomalies 8−19430
Sodium ammonium tartrate, L- and D-mol. energy difference, parity violation 8−25744
sodium diethyldithiocarbamate, for improved removal of ^{60}Co from radioactive waste water 8−37415
sodium dodecyl sulfate, micelle form. in aq. soln., laser light scatt. 8−27825
sodium hydrogen oxalate monohydrate, crystal struct. neutron diffr., deform. electron density analysis 8−10032
sodium lauryl sulphate, aq. subcooled soln., acoustic phenomena during nucleate boiling 8−10181
sodium p-octylbenzenesulphonate ionic micellar solns., neutron diffr. meas. *(French)* 8−44409
sodium propionate, methyl group, ^{2}H quadrupole coupling const. by high-resolution NMR spectroscopy 8−25563
solids, cryst. and amorphous, optical spectra, Urbach rule, struct. disorder effect 8−23479
solvents, trace H_2O determ., IR spectrophotometric method 8−31731
sorbitol, crystallisation, thermal investig. 8−47257
spiropyran, membrane, lipid effect on photoinduced potential change *(Japanese)* 8−31703
squaric acid, neutron diffr. mol. and crystal struct. determ. 8−26557
squaric acid, struct. and Raman spectra 8−47311
squaric acid, two-dimens., phase transition, elastic neutron scatt. 8−6155
stearic acid, large single cryst. growth from organic soln. 8−31314

organic compounds continued
stearic acid, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
stearic acid, single cryst. growth mechanism 8−30562
stearic acid film, permittivity meas. using varying gap immersion method 8−6620
stearic acid monolayers on HCl subsoln., surface diffusion by ^{14}C-tracer 8−34679
steroids, maximum overlap. mol. orbitals versus ab initio HF-SCF-MO calc., dipole energy 8−9070
Δ^5-steroids, methyl group rot. barriers from ^{13}C relax. data, geometry effect 8−13626
steroids, mixtures, quantitative anal. by ^{13}C NMR 8−31716
stilbene:rhodamine-6Zh, luminesc. of adsorbed mols., excitonic energy transfer to surface 8−31255
stilbene, depend. of phase transition temp. on thickness 8−26669
trans-stilbene, disorder and degree of misorientation 8−38683
stilbene, horizontal radiationless transitions, singlet-pot. and rot. angle, semi-empirical model 8−42109
trans-stilbene, scintillator used for pulse shape discrimination for alpha-gamma separation with trans-stilbene 8−13386
stilbene, trans-, cis-forms, singlet excited state, picosecond dynamics 8−17677
cis-stilbene radical anion, ESR, proton coupling const. 8−21948
streptomycin oxime selenate tetrahydrate, antibiotic, cryst. and mol. struct. 8−24028
strontium acetate hemihydrate:Cu^{2+}, EPR of cryst. 8−19312
strontium uranyl tetraformate hydrate, struct. determ., orthorhombic unit cell, UR spectrum *(French)* 8−22705
styrene-ethylene glycol, oligomeric liquid mixtures, transition to, polymer systems, thermodynamics 8−20048
succinamic acid, X-irrad., primitive radn. damage, ESR, ENDOR 8−3352
succinonitrile, orientationally disordered crystal., mol. orientation 8−34448
succinonitrile, plastic phase, mol. reorientation and rotational isomerization, anal. of elastic incoherent struct. factor 8−22674
sucrose-NaCl-H_2O, phase diagram determ., appls. in cryobiology 8−15777
sugar, triboluminescent intensity, fracture in air and liq. anhydrous diethylether 8−19582
sugar chars, heat treatment, EPR rel. to temp., A-centers 8−43639
sugar chars, heat treatment, EPR rel. to temp., spin centres 8−48036
sugars, detect. in HPLC systems using polarimetry, refractometry and optical rot. 8−48734
N-sulphinylaniline, microwave rot. spectra, torsional freq., dipole moment and internal rot. barrier 8−973
sulphonic acids, adsorption and orientation on Al_2O_3, tunnelling spectroscopy obs. 8−34707
sultams, characteristic band in IR region, Raman obs. 8−29784
Tanane, ferroelec. ferroelastic transition, X-ray and optical expts. 8−15110
TANOL, linear chain antiferromagnet, long-range order, magnetisation, PMR 8−23266
TANOL, linear chain-like organic free radical, EPR line widths 8−39404
tartaric acid, troboluminescent intensity, fracture in air and liq. anhydrous diethylether 8−19582
TBBA, low temp. phase, inelastic coherent neutron scatt. exam. 8−26429
TBBA, smectic, spin-lattice relax., self-diffusion, mol. rot. 8−35055
TCNE, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
TCNE-stilbene complexes, and analogs, charge transfer energy calc. isomer prediction 8−21854
TCNQ, infinite stacks, all valence electron band struct. 8−39001
TCNQ, metallic reflection band, vibronic struct. 8−19502
TCNQ, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
$(TCNQ)_2$ MEM, crystal struct. of 1:2 complex, at −160°C 8−10031
TCNQ alkaline salts, phase transitions, vibronic intensity enhanced IR spectra 8−23441
TCNQ and its salts, XPS meas. surface effects 8−11075
TCNQ anion, one-electron Hamiltonian method in SCF theory 8−9055
TCNQ anion radical salts, phase transition $\alpha\gamma \rightarrow \beta\gamma$, volume change 8−26684
TCNQ anion radical salts, solid solns. phase transition, heats of mixing 8−47519
TCNQ complex with N-methyl-Z-ethylthiazoline, cryst. and mol. struct. 8−10034
TCNQ complexes, $Qn(TCNQ)_2$, NMePh.TCNQ, and Li^+TCNQ^-, extrinsic and intrinsic mag. susceptibility 8−43556
TCNQ complexes with dipyranylidene and dithiadipyranylidene, high cond. investigs. and related props. 8−6368
TCNQ derivatives, substituted, org. cond. with low-symmetric acceptors, cond. behaviour rel. to cryst. struct. 8−6365
TCNQ film, energy loss spectra of low energy electrons 8−19116
TCNQ salt, $(DEPE)^{2+}(TCNQ)_4{}^{2-}$, elec. props., semicond. and metallic phases 8−34826
TCNQ salt, $(TMA^+)_3(I_3{}^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
TCNQ salt, alkali transition metal, elec. cond. and phase transition 8−43370
TCNQ salt, $Cs_2(TCNQ)_3$, elec. cond. and elastic const., mol. bending *(Korean)* 8−23090
TCNQ salt, DECA $(TCNQ)_2$, struct., phys. props. and irreversible phase transition 8−6273
TCNQ salt, HMTTF-TCNQ, metallic organic charge transfer complex, chemical prep. and phys. props. 8−2471
TCNQ salt, HMTTF-TCNQ, quasi-one-dimensional organic conductor, mag. susceptibility meas. 8−6508
TCNQ salt, K^+TCNQ^-, temp. depend. of dynamic nucl. polarisation enhancement of protons 8−6601
TCNQ salt, K-TCNQ, cryst. struct. *(French)* 8−43006
TCNQ salt, K-TCNQ, energy gap, electron-phonon interaction, IR spectrum 8−15167
TCNQ salt, pyridine $(TCNQ)_2$, phase transition at 80K investig. and interpret. 8−6530
TCNQ salt, $Qn(TCNQ)_2$, temp. and freq. depend. of nucl. relax. rate 8−6594

organic compounds continued
TCNQ salt, quinolinium $(TCNQ)_2$, random-exchange Heisenberg antiferromag. chain, sp. ht., 0.07-5K 8−14976
TCNQ salt, Rb-TCNQ, ^{14}N NQR, Zeeman perturbation study, charge transfer 8−39438
TCNQ salt, TMPD-TCNQ , mag. excitation gap attributed to spin polarisation instability 8−31086
TCNQ salts, chem. trends and stabilisation of nearly one-dimens. state 8−10328
TCNQ salts, complex, with aromatic donors, interchain coupling and disorder 8−6314
TCNQ salts, complex, with symmetric and asymmetric donors, transport and mag. props. 8−6315
TCNQ salts, electron arrangement in ground state, optical spectra interpretation 8−47715
TCNQ salts, electron tunnelling 8−47769
TCNQ salts, model for cond. 8−10426
TCNQ salts, $Qn(TCNQ)_2$ and $Cs_2(TCNQ)_3$, surface magnetism obs. 8−6561
TCNQ salts, $Qn(TCNQ)_2$ and $Cs(TCNQ)_3$, surface magnetism 8−2703
TCNQ salts, quasi-one-dimensional, Wigner cryst. model 8−47273
TCNQ salts, simple, triplet exciton obs. by ESR 8−10373
TCNQ salts 8−6356
TCNQ salts with alkali metals, intensities of IR absorpt., electronic transfer magnitude 8−6691
TCNQ salts with alkali metals, optical absorpt. spectra of small particles 8−19505
TCNQ salts with NMP and Rb, elec. cond., temp. and press. depend. *(Japanese)* 8−43366
TCNQ-HMTSeF, large Hall effect obs. below room temp. 8−6364
TCNQ-HMTSeF, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
TCNQ-HMTSeF, polarised single cryst. reflectance obs. and one-dimens. behaviour interpret. 8−6690
TCNQ-HMTSeF, press. effects on mag. props., review 8−6505
TCNQ-HMTSeF, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
TCNQ-HMTTF, metallic state stabilisation at low temp. under press. 8−30911
TCNQ-NMP, disordered, paramag. susceptibility 8−10645
TCNQ-NMP, metal-insulator transition theory based on generalised Hubbard model 8−18966
TCNQ-potassium, dynamic nucl. polarisation exam., temp. depend. 8−39447
TCNQ-pyrene complex, evaporated layers and single crysts., photocond. *(Russian)* 8−6416
TCNQ-TMTTF, press. effects on mag. props., review 8−6505
TCNQ-TSeF:TCNQ-M, thermopower determ. 8−47772
terephthal-bis-n-alkylaniline, homologous series, prep. and mesomorphic props. 8−26436
terephthalate liquid crystals, vibr. spectra, vol. struct. 8−18547
terephthalylidene-bis-4-n-alkylanilines, smectic F planes 8−42902
terpenes, conc. meas. in Adirondack Mountains pine forest 8−32185
p-terphenyl:anthracene, impurity effects on positron lifetime spectrum 8−43954
p-terphenyl, cryst., highly excited states decay, mag. field effects 8−10962
p-terphenyl, cyclic hydrocarbon admixtures, positronium lifetimes meas. 8−19595
p-terphenyl, Raman scatt., order-disorder phase transition 8−43841
p-terphenyl, vap., electron energy loss spectra rel. to lasing 8−29947
p-terphenyl host, breakdown of anisotropic Lorentz approximation 8−5276
2,2′:6.2″-terpyridine, photoelectron spectra, SCF LCAO calcs. 8−33551
tert-butyl chloride, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
1-(2,3,4,6-tetra-0-acetyl-β-D-glucopyranosyl)-2,3-(2R)-epoxypropane, molecular and cryst. struct. 8−25746
tetra-alkylammonium halides, far IR spectra, interionic pot. energy 8−27217
tetraalkylammonium bromide, solid and liq., Raman spectra, longitudinal acoustic vibr. mode, mol. dimensions of ions 8−31183
tetraalkyltin compounds, heats of mixing meas. 8−15693
tetrabromoethane-EBBA, binary liq. cryst. system, two-phase premelting, NMR obs. *(Russian)* 8−30743
tetrabutylammonium, selective uptake of ions into PMMA gel 8−35719
tetrabutylammonium bromide, aq. soln., thermal diffusion, heat of transport *(French)* 8−18808
tetracene:pentacene, exciton migration, picosec. meas. 8−15207
tetracene, in p-terphenyl, polarisability calcs., from Stark meas., anisotropic Lorentz approx. breakdown 8−5276
tetracene, optical obs. of charge transfer 8−35199
tetracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
tetracene, singlet exciton fission and fluorescence, mag. field depend. 8−39026
tetracene anion+tetracene cation, electron transfer reaction, singlet fission 8−11502
tetracene in alcoholic glasses, laser-induced hole burning mechanisms, zero-phonon fluoresc. 8−43912
tetracene single crystals, Davydov splitting, press. depend., phase transition obs. 8−27250
1,2,3,5-tetrachlorobenzene, chemical perturbation of cryst. structs., Raman phonon spectra 8−26559
1,2,4,5-tetrachlorobenzene, in durene host, phosphoresc., cross-relax. between spin levels 8−9186
1,2,4,5-tetrachlorobenzene, mol. cryst., coherent 1-dimens. exciton transport and impurity scatt. 8−14666
tetrachlorobenzene, mol. crystal, exciton band spin-orbit coupling 8−39025
tetrachlorobenzene, triplet exciton spectral line shape, 2-45K 8−19498
1,2,4,5-tetrachlorobenzene, triplet excitons, ESR and ODMR 8−43681
tetrachloroethylene, cryst., IR spectra in polarised light, cryst. struct. 8−27223
tetrachloroethylene, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
tetrachloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244

organic compounds continued
tetrachloromethane+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
tetrachloromethane in dil. soln., dynamic dipole induced interactions in absorption spectra 8−13553
tetrachloromethane-I_2 soln., $I_2(B^3\pi_0{}^+{}_u)$, ps excitation, ultrafast decay and spectrum 8−9184
tetracyanoethylene(d), charge-transfer complex, fluoresc. quantum field and decay time 8−42107
tetracyclo[$3.2.0.0^{2,7}.0^{4,6}$]heptan-3-one, microwave spectrum and effect of cyclopropyl-carbonyl group interactions on dipole moment 8−9138
tetraethylammonium, selective uptake of ions into PMMA gel 8−35719
tetraethylammonium bromide, aq. soln., thermal diffusion, heat of transport *(French)* 8−18808
tetrafluoroethylene, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
tetrafluoroethylene radical anion, isotropic and anisotropic EPR spectra, conform. 8−13532
tetrafluoroethylene radical ion+tetrafluoroethylene, cycloaddition 8−13533
tetrafluoromethane, ^{19}F chem. shielding, depend. on internal coords. 8−5249
tetrafluoromethane, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
tetrafluoromethane, collision-induced light scatt., spectral features 8−13493
tetrafluoromethane, compressed fluid ang. momentum relax., NMR 8−19354
tetrafluoromethane, molecular charge density contours for cryst. struct. 8−38645
tetrafluoromethane, optically pumped laser, 11-17 μm 8−46581
tetrafluoromethane, spectral shape of collision-induced scatt. 8−37687
tetrafluoromethane+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8−13568
tetrafluoromethane+S_2, fluoresc. quenching and lifetimes of S_2 8−46386
tetrafluoromethane-inert gas, compressed fluids, ang. momentum relax., NMR 8−19355
tetraglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
tetrahydro-2-methylfuran glass, γ-irrad., spin trapping of radicals by BNB, EPR obs. 8−10776
tetrahydrofuran, aq. mixtures, miscibility, enthalpy of mixing, solvation *(German)* 8−18779
tetrahydrofuran, effective force constant corrections, in redundant mol. coords. 8−13634
tetrahydrofuran+OH, reaction rate const., in irrad. NO_x mixture 8−7171
1,2,3,4-tetrahydronaphthalene-H_2O, liq.-liq. phase equilib., crit. phenomena 8−18764
3,3,4,4-tetrahydrothiophene-1,1-dioxide, vap. press. by effusion method 8−26680
tetraiodoethylene, disorder, neutron powder diffr. data refinement 8−34501
tetralin, diffusion in liq. polyethylene, gas chromatography determ. 8−2277
tetramethyl silicon+Na, rainbow scatt. at thermal energy, anisotropic pot. 8−29837
tetramethylammonium, selective uptake of ions into PMMA gel 8−35719
tetramethylammonium bromide, aq. soln., thermal diffusion, heat of transport *(French)* 8−18808
tetramethylammonium cadmium trichloride:Mn^{2+}, EPR spectrum temp. depend. 8−19314
tetramethylammonium hexachlorotellurate, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
tetramethylammonium tetrachlorozincate, ferroelectricity 8−39513
tetramethyldioxetane, collisional dissoc. by supersonic Xe beam, chemiluminesc. 8−40029
2,2,6,6-tetramethylpiperidine nitroxide radical.alcohol complex, NMR chem. shift 8−46366
tetramethylsilane, liquid, effect of nonelectronegative molecules on excess electron mobility 8−2534
tetramethylurea-d_0,-d_{12}, IR spectra, normal coord. anal. 8−978
2,2′,2″,2‴-tetrapyridine, photoelectron spectra, SCF LCAO calcs. 8−33551
tetraselenatetracene bromide complex, optical props. 8−6680
tetraselenotetracene bromide, positive microwave dielectric const. 8−47771
tetrathiotetracene iodide, positive microwave dielectric const. 8−47771
s-tetrazine, fluoresc. excitation spectra, 1K rot. struct. 8−1020
s-tetrazine, visible absorpt. band assignment, vibr. anal. 8−994
s-tetrazine-benzene, mixed cryst., 2K, lifetime limited photochem. hole burning 8−9183
TETTF.$TCNQ_2$, cryst. struct. *(French)* 8−18625
TGS:Cr^{3+}, EPR obs. of fluctuations near phase transition 8−43820
TGS:$Cr^{3+}(VO^{2+})$, polarization reversal, static hysteresis loops, switching processes, EPR 8−43633
TGS, Brillouin scatt. spectra, depolarisation field effect 8−15177
TGS, calorimetry, sp. ht., 0-80°C 8−15122
TGS, complex dielec. permitt. near Curie temp., ferroelec. polarisation mechanism interpretation 8−43808
TGS, conditions for electret state 8−43773
TGS, cryst., vibr. bands, ferroelec. and paraelec. phase H bonds *(Russian)* 8−15172
TGS, deuterated, Brillouin spectra and elastic consts., behaviour near T_c 8−15178
TGS, deuterated, paraelec. phase, D atom positions 8−14334
TGS, deuterated and undeuterated, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
TGS, dielec. behaviour near transition temp. 8−15127
TGS, dilatometric study, examination of logarithmic connection to classical Landau-type theory 8−6642
TGS, domain boundaries, X-ray topographic study 8−48136
TGS, domain growth shapes 8−27168
TGS, domain wall dynamics and small signal permitt., loss mechanism absence 8−43825
TGS, effect of aniline in aqueous crystal growing soln. on physical props. 8−43810
TGS, elastic vs. polarisation energy near transition 8−15118

organic compounds continued
TGS, electromech. coupling of surface acoustic waves near ferroelec. transition 8−19415
TGS, ferroelec., negative ENDOR study of radiation damage 8−19373
TGS, ferroelec., positron lifetime meas. during phase transitions 8−6644
TGS, ferroelec. transition, electrooptical hysteresis and crit. behaviour of electrooptical props. 8−2817
TGS, growth from solution containing aniline, dielec. and pyroelec. props. 8−6639
TGS, growth of large area, doped and undoped crysts. by rotating disc method 8−19652
TGS, laser light scatt. spectroscopy 8−10156
TGS, orientation depend. of l-alanine incorporation 8−42938
TGS, photoelastic const. behaviour new ferroelectric transition 8−19441
TGS, polarisation reversal, cryst. defects effect 8−27156
TGS, positron annihilation and ferroelectric transition 8−19594
TGS, proton spin-lattice relax. time, temp. depend., near transition pt. 8−43668
TGS, static and dynamic crit. behaviour of uniaxial ferroelectrics 8−35103
TGS, surface pot. between ferroelec. domains 8−15132
TGS crystal, generation of second acoustic harmonics 8−18711
TGS crystals, influence of domain struct. on pyroelec. props. 8−31159
TGS epitaxial thin film, IR absorption spectra *(French)* 8−35129
TGSe, Brillouin scatt. spectra, depolarisation field effect 8−15177
TGSe, deuterised, elec. field induced Merz double hysteresis loop obs. 8−31164
TGSe, domain growth shapes 8−27168
TGSe, ferroelec. transition, electrooptical hysteresis and crit. behaviour of electrooptical props. 8−2817
TGSe, sp. ht. anomaly, AC calorimetric obs. 8−23414
thallium acetate, aq. soln., $^{205}Tl^+$ NMR, dissolved O_2 on nuclear spin relax. rate 8−19356
theobromine, UV PES, constitutive subunits, methylatron effects 8−29798
theophylline, UV PES, constitutive subunits, methylatron effects 8−29798
1,2,4-thiadiazolidine derivatives, isomers, negative ion mass spectrometry *(Japanese)* 8−5367
thianaphthalene, plastic cryst., Rayleigh scatt. of Mossbauer radiation 8−27125
2-thiapyridone, dimer, vibr. Hamiltonian for IR spectra of H bonding 8−37620
thiapyrylium, photosensitisation of Lexan:triphenylamine 8−34856
thioacetamides, CNDO calcs., internal rot., ionisation pots., photoelectron spectra 8−5143
thioacetic acid, $-d_1$, principle axis method anal. of microwave spectra 8−9139
thioamides, characteristic pattern in IR and Raman spectra 8−29818
p,p′-thiobenzophenones, (He I) photoelectron spectra, assigned by perturbational mol. orbital and CNDO/2 calcs. 8−46396
thiocarbocyanine dye, adsorpt. on AgBr photographic gelatin dispersion 8−32908
thioformaldehyde-d_0,-d_2, far UV spectrum meas. 2200 to 1800 angstroms 8−25553
thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8−25520
thioformyl ion, theoretical study 8−37553
thioindigo, cis⇌trans isomerisation, nanosecond flash photolysis and steady state methods, triplet state 8−35648
thiolic antifoggants, chem. struct., adsorpt. on AgBr emulsions, ESCA investig. 8−32907
thiopen-2,5- dicarboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8−1004
thiophen-2-carboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8−1004
thiophene, flash photolysis, new transient absorption spectrum, C_4H_3 radical, assignments 8−46354
thiophosgene, a^3A_2-X^1A_1, dye laser excitation spectra, 539 to 610 nm 8−42083
thiourea, room temp. photoelastic consts., Brillouin scatt. obs. *(French)* 8−15182
thiourea, thermally stimulated depolarisation currents, peaks interpreted in terms of molecular relaxations 8−19407
thiourea-cyclohexane inclusion compound, phase changes, molecular motion exam. 8−31116
thioxanthene, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
thirene, ab initio SCF calc., thermodynamic stability 8−25420
1,2,3-timethoxybenzene, weak electronic transition, solid, and in rigid glass, UV assignments 8−17681
TMBP.HCNB and TMBTP.HCNB complexes, elec. and mag. props. 8−6512
TMMC, antiferromag. reson. below 1K 8−39408
TMMC, linear antiferromag., 3D ordering and spin correlations, mag. field effect 8−19262
TMMC, one dimens. antiferromag., neutron scatt. exam. of impurity effects 8−43598
TMMC, one dimens. Heisenberg system, shift of half-field EPR line 8−23325
TMNB, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
TMNC, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
TMPD, 2,2,4-trimethylpentane, fluoresc. quenching by elec. field, above photoionis. threshold 8−33539
TMPD, fluoresc. in nonpolar organic liqs. for excitation energies above and below photoionis. threshold 8−1018
$(TMTTF)_2BF_4$, cryst. struct. *(French)* 8−26556
$(TMTTF)_2Br$, cryst. struct. *(French)* 8−34503
tobacco, density changes during burning as obs. by β-source attenuation 8−11792
tobacco mosaic virus, solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas. 8−48187
toluene, coherent polarisation spectroscopy of Raman scatt. 8−13758
toluene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
toluene, dielec. const. meas. using 3-terminal meas. cell 8−21170
toluene, fluoresc. quantum yield in soln., dipole-dipole interaction 8−25598

organic compounds continued
toluene, free convection heat transfer in tube at supercrit. press. 8−42518
toluene, mol. geometry, electron diffraction obs. 8−9270
toluene, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
toluene+$O(^3P)$, reaction product identification by mass spectrometer 8−7185
toluene+OH, cross mol. expt., product anal., 300K 8−44353
toluene in ethanol-d_0-d_1, dry electron scavenging efficiency, isotope effect on electron localisation 8−27784
toluene-1-hexene(1-pentene), radiolysis at 77K, fluoresc., energy transfer processes 8−20037
toluene-d_0, -d_1, mol. reorientation and D nucl. relax. time, temp. depend. 8−39424
trace elements analysis, in thick samples, photon excited X-ray fluoresc. 8−3423
trans-p-n-alkoxy-α-methyl p′-cyanophenyl cinnamates, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
trans-propargyl amine, microwave spectra, dipole moments and struct., isotopic species 8−974
trans-stilbene, fluoresc. lifetimes, 77-295K 8−1029
tri-n-propylamine, laser seed cpds., photoionisation and photoabsorpt. characts. 8−13688
n-triacosane, chain axis cryst., quasi-elastic neutron scatt., plastic phase transform 8−6023
triallyl orthoformate, photoelectron spectra, ionisation pot. bands, conformation, SPINDO calc. 8−9194
s-triazene, second order phase transition, mol. reorientation, ^{14}N NQR 8−48074
s-triazine, charge density anal. 8−38578
s-triazine, Raman spectrum, lattice vibrs. 8−19465
triazinyl-stilben compounds, lasing characts. 8−29948
triazinyl-stilbenes, sulphonated, laser dyes, CW operation in blue and violet spectral region 8−42334
1,3,5-tribromobenzene mesophase, spiral-like, struct., PMR of dissolved mols. 8−1981
tribromomethane-propyl alcohol conc. fluctuation kinetics, holographic study *(Russian)* 8−19508
1,3,5-trichloro-2-bromobenzene, chemical perturbation of cryst. structs., Raman phonon spectra 8−26559
1,2,3-trichloro-5-bromobenzene, chemical perturbation of cryst. structs., Raman phonon spectra 8−26559
trichloroacetic acid, proton chemical shift tensor 8−13520
trichloroacetic acid, self association, IR spectra, book contrib. 8−21931
trichloroacetic acid-base H bonded complex, ^{35}Cl NQR meas. 8−25555
1,3,5-trichlorobenzene mesophase, spiral-like, struct., PMR of dissolved mols. 8−1981
trichloroethane, CH_3-stretching modes, Raman spectra reson. energy transfer obs. 8−48162
trichloroethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
1,1,1-trichloroethane, thermodynamic and structural studies of polymorphism 8−18571
trichloroethylene, effect of addition on thermal oxidation of Si at 1200°C 8−27660
trichlorofluoromethane, conc. meas. in stratosphere 8−32171
trichlorofluoromethane, dissoc. into metastable fragments following electron impact excitation 8−37757
trichlorofluoromethane, IR multiple-photon laser-induced decomposition, Cl and Cl_2 form. 8−40066
trichlorofluoromethane, transport processes indicator in urban atmosphere 8−36264
trichlorofluoromethane, tropospheric lifetime 8−3920
trichlorofluoromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
trichlorofluoromethane, vertical profile meas. in seawater *(German)* 8−3814
trichloromethane, and -d_1, liq., vibr. relax., Raman spectra 8−19471
trichloromethane, matrix isolation IR spectra, $^{35/37}Cl$ and $^{12/13}C$ isotope shifts 8−977
trichloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
trichloromethane in dil. soln., dynamic dipole induced interactions in absorption spectra 8−13553
trichlorophosphazenes, ^{35}Cl NQR spectra and reorientational motion of PCl_3 group 8−25567
tricresyl phosphate in gasoline, P determ. by at. absorpt. spectrometry 8−31729
triethyl methacryloxystannane, protection from biological overgrowths 8−18034
triethylamine, gas (soln.), fluoresc. quenching by ‘inert’ perfluoromethylcyclohexane 8−46438
triethylamine, laser seed cpds., photoionisation and photoabsorpt. characts. 8−13688
triethylamine-water, near crit. soln. pt., sp. ht. at const. press. and crit. conc., −1-22°C 8−38847
triethylamine/alcohol mixtures, theoretical evaluation of sound vels. and AB interactions 8−18706
triethylamine/phenol mixtures, theoretical evaluation of sound vels. and AB interactions 8−18706
triethylenediamine, aq. soln., stimulated Raman scatt., struct. enhancing solute 8−27222
1,1,1-trifluoroacetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
1,2,3-trifluorobenzene, ^{13}C, ^{19}F, and ^1H NMR spectral anal. 8−37659
1,2,4-trifluorobenzene, microwave spectrum, dipole moment and centrifugal distortion constants 8−37630
trifluoroethane, MODR, rot. consts. 8−9177
trifluoroformamide, electronically excited, vibr. relaxation, stochastic description 8−37715
trifluoroiodomethane, liquefied gas solns. bound exciton model for Rydberg bands 8−31214
trifluoroiodomethane, optically pumped laser, 11-17 μm 8−46581
trifluoroiodomethane, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
trifluoroiodomethane+K(Ba)→K(Ba)I+CF_3, products translational distrib., crossed beam reaction 8−31629

organic compounds continued
- trifluoroiodomethane+O, I atom abstraction by O, mol. beam study 8−48638
- trifluoromethane-methane, liq.-liq. phase equilib., crit. phenomena 8−18764
- trifluoromethyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
- trifluoromethyl iodide, ^{13}C isotope separation by selective multiphoton dissoc. 8−25734
- trifluoromethyl iodide+Ba, BaI vibr. states bimodal distrib. 8−27743
- triglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
- triglycine fluoberyllate, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
- triglycine fluoroberyllate, ferroelec. transition, electrooptical hysteresis and crit. behaviour of electrooptical props. 8−2817
- triglycine fluoroberyllate, thermodynamic props. 8−15123
- trihydroxybenzophenone on wafer surface, trace analysis 8−3433
- 3,3′,5′-triiodothyronine plasma to tissue transport rate estimation from 3-compartment model 8−31792
- 1,1,1-trimethoxyethane, mol. struct., electron diffr., vibr. spectra 8−37765
- trimethyl orthoformate, photoelectron spectra, ionisation pot. bands, conformation SPINDO calc. 8−9194
- 2,4,6-trimethyl pyridine-N-oxide, linear dichroism in liq. cryst. matrix, out-of-plane components 8−17701
- trimethylamine, laser seed cpds., photoionisation and photoabsorpt. characts. 8−13688
- trimethylamine+OH, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
- trimethylammonium manganese bromide, mag., anisotropy, biquadratic exchange 8−14952
- trimethylammonium manganese chloride dihydrate, optical absorpt. spectrum, 300K, 90K, cryst. field parameters 8−27253
- trimethylbenzene+O(^3P), reaction product identification by mass spectrometer 8−7185
- 1,3,5-trimethylbenzene+OH, cross mol. expt., product anal., 300K 8−44353
- trimethylene diradical, geometry optimisation by generalised Hartree-Fock 8−25427
- trimethylene oxide, ^{12}C NMR, coupling consts. 8−25570
- trimethylene sulphide, ^{12}C NMR, coupling consts. 8−25570
- trimethylphosphate, plastic and hard crysts., liq., nucl. spin-lattice relax. mol. motion 8−48065
- trimethylsilyl sulphide, UV spectra, assignments 8−46359
- trinitromehtane, electron diffr. study of gas phase mol. struct., rot. isomerism 8−1080
- S-trioxane, lattice vibrs. from Raman spectra 8−6672
- triphenylamine-bisphenol-A-polycarbonate, binary solid soln., hole photogeneration, Onsager theory and expt. 8−39148
- triphenylantimony, single crystal, irrad. by UV, diphenylantimony radical prod., ESR 8−31662
- 2,4,6-triphenylheptane, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- triphenylphosphine compounds, $(C_6H_5)_3PM_xM'_{1-x}(CO)_5$, M,M′=Cr, Mo, W, mixed cryst., CO vibr. spectra, modal anal. 8−35128
- tripropylamine, additive for CO_2 laser 8−13679
- tripropylamine, CO_2 laser additive, amplification characts. *(Russian)* 8−25848
- tris(hyroxymethyl)aminomethane, water solution calorimeter, determination of energy equivalent 8−23961
- tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8−26681
- triterpenes, isolated from Japanese Cimicifuga plants, cryst. struct. determ. 8−34504
- S-trithiane, lattice vibrs. from Raman spectra 8−6672
- trithiane, Raman spectrum, press. effect on internal rot. angle 8−37642
- tropone, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
- trypsin, in suspension, radical form. and inactivation after Γ-irrad. 8−3564
- tryptophan, Fourier transform PMR in aq. soln., ^1H exchange and relax. rates meas. method 8−15049
- tryptophan, photoionised, in γ-irrad. alkaline glass, electron traps, stimulated luminesc. 8−11536
- DL-tryptophan, polycryst., amino group rot., reorientation, mol. struct., 77-555K, PMR obs. 8−35047
- tryptophan, triplet state, zero-field splittings, wavelength depend. 8−43680
- tryptophyl peptides, pulse radiolysis, hydrated electron reaction 8−48679
- TSCC:Mn^{2+}, microscopic, mechanism of ferroelectric transition, EPR fine struct. tensor calc. 8−35104
- $(TSeF)_x(TTF)_{1-x}(TCNQ)$, interstack hybridisation role in metal-insulator transition temp. determ. 8−6304
- $(TSeF)_x(TTF)_{1-x}TCNQ$, struct., cond., phase transitions 8−47770
- TSeF salts, mol. props., one-dimens. cond. salts form. 8−6363
- TSeF-TCNQ, Ginzburg-Landau model for metal-insulator transition 8−6301
- TSeF-TCNQ, resist., crit. behaviour anisotropy 8−10430
- TSeF-TCNQ, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
- TTF_x $TseF_{1-x}TCNQ$ solid soln., DC conductivity, struct. 8−10423
- TTF, infinite stacks, all valence electron band struct. 8−39001
- $(TTF)_7I_5$, superstruct. modulation, X-ray obs. 8−14333
- TTF and TTN derivatives, quasi-one-dimens. cond., phys. and electronic props. 8−6366
- TTF crystals, polarised Raman spectra meas. 8−6681
- TTF film, energy loss spectra of low energy electrons 8−19116
- TTF-d_0, -d_4, IR and Raman spectra, vibr. assignments 8−23436
- TTF-DETCNQ, metal-insulator transition, struct., elect. cond. and sp. ht. expts. 8−14662
- TTF-TCNO, optical evidence for Coulomb interactions, review 8−6704
- TTF-TCNQ:TCNQ-M, thermopower determ. 8−47772
- TTF-TCNQ, CDW and phase transition exam. 8−6283
- TTF-TCNQ, CDW instability, classical vs. crit. behaviour 8−39041
- TTF-TCNQ, covalon conduction 8−10427
- TTF-TCNQ, deuterated, compressibility under hydrostatic press., neutron diffr. meas. 8−2197

organic compounds continued
- TTF-TCNQ, dimers and trimers, Xα scattered wave calc. 8−10326
- TTF-TCNQ, dynamic nucl. polarisation exam., temp. depend. 8−39447
- TTF-TCNQ, electron-electron interaction strength, electron scatt. and spin-lattice relax. data 8−30878
- TTF-TCNQ, electronic props. and comparison with $(SN)_x$, review 8−6306
- TTF-TCNQ, inelastic neutron scatt., Peierls transition exam. 8−10134
- TTF-TCNQ, inelastic neutron scatt., re-examination 8−30721
- TTF-TCNQ, isotope effect on Peierls transition temp. 8−43367
- TTF-TCNQ, isotope effect on Peierls transition temp. 8−43369
- TTF-TCNQ, Kohn anomaly and Peierls-type transition, X-ray obs. 8−14435
- TTF-TCNQ, Landau theory of phase transitions 8−30914
- TTF-TCNQ, low temp. phase transitions, elastic neutron scatt. obs. 8−14464
- TTF-TCNQ, Madelung energy, electronic struct. *(Russian)* 8−6253
- TTF-TCNQ, metallic conductivity temp. depend. 8−6357
- TTF-TCNQ, modulated phases in terms of four-and five-dimens. superspace groups 8−47310
- TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
- TTF-TCNQ, neutron scattering 8−10133
- TTF-TCNQ, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
- TTF-TCNQ, ordering types below 54K, perp. phase depend. 8−6300
- TTF-TCNQ, Peierls instability and consequences 8−6303
- TTF-TCNQ, positive microwave dielectric const. 8−47771
- TTF-TCNQ, possible Lifshitz point, struct. transitions exam. 8−2423
- TTF-TCNQ, press. effects on mag. props., review 8−6505
- TTF-TCNQ, resist., crit. behaviour anisotropy 8−10430
- TTF-TCNQ, single cryst., mag. susceptibility in phase transition region, two-gap model 8−6511
- TTF-TCNQ, struct. rel. to quasi one-dimensional elec. props. 8−14716
- TTF-TCNQ, surface magnetism 8−2703
- TTF-TCNQ, surface magnetism obs. 8−6561
- TTF-TCNQ, symmetry changes and phase transitions 8−6299
- TTF-TCNQ, temp. depend. of dynamic nucl. polarisation enhancement of protons 8−6601
- TTF-TCNQ, theory of structural phase transitions 8−38831
- TTF-TCNQ, two-chain inverted band model 8−6313
- TTF-TCNQ, X-ray, neutron scattering, low temp. modulated lattice, 3D modulated lattice 8−10033
- TTF-TCNQ, X-ray exam. of 2k and 4k anomalies 8−10162
- TTF-TCNQ electronic props., PMR 8−2763
- TTF-TCNQ film, energy loss spectra of low energy electrons 8−19116
- TTF-TCNQ phase transition, press. depend., longitudinal lockin, stacking axis resistivity meas. 8−47520
- TTF-TCNQ-d_8, large single cryst. platelet growth by diffusion method 8−3010
- TTG-BDT(Cu), giant struct. distortion, high speed photography obs. 8−43121
- TTT_2I_3, organic metal, mag. susceptibility meas. 8−23241
- $(TTT)_2I_{3+\delta}$, 1 dimens. conducting chains, supercond. fluctuations 8−39099
- $(TTT)_2I_3$, metal-insulator phase transition, elec. cond. and mag. susceptibility meas. 8−14719
- TTT cation-radial salts, new class of quasi-one-dimens. org. cond. 8−6367
- TTT-I_n, charge transfer salt, electronic spectra in soln. and solid state 8−2878
- tyrosine, photoionised, in γ-irrad. alkaline glass, electron traps, stimulated luminesc. 8−11536
- uracil derivatives, effects of UV radiation, IR spectra obs. 8−27801
- uracil derivatives, photosensitised induction by H-addition radicals in frozen aqueous soln. 8−20146
- uracil in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
- uranyl acetate solns., radiocolloidal and pseudoradiocolloidal state 8−44390
- urea, thermally stimulated depolarisation currents, peaks interpreted in terms of molecular relaxations 8−19407
- uronic and other organic acids in Baltic and Black Sea sediments 8−49007
- l-valine, cryst., electron damage, electron microscope study 8−22762
- DL-α-valine in aq. soln., dielectric dispersion 8−20141
- valinomycin monolayers, struct., area and compressibility determ. 8−44461
- valinomycin-cholesterol (stearic acid) monolayers, struct., area and compressibility determ. 8−44461
- vanadyl phthalocyanine-copper phthalocyanine mixed crysts., α-β phase transform., heat of transform., DTA investig. *(German)* 8−30754
- vinyl alcohol, struct. from ab initio calcs. 8−29857
- vinyl chloride, air pollution monitoring by CO_2 laser system 8−49182
- vinyl chloride, trace determ. in water by direct injection GC/MS 8−35739
- vinyl isocyanate, conformers, geometrical and electronic structures, microwave spectra 8−9142
- vinyl methyl ether+O(^3P), absolute rate consts. meas., 297-439K 8−7196
- vinyl sulphides, divalent S linking with multiple bonds, spectrosc. obs. *(Russian)* 8−21929
- violanthrene-A, electron escape depths and absorpt. coeffs. 8−23580
- violanthrone, free radical, EPR meas. 8−27094
- volatile compounds determ. in city air, gas chromatography techniques 8−12003
- xanthene, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
- xanthene dye N-92+inert gas buffer, electron beam excited, fluoresc., energy transfer 8−25877
- xanthione, solns., triplet state quenching by ground state xanthione 8−42180
- xanthone, single cryst., polarised UV absorpt. spectra 8−19500
- xanthone in n-hexane, 77 and 4.2K, phosphoresc. spectra, triplet lifetime 8−21957
- o-xylene, in external transverse resonator, stimulated Rayleigh wing scatt. line, anomalous shift 8−13763
- xylene, presence in TEA CO_2-laser, optimum operational conditions *(Bulgarian)* 8−33720
- p-xylene, stimulated Raman scatt., intensity changes 8−13753

organic compounds continued
- xylenes, fluoresc. and triplet state quantum yields, biacetyl method 8−37671
- zeaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- zinc bisdiethyldithiocarbamate:Cu^{2+}, exchange interaction of Cu^{2+}-Cu^{2+} pairs, spin-lattice relax. 8−48034
- zinc oxalate, crystallisation kinetics, specific surface energy at cryst.-soln. interface 8−26471
- zinc oxalate, effect of supersaturation on crystallisation kinetics, turbidimetry meas. 8−30569
- zinc porphin, in n-alkane crystals. at 4.2K, Zeeman spectra for Jahn-Teller instability 8−27256
- zone refining *(Japanese)* 8−48312
- 1-azaphenanthrene, aq. soln., proton transfer photoreaction kinetics, in singlet excited state 8−48671
- p-azotoluene-azulene, order parameters and lattice energy, mean field approx. 8−22688
- BCl_3-$COCl_2$, impurity removal by laser irrad., IR spectra meas. 8−15686
- 2,2′-bipyridine, photoelectron spectra, SCF LCAO calcs. 8−33551
- 1-bromo-1-chloro-1-fluoroethane(-2-d_1), IR and Raman spectra, vibr. assignments, normal coord. anal. 8−42053
- t-butyl chloride, dipolar liquid, far IR absorpt. rel. to Mori continued fraction for autocorrel. function 8−2875
- CCl+alkynes, absolute reaction rate consts. 8−27728
- CD_2, laser plasma, ion energy distrib. 8−30461
- CD_4^+, rot. predissociation, observed by metastable peak struct. in translational spectra 8−25635
- $CF_3+CH_4(H_2)(HCL)$, H abstraction, energies of activation calc. 8−31632
- CF_2Br^+, CF_2Cl^+, IR spectra, matrix isolation study, C-F stretching fundamentals 8−37632
- CH, interstellar, ground state inversion, collisional excitation 8−28503
- CH, interstellar, rot. levels struct., excitation mechanisms 8−21908
- CH, search for RF emission in Comet West (1975n) 8−20735
- CH^+, CD^+, $A^1\Pi$-$X\ ^1\Sigma^+$ band system, spectroscopic consts. and radiative lifetimes 8−5237
- CH^+, excitation energy and transition moment anal. of electronic transitions 8−25620
- CH^+, interstellar, upper limit towards τ Scorpii 8−4309
- CH_2, laser plasma, ion energy distrib. 8−30461
- CH_2 radical, fluoresc. induced by laser 588.9-595.6 nm, $(a^1A_1-X^3B_1)$ energy separation 8−42121
- CH_2^+, unimol. decay, nonadiabatic interaction, selection and propensity rules 8−23932
- CH_3^+ ion, radiative assoc. reactions in interstellar clouds 8−41021
- $CH_3+CH_4(H_2)(HCl)$, H abstraction, energies of activation calc. 8−31632
- CH_3^++small molecules, binary and ternary reactions at thermal energies, rate coeffs., product distribs. 8−44358
- CH_3+ethylene, transition state, ab initio calc. 8−48640
- CH_4^+, rot. predissociation, observed by metastable peak struct. in translational spectra 8−25635
- CH_n^++$COS(H_2S)$(formamide)(methanol)(methylamine), (n=Q-4), reactions at 300K 8−44357
- $C_2H_2+OH^-\rightleftharpoons C_2H^-+H_2O$, equilib. consts., ab initio SCF and CEPA calcs. 8−3361
- C_4H_3, in flash photolysis of thiophene, transient absorption spectrum 8−46354
- $CH(CH_2)(CH_3)$, semiempirical electron impact ionis. cross-sections 8−1089
- CH_2F, far IR laser mag. reson. spectrum 8−9174
- $(CH_3)_4NAl_2Br_7$, ^{81}Br NQR and ^{27}Al NMR 8−6597
- CHNO isomers, interconversion pot. energy surfaces, geometries, electronic structs. 8−35660
- CO_2, Kerr consts., depolarisation ratios and hyperpolarisabilities meas. 8−25624
- CO_2+propyl alcohols, collisional deactivation, of CO_2 (00^01), 303-514K 8−17759
- ^{13}CH fragment, selective population transfer expts., density matrix formalism appl. to NMR spectroscopy 8−15059
- chloromethane, collisional rot.-line widths and shifts, microwave region 8−25619
- 2-chlorothiophene, σ^* anion radical, prod., ESR spectrum assignment 8−11539
- ClCF radical in solid Ar, emission and excitation spectra, vibr. anal. 8−9164
- Cu complex, glycylglycine, isotope substituted, IR and Raman vibr. spectra 8−42051
- Cu-phthalocyanine, electron escape depths and absorpt. coeffs. 8−23580
- t-cyanobutane, solid, uniaxial molecular reorientation, quasielastic neutron scatt. 8−42927
- cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
- 1,6-di-(N-carbazolyl)-2,4 hexadiin, cryst. struct., luminesc., γ-ray polymerisation 8−18629
- 1,3-diphenylpropane, in isooctane soln., monomer phosphoresc., low binding energy triplet excimer not obs. 8−25597
- F compounds, ground states, mol. parameters, MINDO calcs. 8−41955
- freon (freon-N_2), gas, sparking pots., ionisation and electron attachment coeffs. 8−42705
- H+bromotrifluoromethane, reaction rate consts., flash photolysis-reson. fluoresc. obs. 8−3327
- $H+Cl_2$(organic molecule), rate const., discharge flow-reson. fluoresc. meas. 8−7178
- HC_2, ground state energy surface, ab initio SCF calc. 8−33446
- HC_2^-, ground state energy surface, ab initio SCF calc. 8−33446
- HCCN, free radical, matrix isolation spectra and ab initio calcs. 8−46329
- $HCHO.H^++H_2O(H_2S)(HCN)$(formaldehyde), proton transfer, rate and equilib. consts. 8−48636
- $HCO+NO(O_2)$, reaction rate consts. 8−31617
- HOCO and HOCO* formed by OH+CO, thermochem. props., ideal gas state 8−27805
- $HPO_4^-(H_2PO_4)$ radicals + organic compounds, reaction rate consts. 8−15669
- He-O_2-acetylene flame atom cell, for at. spectrometry, characterisation 8−32876

organic compounds continued
- $He_2(^3\Sigma_u)+Ne(Ar)(N_2)(CO)(C_2)(CH_4)$, excitation transfer reaction rates 8−5332
- hexamethylphosphoramide:Li glass, metallic condensation of Wannier-Mott impurity states 8−2420
- In-EDTA tracer, for groundwater flow investig., neutron activation anal. 8−11921
- KC_{24}-tetrahydrofuran, physical props. *(French)* 8−26692
- MBBA, nematic, anomalous spectra of current induced noise under high DC field 8−38617
- methanol-water mixture, Compton profile meas., non-additivity of elastic and inelastic X-ray scatt. 8−43953
- methyl isonitrile, chemisorption on Fe (110), UV photoelectron obs. 8−19629
- N+organic molecule, rate const., discharge flow-reson. fluoresc. meas. 8−7178
- NCO^+, partial pot. energy surfaces, ab initio SCF CI calcs. 8−37554
- NO_2, vibr. excited, from nitroalkane photodissoc., fluoresc. obs. 8−37693
- N_2O-acetylene flame, background compensation in differential atomic emission spectrometry *(French)* 8−7296
- 1-naphthol, aq. ethanolic soln., proton transfer photoreaction kinetics, in singlet excited state 8−48671
- O+acetaldehyde(propylene), rate const., discharge flow-reson. fluoresc. meas. 8−7178
- O_3+ethylene, dioxirane form., decomp. products, mass spectrometric obs. 8−11504
- O_3+ethylene, dioxirane form., identification by microwave spectra 8−15659
- $O(^3P)$+1-butyne (2-butyne), CO pro dynamics, mechanisms 8−11510
- $O(^3P)$+vinyl halides, reaction rate consts. 298-442K flash photolysis obs. 8−7195
- PO_4^{2-} anion radicals + organic compounds, reaction rate consts. 8−15669
- 4′-n-pentyl-4-cyanobiphenyl, nematogenic liq. cryst., above T_c, Kerr effect response time, temp. depend. 8−34434
- propylene, μ, ρ and T-surfaces, global behaviour, rel. to catastrophe theory 8−26226
- SF_6, gas, Rayleigh vol. scatt. coeffs., spectronephelometric meas. 8−14127
- TBBA, liq. cryst., evidence for cybotactic cluster pretransition formation, X-ray diffr. meas. 8−10179
- TGSe, domain-wall orientations and wall energies 8−23420
- TMMC, one-dimensional mag., anomalous shift of EPR field 8−15010
- TTF-TCNQ , elec. props. in high temp. regime, effect of controlled disorder 8−30912
- $TTF.CuS_4C_4(CF_3)_4$, spin-Peierls system, nucl. spin-lattice relax. process 8−19361
- $Th(AcAc)_4$, 4f level XPS shake-up satellites, assignments 8−1023
- $Th(OAc)_4$, 4f level XPS shake-up satellites, assignments 8−1023
- thiophen, gas, X-ray photoelectron spectra, satellite struct. 8−5281
- $Th(oxin)_4$, 4f level XPS shake-up satellites, assignments 8−1023
- toluene, vapour, thermal conductivity, 300-700K 8−38444
- p-toluidine, kinetics and morphology of lamellar-spiral growth hillocks 8−18566
- B-trichloro-m-carborane, cryst. electrophilic chlorination of 9, 10-dichloro-m-carborane, cryst. and mol. struct. from X-ray diffr., cryst. struct. 8−9268
- Zn etioporphyrin, excited triplet states absolute rate consts., ODMR meas. 8−33533

organic insulating materials
- *see also insulating oils; paper; plastics; rubber; silicones; varnish; waxes*
- epoxy mica generator insulation, dielectric stress conc. influence on voltage endurance 8−15094
- ethylene propylene diene terpolymer, crosslinked, AC elec. breakdown studies 8−43787
- films, electronics and communications engineering appls. *(German)* 8−44011
- liquids, high-field electric conduction, thermal activation energy, anal. 8−43399
- polyethylene, cross-linked and low-density, pseudo spherulite structures and elec. discharges 8−42920
- polyethylene, treeing inception voltage, effect of blending and crosslinking 8−43788
- polyimide film, dielec. AC props., expt. 8−43783
- polymer, amorphous, excess charges, band gap levels and elec. props. 8−23053
- polymer electric strength rel. to permittivity, loss-angle, and volume resistivity 8−6631
- polymers, morphology and elec. props., correl., review 8−43786

organic molecule configurations
- *see also isomerism*
- acetyl cyanide-d_1, microwave spectra, r_s, r_0-struct. 8−13491
- acetyl halide-titanium tetrahalide adducts, coordination, IR and Raman spectra 8−42050
- alkanes, liquid, press. induced changes in mol. conform. 8−9269
- alkanes, molecular topology, branching, distance matrix, information theoretic calcs. 8−25405
- anthracenes, anthronyl substituted, solvent-assisted form. of luminesc. intramol. exciplexes 8−25589
- basketene, electron diffr. determ. of struct. 8−37764
- benzaldehyde, proton affinity, MINDO/3 results compared to ICR obs. 8−1103
- benzene rings, substituted, planar ring distortion, geom. constraints 8−18624
- benzynes, geometry optimisation by generalised Hartree-Fock 8−25427
- beryllocene, gas phase struct., ab initio LCAO SCF calc. 8−41942
- bicyclo[3.1.0]hex-2-ene, microwave spectra, rot. consts., ring struct. and config. 8−42041
- bicyclo[3.1.0]hexane, zero-point average struct., microwave spectra and electron diffraction 8−25738
- 1,1′-binaphthyl, conformational changes, picosec. dynamics 8−25625
- bis(trimethylstannyl)-acetylene, mol. struct. determ. from gas phase electron diffr. 8−25740
- bispyrrol-indigo, π-electronic struct., PPP-type calc. and config. anal. 8−21855
- bromobenzene, in EBBA, ^1H NMR and NQR of D, geometric struct. 8−17689

organic molecule configurations continued
bromomethane, ab initio SCF MO calcs., ionis. pots., dipole moment, config., electronic props. 8–1104
N-bromosuccinimide lone-pair struct., photodetection spectra 8–37684
bromotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8–37766
cis-butene-1, microwave rot. spectrum, centrifugal distortion effects, rot. consts. 8–9137
carotenoids related to visual chromophore, electronic struct., band shape model 8–20142
CBOOA, smectogenic, cryst. and mol. struct. determ. 8–2103
cetyltrimethylammonium bromide, aq. soln., mol. conform., laser Raman spectra 8–21934
chlorobenzene in EBBA, ^{1}H, D NMR and NQR, geometric struct. 8–17689
2-chloropropane, conformation, vibr. spectrum, from simple harmonic force field 8–33494
N-chlorosuccinimide, lone-pair struct., photodetection spectra 8–37684
chlorotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8–37766
coronene, triplet mol. in n-heptane Shpol'skii sites, distortion and orientation meas. by MIDP 8–37668
CT complex, equilib. distances and stabilisation energy, PCILO calc. 8–41963
cyclobutenedione derivatives, photoelectron spectra, 2p lone pair delocalisation 8–46392
cyclopentadienyl cation, geometry optimisation by generalised Hartree-Fock 8–25427
cyclopentene, ring puckering, semi-empirical and ab initio calcs. 8–9065
cyclopropyl chloride, ab initio SCF-MO calc., electronic and mol. struct. 8–25425
decanol, dynamic mol. struct. in cyclohexane-d$_{12}$, ^{13}C NMR 8–33519
N,N'-diacetyl-1,2,1',1'-tetrahydro-1,1'-diisoquinoline, cryst. and mol. struct. 8–2106
diamino-quinone, π-electronic struct., PPP-type calc. and config. anal. 8–21855
α,ω-diarylperfluorpolienes, X-ray spectra, phase transition temp. depend., struct. and mesomorphic props. *(Russian)* 8–38621
1,1-dichlorocyclopropane, ab initio SCF-MO calc., electronic and mol. struct. 8–25425
3,3'-diethylthiatricarbocyanine iodide, cryst. and molecular struct. 8–26554
diketomorpholine, cyclodepsipeptide, cryst. and mol. struct. 8–2104
dimethylboric anhydride, IR and Raman spectra, vibr. and struct. 8–25531
1,8-dinitronaphthalene, orthorhombic, X-ray obs., 22 and 97°C 8–6048
N,N'-diphenyl-m-phenylenediamine, crystal and mol. struct., X-ray diffr. 8–47312
enniatin B, DLLLLL-stereoisomer, molecular and cryst. struct. 8–25745
ethanol, conformational analysis and electronic structure 8–33429
ethylene glycol, IR spectra, ab initio calcs., vibr. anal., conformations of isotopic modifications 8–5210
ethynol, struct., isomerisation, ab initio SCF MO calcs. 8–41941
fluoranil-macrocyclic polyether mol. complexes, configs., IR and NMR obs. 8–33529
formaldehyde, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8–46256
formamide, low temp. electron density distrib. 8–34502
glycyl anion radical, in α-glycine cryst., struct., ESR obs. 8–33530
1-halo-1-n-propylcyclohexanes, conform. equilib., and pot. barriers, IR spectra *(Russian)* 8–21928
histone H4 N-terminal oligopeptide struct., circular dichroism and IR spectroscopy 8–24025
hydrocarbons, mol. thermodynamics, information-theoretic aspects 8–13409
2-hydroxytropone, in β-cyclodextrin complex, UV circ. dichroism spectrum assignments, complex struct. 8–46358
idolalkylamines, conformational varieties in cryst. 8–10030
iodotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8–37766
maleic anhydride, struct., DRM microwave spectra, isotope shifts 8–21918
methanol-water, assoc. mixture, rot. barrier solvent effect, CNDO/2 calc. 8–29861
methyl anion, geometric struct., electron correlation effects, self-consistent electron pairs 8–22050
methyl chloride, ab initio SCF-MO calc., electronic and mol. struct. 8–25425
methyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8–46265
methyl radical and anion, electron affinity determ., ab initio SCF and CI calcs. 8–5149
4-methylene-cyclohexadiene-2,6-one-1, proton affinity, MINDO/3 results compared to ICR obs. 8–1103
6-methylmercaptopurine riboside, 4 MeV electron irrad., 77K radicals form., EPR obs. 8–39405
mucochloric acid-d$_0$, -d$_1$, vibr. spectra, struct. 8–46326
myoglobin , oxyhaeme complex, single cryst., visible spectrum, electronic struct., coord. geometry 8–44456
octamethylcyclotetrasilazane, gas, liq., cryst., CCl$_4$ soln. IR and Raman spectra, assignments, struct. *(French)* 8–29790
oxiranylidene, struct., isomerisation, ab initio SCF MO calcs. 8–41941
palladium bis-β-diketonates, IR and Raman spectra 8–46327
p-phenylene bis (p-substituted benzoates), cryst.-nematic transition, mol. struct. effects, DTA 8–47504
polyacenes, electronic transition bands, Franck-Condon factors, PPP SCF MO/CI calc. 8–33430
polypyridines, photoelectron spectra, SCF LCAO calcs. 8–33551
pyrazine, mol. struct. determ. from gas phase electron diffr., r$_\alpha$ struct. 8–25739
pyridine, and -d$_1$, microwave spectra, mol. struct., rot. consts. 8–25517
selenoketene, formation, microwave spectrum, struct. determ. 8–25515
selenoketene, microwave spectra, 26.5-40 GHz, mol. config., bond angle and length 8–46322
squaric acid, neutron diffr. mol. and crystal struct. determ. 8–26557
streptomycin oxime selenate tetrahydrate, antibiotic, cryst. and mol. struct. 8–24028

organic molecule configurations continued
TCNQ complex with N-methyl-Z-ethylthiazoline, cryst. and mol. struct. 8–10034
1-(2,3,4,6-tetra-0-acetyl-β-D-glucopyranosyl)-2,3-(2R)-epoxypropane, molecular and cryst. struct. 8–25746
tetraalkylammonium bromide, solid and liq., Raman spectra, longitudinal acoustic vibr. mode, mol. dimensions of ions 8–31183
tetrafluoroethylene radical anion, isotropic and anisotropic EPR spectra, conform. 8–13532
tetrakis(trifluoropropynyl)-tin, mol. struct. determ. from gas phase electron diffr. 8–25741
tetravinyltin, electron diffr. determ. of struct. 8–37763
s-tetrazine, fluoresc. excitation spectra, 1K rot. struct. 8–1020
thioformyl ion, theoretical study 8–37553
thiopen-2,5- dicarboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8–1004
thiophen-2-carboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8–1004
toluene, mol. geometry, electron diffraction obs. 8–9270
triallyl orthoformate, photoelectron spectra, ionisation pot. bands, conformation, SPINDO calc. 8–9194
trifluoromethyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8–46265
1,1,1-trimethoxyethane, mol. struct., electron diffr., vibr. spectra 8–37765
trimethyl orthoformate, photoelectron spectra, ionisation pot. bands, conformation SPINDO calc. 8–9194
trimethylene diradical, geometry optimisation by generalised Hartree-Fock 8–25427
trimethylgermylisocyanate, IR and Raman spectra, struct. 8–37637
trimethylgermylisothiocyanate, IR and Raman spectra, struct. 8–37637
tropone, proton affinity, MINDO/3 results compared to ICR obs. 8–1103
vinyl alcohol, struct. from ab initio calcs. 8–29857
CH$_2$F, far IR laser mag. reson. spectrum 8–9174
CHNO isomers, interconversion pot. energy surfaces, geometries, electronic structs. 8–35660
F compounds, ground states, mol. parameters, MINDO calcs. 8–41955
NCO$^+$, partial pot. energy surfaces, ab initio SCF CI calcs. 8–37554
B-trichloro-m-carborane, cryst. electrophilic chlorination of 9, 10-dichloro-m-carborane, cryst. and mol. struct. from X-ray diffr., cryst. struct. 8–9268

organic molecule electronic structure *see molecular electronic states*

organic semiconductor materials *see organic semiconductors*

organic semiconductors
anthracene:2-chloroanthracene, electrolum., voltage- and freq.-brightness characts., dopant conc. depend. 8–2916
anthracene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8–27764
anthracene, fission of singlet excitons into triplet-exciton pairs 8–14672
anthracene, hole mobility mechanism interpretation of cyclotron reson. results 8–10438
anthracene, O-O exciton absorption bands, thermomodulation study 8–39563
anthracene, phonon-assisted mobility due to intermol. vibrs. 8–6383
anthracene, pure and doped, singlet exciton diffusion lengths, fluoresc. quenching by dye 8–43923
anthracene, TSC meas. induced by Q-switched ruby laser 8–19087
anthracene crystal, singlet-triplet exciton annihilation 8–31240
anthracene crystal, triplet exciton absorpt., high resolution photoconductivity spectroscopy 8–10504
anthracene crystals, carrier trapping in deformed surface region 8–47806
anthroquinone, temp. depend. and anisotropy of electron drift mobilities 8–19089
cetyl alcohol with dipoles, switching and negative resist. phenomenon, quantitative model 8–14769
cholesterol film with dipoles, switching and negative resist. phenomenon, quantitative model 8–14769
chrysene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8–27764
conference on organic conductors and semiconductors, Siofok, Hungary (Sept. 1976) 8–6284
α-9,10-dichloroanthracene, crystal, hole mobility temp. depend. 8–26858
1,1'-diethyl-2,2'-quinocyanine-[TCNQ]$_2$ anion radical salt single crystals, photovoltaic effect *(Japanese)* 8–2522
p-diiodobenzene, phase transition obs. using interferometry 8–34616
N,N'-diphenyl-p-phenylenediamine, current carrier traps, space-charge-limited currents 8–47799
dyes, cond. type, I-V characts. 8–6391
electrical conduction and polarisation phenomena at low fields 8–48113
hexamethyltriaminotriphenylcarbenium chloride, cryst. violet, photoconductive characts. 8–39163
isostructural heterojunctions of organic materials 8–39194
Lexan:triphenylamine, molecularly doped, hole transport by hopping 8–34831
Lexan:triphenylamine, photosensitisation using rhodamine B or thiapyrylium 8–34856
molecular crystals, electronic props. *(German)* 8–23089
naphthalene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8–27764
naphthalene, electron band hopping transition 8–39155
organometallic semiconductors, activation energy of elec. cond. rel. to press. 8–24811
pentacene, evaporated film elec. cond. meas. for various temps., SCL 8–10584
perylene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8–27764
phenanthrene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8–27764
phthalocyanine, molecular crystals, electronic props. *(German)* 8–23089
poly-N-vinyl carbazole, and Br-substituted derivative, transient hole hopping transport, 150-500K 8–39108
polyacrylonitrile, pyrolyzed, surface layer, anal. of elec. cond. mechanism by impedance diagram *(Japanese)* 8–23148

- **organic semiconductors** continued
  - polycarbonate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8–34857
  - polydiacetylene-bis(toluenesulphonate), transient photocond. meas. 8–30951
  - polydiacetylenes, band struct., ab initio cryst. orbital method, and transport props. calc. 8–26811
  - polyene, mol. cryst., elec. cond. *(German)* 8–23089
  - polyethylene naphthalate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8–34857
  - polyethylene terephthalate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8–34857
  - polyparaxylyrene, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8–34857
  - polystyrene, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8–34857
  - pyrene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8–27764
  - TCNQ salt, $Cs_2(TCNQ)_3$, elec. cond. and elastic const., mol. bending *(Korean)* 8–23090
  - TCNQ salts, complex, with aromatic donors, interchain coupling and disorder 8–6314
  - TCNQ salts, complex, with symmetric and asymmetric donors, transport and mag. props. 8–6315
  - p-terphenyl, carrier generation and transport, temp. depend. around phase transition at 180K 8–47783
  - vibrational IR excitons, spectra *(Russian)* 8–15173
- **organometallic compounds**
  - aminoarsines, NQR freq. of ^{14}N, ^{75}As, ^{35}Cl, N-As bonds 8–25566
  - aminoboranes, NQR freq. of ^{14}N, ^{75}As, ^{35}Cl, N-B bonds 8–25566
  - beryllocene, gas phase struct., ab initio LCAO SCF calc. 8–41942
  - bis(trimethylstannyl)-acetylene, mol. struct. determ. from gas phase electron diffr. 8–25740
  - chromocene, heat capacity meas., phase transitions 8–38853
  - chromocene, mag. props., complete ligand field theory 8–31048
  - chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8–43861
  - cobaltocene, mag. props., complete ligand field theory 8–31048
  - dibenzene chromium, heat capacity meas., phase transitions 8–38853
  - diethyl aluminium hydride, Al coating produced by thermal decomp. of alkyls on steel 8–15590
  - diisobutyl aluminium, Al coating produced by thermal decomp. of alkyls on steel 8–15590
  - dimethyl cadmium, core level ligand field splitting, PES, model for covalent mols. 8–37681
  - dimethyl zinc, core level ligand field splitting, PES, model for covalent mols. 8–37681
  - dimethylmercury, mol. force field, generalised inverse method for calc. 8–25505
  - diphenylmercury, mol. photoionisation, up to 13.5 eV, formation of $HgPh^+$ 8–25633
  - ferrocene, electronic struct., excited states, semiempirical PEEL MO calcs. 8–33431
  - ferrocene derivatives in smectic B phase liquid cryst. BBOA, ^{57}Fe Mossbauer study 8–27136
  - methyl derivatives, simple, organometallic, spin-spin coupling between metal nucleus and protons 8–37656
  - bis cantena pol methylarsenide, energy gap depend. on As electron delocalization *(German)* 8–43296
  - sodium tetraphenylborate solns., stationary electrochemiluminesc. *(Russian)* 8–48243
  - tetrakis(trifluoropropynyl)-tin, mol. struct. determ. from gas phase electron diffr. 8–25741
  - tetramethyl silicon+Na, rainbow scatt. at thermal energy, anisotropic pot. 8–29837
  - tetramethyl tin, rainbow scatt. at thermal energy, anisotropic pot. 8–29837
  - tetravinyltin, electron diffr. determ. of struct. 8–37763
  - tin tetrahedral molecular solids, ^{119}Sn Mossbauer and Raman spectra 8–15070
  - tributyltin sulphate, cryst. struct. 8–18632
  - triethyl aluminium, Al coating produced by thermal decomp. of alkyls on steel 8–15590
  - triisobutyl aluminium, Al coating produced by thermal decomp. of alkyls on steel 8–15590
  - trimethylantimony(V) dihalides, normal coord. anal., comparison of force fields 8–968
  - trimethylgermylisocyanate, IR and Raman spectra, struct. 8–37637
  - trimethylgermylisothiocyanate, IR and Raman spectra, struct. 8–37637
  - triphenylstannyl radical, EPR in single cryst. matrix, ^{119}Sn hyperfine coupling tensors 8–23346
  - $(C_2H_5)_2Fe^+$ complexes, vibrational electronic (Franck-Condon) Raman transitions 8–42070
  - CH_3MCl_3, (M=Ge, Si, Sn), polycryst., proton spin-lattice relax. times meas. 8–39430
  - $Mn-C_2H_2$ and $Mn-C_2H_4$, π-bonded, pot. energy curves, SCF calc. 8–5136
- **organs (artificial body)** *see artificial organs*
- **origin of elements** *see element origin*
- **origin of life** *see evolution (biological)*
- **orthicons** *see television camera tubes*
- **orthogonalised plane wave calculations** *see OPW calculations*
- **orthosis** *see orthotics*
- **orthotics**
  - arm, thumb driving mechanism, arm orthotics finger tip mechanisms CO_2 powered *(Japanese)* 8–28126
  - assisted circulation apparatus cardiosynchronisation method, problems 8–7534
  - Baylor left ventricular bypass pump, recent experience 8–44718
  - bifocal lens designs, marginal aberrations 8–48927
  - blood circulation assist devices, antithrombotic polymeric materials 8–36052
  - blood pump, pulsatile, stabilisation of unsteady ball valve motion 8–44708
  - blood pump for completely implantable circulatory assist systems 8–44723
  - blood pump human fitting studies using computerised axial tomography scanning 8–40432
- **orthotics** continued
  - blood pump pressure servovalve control, moving coil system *(German)* 8–24182
  - cardiac assist device pumping, effect on mech. props. of vascular walls 8–40429
  - cardiac assist devices, selection of prosthetic valves 8–44730
  - cardiac in-series assistance using balloon pump, effects on left ventricular afterload/aortic power dissipation 8–3669
  - centrifugal blood pump for cardiac support 8–44709
  - communication device for mute paralytic 8–40420
  - contact lens, circular, tear film dynamics and O_2 tension 8–48929
  - contact lens, hard gas-permeable type, O_2 tension underneath 8–3473
  - contact lens, math. model for dioptric effects of eye optical parameter changes 8–3477
  - contact lens, simple photokeratoscope for corneal curvature meas. 8–3624
  - contact lens, soft, in-office meas. 8–7339
  - contact lens performance evaluation by border contrast enhancement 8–3492
  - contact lens rotation on toric corneas, nonprism and prism-ballast hydrogel lenses 8–3474
  - contact lenses, effect of peripheral fenestration on corneal oedema 8–3470
  - contact lenses, rigid and flexible, myope accommodation 8–48787
  - counterpulsation assist pumping, optimum performance determ. under computer control 8–24181
  - dental crown restoration fixation, dynamic shear testing 8–36068
  - electrical stimulation of organs and tissues in clinical medicine 8–35977
  - electrophrenic respirator, implantable, Hg battery powered, design, features *(Japanese)* 8–3675
  - electrostimulator for leg muscles to correct defective walking 8–36051
  - gait control, peroneal nerve stimulation sequence effect *(Croatian)* 8–44692
  - hand opening by proportionally controlled electrical stimulator *(Croatian)* 8–44693
  - handicapped persons technical aids, R&D in Sweden *(Japanese)* 8–48934
  - hemiplegic upper extremities, feedback elec. stimulation trainer 8–44683
  - implanted diode stimulation, long-term viability 8–44716
  - in-series cardiac assist devices, expt. and theoretic observations 8–36063
  - intra-aortic balloon pump control, real-time microcomputer ECG recognition system 8–36067
  - intra-aortic balloon pumping efficacy evaluated by nonlinear cardiovascular system model 8–44732
  - intra-aortic balloon timing, microprocessor control 8–44725
  - intracorporeal long-term blood pumps, design criteria and physiologic performance criteria 8–40430
  - knee locking, sensor-controlled external system, exptl. study 8–40406
  - left ventricular assist device, diaphragm-type, factors affecting pumping dynamics 8–44706
  - left ventricular assist device, implantable piezoelec. drive invertor improvement 8–15927
  - left ventricular assist device, intrathoracic, with biolised blood-contacting surfaces 8–7540
  - left ventricular assist device, mech. anal. of human neointimas developing on flocked surface 8–40431
  - left ventricular assist device long-term expts., maintenance of efficient pump performance 8–44722
  - left ventricular assist mech. pump effectiveness in acute myocardial failure model 8–44719
  - left ventricular bypass performance, influence of power waveform 8–40433
  - lower extremities, adaptive control principle 8–48932
  - lung ventilator, development, engineering appraisal 8–3673
  - material characterisation by mech. impedance method 8–36066
  - ophthalmic lens distortion display 8–7338
  - orthodontic appliance mechanical behaviour determ., computer-controlled device 8–44727
  - orthodontic appliance uniplanar force meas. system 8–31970
  - orthotic-prosthetic and manipulator system uses of microprocessors *(Croatian)* 8–44694
  - parameter assessment based on telemetric heart rate monitoring, paediatric patient appl. 8–31974
  - perfusion and intraaortic balloon pumping system, Biopul's-3 8–7536
  - physically handicapped persons' apparatus, recent status of R&D *(Japanese)* 8–44703
  - physically handicapped persons' apparatus standardisation *(Japanese)* 8–44699
  - pulsatile blood pump, vortex diode used as outflow valve 8–44724
  - respiration electrical stimulation, appls. and equipment 8–36054
  - roller pump for pulsatile blood flow 8–44721
  - roller pumps, automatic safety shutdown 8–44720
  - scoliosis correction, by lateral surface elec. stimulation of muscles 8–44717
  - sensory feedback, recommended electrocutaneous codes 8–44715
  - spectacle lens design, computation of unwanted sphere and cylinder in periphery 8–48928
  - standardisation of technical terms *(Japanese)* 8–44700
  - stimulator encapsulation for implantation, biomaterials 8–40416
  - tibial shaft internal fixation, biomech. study 8–20313
  - transapical left ventricular bypass, prolonged use in sheep and man 8–40435
  - urinary incontinence device for surgical implant 8–40419
  - ventilator-patient coupling, effects of positive press. ventilation on cardiac output and pulmonary arterial flow 8–31852
  - ventricle type blood pump, blood damage 8–44707
  - vision correction lens, hyperopic eye functional visual acuity at intermediate range 8–48791
  - vision sharpness improvement, optical devices and apparatus *(Hungarian)* 8–15823
  - visual angle increase, optical devices, geometrical and physiological optics *(Hungarian)* 8–20312
  - walking appliances for paraplegics, misuse of technology 8–41132

oscillations
- *see also circuit oscillations; electromagnetic oscillations; harmonic oscillators; harmonics; liquid oscillations; mechanical oscillations; piezoelectric oscillations; plasma oscillations; resonance; stability; vibrations*
- biochemical model, spatial differentiation 8−44476
- boundary layer, transitional, oscills., stability waves, vortices 8−38287
- chemical reactions in closed illuminated system, oscills., runaway states 8−7188
- elastic half space, torsional oscillations due to rigid annular disc 8−28958
- excitable medium, auto-oscillatory, 1-dimens., stability complex regimes 8−15752
- gas, reson. oscills. in channel, local heat transfer coeffs. 8−1659
- gas column, onset of oscillation due to heat conduction field 8−14027
- gas column, onset of oscillations due to heat conduction, limiting condition 8−14028
- incompressible viscous oscill. flow past porous sucking vertical plate, convection 8−30283
- nonlinear diffusion processes, slowly modulated oscillations 8−16758
- viscous fluid oscill. decrements in complex pipelines 8−5801

oscillator strengths
- alkali isoelectronic series, transition probabilities, oscill. strengths, lifetimes, branching ratios 8−33470
- alkali-inert gas system, mol. band profiles of induced dipole transitions 8−42135
- atom, ns-electron ionis. transitions 8−5173
- atomic oscill. strength, gauge props. of HF and RPA approx. 8−950
- atoms, theory and calc., review 8−17616
- benzene, electron impact-induced generalised oscill. strength, 400 eV, 500 eV, momentum change depend. 8−1088
- benzene-acetone donor-acceptor pair, energy transfer cross sections rel. to generalised oscill. strengths 8−46452
- butadiene, oscillator and rotatory strengths, RPA in ab initio calc. 8−25617
- diatomic isovalent sequence, free-mol. electronic transition intensity consts., systematics 8−42137
- ethylene, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
- ethylene, excited states, continuum embedded, SCF-stabilisation approach 8−928
- exciton resonances, interacting, dielec. theory 8−14673
- formaldehyde, electronic states, oscill. strengths calcs. 8−9095
- ions, two vacancies in K shell, 2 electron 1 photon, and hypersatellite transition probabilities 8−46294
- methane, ZZ 8−46418
- molecules, transition probability studies, review of recent advances 8−17655
- porphin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- porphyrin a, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- protoporphyrin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- Raman effect in solids, interacting elementary excitations, review 8−43846
- Rydberg INDO method, mol. Rydberg S←S and T←S transitions and oscill. strengths 8−17572
- solar and stellar element abundance, atomic and mol. f-values 8−20792
- solids, liquids and mols., optical oscill. strengths and excitation energy 8−6648
- transfer of oscillator strength in regions of avoided crossings, two state approx. 8−25484
- two-electron systems, RPA eigenvalue eqns., excitation frequencies and oscillator strengths 8−17570
- Al transitions, Stark broadening and oscillator strengths 8−29761
- Al XII, He-like ion, oscillator strengths of transitions between low-lying S and P states 8−13470
- Ar, and isoelectronic sequence, E1 transitions, relativistic oscill. strengths 8−949
- Ar line broadening by at. collisions, meas. of oscillator strength of ArI lines reson. *(French)* 8−5172
- Be isoelectronic sequence, mag. quadrupole transitions probabilities 8−37592
- Br, fluoresc. in Ar^*+Br_2 lamp 8−46466
- CO, electronic states, oscill. strengths calcs. 8−9095
- Ca, valence shell states, calc. 8−17611
- $Cd(Ca)F_2:Co^{2+}$, Jahn-Teller split $^4A_{2g}\rightarrow 4T_{1g}(P)$ absorption band, elec. field effect 8−15202
- Cl, kinetic spectroscopy in far vacuum UV, oscillator strengths of transitions 8−13457
- ClO, vibr.-rot. bands, intensity parameters 8−17722
- Co I, excited levels lifetimes and absolute oscillator strengths 8−5178
- Cu, resonance lines, relative oscill. strengths, absorpt. spectra 8−42005
- CuCl, induced absorption due to exciton-biexciton transitions 8−15187
- F, kinetic spectroscopy in far vacuum UV, oscillator strengths of transitions 8−13457
- Fe XII and XIII, energy levels and oscillator strengths for XUV transitions 8−46277
- Fe XXV, He-like ion, oscillator strengths of transitions between low-lying S and P states 8−13470
- Fe-group, atoms and singly ionised, f-value meas., review 8−17617
- Gd^{3+} in solution, absorpt. spectrum intensity *(Russian)* 8−35169
- H^-, $^1P_0$-reson., DC Stark effect calcs. 8−42000
- H_2, dipole oscill. strength distribs., sums 8−21975
- H_{22} quadrupole vibration-rotation transition probabilities 8−25512
- H_3^+, struct. props., in mag. fields, var. calcs. 8−21843
- HCN, electronic states, oscill. strengths calcs. 8−9095
- H_2O, dipole oscill. strength distribs., sums 8−21975
- H_2O, dipole oscillator strengths, 10-60 eV, for photoabsorpt., photoionis. and fragmentation 8−42133
- H_2O, electronic states, oscill. strengths calcs. 8−9095
- H_2O_2, electronic states, optical rot. dispersion, oscill. strength calcs. 8−9095
- He, photoabsorption, modified RPA calcs. with exchange 8−13477
- He, RPA eigenvalue eqns., excitation frequencies and oscillator strengths 8−17570
- He-like ions, oscillator strengths of transitions between low-lying S and P states 8−13470

oscillator strengths continued
- Li atoms, photoexcitation and ionisation cross sections, Stieltjes-Tchebycheff procedure 8−17633
- Li, dipole oscill. strength sums, dipole-dipole and dipole-quadrupole van der Waals consts. 8−9127
- Li, dipole oscill. strength distribs., sums 8−21975
- Mg, intercombination line oscill. strength, including core-polaris. and relativistic effects 8−25475
- Mg isoelectronic sequence, mag. quadrupole transitions probabilities 8−37592
- Mg, isoelectronic series, oscill. strengths and excitation energy, RRPA calcs. 8−13471
- Mg, valence shell states, calc. 8−17611
- Mg XI, He-like ion, oscillator strengths of transitions between low-lying S and P states 8−13470
- Mn^+, oscillator strengths, from level lifetimes and branching ratios 8−17619
- Mo I, relative oscill. strengths in dissoc. $MoCl_5$ pulsed discharge 8−25479
- Mo^{13+}, energy levels for transition probabilities, oscillator strengths, rad. lifetimes 8−17589
- Mo^{30+}, VUV reson. lines, transition probabilities calcs. 8−41989
- N, dipole oscill. strength distribs., sums 8−21975
- N, oscillator strength calc. for $^4S^0$ to ^4P sequences 8−25485
- N_2, dipole oscill. strength distribs., sums 8−21975
- N_2, electron impact excitation, 12.5-14.2 eV energy-loss region 8−17811
- NH_3, dipole oscill. strength distribs., sums 8−21975
- NH_3, photoionisation branching ratios and partial oscill. strengths 8−5303
- NO, dipole oscill. strength distribs., sums 8−21975
- N_2O, dipole oscill. strength distribs., sums 8−21975
- Na, high resolution inelastic electron scatt. at zero angle, oscillator strengths 8−9255
- Na isoelectronic sequence, electron impact excitation, transition probabilities, oscill. and collision strengths 8−25718
- Na isoelectronic sequence, theoretical f-values 8−37593
- Ni II, near UV lines, wall-stabilized arc meas. 8−42003
- Ni XXVII, He-like ion, oscillator strengths of transitions between low-lying S and P states 8−13470
- O, dipole oscill. strength distribs., sums 8−21975
- O, dipole transition oscill. strengths, photoionis. cross section 8−9120
- O I, oscillator strengths interstellar O abundance 8−16498
- O_2, dipole oscill. strength distribs., sums 8−21975
- S XV, He-like ion, oscillator strengths of transitions between low-lying S and P states 8−13470
- Si, mass-anisotropy exciton splitting determ. 8−6685
- Te I, UV line rel. oscill. strengths and unexcited atom conc., AAS meas. *(Russian)* 8−31749
- Ti I, hook and emission meas. 8−42002
- Ti I, solar lines oscillator strengths and Sun Ti abundance 8−45306
- Ti, reson. lines relative oscill. strengths, hook technique using wall-stabilised arc 8−13628
- TiO, ($C^3\Delta$-$X^3\Delta$) system, radiative lifetimes, oscillator strengths, flame spectroscopy 8−42136
- VO_2, semicond. phase, optical spectrum, CNDO CI calc. 8−27258
- W radiation from Tokamak-produced plasmas 8−9835
- Xe, intershell correlation, double electron ejection from outer shell 8−42019
- Zn isoelectronic sequence, RRPA calcs. of oscillator strengths in resonance transitions 8−17612

oscillators
- *see also Gunn oscillators; microwave oscillators; parametric oscillators; relaxation oscillators; tunnel diode oscillators; variable-frequency oscillators*
- 440 Hz standard A tone generator 8−46863
- fibre optic relay with metallic pads heated by light 8−18038
- Fitch oscillator operation in nanosec. electron accelerator 8−828
- interdigital transducer and 1.1 GHz SAW oscillator, photolithographic contact printing *(Japanese)* 8−33981
- ion cyclotron resonance marginal oscill. detector, rot. elec. monopole theory 8−41371
- ion cyclotron resonance spectroscopy, sensitivity calibration of marginal oscillators 8−21177
- low frequency, 0.25-2.5 Hz generation, for student lab. demonstrations 8−24624
- nonferromagnetic film sheet resistance meas., eddy-current method 8−45658
- nonlinear oscillator eqn., Poincare-Lindstedt solns. 8−30
- with nonlinear restoring forces, first passage failure probability calc. 8−42562
- segmented bidirectional amplifier SAW oscillator 8−1528
- valve oscillator, VHF, construction and transmissions line expts., for teachers 8−28894
- Wien-Robinson, digital temp. meter appl. *(German)* 8−29110

oscillograms *see oscillographs*

oscillograph recorders *see oscillographs*

oscillographs
- *see also cathode-ray oscilloscopes*
- loop freq. response meas. using stroboscopic methods *(Polish)* 8−29102
- random process, distribution functions meas. 8−4607
- solid state oscilloscope using 10 LED bars 8−21113
- tensile test diagram remote recording device 8−7139

oscilloscopes, cathode-ray *see cathode-ray oscilloscopes*

Oseen method *see flow*

osmium
- *see also nuclei with ......*
- correlation effect of crystal pot., RAPW calcs. 8−6265
- EPR, quadrupole interaction 8−48027
- HCP, elec. field gradient 8−14698
- metallography 8−3289

osmium alloys
- *see also osmium compounds*
- η-$Pu_{19}Os$, cryst. struct. 8−42954

osmium compounds
- *see also osmium alloys*
- K_2OsCl_6, displacive phase transition, thermal expansion meas. 8−10188

osmium compounds continued
  $OsBr_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
  $Os(CO)_5$, chem. thermodynamics 8−18799
  OsO_4, CO_2 laser freq. stabilisation appl., expt. *(Russian)* 8−33747
  OsO_4, isotope separation by dissociation in two-freq. IR laser field 8−25638

osmosis
  see also membranes
  charged membrane osmotic transport, generalised flux eqns. 8−24050
  chloroplast membrane proton gradient and osmotic vol. determ. 8−28143
  colloidal capillary-porous body, mass transfer parameters, adsorpt., osmotic moisture 8−11563
  corneal hydration endothelial control theory 8−35841
  electro-osmotic enhancement of the neutral tracer transfer through a capillary membrane 8−3371
  electroosmotic flux eqn., nonlinear, second-order phenomenological coeff. 8−31687
  electroosmotic pump for regulated release of medicaments *(German)* 8−7518
  epoxy resin, destruction by diffused water 8−48511
  erythrocytes, frozen human cells, conc. polarisation effect 8−3460
  ethylene-vinylacetate-copolymers charact. by gel chromatography, viscometry, osmotic meas. *(German)* 8−14496
  gallbladder epithelial cells, compartmental anal. of osmotically induced permeability changes 8−3455
  glass fibre reinforced epoxy resin, destruction by diffused water 8−48511
  glass fibre reinforced epoxy resin, destruction by freezing or boiling of phase separated water 8−48512
  intestinal epithelium, effect of Ca ions and pH on osmotic pot. 8−20156
  latex, monodisperse, Kirkwood-Alder transition press. meas. 8−7239
  oil-water microemulsions, osmotic press., micelle diameters, second virial coeff. *(French)* 8−20075
  plant protoplast membrane, osmotically induced changes in elec. props. 8−27910
  polystyrene sulphonic acid, charged membrane, electroosmosis and streaming potential *(Japanese)* 8−31696
  polystyrene-diethyl malonate system, osmotic compressibility and correlation range near crit. point 8−6694
  Portland cement, a model describing the hydration process 8−23654
  transcapillary water movement resulting from non-oncotic osmotic forces 8−44548
  4-vinylpyridine acrylonitrile copolymer membrane, reverse osmosis charact. *(Japanese)* 8−31694
  ^3He-^4He mixtures, osmotic response function near tricrit. point, meas. method 8−2331

osmotic pressure *see osmosis*

otology *see ear*

ovens
  see also electric heating
  atomic beam source, low-consumption, with recycling oven 8−5376
  induction heated, for laser induced fluorescence spectroscopy of U 8−21230
  laser-heated miniature oven, for prop. of matrix isolation samples for Raman studies 8−45737
  zonal refinement, description of oven for material's with MP<700°C *(Spanish)* 8−44009

overcurrent protection
  diadynamic current therapy apparatus Tonus-1 8−7523
  electro-medical measuring equipment, leakage current protective measures *(German)* 8−3629

Overhauser effect
  see also nuclear Overhauser effect
  CIDNP, triplet Overhauser mechanism 8−13531

overvoltage
  anodic oxidation, open-cct. transient method for overpotential anal. 8−27776
  electrode processes possessing charge transfer mechanism, overvoltage theory, in book, for teachers 8−8204
  electrode systems, nonequilib. polaris. states props. overvoltage theory, in book, for teachers 8−8205
  Ta, anodic oxidation, open-cct. transient method for overpotential anal. 8−27776

oxidation
  see also anodisation; combustion; corrosion; reduction (chemical)
  AES, in-situ obs. using galvanic cells 8−19615
  alcohols, electrochem. oxidation, kinetic isotope effect *(German)* 8−15681
  aliphatic short chain compounds, oxidation and degradation by hyperazeotropic nitric acid 8−37431
  alkali silicate glasses, internal friction, influence of red/ox ratio of multivalent ions 8−31447
  alloys, ZZ 8−14600
  alloys for solar thermal power system 8−18071
  anisothermal, model for kinetics 8−44375
  anodic, of Mn in solns. of Mn salts *(French)* 8−11520
  anthracene, spectral evidence for green incipient dimers after photooxidation and photodimerisation 8−15687
  atmosphere S, homogeneous oxidation chemistry 8−49119
  brass, cold-worked, anal. by X-ray photoelectron spectroscopy 8−11423
  brass coated steel wire, surface composition, oxidation, sulphidation, study by XPS 8−11423
  n-butane-CO_2 mixture, oxidation under RF discharge conditions 8−15670
  C W, staged flow of O_2 interaction process, secondary ion emission obs. 8−11386
  catalyst, polycryst., ZZ 8−14600
  chlorophyll, photooxidation, triplet state mechanism 8−27791
  chloroplasts, EPR signal in response to illum. sequence of four flashes 8−7325
  cytochrome c oxidase, oxidised and reduced, X-ray absorpt., edges, using synchrotron radiation 8−48758
  diamond, powders, oxidised surfaces, thermal desorpt. spectra 8−47661

oxidation continued
  dielectric films on semiconductor devices, review of deposition techniques 8−23611
  1,3-diphenylisobenzofuran, rubrene sensitised photooxidation, efficiency meas. 8−27792
  dynamic, in power units in hot industrial gas stream 8−35567
  electroreflection exam., short range order in surface layers 8−6703
  ethylbenzene, oxidation, complex network calcs. 8−11497
  Fe base alloy, with metallic coating, oxidation effects, wetting, adherence 8−7085
  fuel rod microstruct. changes associated with post-DNB operation during power-cooling-mismatch 8−21688
  glass, ageing use, photothermal processing, sorptive and luminescence props. *(Polish)* 8−11250
  glass, Libyan Desert Glass, redox form. conditions, EPR obs. of as-received and irrad. samples 8−28228
  graphite, trifluoromethanesulphonate intercalate, prep. by anodic oxidation 8−27439
  graphite intercalation compounds, magnetic resonance determ. of oxidation state 8−35051
  Hastelloy B-2, decomposition of metal oxide films under electron bombardment 8−19928
  heat exchanger materials, oxide protective layer formation meas. by hydrogen permeation 8−8895
  HTGR, structural materials, effect of coolant impurities on mech. props. *(German)* 8−25297
  III-V semiconductors, oxide film growth, optical props. *(German)* 8−34730
  Inconel 750, volatilisation of oxides during oxidation at 1200°C 8−23873
  inositol, X-irrad., radical form. detection by ESR and ENDOR, oxidation process 8−27797
  insulating film for semicond. devices, props., rel. to deposition conditions 8−23612
  isopropanol, anodic oxidation *(Rumanian)* 8−19907
  isopropylbenzene, IR spectra of oxidation products *(Rumanian)* 8−23838
  laser treatment of material influence of oxidising atmosphere *(Russian)* 8−23840
  lodestones, oxidation rel. to microstruct. and mag. props. 8−16004
  metal surface oxidation, refl. spectra obs. 8−39958
  metal with dispersed oxide phase, charged particle theory 8−19925
  metallic coatings, sputtering in inert atm. with uncooled cathode, X-ray diffr. obs. 8−3041
  metals, in hostile environments, oxidation, in situ meas. method 8−44277
  methane, oxidation, complex network calcs. 8−11497
  methane, shock-tube oxidation, equilibrium and nonequilibrium radiation emission 8−27760
  methane-CO_2 mixture, oxidation under RF discharge conditions 8−15670
  MOS structures, Na^+ neutralisation characteristics of HCl oxides 8−10572
  NAD.H, oxidative phosphorylation, role of respiratory chain 8−15795
  Nichrome, volatilisation of oxides during oxidation at 1200°C 8−23873
  Nimonic PE16, oxidation in Ar-H_2O-H_2 atmosphere 8−35584
  oxide thickness measurements up to 120 Å on silicon and aluminium using the chemically shifted Auger spectra 8−23586
  Permalloy film, oxidation, quartz cryst. microbalance, AES and XPS obs. 8−27676
  Permalloy film oxidation, microbalance, AES, ESCA and sputter profiling 8−15600
  picrate anion active transport through organic liq. membrane 8−11556
  polyethylene, cross linking by energy rich radiation, mech. and elec. props. *(German)* 8−20035
  polyethylene, high density corona charged, TSC, oxidation effect 8−26882
  polyethylene, oxidised and gamma-irradiated, carrier traps, thermally stimulated currents 8−19050
  polyethylene, thermally oxidised, low-temp. dielec. relax., dipolar tunnel states 8−2797
  polyethylene single cryst., FT IR spectra, CH_2 rocking mode 8−2843
  polymer, ESCA investigation of struct., reactivity and bonding, O_2 (inert gas) surface modification 8−3438
  Rene 41, volatilisation of oxides during oxidation at 1200°C 8−23873
  retinal, highly polar excited electronic states, electron transfer 8−48757
  rhodamine 6G in ethanol, photobleaching mechanism *(Russian)* 8−48680
  rhodamine B, adsorption on ZnO single crystal, photooxidation, electrochem. meas. 8−31645
  secondary ion yield calculations for oxidised metal surfaces, empirical formula 8−6821
  silane, prod. of SiO_2 films 8−3038
  sintered frictional material, environmental effects on props. 8−11338
  soft magnetic mat. prep. by precip. of insulating film on Fe powder in polishing bath 8−23637
  steel, AGR boilers, gas side corrosion, breakaway oxidisation treatment 8−48558
  steel, C, wear charact. of worn surface layer under lubrication *(Japanese)* 8−35526
  steel, Cr (9 wt.%), oxidation in CO_2, early stages study by AES 8−7080
  steel, Fe-Cr-Al, sulphidation behaviour, 750°C, preoxidation effect *(French)* 8−15566
  steel, heat-exchanger alloys for use in nuclear steam coal gasification plant 8−15589
  steel, medium C, 45, deposition of composite, wear resistant Ni-B-Cr coating 8−11420
  steel, oxidation-reduction processes on surface during heating in vacuum *(Russian)* 8−11403
  steel, oxide inclusions 8−23648
  steel, stainless, deoxidation in melting with Si *(Korean)* 8−19947
  steel, stainless, ferritic, Fecralloy, with and without Y, oxidation in Ar-H_2O-H_2 atmosphere 8−35584
  steel, stainless, Nb, oxidation in Ar-H_2O-H_2 atmosphere 8−35584
  steel, stainless, oxidation in melting *(Korean)* 8−19946
  Stellite 6B, volatilisation of oxides during oxidation at 1200°C 8−23873
  succinamic acid, X-irrad., primitive radn. damage, ESR, ENDOR 8−3352

oxidation continued
- surface processes investigated by alpha-particle effect on electron work function 8–2547
- thiol, influence on mitochondria and submitochondrial particle phosphate transport 8–27913
- troposphere, nonurban, oxidation of NH_3, H_2S and methane 8–32183
- water, photooxidation at α-Fe_2O_3:TiO_2 electrodes 8–15684
- Zircaloy, hydriding reaction kinetics, oxidised specimens 8–26728
- Zircaloy 2 and 4, oxidation kinetics appl. to loss of coolant accidents, data review 8–19958
- Zircaloy-4, accelerated corrosion in high temp., high press. steam, effect of heat treatment 8–44263
- AgBr, photographic emulsions, sensitivity, fog rel. to treatment in redox-buffered solns. 8–32906
- Al (111) surface, ordered O overlayer associated with chemisorption state 8–47665
- Al alloy, anodic oxidation, direct coloured oxide layer *(Rumanian)* 8–23852
- Al coating, plasma sprayed on steel substrate, microstructural investigation and oxidation effects 8–11426
- Al, film, initial oxidation, AES, work function and gravimetric meas. 8–7087
- Al film, initial oxidation, electron energy loss spectra 8–7088
- Al, IR refl. obs. of oxide film 8–35591
- Al, initial oxidation exam. by inter-atomic Auger yield spectroscopy 8–11419
- Al oxidative vaporisation, thermochemical analysis 8–11447
- Al, oxide covered, tensile deform. in high vac., particle and photon emission 8–39672
- Al surface hydrous, oxide film formation 8–15602
- Al-Mg alloy, growth of AMgO film with high secondary electron emission 8–35590
- Al-Sn, Sn effect on electrochemical behaviour in acetate buffer 8–19927
- (AlGa)As DH laser degradation due to facet oxidation 8–42336
- Al_2O_3, porous, anodic, growth, physical model 8–48662
- Al_2O_3, porous, anodic, growth, ionic cond. 8–48663
- BN fibres, prep., struct., thermal, mech. and elec. props., appls., book contrib. 8–48360
- $BaFe^{2+}{}_2Fe^{3+}{}_{16}O_{27}$, metal deficient, hexagonal with W struct., chemical instability 8–27662
- C, colloidal layers, sputtering, chem. etching in DC glow discharge 8–27667
- C fibre, thermal treatment temp. effect on struct. and props. 8–23743
- C fibres, oxidation, surface props. *(French)* 8–44238
- C fibres, oxidation by NO_2, struct., props. modification 8–44237
- C fibres, PAN-based, surface characts., active surface area, microporosity 8–35536
- C oxidation in flow conditions at 1000 to 6000K 8–11445
- CO, catalytic oxidation on Pt, CO_2 product vel. and ang. distribs. 8–20065
- CO, catalytic oxidation reaction over Pd(111) surface, mechanism 8–40079
- CO on Pt, surface struct. effects on rate, data assessment 8–43251
- CO oxidation by NO on Ir surface XPS and UPS 8–15702
- Ca, low temp. oxidation by water vapour 8–3256
- CdS+NaCl, roasting processes rel. to flux growth of phosphors 8–23590
- Ce^{3+}, oxidation kinetics in X zeolite on O_2 adsorpt. 8–3373
- CeB_6, thermionic emission rel. to surface state 8–39654
- $CeNbO_{4+x}$, oxidation-reduction reactions 8–39930
- Ce_3NbO_x, $CeNbO_x$ and $CeNb_3O_x$, redox processes, elec. resist., phase anal., mag. suscept., thermogravimetric meas. 8–34482
- $CeTaO_{4+x}$, oxidation-reduction reactions, phase equilibrium, thermogravimetry and magnetic susceptibility meas. 8–39930
- Co, oxidation at high temp. 8–23877
- Co, reaction, in Ar-SO_2 atmosphere, 500 to 900°C 8–39953
- Co-Cr, containing dispersion oxides formed by internal oxidation, oxidation behaviour 8–19922
- Co-Cr-Al-Y coating, Pt-modified, oxidation and hot corrosion resist. 8–11437
- Co-Cr-Al-Y(Hf), high temp. oxidation 8–11432
- Co-Cr-Si alloy hot corrosion and oxidation expts. for ionic conducting scale 8–11446
- CoCrAl-Hf, Hf effect on oxidation 8–44275
- CoO, high temperature physico-chemical interactions with oxygen under pressure *(French)* 8–31549
- Cr (111) face LEED and RHEED meas. *(French)* 8–39955
- Cr alloys, ESCA meas. of oxide layer 8–15584
- Cr, combined AES and threshold potential spectroscopy 8–11026
- Cr, corrosion by O_2 containing H_2O and gaseous NaCl, volatile products 8–27674
- Cr, oxidation, in hostile environment, in situ meas. method 8–44277
- Cr oxidative vaporisation, thermochemical analysis 8–11447
- Cr-AlN, dispersion strengthened, hardness and oxidation rate, 1000 to 1500°C *(Russian)* 8–15574
- Cr-Y_2O_3 dispersion hardened, oxidation and nitridation resistance, embrittlement 8–44267
- Cu (111), misfit dislocations between Cu_2O and substrate, TEM obs. 8–14629
- Cu^+, in LiCl-KCl fused eutectic, diffusion and surface effects, chronopotentiometry *(French)* 8–11524
- Cu-Ni film, (001), in situ oxidation, TEM obs. 8–23874
- Cu(100) surface, oxidation studied by angle-dispersive photoemission spectra 8–15585
- ErT_2, film, surface oxide form. and interfacial metal loss, AAS, XES 8–31733
- Fe (001) surface, first monolayer at. struct. 8–34706
- Fe, core and valence level photoemission studies of Fe oxides 8–15290
- Fe, corrosion and oxidation, new technique for simultaneous acquisition of Mossbauer spectra and microbalance data 8–44252
- Fe, electrolytic, oxidation in melting *(Korean)* 8–19946
- Fe, oxidation, in hostile environment, in situ meas. method 8–44277
- Fe, oxidation in CO_2, early stage obs. by AES 8–48570
- Fe, oxidation in pure O_2 at 973 to 1173K, morphological study of oxide scale 8–15595
- Fe, oxide scale fracture on substrate deform. 8–11407
- Fe, reaction with sodium disilicate glass, Mossbauer effect 8–11190
- Fe-Al oxide system, depth profile anal. by secondary ion mass spectra *(Japanese)* 8–7290

oxidation continued
- Fe-base fibres, extruded, heat treatment 8–35414
- Fe-C alloy, oxidation at 500°C cold work and annealing effects 8–44276
- Fe-C-(P)(S), drops, oxidation kinetics in oxidizing slags 8–11153
- Fe-Cr, microstructural study of oxidation, selective etching 8–44245
- Fe-Cr, oxidation, in hostile environment, in situ meas. method 8–44277
- Fe-Cr, surface composition change caused by heating in high vacuum, XPS obs. 8–44254
- Fe-Cr (17.3 wt.%), oxidation at 1000°C, alloy grain growth effect 8–7075
- Fe-Cr (5 wt.%), friction and wear in controlled environments, oxide film effect 8–15546
- Fe-Cr-Al-Ce, high temp. oxidation *(Japanese)* 8–11413
- Fe-Cr-Al-Y-C, GE-1541, volatilisation of oxides during oxidation at 1200°C 8–23873
- Fe-Cr-Mn-C, high temp. oxidation, X-ray and weight gain meas. *(Russian)* 8–15571
- Fe-Cu (2 wt.%), furnace cooled, ageing and steam oxidation 8–23744
- Fe-Fe_2O_3-SiO_2-Si melt, interacting system, oxidation products *(Russian)* 8–19728
- Fe-Ni, oxidation, Mossbauer spectroscopy, metallography, SEM and X-ray diffr. anal. 8–15577
- Fe-Ni (9.21 wt.%), oxidation in CO_2 at 700-1000°C 8–44265
- Fe-Si (3.25 wt.%), mag. props., influence of struct. and chemical composition of surface oxide layer 8–2700
- Fe-Si-Mn (3, 0.004 to 0.1 wt.%), Mn effect on oxidation in H_2O-H_2 atmos. 8–31560
- $FeO \rightarrow Fe_3O_4$, in-situ AES using galvanic cells 8–19615
- α-Fe_2O_3, reduction to active magnetite and direct air oxidation to α-Fe_3O_4 *(German)* 8–7060
- Fe_xO_y, adsorption of H_2O, oxidation and reduction effects on adsorption 8–43237
- $Ga_{0.64}Al_{0.36}As$, plasma grown oxide, phys. and elec. props. 8–48550
- GaAs (110), 3d core level binding energy, multiple bonds 8–35543
- GaAs (110), 3d core level binding energy, single bonds 8–35544
- GaAs (110) cleaved surface, oxidation, XPS exam. 8–31551
- GaAs, adsorption enhancement by electron beam excitation of gas mols. 8–43238
- GaAs, device compatible anodic oxidation technique 8–44236
- GaAs, low temp. plasma oxidation and MIS struct. characts. 8–31546
- GaAs oxidation saturation and MOS diode equivalent cct. 8–47875
- GaAs oxidised surface, detection of excess crystalline As by Raman scatt. 8–19453
- GaAs, photolum. intensity degradation caused by excitation-enhanced oxidation 8–15205
- GaAs solar cell fabrication, using AMOS tech., single and polycrystalline cells 8–39935
- GaP, O_2 adsorpt. monitoring by Auger spectroscopy, electron beam effects 8–6218
- GaP, surface cleaning by oxidation and heating, characterisation for electron emitter appl. 8–35548
- GaP, XPS exam. of thermally grown oxide film 8–31552
- GaSb oxidised surface, detection of excess crystalline Sb by Raman scatt. 8–19453
- Ge film, elec. resist., long term stability rel. to ambient atmosphere changes 8–2597
- GeO, population inversion of electronic levels by oxidation, visible emission 8–13697
- H_2S oxidation by active C, electrochem. model *(German)* 8–35717
- Hf oxidation in flow conditions at 1000 to 6000K 8–11445
- InAs, oxidised surface, detection of excess crystalline As by Raman scatt. 8–19453
- InSb oxidised surface, detection of excess crystalline Sb by Raman scatt. 8–19453
- InSb(111) surface, oxidation props., LEED and surface cond. meas. 8–15559
- Ir (111), oxidation, combined LEED/UPS obs. 8–19955
- LaB_6, thermionic emission rel. to surface state 8–39654
- $LaMnO_3$, O_2 environment, phase stability and nonstoichiometric behaviour, 1200°C 8–43134
- Mg, adsorption of O_2, at 100 and 300K, XPS, UPS and X-ray AES meas. 8–18901
- Mo, corrosion by O_2 containing H_2O and gaseous NaCl, volatile products 8–27674
- Mo oxidation in flow conditions at 1000 to 6000K 8–11445
- Mo, staged flow of O_2 interaction process, secondary ion emission obs. 8–11386
- $MoSi_2$, effect of Al on oxidation behaviour *(German)* 8–31587
- NH_3, rel. to amino acid photodegradation in presence of TiO_2 8–11531
- NO, oxidation in O_2 matrix, IR spectra of products 8–23936
- Nb, O enrichment of surface layers, supercond. penetration depth and resist. meas. 8–19180
- Nb, staged flow of O_2 interaction process, secondary ion emission obs. 8–11386
- $NbBe_{12}$, by diffusion saturation in vacuum, resistance to heat 8–44259
- Ni (110), initial stage kinetics, RHEED and X-ray emission 8–15588
- Ni based alloys, hot hardness and oxidation resistance meas. 8–31588
- Ni based superalloys 713C and Mar-M200, Si effect on oxidation, hot corrosion and mech. behaviour 8–39950
- Ni, foil, oxidation to produced NiO for elec. cond. meas. at 1000°C 8–10451
- Ni, oxidation, diffusion enthalpy and entropy 8–7084
- Ni, oxidation rate transition, at Curie temp. 8–27685
- Ni, oxide covered, tensile deform. in high vac., particle and photon emission 8–39672
- Ni, quenched vacancies, effect of oxidation *(French)* 8–27686
- Ni, self-diffusion in NiO, 700-1400°C, rel. to oxidation mechanism 8–27681
- Ni, staged flow of O_2 interaction process, secondary ion emission obs. 8–11386
- Ni, tarnishing in air, 23-200°C, relative humidities from ambient to 95% 8–19940
- Ni-Al-Ti protective coating, on Ni-Al alloy IN 100, Ti content influence, oxidation behaviour *(French)* 8–3258
- Ni-based superalloys, corrosion by O_2 containing H_2O and gaseous NaCl, volatile products 8–27674
- Ni-Cr (20 wt.%), oxidation, O_2 press. effects *(Japanese)* 8–15578
- Ni-Cr-Al, oxidation, NaCl vapour effects on microstruct. 8–44274

oxidation continued
- Ni-Cr(Mo), oxidation effect on magnetic props. *(Russian)* 8−23868
- Ni-Fe alloy, oxidation, diffusion enthalpy and entropy 8−7084
- Ni-Nb_2O_5, fibrous composite, aligned in situ growth by preferential internal oxidation 8−6879
- Ni_4Mo alloy, high temp. oxidation, oxide layer growth, struct., mech. behaviour 8−44269
- $Ni_{1-x}S$, oxidation, TG/DTA/MS obs. 8−31745
- O+$Cl_2(CS_2)$, reactive scatt., O atoms seeded in Ne supersonic nozzle beam 8−48637
- Pb (100) and (110) surfaces, oxidation and sulphidation, LEED and XPS obs. 8−20070
- Pb film, oxidised (111) surfaCe, electron microscope anal. of oxides 8−23878
- Pb superconducting tunnel barrier, oxidation in humidity-controlled O_2 regulated atm. 8−19187
- Pb-Te-O, thermal stability 8−44104
- Pt oxidative vaporisation, thermochemical analysis 8−11447
- Pt, single cryst., ZZ 8−14600
- SO_2 oxidation by O_3 in cloud droplets, HSO_3^- aerosols form. 8−44894
- SO_2+OH, role for stratospheric HSO_3 layer, reaction rate consts. 8−32202
- SO_3^-+BrO_3^-, fast oxidation in acid medium, laser Raman multichannel spectroscopy 8−27754
- Se film on brass, ESCA interface study 8−43269
- n-Si (100), oxidation-induced stacking faults, O_2 partial press. depend. 8−39922
- Si (111), adsorpt. of O and stimulated oxidation by electron bombardment, AES 8−14599
- Si, CC HCl oxide growth, ellipsometric meas. 8−7073
- Si, CCD processing, elimination of stacking faults 8−10065
- Si, chemical staining due to suboxide form. 8−35540
- Si, Cl incorporation in O_2-HCl ambients 8−11378
- Si, clean SiO_2 film prep., use of poly-Si oxidation tubes 8−39924
- Si Czochralski wave, oxid. induced stacking fault, oxygen content influence 8−10062
- Si dry pressure-oxidation for low-temp. IC processing 8−7068
- Si, growth and thermal evaporation kinetics of oxide film on Si surface 8−3246
- Si, high-press. pyrogenic oxidation in the production environment 8−35547
- Si, ion-implanted, thermally oxidised, Rutherford backscatt. analysis 8−19910
- Si, Ne ion implanted, oxidation expanded defects, effect on MOS parameters 8−19152
- Si, oxidation, oxidation-induced lattice defects, review *(Japanese)* 8−39931
- Si, oxidation comparison with O_2 adsorption, SIMS 8−15273
- Si oxidation in flow conditions at 1000 to 6000K 8−11445
- Si, oxidation induced stacking fault growth, role of point defects 8−10061
- Si, oxidation induced stacking faults, wafer orientation and ion implantation effects 8−10063
- Si oxidation rate constants and role of H_2O 8−7072
- Si, oxidation without stacking fault form. 8−7062
- Si oxidative vaporisation, thermochemical analysis 8−11447
- Si, oxide growth kinetics for SiO_2 films in low O_2 partial press. *(Japanese)* 8−27665
- Si, oxidised surface, irregular growths of $B(OH)_3$ 8−39926
- Si, planar technology, insulating thin film preparation and props. 8−10589
- Si, single cryst., ZZ 8−14600
- Si, surface layer defects, influence of multiple oxidation *(Russian)* 8−47650
- Si, surface prep. prior to thermal oxidation, chem. struct. of Si-SiO_2 interface 8−27654
- Si, thermal oxidation, role of H_2O, ellipsometry expts. 8−27656
- Si, thermal oxidation at 1200°C, effects of trichloroethylene addition 8−27660
- Si, thermal oxidation in O_2-H_2O and O_2-Cl_2 mixtures 8−44239
- Si wafer, Czochralski grown, precipitation during high temp. oxidation 8−11381
- Si, wafer, suppression of oxidation stacking fault generation by preannealing in N_2 atm. 8−30648
- Si wafer, thermally oxidised, stress and strain meas. *(Russian)* 8−11375
- Si:B, heavily implanted wafers, secondary defect generation suppression by HCl oxidation 8−10069
- Si:B, implanted, oxidation induced precipitate defects, TEM 8−31556
- Si:B, implanted, oxidation-induced stacking faults, EBIC and TEM expts. 8−39923
- Si-SiO_2, influence of oxidation conditions on elec. props. of ultrathin SiO_2 layers 8−39226
- Si-SiO_2 bonding layer, EPR exam. 8−15022
- Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
- β-SiC, oxidation in CO-CO_2 mixture *(German)* 8−23844
- Si_3N_4, effect of Al on oxidation behaviour *(German)* 8−31587
- Si_3N_4, hot pressed, rate controlling process in oxidation 8−27659
- Si_3N_4, oxidised, with Y_2O_3 densification aid, temp. and compositional stability of $Y_6Si_6O_{21}$ 8−27664
- Si_3N_4, thin sheets, reaction sintered, exam. of oxidation in damp air 8−48552
- Si_3N_4-SiO_2-MgO, phase relations and interrelation with mech. strength, and oxidation 8−48386
- SiO_2 layers, crystallisation, structural props. rel. to annealing 8−34724
- SiO_2-Si interface, Cs doped, distrib. of impurity and oxide depth 8−6395
- $Si_lO_mN_p$, CVD from SiH_4-CO_2-NH_3-H_2 system, physicochem. props. 8−38978
- Si(111), water vap. and O_2 interactions, EELS 8−14571
- Sn, metallic thin film, oxidation mechanism, depth selective Mossbauer spectroscopy method 8−35549
- Sn-Ni equiatomic electrodeposited alloy, surface comp. 8−47649
- SnO, population inversion of electronic levels by oxidation, visible emission 8−13697
- $TABe_{12}$, by diffusion saturation in vacuum, resistance to heat 8−44259
- Ta, oxidation comparison with O_2 adsorption, SIMS 8−15273
- Ta, oxidation in O_2-N_2 and O_2-inert gas mixtures 8−3255
- Ta, sputtered layer, thermal oxidation, reaction kinetics 8−39959

oxidation continued
- Ta_2N, sputtered layer, thermal oxidation, reaction kinetics 8−39959
- Th, O_2 adsorpt., and oxidation, electron-induced luminesc. expts. 8−38946
- Ti, conference, Rennes, France (Nov. 1976) 8−23857
- Ti, corrosion by O_2 containing H_2O and gaseous NaCl, volatile products 8−27674
- Ti film, effect of surface and bulk oxidation on charact. electron energy loss spectra *(French)* 8−39641
- Ti film, electrochemical oxidation, AES, XPS and electrochem. characterisation 8−7086
- Ti, oxidation behaviour in high temp. steam after heat treatments *(Japanese)* 8−48565
- α-Ti, oxidation in O_2 atmosphere, role of oxide layer and mechanism of oxidation *(French)* 8−23859
- Ti, oxide layer form. in acid soln., electrochem. and optical props. 8−48560
- Ti, XPS exam. *(French)* 8−23858
- Ti-Al-Zr, TA6Zr5D, oxidation at high temp. *(French)* 8−23860
- $Ti_3Al(Sn)$, oxidation *(Russian)* 8−19939
- TiB_2-$TiSi_2$ composites, high-temp. oxidation, scale comp. 8−15561
- TiO_2, chemisorption of O_2 and H_2O, electron stimulated desorption, AES and charact. loss spectra 8−22963
- TiO_2-Sb_2O_3 system, phase comp. of roasted coprecipitates 8−23651
- V alloys, strengthening in internal oxidation *(Japanese)* 8−11493
- V-Mn-O system, phase comp. during oxide prep. 8−27447
- W, chemisorption of O_2, initial oxidation, reaction probability 8−15700
- W oxidation in flow conditions at 1000 to 6000K 8−11445
- Zn (0001), oxide film growth, at. and electronic struct. 8−15587
- ZnSe(100) surface, anomalous oxidation props. 8−15558
- Zr oxidation in flow conditions at 1000 to 6000K 8−11445
- Zr-Nb (2.5 wt.%), cold worked, in reactor oxidation of crevices and cracks 8−23865
- Zr-Nb (2.5 wt.%), oxidation kinetics appl. to loss of coolant accidents, data review 8−19958
- Zr-Nb (2.5 wt.%) neutron effects on oxidation kinetics 8−690
- Zr(C,N), coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 500-600°C *(French)* 8−44266
- ZrN, coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 550-700°C *(French)* 8−44266
- ZrO_2 coatings, prod. by low-temp. oxidation, props. 8−23856
- ZrO_2-CeO_2, semiconducting ceramics, electronic conductivity and oxido-reduction *(French)* 8−26919
- ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8−26663

oxide coated cathodes
- *see also thermionic electron emission*
- electrical conductivity of coating, temp. and porosity effects 8−11062
- rare earth oxide, work function, influence of surface and bulk effects 8−11065
- steel, mild, cathode arc craters, oxide thickness effects meas. *(German)* 8−38558
- steel, stainless, cathode arc craters, oxide thickness effects meas. *(German)* 8−38558
- BaO, epitaxial, on Ir, low energy electron spectra, electron affinity, conduction band edge position 8−14790
- BaO, on W cathode, struct. transforms., LEED obs. 8−11061
- BaO-Ba coated cathode, role of surface donor centres 8−11063
- (BaSrCa)O, cathodes, thermionic emission characts., X-ray struct. obs. 8−48270
- Cu cold cathode arc craters, oxide thickness effects meas. *(German)* 8−38558
- $SrCO_3$, $NiCO_3$ impurity effect on dissoc. 8−27425

oxygen
- *see also nuclei with ......*
- absorption in molten Cu, kinetics, influence of surface tension-driven flow effect 8−6199
- acetylene+O_2 detonation products, enhancement of CO laser gain measurements 8−33729
- adsorbed layer on graphite film, mag. susceptibility 8−43241
- adsorbed on Al, ang. depend. on plasma loss features in XPS 8−43987
- adsorbed on porous Vycor glass, props. characteristic of amorphous antiferromag. obs. 8−10665
- adsorbed on Pt, isotopic exchange and thermal desorption *(French)* 8−43249
- adsorbed on Si (111) surface, electron energy loss spectroscopy 8−2374
- adsorbed on Si (111) surface, UHV cleaved, electronic transitions 8−39183
- adsorption, jointly with Cs, on Mo (110) and (111) faces, and emission props. 8−2364
- adsorption, on CdS:Li film, effect on photocond. 8−34854
- adsorption, on graphite, mag. phase transition, theory 8−38811
- adsorption, on Si (111), and stimulated oxidation by electronic bombardment, AES 8−14599
- adsorption, on W, order-disorder transition, theory 8−38811
- adsorption of SnO_2 ESR of adsorbed O species *(Japanese)* 8−10750
- adsorption on Ag (111) ordered and damaged surfaces, CO interaction 8−14583
- adsorption on Al, intrinsic and extrinsic plasmon coupling, XPS of adsorbed atoms core states 8−10278
- adsorption on $BaTiO_3$, effect on work function and spontaneous polarisation *(Russian)* 8−6211
- adsorption on clean annealed Mg surface, exoelectron emission 8−39671
- adsorption on Cr (111) face, LEED and RHEED meas. *(French)* 8−39955
- adsorption on Cu (100), ang. resolved AES and LEED 8−18908
- adsorption on GaAs (110), effect on surface electronic struct., photoemission expt. 8−43453
- adsorption on GaAs (110) surfaces, elec. props. *(French)* 8−34690
- adsorption on GaP, monitoring by AES, electron beam effects 8−6218
- adsorption on Ir (110) surface 8−38961
- adsorption on $NbSe_2$, 200-300K 8−26767
- adsorption on Ni, electronic struct. and UPS 8−15281
- adsorption on Ni (100) surface, surface phonons 8−2359
- adsorption on polycryst. Mg at 100 and 300K, XPS, UPS, XAES 8−18906

oxygen continued

- adsorption on polycrystalline Mg, at 100 and 300K, XPS, UPS and X-ray AES meas. 8−18901
- adsorption on Pt, surface struct. effects on rate, data assessment 8−43251
- adsorption on Pt, thermal desorpt. spectra 8−14607
- adsorption on Pt, UV photoemission spectra 8−14608
- adsorption on Pt (111), cooxidation, AES *(German)* 8−14619
- adsorption on SbSI, effect on work function and spontaneous polarisation *(Russian)* 8−6211
- adsorption on Si, UPS, new adsorption state 8−34702
- adsorption on Si and Ta, comparison with oxidation, SIMS 8−15273
- adsorption on Ta, FEM obs. of work function changes 8−26771
- adsorption on Th, and oxidation, electron-induced luminesc. expts. 8−38946
- adsorption on vacuum-deposited Ta film photoelec. props. 8−15298
- adsorption on W (110), electron impact and thermal desorption at high temp. 8−30821
- adsorption on ZnO surface, electron energy loss spectra meas. 8−14601
- alkali halide: O^{2-}, photoluminesc. spectra, phonon using struct. *(Russian)* 8−2912
- antiprotonic atoms of light nuclei and isotopes, $\bar{p}$-n strong interaction effects 8−29867
- atom, dipole oscill. strength distribs., sums 8−21975
- atom, dipole transition oscill. strengths, photoionis. cross section 8−9120
- atom, electron affinity, for two electrons, from alkali and alkaline earth oxides cohesive energies 8−25736
- atom, far IR laser mag. reson. 8−37576
- atom, in upper atmosphere, electron impact cross-section 8−28398
- atom, in upper atmosphere, electron impact yield spectra 8−28401
- atom, intermediate coupling props., relativistic average of config. wave-functions applicability 8−17574
- atom, isoelectronic sequences, energy spectra inc. relativistic corrections 8−924
- atom, low-energy electrons elastic scatt. cross sections 8−42213
- atom, photoelectron ang. distrib. anal. branching ratios determ. 8−5181
- atom, polarisation functions for Gaussian basis sets 8−5126
- atom, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- atom, ZZ 8−46418
- atomic beam cooled micrwoave discharge source 8−5373
- atoms, reactions with MgO and zeolite, EPR anal. via ultrahigh vacuum/flow system 8−7232
- aurora, O I (989 Å) and O I (1027 Å) emissions 8−28367
- benzene+O(^{3}P), reaction product identification by mass spectrometer 8−7185
- biological tissue diffusion and reaction, Michaelis-Menten kinetic model 8−31793
- blood level in artery and vein, quantitative continuous meas. 8−40363
- brain pO_2 dynamics in cerebral angiography, rel. to contrast agent neurotoxicity 8−35954
- breathing, on-line uptake meas., analogue approach 8−28134
- BWR, O_2 monitoring and control 8−25309
- chemisorbed on Pd and Pt, catalytic activity, SCF-Xα-SW calcs. 8−15711
- chemisorbed on Pt surface, reaction with CO, transient kinetics obs. 8−7229
- chemisorption, and coadsorpt. with Cl_2 on Ag (331) 8−34711
- chemisorption, on metal films, active sites, chemiluminesc. and vacuum microbalance obs. 8−22950
- chemisorption, on Ru catalyst, EXAFS obs. 8−15708
- chemisorption and photodesorption on ZnO, conductivity effect 8−43441
- chemisorption on Ag-Pd alloy, correl. of heat of adsorpt. data with AES expt. results 8−34684
- chemisorption on Al(111) surface, ordered overlayer obs. 8−47665
- chemisorption on Al (100), mol. orbital cluster calc. 8−14582
- chemisorption on CdS evap. film, kinetics, effect on elec. cond. 8−6464
- chemisorption on GaAs (110), bonding sites 8−38938
- chemisorption on MgO and desorption, light emission phenomena 8−38949
- chemisorption on Ni, orbital energy spectrum of chemisorbed electrons 8−2542
- chemisorption on Ni, Pt and W (001) surface, localised orbital approach 8−14587
- chemisorption on Ni (100), geometry of overlayers 8−2373
- chemisorption on Ni (110), initial stage kinetics, RHEED and X-ray emission 8−15588
- chemisorption on PAN-based C fibres, surface characts. 8−35536
- chemisorption on polycryst. Ti, secondary electron yield spectrum obs. 8−38933
- chemisorption on Rh (111) and (100) surfaces, LEED, AES and thermal desorption meas. 8−38951
- chemisorption on TiO_2, electron stimulated desorption, AES and charact. loss spectra 8−22963
- chemisorption on TiO_2 (100), electron spectroscopy, evidence for Ti^{3+} photogeneration 8−38940
- chemisorption on transition metals 8−2378
- chemisorption on W, initial oxidation, reaction probability 8−15700
- chemisorption on W(100), SIMS spectrum 8−34712
- co-adsorption with Cu on W{100} surface 8−38950
- coadsorption with CO_2 on MgO surface, ESR 8−6572
- concentration in tissue, meas. by pulse-mode conduction method 8−7551
- contact lens, hard gas-permeable type, O_2 tension underneath 8−3473
- crystalline, polyexciton light absorpt. *(Russian)* 8−27251
- desorption, electron-stimulated, from W (100) and Ta (110) 8−2363
- desorption from diamond powder oxidised surfaces 8−47661
- determination, by solid electrolyte sensor with internal reference 8−20092
- determination, in metals, neutron activation anal., sensitivity 8−15742
- determination, in nonferrous metals by nucl. reaction method, surface treatment effects 8−11596
- determination, in Ta film on Corning glass, nondestructive method *(German)* 8−43272
- diffusion in β-Zircaloy 8−6181
- diffusion in liq. GaIn, thermodynamic activity and solubility 8−38860

oxygen continued

- diffusion in V, least squares computer technique 8−38881
- diffusivity in liquid Ni and Fe, EMF meas. 8−14494
- discharge, HF, prod. of cold plasma rich in metastable species *(French)* 8−14238
- dissociation rates, nonequilib., vibr. populations in elec. discharges 8−46427
- dissolved in water, effect on $^{205}Tl^+$ nucl. spin relax. rates 8−19356
- EPR spectra of γ-O_2 *(Russian)* 8−6565
- exam. of whether interstitial O can cause internal friction in Ti 8−48537
- fuel cell electrocatalytic O_2 reduction mechanism with metal chelate coating 8−23951
- GaAs:O, growth, O_2 solubility determ. rel. to temp. 8−34624
- gas, μ, ρ and T-surfaces, global behaviour, rel. to catastrophe theory 8−26226
- gas, magnetothermal convection in nonuniform mag. field 8−1746
- gas, photoabsorption cross-section, 55-350 Å 8−46364
- gas, thermal cond., mag. field effects 8−34255
- gas, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
- gas and liq., shear viscosity coeff., 75-300K, up to 34 MPa 8−34253
- glow discharge, polymer surface modification, ESCA obs. 8−3438
- implanted in Si, lattice location of ^{16}O by α-particle backscatt. method 8−10080
- interstitials, Si Czochralski wafer, rel. to oxid. induced stacking faults 8−10062
- ion impurity in linear Z-pinch He plasma, outer 2s-shell electron excitation emission 8−22113
- ionosphere upward flowing energetic O^+ ions latit., diurnal and altitudinal distribs. 8−49199
- isotopic composition determ. using RMO-4S omegatron mass spectrometer 8−5368
- l 8−39711
- labelled molecular O_2 formation by ^{15}O recoils from $^{16}O(n,2n)^{15}O$ 8−3359
- late-type supergiants, C, N and O abundances for G AND K Ib stars 8−24509
- liquid, EPR temp. depend. *(Russian)* 8−31103
- liquid, photoluminesc., dimer effects 8−31233
- mesosphere, O_2 density profiles from solar H Lyman-α radiation extinction meas. 8−44947
- methane-O_2 aquamechanical foam, propag. characts. of detonation waves 8−31713
- microanalysis in dislocation-free Czochralski-grown Si crysts. *(German)* 8−26592
- microcirculation O_2 distrib. during and after arteriolar occlusion 8−44529
- molecule, $a^1\Delta_g$ and $b^1\Delta_g^+$ state, MCSCF wavefunctions 8−37561
- molecule, absorpt. 177.5 to 178.3 nm, appl. of vac. UV 6 m monochromator 8−37969
- molecule, bonding, spin density functional theory 8−17558
- molecule, dipole oscill. strength distribs., sums 8−21975
- molecule, dissoc. induction times, high-temp., exact simple model numerical calcs. 8−9230
- molecule, effective spin-spin parameter, ab initio calc. 8−9067
- molecule, electron impact, energy loss spectra, electronic transitions obs. 8−17805
- molecule, electron impact ionisation, in RF ion source, effective cross-sections 8−22034
- molecule, electronic electron impact excitation, rot.-electronic coupling 8−9265
- molecule, ground state MNDO calcs. 8−911
- molecule, in upper atmosphere, electron impact cross-section 8−28398
- molecule, in upper atmosphere, electron impact yield spectra 8−28401
- molecule, ionisation, photodissoc. of positive and negative ions, mass spectrometric obs. 8−13559
- molecule, low-energy electrons elastic scatt. cross sections 8−42213
- molecule, photoabsorption and photionisation, UV region meas. 8−42087
- molecule, photodissoc., O(^{1}D) production quantum yields, 1160-1770 Å 8−33557
- molecule, photoionisation cross sections, 100-800 Å 8−5302
- molecule, Q-branches, high resolution pulsed CARS 8−17676
- molecule, Raman spectra of fundamental vibr. band, rot. consts. 8−21932
- molecule, reaction with radiation induced free radicals in DNA or polynucleotides 8−48759
- molecule, RH-GTO-MCSCF calc., 1s photoelectron spectra, multiplet intensity ratio 8−5134
- molecule, valence states, ab initio config. interaction calcs. 8−25448
- molecule, zeolite matrix isolated, induced IR spectra 8−46333
- molecule, ZZ 8−46418
- molecule+$H^+(He^+)(O^+)$, dissoc. ionisation, kinetic energy spectra 8−25684
- muonium depolarisation in fine SiO_2 powder vac. interstices 8−42250
- nebulae, N and O abundances 8−8093
- oxidation of H_2S by active C, electrochem. model *(German)* 8−35717
- oxidation of Ti, XPS exam. *(French)* 8−23858
- permeability through ethylene-vinyl alcohol copolymer *(Japanese)* 8−31702
- petroleum-acetylene-O_2 combustion products, seeded, elec. cond., for MHD power plant 8−34256
- plasma impurity, high-temp. ionis. equilib. and radiative cooling 8−42712
- plasma impurity, Microtor Tokamak, trapping and removal in low-temp. H plasma 8−22541
- plasma impurity, radiation loss effects on Tokamak expts. 8−22465
- plasma impurity radiation, metastable transitions in Tokamak, modified coronal model 8−26255
- plasma injection, in TFR Tokamak current plateau, effect on Mo impurity 8−22565
- poisoning of LaB_6 cathodes in vac. systems, thermionic emission decay 8−27364
- primitive ionosphere O content rel. to thermal struct. 8−40754
- production from water using solar energy, one-step effusional process 8−15672
- propane-O_2 aquamechanical foam, propag. characts. of detonation waves 8−31713
- removal from Fe, by dry H_2 method *(Japanese)* 8−11234
- retinal damage by visible light, role of singlet O 8−15858
- rubrene, excited singlets, O quenching, singlet O formation 8−27792

oxygen continued
self-diffusion coeff. in single crystal Al_2O_3 8−30792
Si:O, ion implantation, SiO_2 layer form., crystallisation, structural props. rel. to annealing 8−34724
solar quiet corona, X-ray spectrum of highly ionised O and N 8−45297
solubility and activity in liquid Ge and Ge-Cu 8−44109
solubility in Nb, steady state *(German)* 8−38851
sorption on metal film work function 8−19125
sorption on Si(111), EELS 8−14571
sputtering of ice, MeV ions, erosion rate 8−48268
superheated liquid, spontaneous boilieg and life-time, press. variation *(Russian)* 8−22839
technology and conservation in metallurgical extraction 8−7169
thermodynamic dissolution in Fe-Ni-Mn melt *(Russian)* 8−27473
thermosphere, O_2 concs. and absorpt. cross sections from EUV occultation profiles 8−28356
thermosphere, O conc. at 400 km altitude, incoherent scatter obs., model construction *(French)* 8−12030
tissue mass transport and regulation, microelectrode and math. modelling study 8−44534
tissue O_2 uptake continuous meas., high-sensitivity device 8−20324
toluene+$O(^3P)$, reaction product identification by mass spectrometer 8−7185
transport phenomena correlations, in non crystalline silica 8−47581
Trichel corona, negative ions 8−30503
trimethylbenzene+$O(^3P)$, reaction product identification by mass spectrometer 8−7185
vapour, fluorescence quenching of pyrene 8−5266
vapour pressure, effect of high mag. fields 8−38825
vertical distrib. in Atlantic and Mediterranean near Gibraltar *(Russian)* 8−16058
void swelling in neutron irradiated V, O_2 effect 8−6106
adsorption on W (110), LEED, AES and thermal desorption meas. 8−38957
Ag:O wires, effects of O on internal friction and rigidity modulus 8−3160
AlN:O, deep impurity states, orbital spectra, CNDO/2 calcs. 8−6319
$Ar^++H_2(O_2)(CO_2)$, reactions in flow-drift tube, rate consts. 8−15664
$Ar^{2+}+O_2(CO_2)(C_2H_2)$, reactions in flow-drift tube, rate consts. 8−15666
$Ar^+(Ar^{2+})+O_2$, reaction rate consts. 8−48613
Au-Cu-O surface, quantitative Auger analysis using relative sensitivity factors 8−7295
Au-Ni-O surface, quantitative Auger analysis using relative sensitivity factors 8−7295
in C polymer chars 8−11551
$CO-He-O_2-H_2O$ laser discharge, stability, influence of recombination and ion chem. 8−17915
$CO-O_2$ liq., polarised vibr. Raman scatt. lineshapes 8−27199
$CO-O_2$ liq. mixture, IR four wave sum and difference freq. generation 8−33771
$CO-O_2$-He low-press. laser discharge, increased power and efficiency 8−17914
$CO-O_2-SF_6$, liquid, phase matched IR third harmonic generation 8−42384
$CO+NO(O_2)(D_2)$, $(\nu=1)$ relax., temp. depend. 8−17760
$CO_2-N_2-O_2$ mixtures, thermalisation under reson. excitation by laser radiation *(Russian)* 8−26231
CO_2-O_2, negative ion form., photodissoc., mass spectrometric obs. 8−13558
CS_2-O_2 flame, rate of population of CO vibr. levels, CO emission intensity 8−7186
CaF_2:O, absorption, ionic cond. and thermal depolarisation 8−14502
$CaF_2:O^-$, Jahn-Teller distortion, electronic struct., MS Xα calc. 8−23057
$^{44}Ca+O_2(O_3)$, reaction products identification by IR spectra in N_2 matrix 8−9151
$Cu-SiO_2$ alloy, fracture at elevated temp. 8−39896
$D_2^++O(^3P)\rightarrow OD^++D$, reaction dynamics, cross-section at. quadrupole moment effects 8−3324
$F+O_2+M\rightarrow FO_2+M$, flash photolysis IR chemiluminesc., rate const. 8−3311
Fe, cast, air-atomized powder, effect of particle size on C and O contents 8−15340
Fe:O,N, bonding of Al, growth of intermediate phases, effect of O and N impurities 8−27680
GaAs:O, deep impurity levels, AC photocond. meas. 8−19082
GaAs:O, evidence for metastable state of O centre, Schottky barrier photocapacitance meas. *(French)* 8−10556
GaAs:O, Fe, temp. depend. of ionisation energies of O and Fe levels, electroabsorption meas. 8−47736
GaAs:O, impurity photocond. in high elec. field, 90K 8−19095
GaP:O, donor centre struct. and conduction band nonparabolicity 8−14695
GaP:O, impurity concentration determ. by donor-acceptor luminescence 8−6090
GaP:O, wave functions and optical cross sections associated with deep centres 8−34801
$GaP:O^-$, two electron state, electron capture 8−39054
GaP:Zn,O, kinetics of X-ray luminesc. 8−10984
n-Ge:Bi,O, plastically deformed, dislocation scatt. anisotropy, effect of state of O in Cottrell atm. 8−19028
Ge:O, intrinsic γ detector, deep level defect connection with O content *(Russian)* 8−43331
Ge-O, removal from a-Ge in pre-crystallisation annealing 8−9957
$H+O^{2+}$, ionization model for NGC 7027 planetary nebula 8−36671
H_2-O_2 system with N_2, O_2 diluents, detonation wave instabilities 8−5762
H_2+O_2+CO, 500°C, rate consts. involving OH and HO_2 radicals 8−35646
$HCO+NO(O_2)$, reaction rate consts. 8−31617
$HCl(\nu=1,2)+O(^3P_g)$, reaction and deactivation, laser-induced fluoresc. obs. 8−35669
$He-O_2$-acetylene flame atom cell, for at. spectrometry, characterisation 8−32876
$He+B^{3+}(C^{4+})(N^{5+})(O^{6+})$, electron transfer 8−13598
$He+H_2$ (O_2), rot. cross-section, exponential distorted wave and effective Hamiltonian 8−37709
$I+O_2$, chemical generation of population inversion between spin-orbit states of I 8−17767

oxygen continued
In:O surface, impurity precipitation and resolution at melting point 8−14553
N_2-Ar-O_2, liq. vap. equilib. prediction using cubic eqn. of state 8−18737
$N(^4S)+O_2(^3\Sigma_g^-)\rightarrow NO(^3\pi_u)+O(^3P)$ doublet surface minimum energy path calcs. 8−7194
O I, O II, permitted lines excitation cross-sections, rel. to auroral emissions 8−37745
O I, oscillator strengths interstellar O abundance 8−16498
O I, resonance line broadening in low press. He discharge lamps 8−9123
O I 1304 Å, airglow emissions from cometary inner comas 8−45282
O I 5577 Å, airglow in upper atmosphere, semi-annual vars. 8−28360
O I 5577 Å and 6300 Å forbidden emissions during aurora, line profile vars. 8−45081
O I 5577 Å emission of meteors, vel. dependence 8−20758
O I 5577 Å forbidden line in meteor trains, emission mechanism 8−49395
O I 5577 Å nightglow, meas. via two-channel rocket photometer 8−45078
O I 630 nm predawn airglow, excitation by conjugate photoelectrons 8−49196
O I 6300 Å forbidden line nightglow, ground-based meas. contamination by OH emissions 8−4020
O I emission resonance triplet lines form. in solar spectrum 8−24504
O I green line airglow, obs. during Winter Anomaly Campaign (1957/76) 8−45075
O III, production by Auger effect, astrophysical appls. 8−20633
O isotope fractionation in alkali halide H_2O and D_2O solns. 8−22629
O V, solar emission line ratios interpretation 8−28598
O V,VI plasma impurity UV emission, poloidal asymmetry obs., grad B drift 8−26331
O VI, interstellar, absorpt. lines statistical anal. rel. to coronal gas in Galaxy 8−36653
O VI, ionis. rate meas. in theta-pinch plasma, VUV obs. 8−26254
O VI interstellar survey, UV spectra of OB stars 8−36679
O VII, laser produced plasma, satellite spectra 8−5165
O^-, interstellar, ionisation and interstellar medium heating by photoelectrons 8−36666
O^+, in magnetotail lobe plasma, evidence from double-peaked ion spectra 8−32299
O^+, O^{2+}, electron impact ionisation cross section in hollow beam trap 8−25717
O^{2+}, terrestrial origin, discovery in outer magnetosphere 8−32295
O^{5+}, 1s3s3p $^4p^0$ state, Hartree-Fock function, third-order energy 8−37569
O^{5+}, O^{6+}, production and acceleration in cyclotron *(Japanese)* 8−5084
O+acetaldehyde(propylene), rate const., discharge flow-reson. fluoresc. meas. 8−7178
$O+CS\rightarrow CO+S$, rate const. temp. depend., ESR-mass spectrometer obs. 8−20013
$O+Cl_2$ (CS_2), reactive scatt., O atoms seeded in Ne supersonic nozzle beam 8−48637
O+ethylene, OH chemiluminesc., mechanism, rate const., mathematical model calcs. 8−48655
O+fluoromethane, reactions, selective vibr. excitation effects 8−35643
$O+H^+(He^+)$, double K-shell ionis., projectile Z depend. 8−25680
O+inert gas, $^1S-^1D$ collision-induced transitions 8−33588
$O+N_2O_5$, rate const., 220K, 300K, discharge-flow method 8−44352
O+NO, in Ar matrix, chemiluminesc. 8−35688
O+nitroethane (nitromethane), H atom abstraction in discharge flow system 8−35671
O+trifluoroiodomethane, I atom abstraction by O, mol. beam study 8−48638
$O^-+CO(Mg)(N_2)$, electron detachment cross-sections, 20-150 keV 8−25690
$O^-+CO\rightarrow CO_2^++e^-$, vibr. chemiluminesc. 8−3340
$O^-+N_2\rightarrow N_2O+e$, rate studies 8−40036
O^++H, cold dense H plasma, charge exchange, impurity losses, Monte Carlo simulation 8−34260
O^++H_2, H^+ prod., from H_2^+ dissoc. states or H_2^{2+} 8−20015
O^++N_2, luminescent charge transfer, metastable and ground state ions 8−42202
O^++O_2, dissoc. ionisation, kinetic energy spectra 8−25684
$O^{n+}+C$, 4 to 40 MeV, beam-foil K-shell X-ray prod. cross sections 8−33461
$O^{q+}+Ar$, continuum electron capture and loss, 1.6-2.8 MeV/A 8−46443
O_2 0.762 μ band absorption coeff. in atmosphere *(Russian)* 8−28315
O_2, $(0,1)b^1\Sigma_g^+-X^3\Sigma_g^-$ band, integral absorption coeff. 8−20512
O_2, $A^3\Sigma_u^+$, $C^3\Delta_u$ and $C^1\Sigma_u^-$ states in van der Waals solids, electronic spectra, dynamics 8−1000
O_2 ambient gas, computer expts. on ionic rcombination, coeff., binary recombination 8−22028
O_2, atm. density seasonal vars. near 100 km altitude 8−12034
O_2, electronic spectra, parity nonconservation effects *(Russian)* 8−13488
O_2, in meteor wakes, ion-molecule reactions rel. to red afterglow 8−36536
O_2 isotopes, $^{17}O_2$, $^{16}O^{17}O$, $^{17}O^{18}O$, pure rot. Raman spectra, bond lengths 8−42071
O_2, lifetimes and reactivity in aq. micellar system 8−46398
O_2, microwave absorpt. at high-press., 9, 23 and 60 GHz 8−13490
O_2, nonempirical calc. for molecules in electric field 8−25459
O_2, pressure broadening of HNO_3 linewidth, 200 and 300K 8−46399
O_2, singlet state lifetime in D_2O soln., decay of micellar system 8−46301
O_2, thermospheric densities, calc. and meas. values comparison 8−28357
O_2, thermospheric density indirect determ. from AE-C satellite meas. 8−12032
O_2^-, generation in CdS aq. dispersion by photolysis, spin trapping detect. 8−11538
O_2^-, in aq. solns. of alkali halides, spectral props. *(Russian)* 8−6766
O_2^+, $b^4\Sigma_g^--a^4\Pi_u$ band, rot. lines, rel. intensities, theoretical and exptl. results 8−13505
O_2^+, IR spectra, rot. anal. of b $\Sigma_g^-a^4\pi_u$ first negative band 8−5219
O_2^+, mobility in CO_2, obs. using injected-ion drift tube mass spectrometer 8−1784

oxygen continued

- O_2^+, predissociation of $b^4\Sigma_g^-$, $c^4\Sigma_u^-$ states, threshold photoelectron-photoion coincidence 8−42144
- O_2^+, radiative lifetimes and UV spectra, $b^4\Sigma_g$-$a^4\Pi_u$, $A^2\Pi_u$-$X^2\Pi_g$ transitions 8−17724
- O_2^+, second negative bands excitation cross-sections, rel. to auroral emissions 8−37745
- O_2^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
- O_2-Ar, gas, thermal cond., mag. field effects 8−34255
- O_2-He(SF_6), breathing, effect on respiratory mechanics 8−27992
- O_2-propane system with Ar, N_2 diluents, detonation wave instabilities 8−5762
- $O_2+Al \rightarrow AlO+O$, product. rot., vibr., translational energy, AlO fluoresc. 8−23928
- O_2+CO, vibr. deactivation of CO, 80-300K, laser fluoresc. study 8−25661
- O_2+fluoromethylene, vibr. energy distrib., lasing action 8−48644
- O_2+H, 20-500 eV, ion pair and free electron production, integral cross sections 8−46437
- O_2+H^+, K-shell capture cross-section, Auger effect 8−33602
- O_2+H(He), vibr. state distrib., charge exchange 150-2400 eV 8−42195
- O_2+He, long lived collision complexes, exact classical and quantum mech. calcs. 8−33576
- O_2+hydrated electron, rate const., Arrhenius parameters 8−20041
- O_2+inert gas, state-to-state rates from press.-broadened linewidths, data reduction method 8−46430
- O_2+inert gas atom, absolute total elastic cross sections 8−9220
- O_2+Li(Na)(K), excited atom quenching, semi-empirical model 8−1065
- O_2+N_2, collision induced UV absorpt., Herzberg continuum, dimer form. 8−9167
- $O_2+Ne^{m+}(N^{n+})$, K-shell vacancy prod. cross-section, charge state depend. 8−17751
- O_2+O_3, collisional deactivation of laser excited $O_2(^1\Delta_g)$, addition effects and pathways 8−25673
- $O_2+O(^1S)$, collisional interaction products, reson. fluoresc. obs. 8−46423
- O_2+Sc(Y), nascent product state distribs., laser fluoresc. detect. 8−7187
- O_2+Si^*, collisional quenching, reson. line absorpt. expt. 8−46297
- $(O_2)_2$, struct., energy transfer, high resolution electronic spectra 8−25550
- $(O_2)_2$, struct., vibr. relax., local modes, isotope effects 8−25669
- $(O_2)_2$, van der Waals mol., WKB vibr. eigenvalues 8−33498
- $O_3+O^-(OH^-)(S^-)(SH^-)$, associative detachment, rate coeffs. 8−3325
- $O^+(^2D)$ quenching by O in thermosphere, Atmospheric Explorer data 8−28355
- $O(^1D)$, excited states prod. by O_2 photodissoc., quantum yield 8−33557
- $O(^1D)$ formation, in O_3 near UV photolysis 8−15689
- $O(^1D)+H_2(HCl)(NH_3)(N_2O)$(methane), rate consts., temp. depend. 8−27747
- $O_2(^1\Delta_g)$ airglow, emission height profile meas. during winter anomaly event 8−45077
- $O_2(^1\Delta_g)+O_2$, deactivation rate const. meas. 8−5262
- $O(^3P)$+1-butyne (2-butyne), CO pro dynamics, mechanisms 8−11510
- O^3P+allene (butadiene)(vinyl methyl ether), absolute rate consts. meas., 297-439K 8−7196
- $O(^3P)$+amines, rate consts. temp. depend., 298-440K 8−48616
- $O(^3P)$+HCl, reaction rate const. temp. depend., stratospheric implications 8−31616
- $O(^3P)$+vinyl halides, reaction rate consts. 298-442K flash photolysis obs. 8−7195
- $O(^1S)+CO_2(H_2O)(NO)(N_2O)$, product channels 8−46422
- $O(^1S)+O_2$, collisional interaction products, reson. fluoresc. obs. 8−46423
- $O(^5S)$+Ne(Ar)(Kr)(Xe), total cross sections 8−42188
- $O_2(^3\Sigma^-)$, geometry optimisation, using bond function augmented basis sets 8−905
- $O_2(^3\Sigma_g^+)$, charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
- ^{16}O, $^{18}O_2$, vac. UV absorpt. spectra, band intensities and designations 8−5245
- ^{18}O ions, radial dose, LET and energy per ion pair in N_2 and tissue-equivalent gas 8−7452
- $^{18}O/^{16}O$, in SiO_2 from diatoms, 20000 yr record in deep-sea sediments 8−32247
- $^{18}O/^{16}O$ in Archaen clastic metasediments, rel. to use as petrogenetic indicator for Archaean gneisses 8−20410
- $^{18}O/^{16}O$ in cellulose, lignin and whole wood from tree rings, climatic appls. 8−24355
- O_2^*, vibrationally excited, study by variable temp. photoelectron spectroscopy 8−21972
- Pt electrode O_2 reduction kinetics in conc. H_3PO_4, H_2SO_4 and $HClO_4$ 8−23952
- $Sb(5^4S_{3/2})+NO(O_2)$, rate consts., time-resolved reson. fluoresc. meas. 8−27732
- Si:O, C, impurity conc. profiles and process-induced defects 8−6094
- Si:O, EPR spectra of heat treatment centres 8−48039
- Si:O, high temp. annealing effect on impurities 8−38745
- Si:O, IR absorpt. spectra of Si:O complexes 8−19520
- Si:O, implanted O location, channelling effect meas. 8−26593
- Si:O, interstitial Si atom formation by light ion bombardment 8−47406
- Si-O system, modern view 8−10045
- $Si+H_2(O_2)(He)(SiCl_4)$, $3p^2(^1D_2)$ state behaviour, at. absorpt. spectra 8−29846
- n-SiC:N, O, cathodolum. spectra meas. 8−19573
- $Si(3p^2(^1S_0))+He(SiCl_4)(O_2)(N_2O)$, attenuation of reson. radiation, time-resolved kinetic obs. 8−5329
- $U+O_2$, assoc. ionisation, electron energy distrib. 8−35656
- ZnS-O, single cryst., fast neutron irrad., optical props. 8−27331
- ZnTe:O, Ne or Al implantation, electronic and optical parameters of O-related centre 8−6399

oxygen compounds

- allene+OH, absolute rate consts. 8−23927
- hydroxide ions, desorption from GaAs single cryst., activation energies and lifetimes meas. 8−20072

oxygen compounds continued

- metal oxides, chemical dissoc. under pressure as alternative to metallisation, feasibility study *(Russian)* 8−48553
- molecule, ground state MNDO calcs. 8−911
- oxide ions, desorption from GaAs single cryst., activation energies and lifetimes meas. 8−20072
- oxides, binary, variable electronegativity of oxygen, relevance to molten fluorides 8−5157
- oxides, spinel struct., impurity ion pairs, local struct. characts. 8−2146
- oxides ang. distrib. of muon decay electrons of mesic O *(Russian)* 8−48105
- oxides of third-row elements, Auger LVV transitions, X-ray photoelectrons and emission spectra 8−21978
- $C_2H_2+OH^- \rightleftharpoons C_2H^-+H_2O$, equilib. consts., ab initio SCF and CEPA calcs. 8−3361
- $COCl_2$, microwave spectra, 24-154 GHz, rot. and centrifugal distortion consts. 8−46324
- COS^+, photoionis. reson. study of $(^2\Pi)$ and $(^2\Sigma^+)$ states, vibr. freqs., ionis. pot. 8−29821
- COS+OH, reaction rate consts., 299-430K 8−35653
- HO, average tropospheric concs. in northern and southern hemispheres 8−32140
- $MnF_2:OH^-$, thermal cond., temp. depend., role of reson. scatt. of phonons by OH^- defects 8−38889
- $MnF_2:OH^-$, thermal cond., role of phonon scatt. by OH^- defects 8−38890
- Nb-O solid solutions, desorpt. of oxides *(French)* 8−14610
- OCS, atmospheric concs. in S.W. and E.United States 8−20466
- OCS, collisional rot.-line widths and shifts, microwave region 8−25619
- OCS, IR spectra using spin-flip Raman laser, combination band near 1890 cm^{-1} 8−37640
- OCS, microwave spectra, rot. Q-band *(Polish)* 8−29866
- OCS mixtures, rot. energy collisional transfer, M-depend., microwave double reson. 8−46435
- OCS, optically pumped roto-vibr. mol. laser, rate eqn. model 8−37874
- OCS, r_m struct. determ. from rot. consts. 8−42236
- OCS, semiclassical energy levels calc., vibr. freqs. 8−46315
- OCS, vibr.-rot. bands of Raman spectra 8−29173
- $OCS+CO_2$, collisional line broadening of microwave spectra, semiclassical theory 8−29776
- $OCS+CO_2(H_2)(N_2)(OCS)$, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
- $OCS+H_2$, rot. excitation, classical and quantum calcs. 8−1059
- $OCS+H_2$, scattering cross-sections, factorisation and fitting, IOS approx. 8−33575
- $OCS+H \rightarrow HS+CO$, absolute rate parameters, flash photolysis reson. fluoresc. 8−3312
- OCSe, flash photolysis, $Se(4^1D_2)$ direct obs. 8−25461
- OClNO, form. in matrix reaction, IR absorpt. obs., photoisomerisation 8−15667
- OD, $^2\Pi_{3/2}$ state EPR spectra 8−21949
- OD, $A^2\Sigma^+ \rightarrow X^2\Pi_i$ radiation after dissociative excitation of D_2O 8−46455
- OH 1667 MHz line absorption detection in Comet Kohler (1977m) 8−4152
- OH, $(A^2\Sigma^+ \rightarrow X^2\pi)$ fluoresc. prod. by H_2O photodissoc., cross sections 8−25604
- OH, $(A^2\Sigma^+)$, abnormal rot. following H_2O photodissoc., semiclassical calcs. 8−40069
- OH $(A^2\Sigma^+)+H_2(N_2)(Ar)$, collisionally induced population change rates, laser-induced fluoresc. obs. 8−5326
- OH, $A^2\Sigma^+$ state, predissociation and tunnelling 8−29823
- OH, $A^2\Sigma^+$ state, predissociation, tunnelling 8−29824
- OH, $A^2\Sigma^+ \rightarrow X^2\Pi_i$ radiation after dissociative excitation of H_2O 8−46455
- OH, airglow in upper atmosphere, semi-annual vars. 8−28360
- OH, chemiluminesc., form. from O+ethylene, mechanism, rate const., mathematical model calcs. 8−48655
- OH, Dunham pot. energy coeffs. 8−41979
- OH emission as recorder of internal gravity waves near mesopause 8−12031
- OH, IR vibr.-rot. overtone bands in Mira variable R Leonis 8−36574
- OH, in inert gas matrix, H-bonding and charge transfer, fluoresc. 8−25602
- OH in upper atmosphere, emission spectrum meas. rel. to internal gravity waves *(Russian)* 8−16224
- OH, interstellar, absorpt. in Cassiopeia A direction 8−45381
- OH, interstellar, excitation towards dust clouds 8−4318
- OH, interstellar maser lines intensity vars. due to induced Compton scatt. 8−4319
- OH, laser absorption spectrum, scanning technique, appl. to atmospheric monitoring 8−17664
- OH, laser induced fluorescence, preferential population of π^+ component of Λ doublet in $H+NO_2 \rightarrow OH+NO$ 8−31620
- OH, Λ-doublet transitions induced by ion collisions 8−9222
- OH, maser emission from OH/IR sources 8−16432
- OH, maser emission from stellar sources, bright IR star monitoring at 2.7 μm 8−16433
- OH radical, reactions with ester vapours, reaction rate consts. determ. at 292K 8−27729
- OH radicals in glow discharge, rot. levels distrib., temp. meas. 8−47169
- OH, vibr. ground-state, MFS, rot. spectra and electronic band anal. 8−5206
- OH^- excitation, cause of laser Raman fluoresc. background at oxide surfaces 8−10875
- OH+acetylene (CO), reaction rate consts. meas. 8−35663
- OH+CO, HOCO and HOCO* form., thermochem. props. 8−27805
- $OH+COS(CS_2)$(dimethyl thioether), reaction rate consts., 299-430K 8−35653
- OH+CO(+isobutane), reaction rate consts., press. depend. 8−35654
- OH+dimethylamine, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
- OH+ethylamine, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
- $OH+H(H_2)$, rot. excitation in interstellar medium 8−4306
- OH+n-propyl acetate (sec-butyl acetate) (tetrahydrofuran) (peroxyacetyl nitrate), raction rate consts., in irrad. NO_x mixture 8−7171
- $OH+OH \rightarrow H_2O+O$, rate meas. by UV absorpt., 1200 to 1800K 8−35642

oxygen compounds continued
$OH+SO_2$, role for stratospheric HSO_3 layer, reaction rate consts. 8−32202
OH+trimethylamine, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
OH^-+inert gas, collision-induced dissociation 8−29834
OH^-+methoxybenzene (o-cresol), gas phase reaction, 299-435 K, kinetics and mechanism 8−11515
OH^-+O_3, associative detachment, rate coeffs. 8−3325
OH^++NH_3, bimolecular reactions, product. distrib., rate consts. 8−11513
OH_2^+, and OH_3^+, fast mols., dissoc. in thin C foils, Doppler broadening obs. 8−22019
OH_n, LCAO-MO-SCF with Gaussian polarisation functions, energetic effect of p-, d-, and f-functions 8−41944
$OH(^2\Pi)$, rot and translational temps. in gas discharge 8−5243
ONBr, (3×3) order systems, force const. calcs. using isotopic freqs., parametric method 8−21907
ONCl, (3×3), order systems, force const. calcs. using isotopic freqs., parametric method 8−21907
ONF, (3×3) order systems, force const. calcs. using isotopic freqs., parametric method 8−21907
OPF_3, forbidden transitions, mol. beam elec. reson. obs. using avoided crossings 8−29775

ozone
air pollutant eddy correlation flux meas. by fast response sensor 8−45009
atmosphere, 9.6 μm band radiance calc., excitation processes 8−36350
atmosphere, anthropogenic effects on UV radiation and climate 8−28289
atmosphere, conc. meas. at ground level at unpolluted maritime site 8−3951
atmosphere, ground level conc., rel. to regional transport of pollutants 8−44990
atmosphere, high conc. in rural surface layer correl. with high press. systems 8−24325
atmosphere, IR transmissivity 8−11998
atmosphere, monitoring with IR heterodyne radiometer 8−16216
atmosphere, O_3 fluxes from zonal mean circulation model *(Russian)* 8−36224
atmosphere, photochemical-diffusive model, chlorocarbon industry impact on O_3 layer 8−40648
atmosphere, sounding correction procedures and implications 8−20486
atmosphere, transport from stratosphere to troposphere 8−7687
atmosphere, twilight obs. from Atmosphere Explorer 5 8−28261
atmosphere, vertical distrib. meas. (1977, April 1 to June 29) *(French, Flemish)* 8−11966
atmosphere, vertical distrib. over Aspendale, Australia, climatology 8−20475
atmospheric, depletion resulting from nitrogen oxides pollution *(Russian)* 8−16154
atmospheric measurement, using CW CO_2 lasers, long path differential absorption 8−32256
atmospheric oxidation rel. to SO_2 reaction with O_3 in water 8−16083
atmospheric reductions rel. to N_2O life cycle 8−16140
atmospheric vertical profile rel. to UV backscattering 8−7762
cyclic, stability, ab initio GVB-POL-CI calcs. 8−915
field ionisation at Ir surface 8−35273
filter instrument total O_3 accuracy, bandwidth effect 8−16181
hydrofluorocarbon monitoring using telluric absorption line *(German)* 8−49133
long-range transport across mid-W. and E. United States 8−16147
Mars atmosphere, O_3 layer and two aerosol layers detect. by Mars 5 spacecraft UV obs. 8−49357
mesosphere, meas. from ground-based mm wave obs., comment 8−11967
molecule, combination bands $(\nu_1+\nu_2)$ and $(\nu_2+\nu_3)$, anal. 8−9150
molecule, excited state geometries and energies, ab initio pot. energy surfaces 8−5151
molecule, Huggins bands, vibr. anal. 8−42085
molecule, laser flash photolysis, $O(^1D)$ quantum yield 8−20033
molecule, photoelectron spectra, HAM/3 MO calcs. 8−13414
molecule, pot. energy surface analytical function, atmospheric reactions 8−7174
molecule, unoccupied orbitals, excitation energy, electron affinity, HAM/3 MO calcs. 8−13415
photolysis, near UV, temp. depend. of $O(^1D)$ formation 8−15689
profile in tropical stratosphere, BUV meas. 8−49091
spectrophotometric determ. of total O_3 using interference filters 8−16180
stratosphere, at. Cl and ClO radical in situ obs., rel. to O_3 depletion 8−36241
stratosphere, creation and destruction, probability distribs. 8−20496
stratosphere, depletion by chlorofluoromethanes, contradiction of theory 8−49099
stratosphere, depletion by chlorofluoromethanes, two-dimens. time-depend. model 8−24341
stratosphere, effect of increased N fixation 8−28288
stratosphere, effects of O_3 8−16123
stratosphere, influence of 1972 August 4 solar proton event 8−7732
stratosphere, laser photochemistry of O_3 and distant spectroscopy *(Russian)* 8−28314
stratosphere, model, temp. feedback effect on O_3 conc. 8−28277
stratosphere, NO and O_3 meas., mixing ratio 8−44915
stratosphere, O_3 diurnal var. and scattering rel. to Cl concs. 8−7710
stratosphere, O_3 layer depletion by nearby supernova explosion 8−32499
stratosphere, O_3 vertical distrib. in upper layers, satellite and surface-based obs. 8−40620
stratosphere, O_3 vertical profile determ. by lidar sounding from ground 8−11972
stratosphere, rel. to fluorocarbons world prod. and release 8−3919
stratosphere, total content vars. correl. with ionospheric f_0F_2 vars. 8−45098
stratosphere, tropical O_3 spatial variations, influence of meridional transport and planetary waves 8−20463
stratosphere, two-dimens. model of behaviour *(French)* 8−49104
stratosphere to troposphere O_3 transport, Project Dustorm, tropopause folding 8−32177

ozone continued
stratospheric O_3 affecting ground-level oxidant concs. at Santa Rosa 8−16112
tropopause, O_3 vertical and horizontal fluxes, GASP data 8−7720
troposphere, background mean. conc., balloon obs. 8−32189
troposphere, kinetic photochem. downwind over water from urban areas 8−28278
troposphere, meas. in rural areas 8−32179
troposphere, mesoscale anal. of O_3 meas. in Boston metropolitan area 8−32178
troposphere, O_3 budget, one-dimens. photochem. model 8−32180
troposphere, variations along meridional band 8−32190
troposphere and stratosphere, effects of NO_x emissions of high-altitude aircraft 8−32176
Uccle, Belgium, 1977 July-Sept. obs. *(French, Flemish)* 8−40618
upper atmosphere, O_2 and O_3 concs. from $O_2(^1\Delta_g)$ airglow height profile meas. 8−45077
$^{44}Ca+O_2(O_3)$, reaction products identification by IR spectra in N_2 matrix 8−9151
HNO_2+O_3 reaction kinetics under stratospheric conditions 8−11499
on Mg, chemisorptive luminescence systems for surface reaction obs. 8−7236
NO_x aircraft emission effects on atmos. O_3 column increase 8−11979
$NO(NO_2)+O_3$ reactions in power plant plumes 8−3923
O_2+O_3, collisional deactivation of laser excited $O_2(^1\Delta_g)$, addition effects and pathways 8−25673
$O_3+Al\rightarrow AlO+O_2$, chemiluminesc., $A^2\pi$-$X^2\Sigma^+$ transition obs. 8−31639
O_3+ethylene, dioxirane form., decomp. products, mass spectrometric obs. 8−11504
O_3+ethylene, dioxirane form., identification by microwave spectra 8−15659
$O_3+NO\rightarrow NO_2^*$, mol. beam chemiluminesc., kinetic and internal energy depend. 8−31638
$O_3+O^-(OH^-)(S^-)(SH^-)$, associative detachment, rate coeffs. 8−3325
$O_3^-+CO_2\rightleftharpoons CO_3^-+O_2$, rate const., 200-600K in flowing afterglow 8−7193
O_3^-+molecule reactions, thermochemistry, electron affinity and rate consts. 8−40040
$O_3^-+X\rightarrow O^-+O_2+X$, X=He, Ar, CO_2, long-lived excited (or isomeric) state of O_3^- 8−5318
$O_3(001)$+NO, laser enhanced reaction, temp. depend., reactive and nonreactive channels 8−48642
$O_3(001)$+NO, laser-enhanced reaction, rates, temp. depend. 8−48675
SF_6+NO+O_3, laser sensitised reaction, time-resolved NO_2^* emission obs. 8−20017
SO_2 oxidation by O_3 in cloud droplets, HSO_3^- aerosols form. 8−44894

ozonosphere
hydrofluorocarbon monitoring using telluric absorption line *(German)* 8−49133
NO_x from SST and subsonic aircraft emission, potential O_3 column increase 8−11979
O_3 depletion by chlorofluoromethanes, contradiction of theory 8−49099

P invariance
atomic, review of laser appl. to precision meas. 8−42246
atoms, heavy, parity non-conservation, relativistic many-body perturbation theory 8−923
atoms, weak electron-nucleon interactions, testing Laporte's rule, review 8−37564
baryon nonleptonic weak decay, parity violating amplitudes 8−45917
colour gauge theory of strong interactions, P and T invariance 8−37153
fission, spatial parity nonconservation *(Russian)* 8−25170
G-parity nonconservation, ev ang. correlation for allowed beta-decay 8−17151
hadron-hadron large p_t collision, weak interaction effects 8−21462
Higgs exchange in guage models with right-handed charged currents P and CP invariance 8−12824
Higgs-boson exchange P and CP violation, Weinberg model 8−8575
left-right symmetry, spontaneous breakdown, parity violation, leptonic right handed, currents 8−21351
molecular electronic spectra, parity nonconservation effects *(Russian)* 8−13488
neutral current expts., left-right symmetry for $SU_l(2)\times SU_r(2)\times U(1)$ gauge group 8−21375
neutral transitions, vector-like weak currents, parity violation *(Russian)* 8−24995
neutron scatt. from parity violating pot. 8−25167
neutron scattering theory, parity violating interaction 8−25166
nonleptonic decays of ordinary and charmed hadrons, vector-like model 8−41545
parity violation in atoms, $SU(2)\times U(1)$ models, higher-order corrections 8−45807
Sodium ammonium tartrate, L- and D-mol. energy difference, parity violation 8−25744
$SU(2)_l\times SU(2)_r\times U(1)$ gauge theory, left-right symm., neutral current struct. 8−41420
$SU(2)\times U(1)$ gauge model and parity violation in atoms 8−4775
weak interaction theory, review 8−4822
weak interactions, renormalisable model on gauge group $SU(2)_l\times SU(2)_r\times U(1)$ 8−12855
$e^+e^-\rightarrow F\bar{F}$, with polarised particles, weak asymmetries, unified gauge theory anal. 8−8636
eN, pion production, vector-like theories *(Russian)* 8−37221
nd scattering, 14.4 MeV, parity nonconserving asymm. 8−21449
NN scatt. formalism 8−21463
pp elastic scatt., 6 GeV/c, polarisation anal. 8−41568
$pp\rightarrow N\Delta$, parity violation in Weinberg model 8−8701
$\Sigma^0\rightarrow\Lambda e^+e^-$, parity violation 8−25045
Bi, electron config. mixing and parity nonconservation 8−13439
Bi, parity non-conserving optical rot., Weinberg-Salam relativistic central field theory vs. obs. 8−953
Bi, parity nonconservation, light polarisation plane deflection by components of ultrafine splitting *(Russian)* 8−46456
Bi, parity nonconserving optical rot. upper limit, obs. vs. Weinberg-Salam theory 8−952
^{209}Bi coherent scattering of polarised thermal neutrons, parity violating effects 8−29461
Cs, forbidden M1 transitions, parity nonconserving effects 8−21844

P invariance continued
H parity violations, fundamental struct. of weak current, unified gauge theories 8−12849
H, two-photon transitions, parity nonconservation effects *(Russian)* 8−21892
O_2, electronic spectra, parity nonconservation effects *(Russian)* 8−13488
SiS, electronic spectra, parity nonconservation effects *(Russian)* 8−13488
^{117}Sn(n,γ)^{118}Sn, parity violation obs. 8−8820

p-n heterojunctions
abrupt junction, energy band lineup 8−10541
avalanche breakdown sensitivity of multiplication layer *(Russian)* 8−34888
composite barrier, thermally assisted tunnelling 8−19136
dipole barrier role, many-electron interaction 8−23151
II-VI semiconductors, photovoltaic cell appl., recent results 8−39206
III-V semiconductors, defect formation, appl. in optical electronics, review 8−23160
III-V semiconductors for optoelectronic appls., review 8−30975
interface boundary position effect on interface states 8−47855
isostructural heterojunctions of organic materials 8−39194
solar cell, interface state and energy barriers effect on efficiency 8−43464
ternary semiconductors, use in thin film heterojunction and homojunction photovoltaic devices 8−39208
AlAs-GaAs film heterojunction, VPE growth and characts. 8−6439
$Al_xGa_{1-x}As$ DH, origin of $n \simeq 2$ injection current, photolum. expts. 8−14799
$Al_xGa_{1-x}As$-GaAs, epitaxial heterostructure, influence of defects on diffusive distrib. of group I impurities 8−43045
$Al_xGa_{1-x}As$-GaAs, MBE, diffusion across interface, optical annealing expts. 8−2305
$Al_xGa_{1-x}As$-GaAs heterostructures, nonradiative large dark spots exam. 8−23149
$Al_xGa_{1-x}As$-GaAs LED design and characterisation for fibre-optic communications 8−46796
AlGaSb, growth and characts. for 1.0-1.8 μm heterojunction devices 8−6870
AlGaSbAs heterostructures and LED's luminesc. props. in 1-2 micron band 8−10988
BP-Si junctions epitaxial growth and device appls. 8−48333
$CdGeAs_2$-$ZnGeAs_2$, and $CdGeAs_2$-$GdGeP_2$, material distrib., possibility of heterostructure *(Russian)* 8−30979
CdS-Cu_2S heterojunction, slow relax. of photocurrent 8−26943
$CdSnAs_2$-$ZnSnAs_2$, and $CdSnAs_2$-$CdSnP_2$, material distrib., possibility of heterostructure *(Russian)* 8−30979
Cu_2S-CdS heterojunction characteristics and CdS polarity *(Japanese)* 8−23154
Cu_2S-CdS heterojunction model 8−39205
Cu_2S-CdS p-i-n structure diode, photoelec. characts. 8−2557
$Cu_{2-x}S$-CdS heterojunction V-I characteristic and max. photovoltage, long-term changes *(Russian)* 8−43468
Cu_2Se-$AgInSe_2$ heterojunction, photodetection props. 8−39195
$Ga_{0.9}Al_{0.1}As$, nucleation morphologies on $Ga_{0.65}Al_{0.35}As$ surfaces grown by LPE 8−15323
$Ga_{1-x}Al_xAs$-$Ga_{1-y}Al_yAs$, minority carrier lifetime, elec. charcts. and electrolum. meas. 8−2554
$Ga_{1-x}Al_xAs_{1-y}P_y$-GaAs quaternary heterojunction strains and IR laser diode performance 8−9385
GaAs:Si, heteroface solar cells, diffusion lengths 8−47849
GaAs-$Al_xGa_{1-x}As$ heterojunction, avalanche phototransistors, detectivity and noise 8−2558
GaAs-$Al_xGa_{1-x}As$ LPE heterojunction, interface states 8−19128
GaAs-AlAs heterojunction, recombination currents 8−14806
GaAs-$Ga_{1-x}Al_xAs$ superlattices, resonance enhanced Umklapp Raman process 8−39547
GaAs-$Ga_{1-x}Al_xGaAs$ heterostructure, electron tunnelling theory 8−47861
GaAs-$Ga_{1-x}In_xAs$ heterojunction, thermally assisted tunnelling 8−19136
GaAs-$Ga_xAl_{1-x}As$ heterostructure, depend. of efficiency of radiative transitions on composition 8−2909
GaAs-GaAlAs, growth by metal-alkyl-hydride process 8−15313
GaAs-GaAlAs DH LEDs, with thin active layer, Burrus type, internal interference in emission spectrum 8−27325
GaAs-GaAlAs LPE layers, DH material, TEM obs. of crystal defects 8−6241
$Ga_yIn_{1-y}As_xP_{1-x}$-InP heterostructure, lattice matching and cryst. perfection 8−6437
$Ga_{1-x}In_xAs_{1-y}P_y$-InP DH lasers, 1000-hour CW operation 8−1265
GaInPAs heterostructures and LED's, luminescent props. in 1-2 micron band 8−10988
p-GaSb−n-$Ga_{1-x}Al_xSb$, photodiode, LPE, spectral response, quantum efficiency 8−47850
Ga_xSe_{1-x}-SnO_2 heterostruct., amorphous, photovoltaic effect 8−14803
Ge-GaAs abrupt interface, orientation depend. of interface dipole energies, XPS expts. 8−39196
Ge-GaAs heterojunctions, electronic struct. 8−19138
p$^+$-Ge-n-GaAs abrupt heterojunction, reverse currents *(Russian)* 8−10542
Ge-Si, UHV-produced epitaxial structs., electrophys. props. 8−3060
$HgCr_2Se_4$-$CdIn_2S_4$, prep. and photovoltaic prop. 8−34892
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunction, prep. and photovoltaic prop. *(Japanese)* 8−34889
InGaAsP heterojunction cathode, transferred electron photoemission 8−48272
$In_{1-x}Ga_xP_{1-z}As_z$ well in InP, tunnel injection into confined particle states 8−19130
$In_{1-x}Ga_xP_{1-z}As_z$-InP, LPE heterojunctions, lattice matching and dislocations 8−23150
In_2O_3-Si highly photosensitive diodes, and their appl. 8−23152
InP-CdS heterojunction, injection electrolum. 8−23153
InP-$In_xGa_{1-x}As_yP_{1-y}$ photodiode, characts. 8−14800
PbS-Ge heterojunction, influence of conduction band discontinuity on lux-ampere characts. 8−39200
$Pb_{1-x}Sn_xSe$(Te) epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
PbSnTe detector and preamplifier modules for heterodyne detection of CO_2 laser radiation 8−32875

p-n heterojunctions continued
$Pb_{1-x}Sn_xTe$ p-n heterostructure, VPE, struct. and electrophysical characts. 8−10547
PbTe-$Pb_{0.82}Sn_{0.18}Te$, p-n heterojunctions, electrical and photoelectrical properties 8−39193
Si/Si-Ge junction, elec. and photoelec. props. 8−10545
Si-GaAs heterojunction photothyristor, spectral characts. 8−10546
Si-SnO_2 highly photosensitive diodes, and their appl. 8−23152
Zn_3As_2-$(Cd_xZn_{1-x})_3As_2$, LPE 8−35324
ZnO-Si p-n diode monolithic storage correlator 8−18119
ZnSe-Ge(GaAs) epitaxial heterostructs., growth and struct. 8−43257

p-n homojunctions
capacitance transient spectroscopy, book contrib. 8−10548
deep-level centre discrimination from capacitance versus time transients 8−10395
impurity centre mobility at room temp. *(Russian)* 8−34891
IV-VI compounds, dielec. props., elec. meas. 8−15119
p$^+$-i-n$^+$ double-injection struct., regional approx. 8−14805
p$^+$-n diode under forward bias, effects of radiation-induced deep levels on admittance 8−23157
planar, capacitance calc. 8−30978
surface microfield thickness modulation of photolytic polymer film 8−10561
ternary semiconductors, use in thin film heterojunction and homojunction photovoltaic devices 8−39208
thermally associated field emission near precipitates 8−14801
voltage transients, defect centres emission rates and density profile 8−10467
$Al_xGa_{1-x}As$ variable gap junction, photosensitivity 8−39204
Bi_2Te_3, thermoelectric p-n junction, pulse refrigeration 8−23156
(CdHg)Te, ion implanted graded gap photodiodes 8−39192
$Cd_xHg_{1-x}Te$ photodiode, IR responsivity and detectivity 8−19139
CdTe:As^{2+}, photovol. props. of p-n junction prod. by ion implantation 8−43038
$Ga_{1-x}Al_xAs$:Si, doping in LPE, elec. and luminesc. props. *(Czech)* 8−47851
$Ga_{1-x}Al_xAs$:Si p-n junction, reemission effects 8−15230
GaAs, grown by current-controlled LPE, elec. characts. 8−6436
GaAs, nonradiative capture, direct obs. of phonons 8−30976
GaAs planar p-n junction fabrication by Be ion implantation 8−43470
GaAs:Cd, effect of As vapour press. on etch pit density and junction depth 8−26937
GaP, epitaxial struct., cathodolum. in SEM 8−10991
GaP, LPE, cathodo- and electrolum., residual impurity and struct. defect effects 8−19570
GaP negative electron affinity cold cathodes, vidicon appls. 8−19133
GaP:Zn,O, epitaxial p-n junction, IR electroluminesc. exam. *(Russian)* 8−35207
Ge, hot photocarrier and hot electron effects 8−30980
Ge, radiative electromagnetic effect, alpha-particle irrad., Hall effect, photoelectromagnetic effect 8−10434
Ge, voltage-current curve for microplasma breakdown, at. size difference effect 8−2550
InP, planar Zn diffusion process for p-n junction formation 8−43040
InSb, ion bombard. and defect annealing, n- and p-type cond. layer prod. 8−26606
InSb, reverse biased diode, negative resist. 8−19129
$PbSe_{1-x}Te_x$, p-n junction, inversion of conduction level 8−47856
$Pb_{1-x}Sn_xSe$(Te) epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
Si, deep centres, majority carrier thermal capture cross section, TSC meas. 8−10468
Si, dielectric props., freq. depend. of capacitance and conductance 8−43469
Si, electron probe determ. of pn-junction depth *(German)* 8−2552
Si, microplasma instability, effect of space-charge field of mobile carriers 8−19140
Si multilayer structure dopant distrib. and minority carrier diffusion length, SEM obs. *(Russian)* 8−10543
Si, n$^+$-p junction, surface peripheral leakage currents 8−26939
Si p$^+$-n contaminated junction, precip.-induced and generation-recomb. currents 8−2555
Si p-n junction in surface region obtained by evaporation in UHV 8−39198
Si p-n junction radiation detector behaviour in temp.-compensated cct. 8−33389
Si, passivation by slightly conductive chalcogenide film 8−2556
Si polycrystalline p-n junction deposition 8−10549
Si, reverse bias V-I characts., presence of acceptor states around Fermi level of amorphous Si 8−2445
Si, sensor for high intensity solar flux mapping 8−40720
Si, through oxide As implantation, Ar implantation gettering 8−14802
Si, with hot carriers, amplification 8−39203
Si:Al p-n lamellar structures, processing by molten Al rich wire thermomigration 8−10068
Si:Au forward-biased, space charge recombination current variation *(Rumanian)* 8−19131
Si:K, ion implanted, influence of doping and annealing on carriers 8−38742
Si:Ni p$^+$n and n$^+$p diodes, thermally stimulated capacitance obs. of Ni acceptor levels 8−19137
SiC, vapour grown, elec. breakdown field 8−19135
β-SiC:B, diffused structures, current-voltage characts. 8−47865

p-n junctions
see also p-n heterojunctions; p-n homojunctions
avalanche breakdown voltage and differential resistance *(Russian)* 8−47858
avalanching, temp. dependences 8−14808
background dopant density calc. fron C-V meas. 8−26936
deep impurity concentration profile in diffused junction, capacitance meas. 8−26945
defect and impurity centre detection, junction capacitance and current techniques 8−10550
direct conversion of chemical energy into elec. energy 8−39201
directly biased, current-voltage charact. effect of generation-recombination *(Rumanian)* 8−2553
dislocations, TEM/SEM observations comparing diffr., elec. and luminesc. contrast 8−38714
high-power large-area inhomogeneous, I-V characts. theory 8−47859
hot-carrier, instability of EMF 8−26941

p-n junctions continued
  hyperabrupt with exponentially retrograded n-region, C-V index calc. 8−47860
  inhomogeneous, theory of LF noise 8−2559
  junction termination extension technique for increasing avalanche breakdown voltage and controlling surface elec. fields 8−47866
  low-frequency noise 8−6419
  luminescence due to photoinduced injection 8−10939
  minority carrier diffusion length determ. near p-n junction, SEM appl. *(French)* 8−43466
  multilayer structure with p-n junctions, excess cond. relax. 8−39199
  n$^+$-p junction, injection properties *(Russian)* 8−23159
  n$^+$-p spherical junction, strong impact ionisation 8−39202
  noise diagnostics *(Czech)* 8−10544
  p-n junctions, microplasma noise, stochastic model, breakdown voltage of microplasma 8−47854
  planar, nondestructive determ. of depth by SEM 8−19132
  quantum statistical theory in thermal equilibrium 8−39197
  quasiequilibrium equations 8−47853
  reversed biased, with inhomogeneous impurity distrib., space-charge layer 8−30982
  SEM, diffusion length meas. of minority carriers, accel. voltage of primary electrons effect *(Czech)* 8−34844
  structure during preparation, X-ray topography visualisation *(Russian)* 8−26386
  thermally assisted field emission near precipitates 8−14809
  TSC, impurity centre parameter determ. 8−47857
  tunnelling and negative resistance phenomena, book 8−26947
  voltampere characteristics expression, for uniformly distributed impurities *(Russian)* 8−23158

P-V-T relations *see equations of state*

pacemakers
  see also patient treatment
  aortic shear stress reduction by cardiac pacing 8−40239
  bipolar sensing for demand pacing, effect of interelectrode distance 8−40418
  bladder pacemaker, implantable induction device *(Japanese)* 8−31971
  cardiac, isotopic power supplies appl. *(Spanish)* 8−15922
  cardiac pacemaker RF susceptibility tests 8−48935
  demand pacemaker leads, time and freq. domain comparison of unipolar and bipolar electrograms 8−44726
  development progress 8−3646
  diode, implanted, cardiac pacing of dogs, long-term viability 8−44716
  electrode effects on pacing thresholds 8−36071
  electrode orientation, simulation of vol. conductor effects on cardiac dipole 8−28108
  endocardial electrode sensing characts. for optimal pacemaker system design 8−36072
  function analyser, automatic, for pacemaker patient surveillance 8−3679
  impedance determination in man from resist. meas. 8−40417
  implantable, for increasing heart rate 8−7533
  implantation, therapy/measuring combined unit *(German)* 8−7519
  implantation surgery, intracardiac ECG derivation during electrocoagulation 8−40397
  implanted, automatic parameter assessment system 8−11778
  interference test signal generator, operation and cct. *(Spanish)* 8−20315
  microprocessor based pacemaker tracking system, hardware considerations 8−36070
  power source development 8−15917
  R-wave detection with intramyocardial electrodes 8−44713
  selection criteria with different Li batteries *(German)* 8−3670
  thick film resistor trimming for pacemakers 8−31977
  vector cardiographic assessment system for automated testing of implanted pacemakers, PDP 11/40 computer, disc storage 8−11771

packaging
  see also encapsulation; modules
  optical fibre packaging in loose fitting tubes of orientated polymer 8−1338
  optical fibres, loose tube packaging, buckling obs. 8−25962
  polyimide thin film vacuum deposition 8−39695
  tobacco shreds, determ. of filling capacity, friction effects *(Japanese)* 8−7167
  PbSe IR detector, pollution detection and control appl. 8−24378

packing *see packaging*

pair algebra *see algebra*

pair annihilation, electron *see electron-positron interactions*

pair breaking, Cooper *see Cooper pairs*

pair production, electron *see electron pair production*

pairing, Cooper *see Cooper pairs*

pairs, electron *see electron pairs*

palaeomagnetism
  archaeomagnetic polaeointensity study of Hohokam potsherds from Snaketown, Arizona 8−44769
  Arizona, palaeomag. poles and polarity zonation from Cambrian and Devonian strata 8−28156
  SE.Australia, Lake Devonian palaeomagnetic field, Lochiel Formation and Catombal Group 8−28163
  Australia, palaeomag. pole positions for Mesozoic 8−20356
  Bakersfield, California, study at nuclear power plant site 8−40487
  Beaufort Sea sediment cores, NRM, geomag. excursion record 8−20349
  Borzsony Mountains, Hungary, Miocene rocks palaeomag. 8−32011
  Clear Lake, California, absence of Mono Lake geomagnetic excursion in sediment palaeomagnetic record 8−11801
  conference, Amsterdam, Netherlands (Sep. 1976) 8−28164
  Connemara Antiform, tectonic evolution from palaeomag. data 8−36093
  continental blocks, palaeomagnetism rel. to drift since Devonian 8−11864
  converging remagnetization circles for separation of superimposed remanences 8−28348
  Cretaceous-Tertiary extinctions, geomag. field effects 8−32013
  data smoothing, objective method 8−28159
  Devonian lacustrine sediments, from Caithness, Scotland, palaeomag. and mineralogy 8−28170
  directions and pole positions, pole nos. 15/1 to 15/232 8−28160

palaeomagnetism continued
  DSDP abyssal igneous cores, remanent mag. inclinations, postemplacement tectonic effects 8−28161
  early Northern Hemisphere glaciation, ^{18}O isotope and palaeomagnetic evidence 8−7752
  field intensity variations during last 2500 years in Abkhazia 8−44762
  geomagnetic reversals, rel. to stratospheric aeronomy 8−32215
  Gondwana Palaeozoic apparent polar wander path 8−36094
  Gothenburg Magnetic Excursion and Flip 8−40488
  W.Greenland, crustal uplift 8−15954
  igneous rocks from Jamaica, Late Cretaceous and Miocene, palaeomag. rel. to tectonics 8−20352
  India, northward motion since Late Cretaceous, palaeolatitudes 8−28209
  Jalisco, Mexico, palaeomagnetism of Tertiary igneous rocks 8−11799
  Lake Vuokonjarvi, Finland, palaeomagnetic secular variation 8−32004
  Late Brunhes polarity episodes, palaeomagnetism and radiochemical age estimates 8−11797
  Late Cretaceous polarity sequence, Scaglia Rossa limestone, Italy, rock and palaeomag. studies 8−11803
  Late Devonian palaeomagnetic pole for Mulga Downs Group, Western NSW 8−15959
  Late Ordovician Juniata Formation, palaeomag., remag. hypothesis 8−36096
  Late Tertiary field reversal, palaeomag. record in Tatoosh intrusion 8−48962
  limestones from Gargano Peninsula, Italy 8−11804
  Maubisse Formation, East Timor, palaeomag., tectonic implications 8−3716
  Melanesia Basin deep-sea sediments, palaeomag., polarity reversals 8−36102
  Mesozoic plutons, Coast Complex, British Columbia, palaeomag. pole positions 8−20350
  Middle Ordovician volcanic rocks from Quebec, palaeomagnetism 8−15965
  Middle Silurian Rose Hill Formation, Central Appalachians, Palaeomag., remag. problems 8−36097
  multiphase magnetizations, recognition and separation techniques 8−28349
  N.Norway, palaeomagnetic evidence for movement on Trollfjord-Komagelv Fault 8−40535
  Odaka, Japan, Late Pleistocene sediments, reversed magnetozone 8−40486
  Ordovician lamprophyres Taylor Valley, Antarctica, palaeomag. pole position 8−32010
  Pacific Ocean sediments, ^{10}Be dating compared with palaeomagnetic ages 8−32058
  palaeointensity measurement, sediment particle size var. rel. to DRM/ARM ratio 8−32067
  Palaeozoic and Mesozoic palaeomag. poles for Morocco 8−32012
  Palaeozoic igneous rocks, Welsh Borderlands, palaeomag. survey rel. tectonic rot. of Britain 8−48961
  Precambrian rocks, Lake Superior, separation of superimposed remanences 8−28348
  Quaternary data from British Columbia, spectral anal., rel. to geomag. secular var. 8−11806
  red beds, secondary magnetizations significance and utilization 8−28165
  San Juan volcanic field, S.Colorado, palaeomagnetic poles 8−32002
  Sardinia, late Palaeozoic volcanics multivectorial mag., partial remag. and tectonic rot. 8−48960
  Skye lavas, NW.Scotland, remanent mag. struct. 8−28167
  Sudbury dykes, Grenville Front region, palaeomag., petrochem., K-Ar ages 8−7633
  Swedish Ordovician limestones, mag. directions 8−28169
  Tertiary basalts with low Curie temps., palaeomag. data reliability 8−28166
  Tertiary rocks, Faeroe Islands, remagnetization 8−28168
  time-averaged field anomalies, rel. to lower mantle 8−11808
  Transdanubian Central Mountains, palaeomag. pole position, tectonic implications 8−48970
  Triassic Nikolai Greenstone, Alaska, palaeomag. 8−36166
  W.Turkmaniya, Gauss/Matuyama epoch boundary, geomagnetic field inversion 8−15957
  Wrangellia, displaced terrane from Vancouver Island to S.Central Alaska 8−36165
  Yellowstone and Jackson Lakes, mag. props. and secular var. in sediment cores 8−48968
  Yellowstone Group, palaeomag. of welded tuffs 8−48967
  Yellowstone Lake, seismic refl. and refr. surveys and palaeomag. study 8−49049
  Yellowstone volcanic plateau, conf., USA (1974) 8−49004

palladium
  see also nuclei with ......
  adsorbed on Ag (001), electronic states calc. 8−6318
  adsorption and diffusion on W surface, effect on self-diffusion, field emission expts. 8−38945
  adsorption of CO on polycryst., SIMS 8−14585
  annealed, cold worked, H_2 diffusion effect on mech. props. *(Japanese)* 8−10222
  atom, K-shell ionis. by electron impact, cross-sections, 300-600 keV 8−29853
  automotive exhaust gas catalysts, radiometric determ. of Pt and Pd attrition 8−31740
  band model, mag. susceptibility of exchange-enhanced paramagnet 8−2644
  chemisorption of CO, N_2, NO, semiempirical calcs. 8−14611
  chemisorption of O_2 and CO, catalytic activity, SCF-Xα-SW calcs. 8−15711
  epitaxial growth on MoS_2, epitaxial orientation variation *(French)* 8−43256
  field evaporation, search for high ionic charges 8−35269
  film, catalytic activity on effect of Ag interdiffusion in Ag_2S film reduction 8−14519
  film on W (110), field ion microscope exam. 8−34731
  float zone purification, residual resistivity ratio 8−44008
  isoelectronic sequence, UV spectra (60-600 Å), resonance line identifications 8−33455
  K-edge photoabsorption spectra, linear APW calc. 8−43960
  lattice dynamics, phonon dispersion curves, θ-T curves 8−26642

palladium continued
lattice parameters at low temps. 8-26496
liquid, energy bands and electronic density of states, resistivity 8-34755
localised vacancies produced by thermal neutron capture recoil 8-26598
magnetic properties in para-process region *(Russian)* 8-2672
Mossbauer effect on ^{119}Sn and ^{197}Au meas. 8-15080
muonic X-rays, circular polarisation, atomic capture process 8-25758
photoemission, angle-resolved, from clean surface 8-15294
reactive trapping of energetic 18 keV deuterons 8-10096
spin-orbit projected d density-of-states 8-38999
stopping power nucl., in ferromag. Gd, transient mag. field 8-34555
surface, chemisorption of CO, IR spectroscopic evidence for localised site adsorption 8-47669
surface (111), mechanism of CO catalytic oxidation reaction 8-40079
triplet pairing, spin fluctuation contrib. 8-10711
ultrafine particles, size effect on vibr. sp. ht. 8-10153
wire, H_2 sorption, heat of adsorpt., sticking probabilities 8-43240
X-ray reflection intensities, charact. temps. 8-18731
AgBr:Pd, EPR of Pd^+ ions 8-27087
Ge-Au-Pd trilayer film, interdiffusion obs., on annealing 8-2308
Ge-Au-Pd trilayered film, annealing, interdiffusion 8-22902
Pd complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8-46367
Pd, electrospark coating on alloys, corrosion resist. increase *(Russian)* 8-27669
Pd-H system, energy band struct., magnetic susceptibility meas. 8-18953
Pd-H system, instability and superconductivity 8-39248
Pd-H(D), isotope effects in supercond. properties 8-6471
Pd-Si Schottky barrier chemical sensor, for H_2 detect. 8-44646
Pd+SiC, high temp. chem. reactions, products obs. by X-ray diffr. 8-17312
α-$PdD_{0.007}$, lattice location and thermal props. determ. of D by ^{3}He channelling 8-38747
PdH_x film, elec. resist. meas. 8-31011
^{105}Pd muonic X-rays, nuclear charge parameters, quadrupole moments 8-29377
Ti-Pd-Au metallisation, patterning by plasma etching of Ti 8-27677

palladium alloys
see also palladium compounds
Pd_3Fe, ferromag. spin wave meas., inelastic scattering of polarised neutrons 8-2665
Ag-Pd, dil., elec. field gradients due to Pd near neighbour configs., TDPAC obs. 8-19391
Ag-Pd, dil., electric field gradient temp. depend., TDPAC meas. 8-39451
Ag-Pd, dil., electric field gradient meas. by TDPAC method 8-39452
Ag-Pd, dil., TDPAC exam. of radiation damage 8-39464
Ag-Pd, surface comp., AES expts., correl. with O_2 heat of chemisorpt. data 8-34684
Co-Pd alloys, 0-70 at.% Pd, conc. depend. of anomalous Hall field and resistivity *(Russian)* 8-14713
Cu-Pd, microconductors, cast, struct. and physical props. exam 8-44232
Cu_2AuPd, struct., TEM and electron diffr. meas. 8-38666
EuPd, mech. of H absorption, Mossbauer, mag. and X-ray diffr. meas. 8-38846
Fe-Cr-Pd, electrospark coating on alloys, corrosion resist. increase *(Russian)* 8-27669
Fe-Pd, mag. moment, comp. depend. *(Russian)* 8-47280
Fe-Pd alloy, mag. struct. determ., neutron scatt., Mossbauer and mag. meas. *(Russian)* 8-2648
Mn-Pd (10 at.%), antiferromag. defect scatt., neutron polarisation anal. 8-2652
Pd-Ag alloys, epitaxial growth and surface characterisation 8-14638
Pd-Ag-D system, instability and superconductivity 8-39248
Pd-Ba (1.5 wt.%), thermionic emitter, Auger spectrum fine struct. 8-2954
Pd-Ba alloy emitter, thermionic emission props. and Auger spectrum 8-11066
Pd-Cd eutectic, unidirectionally solidified, tensile and compressive props. 8-27567
Pd-Co, dil., relax. of oriented ^{57}Co nuclei, Mossbauer meas. using ^{3}He-^{4}He refrigerator 8-24909
Pd-Cr (11-18 at.%), resistivity comparison with canonical spin glass system 8-10432
Pd-Cu alloys, epitaxial growth and surface characterisation 8-14638
Pd-Cu-Si metallic glass, energy loss spectra and Auger spectra 8-23563
Pd-D alloys, phonon dispersion relation meas., elastic constants and Debye temp. 8-26639
Pd-Er, dilute alloy, EPR spectrum, effect of fine and hyperfine interactions 8-19323
Pd-Fe, highly dil., mag. behaviour, 0.06-300K, Mossbauer expt. 8-43711
Pd-Fe, magnetoresist., rel. to dil. ferromag. model 8-30907
Pd-Fe, onset of ferromagnetism 8-23270
Pd-Fe alloys, H_2 absorption and mag. behaviour 8-35012
Pd-Fe-Mn, ferromagnetic-spin glass transition 8-39339
Pd-Gd, dil., EPR, 35 and 9 GHz, very dil. limit 8-15019
Pd-H alloys, low temp. lattice parameter meas., β and mixed (α+β) phases study 8-26496
Pd-H system, cluster calc. of electronic struct. of interstitial H 8-43326
Pd-H system, instability and superconductivity 8-39248
Pd-H(D), isotope effects in supercond. properties 8-6471
Pd-Ni, Auger sensitivity factors 8-43964
Pd-Ni, dil. paramag. alloy, local moments, rel. to nearly mag. impurities in nonmag. host 8-2647
Pd-Ni, onset of ferromagnetism 8-23270
Pd-Ni, thermopower and crit. conc., spin fluctuation system 8-30909
Pd-Ni-P metallic glass, energy loss spectra and Auger spectra 8-23563
Pd-Ni(Si), melt, struct. and physical-chemical props., thermodynamic props. *(Russian)* 8-18536
Pd-Ru, electron transport props., 50 mK-4.2K 8-14707
Pd-Ru-W(V)(Ti), elec. resist. and thermal cond. *(Russian)* 8-19017
Pd-Si, glassy, phonon transport below 100K 8-14422

palladium alloys continued
Pd-Ti liquid alloy, mass spectrometric study of high temp. thermodynamic stability 8-15369
Pd-Zn system, struct. stability of B2 and $L1_0$ phases 8-26495
PdAg wire, H_2 sorption, heat of adsorpt., sticking probabilities 8-43240
$Pd_{1-x}Ag_{1-x}$-Au, dil., electron density at Au, Mossbauer reson. 8-39473
Pd_5As, cryst. struct. and cryst. binding *(German)* 8-42958
$(Pd_{0.8}Au_{0.2})D_{0.04}$, thermal vibr. temp. depend., ion channelling exam. 8-47457
PdCo, dil., ferromag., nucl. mag. relax. 8-6590
$Pd_{77.6}Cu_6Si_{16.5}$, metallic glass, viscosity meas. from rates of thermal transformations 8-26713
$Pd_{781}Cu_{55}Si_{164}$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8-44268
α-$PdD_{0.007}$, lattice location and thermal props. determ. of D by ^{3}He channelling 8-38747
$PdD_{0.63}$, inelastic neutron scatt. line shapes, Pd-D, D-D force consts. 8-47481
Pd_3Fe, spin wave dispersion, neutron inelastic scatt. meas. 8-14943
$(Pd_{0.67}Fe_{0.33})_{1-x}Au_x$, ordering effects on mag. props. *(Russian)* 8-47942
Pd_2Ge, PdGe, growth kinetics on single cryst. and evaporated Ge 8-22985
$Pd_{21}Ge_8$, cryst. struct. *(German)* 8-18586
Pd_5Ge, cryst. struct. and cryst. binding *(German)* 8-42958
PdH_x film, elec. resist. meas. 8-31011
PdH_x, upper crit. field determ. 8-47919
PdH_x-Au, dil., electron density at Au, Mossbauer reson. 8-39473
$Pd_{1-x}H_x$ (x=0.59, 0.65), magnetic susceptibility meas. in temp. range 4.2 to 300K 8-18953
$Pd_2MnIn(Sn)(Sb)$, Cd impurities, hyperfine field meas. 8-15074
$Pd_2Mn_{1-x}Nb_xSn$, Heusler alloy, NMR and mag. coupling 8-43676
PdMnSb, hyperfine field at ^{125}Te, Mossbauer expts., compared with Jena-Geldart model 8-43707
Pd_2MnSb and PdMnSb, Heusler alloy, hyperfine field at ^{111}Cd, TDPAC meas. 8-43705
Pd_2MnSb, mag. hyperfine field of ^{129}I, Mossbauer spectra 8-43706
Pd_2MnSn alloy, ionic spin distribution and RKKY interactions 8-27028
Pd_2MnSn, Heusler alloy, NMR and mag. coupling 8-43676
$Pd_{48}Ni_{32}P_{20}$, metallic glass, viscosity meas. from rates of thermal transformations 8-26713
PdSi alloys, amorphous thermal behaviour and crystallisation kinetics 8-26446
Pd_2Si film on Si, metallic, resist. and Hall mobility meas. 8-47886
Pd_2Si film on Si, substrate temp. effect on microstruct., TEM obs. 8-14621
Pd_2Si layer, on Si, ion implantation damage, channelling obs. 8-30676
Pd_2Si, Schottky barrier, resistivity, elec. characts., barrier heights, solar cell use 8-14825
$Pd_{80}Si_{20}$, amorphous, structural changes by neutron irradiation, X-ray scatt. meas. 8-6104
$Pd_{80}Si_{20}$ glass, struct. simulation 8-38624
$PdTe_2$, bandstructure, Fermi surface, LMTO method 8-6264
Rh-Pd-Co, dil., local moment formation 8-43562
ScPd, UPS exam. 8-48276
UPd_4, localised cryst. field states, neutron inelastic scatt. obs. 8-14697
V-Pd, dil. alloys, surface segreg. 8-18883
$Zr_{0.7}Pd_{0.3}$, amorphous supercond., sp. ht. and thermal cond., 0.1-10K 8-26991

palladium compounds
see also palladium alloys
Pd complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8-39562
Pd, complex, linear chain type, synthesis 8-6047
Pd complex, $Pd(C_{18}H_{25}O_3)_2$, synthesis and props., possible mesomorphism 8-18749
Pd complex, S_4N_4 with $PdCl_2$, mass and IR spectra, config. 8-13494
Pd complex di-μ-chloro-bis(2-methyl-allyl-3-norboryl)palladium, cryst. data 8-34484
Pd mixed valence complexes, quasi-one-dimens., elec. props. at ultrahigh press. 8-2470
$Pd(CO)_4$, valence orbital energies, pseudopot. calcs. 8-37546
$PdD_{0.63}$, inelastic neutron scatt. line shapes, Pd-D, D-D force consts. 8-47481
PdH, role of optic phonons in superconductivity 8-39251
PdH, supercond., simple scaling theory of isotope effect 8-14878
$PdH_{0.76}$, ^{1}H spin-lattice relax. meas. 8-43672
PdH(D), energy loss spectra and Auger spectra 8-23563
PdH(D), superconducting, electronic spin density, isotope effects 8-39262
$PdH_x(D_x)$, band struct., supercond. props., APW calcs. and neutron scatt. 8-43511
PdO, semiconductivity and stability, optical props. 8-43497
PdSb, optical props., 0.5-5 eV 8-39522
PdX_4^{n-}, X=Cl, Br, n=1, 2, force consts., bond polarizability 8-5201
SnO_2-VO_x-PdO ceramic, switching and oscill. phenomena 8-6417

p.a.m. *see pulse amplitude modulation*

paper
capacitor, dielec. loss, effect of simultaneous application of AC and DC voltages, freq. and temp. depend. 8-15091
surface characterisation and printability criteria, stochastic approach 8-18878

paraelectric materials *see dielectric materials*

paraelectric resonance
orbital doublet, paraelec. reson. in presence of Jahn-Teller interaction 8-15137

parallel processing
micro-optoelectronic parallel processors *(Russian)* 8-46517
parallel preprocessing, nucl. data acquisition system 8-46247
space shuttle reentry, unsteady nonequilib. chemically reactive flow, parallel computation 8-47065

paralleled resonator filters *see band-pass filters*

paramagnetic-antiferromagnetic transitions
see also Neel temperature
amorphous ferromagnet, spin-glass and ferromagnetic behaviour induced by random uniaxial anisotropy 8-39338

paramagnetic-antiferromagnetic transitions continued
- band theory of antiferromagnetism, crit. exponents *(Russian)* 8−2646
- 1,3-bisdiphenylene-2-(p-chlorophenyl)-allyl, antiferromag. resonance, antiferromag. phase transition 8−6579
- calcium copper acetate hexahydrate, $CaCu(CH_3COO)_4.6H_2O$ and $CaCu(CD_3COO)_4.6H_2O$, susceptibility meas. 8−2680
- Hubbard model, CPA treatment, two sublattice alloy analogy method 8−19208
- Ising model, dipolar antiferromag., phase transition at negative absolute temp., Monte Carlo procedure *(Russian)* 8−43594
- s-f model with electron-hole reson., antiferromag. behaviour and phonon spectrum 8−47992
- TCNQ salt, pyridine $(TCNQ)_2$, phase transition at 80K investig. and interpret. 8−6530
- TMMC, linear antiferromag., 3D ordering and spin correlations, mag. field effect 8−19262
- $CeAl_2$, mag. ordering, neutron diffr. meas. 8−6518
- CeP(As), single crystals, low temp. thermal, electrical and mag. props. meas. 8−27051
- Cr, magnetic phase transition at Neel temp. 8−2681
- $CrAs_{0.42}Sb_{0.58}$, mag. and struct. transitions under press., elec. resist. meas. 8−27038
- Cr_2O_3, mag. phase boundaries near bicrit. and Neel points 8−34980
- Cr_2O_3:Ga_2O_3 EPR, antiferromagnetic coupling energy temp. depend. *(German)* 8−10766
- $CrSb_2$, heat capacity and thermodynamic props., mag. transition, enthalpy of decomposition 8−43591
- $CuCl_2.2H_2O$, effect of press. on mag. phase transition, NMR meas. 8−19253
- Dy, magnetic transitions and internal friction temp. depend. *(Russian)* 8−39317
- $EuSO_4$, sp. ht. and susceptibility meas. 8−14977
- Fe-Cr-Ni alloy, Kh18N10, rel. to thermal expansion, 4.2-290K *(Russian)* 8−47537
- $FeBr_2$, hyperfine interaction, ^{57}Fe Mossbauer expts., mag. transition obs. 8−43720
- FeI_2, hyperfine interaction, ^{57}Fe Mossbauer expts., mag. transition obs. 8−43720
- FeP, mag. suscept., resistivity and thermal expansion meas. 8−2661
- ^3He, solid, mag. susceptibility near ordering temp., pulsed NMR meas. 8−18869
- Mn-Cu, mag. and cryst. struct., neutron and X-ray diffr. meas. *(Russian)* 8−22694
- Mn-Ni, single cryst. or polycryst., elastic anomalies at antiferromag. transition 8−14972
- MnSi, crit. transverse US attenuation, spin fluctuations 8−48022
- $Mn_cZn_{1-c}F_2$, crit. neutron scatt. near percolation threshold 8−2693
- $Ni_{1-x}Li_xO$, $0.01 \leq x \leq 0.08$, mag. susceptibility in region 80 to 800K *(Russian)* 8−2664
- $NiS_{2-x}Se_x$, elec. resistivity temp. depend., pressure depend. 8−10690
- $SrEu_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
- $SrTb_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
- Tb_5Ge_4, mag. struct. and mag. transitions, neutron diffr. expts. 8−43564
- UO_2, cross over, discontinuous to continuous phase transition in external mag. field 8−43592

paramagnetic Curie temperature *see Curie temperature*

paramagnetic-ferromagnetic transitions *see ferromagnetic-paramagnetic transitions*

paramagnetic properties of substances
- *see also paramagnetic resonance; paramagnetism*
- bis(p-toluene sulphonate) diacetylene polymer, spin conc., g-values of single cryst. from EPR study 8−48037
- chromocene, mag. props., complete ligand field theory 8−31048
- cobaltocene, mag. props., complete ligand field theory 8−31048
- diacetylene polymer, EPR exam. of partially crystalline polymer extracts 8−39400
- Elinvar, Curie point, magnetisation and susceptibility, heat treatment effects *(Russian)* 8−47973
- graphite intercalation compounds with alkali metals and halogens, physical props. 8−31050
- graphite intercalation compounds with K and tetrahydrofuran *(French)* 8−26692
- graphite-K inclusion compounds, paramagnetism after treatment by π or n donors *(French)* 8−10749
- graphite-nitrate residue compounds, phys. props. 8−10199
- graphite-UF_6 intercalation compounds, NMR exam. 8−39416
- matrix isolated species, MCD spectrosc. appls. 8−46378
- metal particles, thermodynamics and paramag. props. of electrons 8−31051
- metals, crit. transverse US attenuation, spin fluctuations 8−48022
- molecular complexes, nucl. spin-lattice relax., electron spin density matrix theory 8−13521
- neutron polarisation, crit. scatt. above Curie pt. 8−43565
- oxyhaemoglobin, mag. susceptibility of frozen aq. soln., 25 to 250K 8−6507
- rare earth chromates (lanthanide series), paramag. state, crystalline elec. field calcs. 8−39074
- rare earth compounds, phenomenological study of supercond. 8−43512
- rare earth dodecaborides, nature of magnetism *(Russian)* 8−31049
- rare earth double nitrate, Van Vleck temp. independent suscept. 8−43555
- rare earth iron silicides, $R_2Fe_4Si_9$ and $RFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8−34957
- rare earth-transition metal intermetallics, struct. and props. review 8−10668
- TCNQ complexes, $Qn(TCNQ)_2$, NMePh.TCNQ, and Li^+TCNQ^-, mag. susceptibility and sp. ht. 8−43556
- TCNQ complexes with dipyranylidene and dithiadipyranylidene, high cond. investigs. and related props. 8−6368
- TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
- TCNQ salt, DECA $(TCNQ)_2$, struct., phys. props. and irreversible phase transition 8−6273
- TCNQ salt, HMTTF-TCNQ, metallic organic charge transfer complex, chemical prep. and phys. props. 8−2471
- TCNQ salts, complex, with symmetric and asymmetric donors, transport and mag. props. 8−6315

paramagnetic properties of substances continued
- TCNQ-NMP, disordered, paramag. susceptibility 8−10645
- TMBP.HCNB and TMBTP.HCNB complexes, elec. and mag. props. 8−6512
- transition metal, band model, mag. susceptibility of exchange-enhanced paramagnet 8−2644
- transition metal borides, cryst. struct., prep. methods, chem., elec., mag. props., appls., book contrib. 8−47307
- transition metal complexes, mag. exchange in s=1/2 systems 8−43553
- d-transition metal hydride, mag. suscept. and quasirigid model *(Russian)* 8−26805
- transition metal pyrites, mag. and elec. props., review *(Japanese)* 8−47941
- trimethylammonium manganese bromide, mag., anisotropy, biquadratic exchange 8−14952
- TTF-TCNQ, single cryst., mag. susceptibility in phase transition region, two-gap model 8−6511
- W-dichalcogenide, valence band nature, elec. and mag. props 8−39014
- Au_4V, effect of structural changes on phys. props. 8−31400
- $Ba_2Zn_2Fe_{12}O_{22}$, model for low mag. moment, magnetisation meas., 5-1375K 8−2655
- C, amorphous, anomalous low temp. mag. and thermal props. 8−10647
- $CaFeO_3$, preparation, cryst. struct., mag. and elec. props. 8−44066
- $(Ca_{1-x}Mg_x)RuO_3$, mag. props. 8−27027
- $CdGe_{1-x}M_xAs_2$ (M=Si,Sn,Pb), amorphous struct., mag. susceptibility 8−22651
- $Ce(Cu,Ni)_2$, pseudobinary phases, struct. and mag. props. rel. to Ce valence 8−6032
- $CeIn_{3-x}Sn_x$, conduction electrons role in valency fluctuations 8−47741
- CeP(As), single crystals, low temp. thermal, electrical and mag. props. meas. 8−27051
- $Ce_{0.74}Th_{0.26}$, mixed valence alloy, spin dynamics 8−10708
- Co, small-angle crit. neutron scatt. 8−31087
- CoO, paramag. shifts of ^{19}F at O 8−43719
- Co_2TiAl, ^{59}Co NMR, above and below Curie temp. 8−2760
- $Cr_{1-x}V_xCo$, localised mag. moment of Co impurity 8−27014
- $Cr_{1-x}V_xCo$, mag. state of Co impurity, NMR exam. 8−27100
- $CuAl_{1-x}Fe_xS_2$ system, delocalisation of d-electrons, mag., elec. and optical obs. 8−34804
- $CuSeO_4$, $S={}^1/_2$ Heisenberg antiferromag. linear chain, proton spin-lattice relax., rel. to paramag. state 8−39433
- Eu chalcogenide, spin-disorder Raman scatt., mag. phase depend., theory 8−10887
- Eu chalcogenides, paramag., spin-disorder-induced Raman scatt. 8−19474
- Eu^{2+}-ionic compounds, magnetic interaction potential 8−10682
- EuO(S), effect of pressure on energy gaps 8−19239
- EuSe, mag. phase depend. Raman scatt. 8−10886
- EuSe, optical absorption exam., electron phonon interactions 8−10923
- Fe complex, Fe (II) pseudo-tetragonal high-spin cpds., paramag. susceptibility amd Mossbauer quadrupole splitting 8−26834
- Fe complex, $Fe(5\text{-methylpyrazole})_4X_2$, X=Cl, Br, I, mag. susceptibility, mag. saturation; Mossbauer and ligand field spectra, single model interpretation 8−23064
- Fe complex, $Fe(pyrazole)_4X_2$, X=Cl, Br, I, mag. susceptibility, mag. saturation; Mossbauer and ligand field spectra, single model interpretation 8−23064
- Fe, crit. fluctuations, Mossbauer obs. 8−43724
- Fe, neutron critical scatt., above T_c, polaris. asymmetry 8−34994
- $Fe_{0.7}Al_{0.3}$, local environment effects and magnetic clustering 8−10658
- $FeBO_3$-MBO_3 solid soln., (M=Mn, Cr, Al, Ga, In), synthesis, crystal chem. and mag. props. 8−31058
- $(Fe_{1-x}Ni_x)_2P$, mag. props. 8−23248
- FeS_2, mag. susceptibility press. depend., bandstruct. calcs. 8−19212
- Fe_3Se_4, mag. props., 4.2-600K 8−43570
- $FeSn(OH)_6$, mag. props. 8−43574
- $Fe_xV_{1-x}O_2$, mag. props. and Mossbauer spectra meas., exchange-coupled Fe^{3+} clusters at lower temp. 8−31136
- GaP-based III-V solid solns., bonding and energy gap, mag. meas. 8−18580
- Gd clusters in faujasite type zeolites, mag. suscept. temp. depend. 8−14925
- Gd, ferromag., magneto-optical reson., optical consts. determ. 8−6657
- Gd, optical consts. polarimetric meas., mag. ordering effects 8−15184
- Gd^{3+} Gd-ionic compounds, magnetic interaction potential 8−10682
- Gd-Mn alloy, mag. props. and effect of H_2 absorpt. 8−19250
- $Gd(Fe_xCo_{1-x})_2$, paramag. behaviour, itineracy 8−39289
- $GdVO_4$:Ho^{3+}, optically excited doublet splitting in magnetically ordered state 8−19238
- ^3He solid, paramag., low-temp. diffusive transport for polarons and defectons 8−43174
- ^3He, solid BCC, four spin exchange, susceptibility behaviour below 10 mK 8−10253
- Ho-Au, dil., hyperfine interaction of Ho^{3+}, nuclear orientation expts. 8−43717
- $(La_{0.5}Na_{0.5})RuO_3$, mag. props. 8−27027
- Li_2Gd_4 $(MoO_4)_7$, ferroelec. and paramag. props. 8−39517
- Lu-Mn alloy, mag. props. and effect of H_2 absorpt. 8−19250
- Lu-rare field, dil. alloy, cryst. field parameter determ. 8−10650
- $MgSO_4.xH_2O$, mag. susceptibility, polaris. paramag., water of crystallisation effect 8−31047
- $MnCl_2.2H_2O$, ordered, paramag. phases, optical absorpt. spectra, V-lines, Zeeman effects 8−6698
- $MnCl_2.2H_2O$, paramag. phase, external mag. field depend. of $^4T_{2g}(II)$ Kramer doublets of Mn^{2+} 8−6700
- $Mn_{0.25}NbS_2$, mag. anomaly rel. to struct. disordering 8−43557
- Mo-dichalcogenide, valence band nature, elec. and mag. props. 8−39014
- $Mo_{1-x}Re_xCo$, mag. state of Co impurity, NMR exam. 8−27100
- $(NH_4)_2Ni(SeO_4)_2.6H_2O$:$Mn^{2+}$, EPR spectra, spin quenching 8−2732
- $Nd_2Ti_2O_7$, Nd_2TiO_5, paramag. props., mag. susceptibility meas. 1.6 to 70K 8−10649
- $NdVO_3$-$CaVO_3$ solid solns., mag. props. rel. to cryst. struct. 8−43571
- Ni complex, hexamethylphosphorotriamide Ni (II), paramagnetic, pulsed NMR, substitution reaction *(French)* 8−10793
- Ni, thermal expansion, 300-1000K, and power law consts. near Curie temp. 8−38858
- Ni_x Cu_{1-x} paramag., coherent pot. approx. for nonoverlapping muffin tin potentials 8−2451
- Ni_3Al, Mossbauer experiments on homogeneity 8−48395

paramagnetic properties of substances continued
$NiBr_2.6H_2O$, antiferromag. ordering and paramag. behaviour 8−14941
NiO, paramag. shifts of ^{19}F at O 8−43719
Pd, band model, mag. susceptibility of exchange-enhanced paramagnet 8−2644
Pd, magnetic properties in para-process region *(Russian)* 8−2672
$(Pd_{0.67}Fe_{0.33})_{1-x}Au_x$, ordering effects on mag. props. *(Russian)* 8−47942
pt, band model, mag. susceptibility of exchange-enhanced paramagnet 8−2644
$RbMnF_3$, Heisenberg antiferromagnet, paramag. region, NMR, spin pair correl. 8−15032
Sc, susceptibility, temp. depend., theoretical explanation 8−47944
Sc-rare earth, dil. alloy, cryst. field parameter determ. 8−10650
Sc_3In, itinerant electron ferromag., NMR and relax. 8−6586
Sn_3As_2, and Sn_4As_3, mag. susceptibility components 8−43551
Te, liq., mag. susceptibility, temp. depend. 8−47943
Th-Mn alloy, mag. props. and effect of H_2 absorpt. 8−19250
Ti-Cu alloys, mag. susceptibility meas., paramagnetic susceptibility meas. Curie temp. and mag. moments calc. *(Russian)* 8−34956
TiC, mag. suscept. rel. to temp. in homogeneity region 8−34953
Ti_5O_9, phase transitions, elec. cond., mag. susceptibility, sp. ht., EPR and struct. aspects 8−10526
Tm, magnetisation, uniaxial anisotropy, mean field model 8−2660
Tm pnictides, van Vleck paramag., relax., host exchange parameters 8−2735
U monopnictides, mag. props. 8−43554
V hyperfine particles, surface magnetisation, explanation of expt. work 8−23303
V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8−10594
$V_{1-x}Re_xO_2$ $(0 \leq x \leq 0.15)$, insulator-metal transition, DTA, X-ray, mag. and elec. meas. 8−10353
Y-Mn alloy, mag. props. and effect of H_2 absorpt. 8−19250
Y-rare earth, dil. alloy, cryst. field parameter determ. 8−10650
$Y(Fe_xCO_{1-x})_2$ model, Co, mean mag. moment composition depend.; reciprocal susceptibility, thermal var. 8−47945
$YbInAu_2$, intermediate valence cpd., mag. susceptibility expts., 4.2-280K 8−39288
$YbNi_2Ge_2$, intermediate valence cpd., mag. susceptibility expts., 4.2-280K 8−39288
Yb_xSy, synthesis and mag. props. 8−23242

paramagnetic resonance
see also acoustic paramagnetic resonance; CESR; CIDEP; electron spin-lattice relaxation; ENDOR; EPR line breadth; paramagnetic resonance of colour centres; paramagnetic resonance of free radicals; paramagnetic resonance of ions and impurities; spin echo (EPR); spin-spin relaxation
anthracene: tetracene cryst., triplet-state EPR for isolated mol. orientation 8−26583
anthracene-TCNB charge transfer crystal, orientational phase transition, EPR, Raman spectroscopy exam. 8−26817
anthracene-tetracyanobenzene cryst., triplet excitons, zero-field EPR splitting temp. depend. 8−10748
atomic reactions with solid surfaces, via ultrahigh vacuum/flow system 8−7232
bacteria, photosynthetic, triplet-state EPR spin polaris., intramol. model 8−44469
bis(p-toluene sulphonate) diacetylene polymer, spin conc., g-values of single cryst. from EPR study 8−48037
blue proteins, activation of electron transfer reactions 8−44446
carbene in polydiacetylene, zero field splitting parameter 8−27075
cavity loading effect on analytical ESR spectroscopy 8−7253
chlorophyll, photosynthesis mechanism, upconversion, EPR and O_2 evolution data anal. 8−35811
chlorophylls, triplet state ESR, fine struct. and rate consts. determ. 8−25574
chlorophylls, triplet state ESR, fine structs. and rate consts. determ. 8−25575
cyclic A_{2n}-systems, trans induction effect in NMR and ESR spectra 8−29799
diacetylene polymer, EPR exam. of partially crystalline polymer extracts 8−39400
EPR multipurpose cavities, 1.6-1300K appl. 8−8430
graphite, neutron-irradiated, EPR, rel. to electronic struct. *(Japanese)* 8−19326
graphite intercalation compounds with K and tetrahydrofuran *(French)* 8−26692
graphite-K inclusion compounds, paramagnetism after treatment by π or n donors *(French)* 8−10749
Heisenberg magnets, pure and pseudo-one-dimens. temp. depend. of EPR freqs. 8−6563
high-temperature molecules, matrix isolation spectra, review 8−46340
interstellar molecules, matrix isolation spectra, review 8−46340
kinetic equations for solid paramagnet in alternating longitudinal field 8−2725
liquid crystals, nematic and smectic, EPR and NMR relax., first-rank tensor component effects 8−14275
liquid nitrogen bubbling problem in ESR 8−263
minerals, nonsilicate, review 8−39384
molecular fragmentary composition, determ. by IR, EPR and US mag. reson. spectra *(Russian)* 8−13624
naphthalene: anthracene, cryst., triplet-state EPR for isolated mol. orientation 8−26583
nematic liquid crystal, spinning in tilted mag. field, lag angle 8−38615
packed cell sample prep. 8−28145
pheophytins, lowest triplet state, zero field splitting consts., decay rate consts., EPR determ. 8−27896
polyhedral A_{2n}-systems, trans induction effect in NMR and ESR spectra 8−29799
polypropylene, electret, trapped injected electrons, EPR obs. 8−27093
porphyrin, triplet-state EPR spin polaris., intramol. model for photosynthetic bacteria 8−44469
pyrene, crystalline, EPR spectrum of triplet excitons 8−27076
quadrupole interaction for nucl. spin=3/2 systems 8−48027
radiation emissions due to saturation of magnetic resonance 8−39386
sample tube, gas-permeable 8−260
saturation transfer EPR spectroscopy, source modulation, mol. reorientation effects 8−41339
solid, thermally stimulated processes 8−10828

paramagnetic resonance continued
superheterodyne UHF spectrometer for temp. 0.04-4.2K 8−257
TCNQ complexes with dipyranylidene and dithiadipyranylidene, high cond. investigs. and related props. 8−6368
TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
TCNQ salt, pyridine $(TCNQ)_2$, phase transition at 80K investig. and interpret. 8−6530
TCNQ salts, simple, triplet exciton obs. by ESR 8−10373
1,2,4,5-tetrachlorobenzene, triplet excitons, ESR and ODMR 8−43681
transmission EPR spectrometer, appl. of tunable waveguide refl. maser. 8−5443
$TTT_{1,2}NiS_4C_4H_4$, quasi-one-dimensional cond., cryst., mag. and elec. props. 8−10424
two radiation source spectrometer, signal decrease, beat phenomena *(French)* 8−41338
X-band ESR spectrometer, microwave kit for conversion to K-band operation 8−21192
$CS+O \rightarrow CO+S$, rate const. temp. depend., ESR-mass spectrometer obs. 8−20013
D, stabilised in low temp. frozen aqueous acidic solns., two-proton forbidden transitions 8−27804
Ge-S glasses, EPR study 8−43644
Ge-S-Ag glasses, bulk and film, EPR study 8−43644
Ge-Si amorphous film, ferromagnetic interaction between spins 8−2710
$Ge_{1-x}Se_x$ film, EPR, elec. and optical props. meas. 8−48038
MnO, ESR spectra, matrix isolated at 4K 8−33531
MnO_2, ESR spectra, matrix isolated at 4K 8−33531
MnO_3, ESR spectra, matrix isolated at 4K 8−33531
MnO_4, ESR spectra, matrix isolated at 4K 8−33531
NO_2, EPR, mag. dipole transitions, Zeeman parameters 8−17697
$NO(^2\Pi_{3/2}, J=3/2)$ at X-band, high resolution EPR spectra 8−37661
Na_2O-TiO_2-SiO_2 glass, IR refl., Raman and EPR spectra, struct. *(Russian)* 8−2860
O_2 liquid, EPR temp. depend. *(Russian)* 8−31103
Si, amorphisation by bombardment with O ions, electron diffr. and EPR meas. 8−10098
Si, energy depend. of amorphisation by ion implantation 8−2175
Si, heavily irrad., ESR obs. of annealing characts. 8−10771
Si, spin dependent effects, theory 8−23342
Si, spin dependent recombination and photoconductive resonance 8−43439
Si:B:P, dislocated crystals, EPR spectra, estimation of dangling bond conc. 8−10400
Si-SiO_2 bonding layer, EPR exam. 8−15022
TMMC, one-dimensional mag., anomalous shift of EPR field 8−15010
TiO_2, slightly vacuum-reduced, {312} planar defects, correl. with EPR defect centres 8−22736
Ti_2O_3, cryst. growth by chem. transport and tri-arc methods, and characterisation 8−3003

paramagnetic resonance of colour centres
inc. other defects involving initial vacancy or interstitial formation
alkali halides:Ga^+, Jahn-Teller effect, EPR study 8−43690
alkali halides, EPR in relaxed excited state of F-centres, detection via saturated optical pumping 8−6606
alkaline earth fluoride, EPR of triplet state of self-trapped excitons 8−43684
apatites with Ca deficiency, H atom stabilisation 8−23340
chars, heat treatment, EPR rel. to temp., A-centers 8−43639
chars, heat treatment, EPR rel. to temp., spin centres 8−48036
conference on optical techniques in mag. reson. spectroscopy, Dublin, Ireland (Aug. 1977). 8−43683
fluorochloroapatite, synthetic, defect struct. and colour centres obs. *(Russian)* 8−30612
glass, colour centre form. by UV irrad., afterglow, thermolum. and EPR obs. 8−10047
glass, Libyan Desert Glass, redox form. conditions, EPR obs. of as-received and irrad. samples 8−28228
radiation damage tetragonal R2 centre, optical and EPR spectra 8−2888
sodium metaphosphate glasses, γ-irrad., ESR 8−23339
Ag halide, EPR of triplet state of self-trapped excitons 8−43684
$AgBr_{1-x}Cl_x$, ESR of self-trapped holes, Jahn-Teller and reorientation effects 8−27092
$AgBr_{1-x}Cl_x$, mixed cryst., formation of self-trapped holes 8−39399
As_2S_3, glassy, X-ray induced paramag. colour centres 8−19327
As_2Se_3, glassy, X-ray induced paramag. colour centres 8−19327
$[(100\text{-}x)B_2O_3.xLi_2O]_{98}.2CdO$, glass, X-ray irrad., EPR study of Cd^+ centres *(French)* 8−43638
BaO-Al_2O_3-B_2O_3:Ce^{3+} glass, EPR spectra, before and after X-irrad. 8−19320
CaF_2, doped, colour centre form. by UV irrad., afterglow, thermolum. and EPR obs. 8−10047
CaF_2:U^{5+}, single cryst., EPR 8−19325
CaF_2:U^{5+}, trigonal centres, hyperfine parameters, EPR 8−43643
CaF_2:U^{5+}, trigonal EPR spectrum 8−15021
CaO, $^3T_{1u}$ of F-centre, EPR, unaxial stress effects 8−48040
CaO, $^3T_{1u}$ state of F-centre, ODMR spectra 8−43685
CaO, $^3T_{1u}$ state of F-centre, paramag. relax. optical detect. 8−43687
CaO, F_a(Mo) centre, spin coherence zero-field double reson. 8−43689
CaO, F-centre, selective excitation, detection of EPR 8−43688
CaO, F-centres, laser selective excitation and double reson. in Jahn-Teller systems 8−19379
CaO, line broadening of EPR and zero phonon lines of F centres 8−43686
$Ca_3(PO_4)_2$-$CaCl_2$:F^-, EPR of electron excess centres 8−10772
CsBr, F-centres, EPR in relaxed excited state, detection via saturated optical pumping 8−6606
CsBr, F-centres, relaxed excited state, ESR, detected via optical pumping 8−43693
CsCl, F-centres, EPR in relaxed excited state, detection via saturated optical pumping 8−6606
CsCl, F-centres, relaxed excited state, ESR, detected via optical pumping 8−43693
KBr, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769
KCl, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769

paramagnetic resonance of colour centres continued
- KCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
- KCl:Eu, OH^-, EPR meas. on Eu^{2+} complex 8−10773
- Li disilicate glass, radiation induced centres, EPR exam. 8−35033
- $LiNbO_3$, pure, two-photon photorefractive recording 8−31220
- Li_2O, neutron irradiated, ESR of F^+, O^-, H^0 and colloidal Li centres 8−2737
- MgO:Li, $[Li]^0$ defect, high temp. and ionisation induced effects 8−34509
- MgO:Sn(Al), ESR of colour centres-destruction temp. 8−10998
- NaCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
- NaCl:Zn^+, X-irrad., EPR and optical absorpt. 8−43642
- $Na_5P_3O_{10}$, γ-irrad., PO_3^{2-} EPR obs. 8−27091
- Si, EPR of radiation defects, temp. depend. 8−15023
- Si, interstitials and lattice vacancies 8−10038
- Si:O, EPR spectra of heat treatment centres 8−48039
- Si-SiO_2 interface, surface states and elec. defects obs. using ESR 8−23169
- SiO_2 glass, low press. plasma treatment, paramag. defect form. *(German)* 8−23341
- SiO_2, noncryst., radiation-induced defect centres, ESR spectra and struct. 8−23343
- SiO_2:Ag, fused, crystalline, ESR 8−10954
- SiO_{2-x} system, model for paramagnetic E′-centre 8−35034
- SrO:D, γ-irrad., V_{od} defects, EPR and ENDOR 8−27116
- WO_3, single cryst. and amorphous film, ESR of defects 8−10770
- Y_2O_3, formation and changes in point defects, EPR, optical transitions and thermolum. spectra 8−2118

paramagnetic resonance of conduction electrons *see CESR*

paramagnetic resonance of free radicals
- L-α-alanine, cryst., cationic radicals, EPR 8−11537
- amino acids, aq. solns. EPR of spin-trapped radicals, hydrated electron reactions 8−27796
- α-aminoisobutyric acid, cryst., γ-irrad., cation radicals, ESR obs., SCF-MO-INDO calcs. 8−11537
- anthracene, γ-irrad., radical pairs EPR detection 8−31664
- anthracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- atmospheric free radicals, meas. by matrix isolation EPR 8−46374
- 9-aza-bicyclo (3,3,1)nonan-3-one-9-oxyl, dimerisation, ESR, NO radical pair exchange 8−19330
- bacteriorhodopsin photoconversion products, EPR and low temp. spectrophotometry 8−15769
- benzene, γ-irrad., radical pairs EPR detection 8−31664
- benzene, γ-radiolysis, phenyl radical intermediate, spin trapping, EPR 8−7218
- 5-bromodeoxyuridine, single cryst., X-irrad. at 77K, $C_{5'}$-centred deoxyribose radical 8−20032
- cetyltrimethylammonium bromide, micelles, solubilised nitroxide spin probes, ESR 8−21950
- 5-chlorodeoxyuridine, single cryst., X-irrad. at 77K, $C_{5'}$-centred deoxyribose radical 8−20032
- computer analysis, conc. determ. and resolution of multiple-component spectra 8−259
- cyclohexane, plastic-phase, NO-doped, heterogeneous solid soln., mag. reson. evidence 8−34449
- cytosine derivatives, photosensitised induction by H-addition radicals in frozen aqueous soln. 8−20146
- cytosine monohydrate, single cryst., γ-irrad., ion radical recomb. 8−15776
- di-t-butyl nitroxide, in benzene, solvent-solute interactions, ESR, DNP 8−17698
- dimethyl sulfone, X-irrad. cryst., ESR spectrum 8−3351
- dipeptides, aliphatic, EPR studies of direct photolysis 8−48678
- DPPH, exchange integral determ. by ESR in weak Zeeman fields 8−2740
- DPPH, polycryst., forbidden EPR transition 8−48044
- erythrocyte membrane struct. changes due to cAMP, spin-probe study 8−31779
- erythrocyte membrane-haemoglobin interaction, γ-ray effects, EPR 8−7402
- glycine, cryst., cationic radicals, EPR 8−11537
- glycyl anion radical, in α-glycine cryst., struct., ESR obs. 8−33530
- dGMP γ-irrad. in frozen soln., free radical form., computer EPR spectra anal. 8−31774
- hydroxymethyl radical, isotropic hyperfine coupling consts., temp. depend., nuclear vibrs. 8−35039
- hydroxymethyl radicals, adsorption on A-type zeolites, electron spin echo obs. 8−21947
- inositol, X-irrad., radical form. detection by ESR and ENDOR, oxidation process 8−27797
- iodonium cyclic compound, ESR signal *(Chinese)* 8−15025
- methyl radical, isotropic hyperfine coupling consts., temp. depend., nuclear vibrs. 8−35039
- methylene-d_0, -d_2, in Xe matrix, EPR, temp. depend. 8−5255
- 6-methylmercaptopurine riboside, 4 MeV electron irrad., 77K radicals form., EPR obs. 8−39405
- mitochondria phosphorylation and respiration 8−31784
- naphthalene, γ-irrad., radical pairs EPR detection 8−31664
- perylene, anthracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- L-phenylalanine.HCl, X-ray induced radical form. 8−48755
- photosynthesis, electron spin polarisation and mechanism of electron transfer in photosystem I 8−40122
- polydextran, γ-irrad. frozen gel, electron trapping, EPR and optical obs. 8−20030
- polyethylene oxide, solid-state relaxation, spin labelling technique 8−9963
- polymer, spatially cross-linked, spin-lattice relax. time meas. of free radicals 8−19331
- polymer track detector, form. of heavy ion latent tracks 8−17522
- protein aggregates exposed to UV radiation, limiting conc. of paramag. centres 8−24029
- purine, powder, γ-irrad., dose-response curves 8−7215
- pyrimidines, substituted, UV irrad. in aq. solns. 8−40115
- pyrrole, free radicals produced by X-irrad. and decay of tritium atom, EPR study 8−48676

paramagnetic resonance of free radicals continued
- radical pair with axial symmetry, EPR parameters and linewidth components 8−6573
- cis-stilbene radical anion, ESR, proton coupling const. 8−21948
- succinamic acid, X-irrad., primitive radn. damage, ESR, ENDOR 8−3352
- TANOL, linear chain-like organic free radical, EPR line widths 8−39404
- TCNQ salt, HMTTF-TCNQ, metallic organic charge transfer complex, chemical prep. and phys. props. 8−2471
- tetracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- tetrafluoroethylene radical anion, isotropic and anisotropic EPR spectra, conform. 8−13532
- tetrafluoroethylene radical ion+tetrafluoroethylene, cycloaddition 8−13533
- tetrahydro-2-methylfuran glass, γ-irrad., spin trapping of radicals by BNB, EPR obs. 8−10776
- triphenylantimony, single crystal, irrad. by UV, diphenylantimony radical prod., ESR 8−31662
- triphenylmethyl-^{13}C phosphonium chloride, Ph_3P^+-$^{13}CH_2$ EPR, reorientation and hyperfine coupling tensor 8−6574
- triphenylstannyl radical, EPR in single cryst. matrix, ^{119}Sn hyperfine coupling tensors 8−23346
- trypsin, in suspension, radical form. and inactivation after Γ-irrad. 8−3564
- uracil derivatives, photosensitised induction by H-addition radicals in frozen aqueous soln. 8−20146
- violanthrone, free radical, EPR meas. 8−27094
- BiF_6^{2-}, prod. in gamma irrad. $CsAsF_6$:BiF_6^-, EPR 8−19329
- CdS, aq. dispersion, O_2^- generation by photolysis, spin trapping detect. 8−11538
- 2-chlorothiophene, σ* anion radical, prod., ESR spectrum assignment 8−11539
- Cu complex (acetylacetonate), in vitreous liq. cryst. matrix, ang. depend. of EPR spectrum 8−9175
- H_2O^-, in γ-irrad. Y-type zeolite, alternative EPR triplet assignment to NO_3^{2-} 8−11534
- $^{83}Kr_2F$ radical, in UV-irrad. Kr/CF_3OF, 10K, ^{83}Kr hyperfine EPR spectrum, struct. 8−42101
- MgO, coadsorpt. of CO_2 and O_2, UV irrad., ESR of radicals 8−6572
- NH_4ClO_4, γ-irrad. single cryst., NH_3^+ EPR obs., g-tensor hyperfine splitting 8−2739
- $(NH_4)_2SO_4$:SeO_3^-, γ-irrad., hyperfine interaction, ferroelec. transition effects, EPR expt. 8−15024
- NO, EPR line shape in solvating mixtures 8−33532
- NO_3^{2-}, in γ-irrad. Y-type zeolite, EPR triplet assignment, instead of H_2O^- 8−11534
- Na_2O-B_2O_3:Se, EPR, γ-ray effects *(Russian)* 8−31109
- OD, $^2\Pi_{3/2}$ state EPR spectra 8−21949
- SiF_3Cl^-, radical anion struct. and ESR spectrum 8−25571

paramagnetic resonance of ions and impurities
- *see also paramagnetic resonance of iron group ions and impurities; paramagnetic resonance of palladium and platinum group ions and impurities; paramagnetic resonance of rare earth ions and impurities*
- alkaline earth-uranium mixed oxides, EPR spectra 8−27090
- bottlenecked EPR, singly, doubly, multiply bottlenecked systems 8−27078
- chloroplasts, response to illum. sequence of four flashes 8−7325
- d^1 ion in cryst., orbital singlet EPR parameters 8−10751
- defect pairs, dielec. relax. meas. using electric-field-modulated EPR of paramagnetic ion probe 8−23392
- diamond, partial dissoc. of N aggregates by high press.-high temp. treatment, EPR meas. 8−43904
- ferroelectric, H-bonded, soft and central modes, mag. reson., review 8−15108
- gapless superconductors, localised mag. moments, EPR *(Russian)* 8−34920
- local electric field, impurity centre dipole transitions *(Russian)* 8−34811
- phenazine: azulene, EPR, azulene triplet state 8−35024
- teaching, introductory student expt. 8−41119
- thermal splitting of reson. freq. for ions interacting with reson. RF field 8−10753
- transition metal ion complexes, mag. g-tensors, spin-orbit coupling 8−10752
- ^{40}Ar:^{41}K, matrix isolation model system 8−45722
- BiI_3, doped, IR photolum. and EPR spectra 8−19558
- $Ca_{10}(PO_4)_6F_2$:NO_2^{2-} apatite, ESR, struct. of ions *(French)* 8−43640
- $CuGaS_2$, ESR assessment of S diffusion behaviour on annealing 8−35036
- GeO_2:Al, tetragonal, $[Al]^0$ centre, nuclear Zeeman and quadrupole effects 8−35035
- KCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
- β-K_2SO_4:Tl^{2+}, ESR spectra theory 8−23323
- NaCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
- β-$Na_xV_2O_5$, EPR evidence of Na clustering 8−43630
- γ-O_2, EPR spectra *(Russian)* 8−6565
- Si:B, ESR at zero and small external stress, interpreted in spin Hamiltonians 8−43641
- Si:Li, EPR in mechanically affected sampler 8−39385
- Si:Li, nonrandom strain, EPR of thermally excited donors 8−43629
- SnO_2, ESR of adsorbed O species *(Japanese)* 8−10750

paramagnetic resonance of iron group ions and impurities
- alum:Cr^{3+}(Fe^{3+}), forbidden EPR transitions, theory 8−31106
- CdS:N, Mn, ion implanted, anomalous enhancement of EPR signal of Mn^{2+} 8−27080
- chloroplast, EPR signal II and Mn-water splitting, factors influencing stability 8−24038
- Cl Mn II complex with protein, EPR spectra and zero field splitting interaction 8−35793
- copper porphine, Xα multiple scatt. calcs., EPR and electronic spectra 8−13426
- copper tetraphenyl porphyrins, mag. diluted, EPR meas. 8−39391
- diethylammonium manganese chloride, T_1 and T_2 meas. by LODESR 8−15064
- glass, Libyan Desert Glass, redox form. conditions, EPR obs. of as-received and irrad. samples 8−28228

paramagnetic resonance of iron group ions and impurities continued
glass, phase separated, EPR rel. to struct., elec. and opt. props. 8−23333
graphite intercalation compounds, $C_{13}CrO_3$ and $Cr_{27}CrO_2Cl_2$, Cr oxidation state determ. 8−35051
guanadinium zinc sulphate:Cu^{2+}, EPR of Cu^{2+} at tetrahedrally coordinated Zn^{2+} sites 8−39388
high spin d^5 system, isotropic g-tensor 8−10757
high-potential Fe protein of Chromatium vinosum, low-lying excited state 8−3448
II-VI semiconductor, Cr^{2+}-doped, Jahn-Teller interaction energy calc. 8−2455
iron porphyrin chlorides, X-ray, EPR and mag. susceptibility obs., intermol. exchange interaction 8−10765
manganese stearate monolayer, two-dimensional mag., prep. and characterisation 8−31097
methylammonium chromium alum, single cryst., Cr^{3+} EPR, g-factor, hyperfine splitting 8−2729
peptide-Cu II interaction, EPR and optical absorpt. 8−27881
polyvinyl acetate:Cu, and undoped, thermally stimulated currents exam. 8−35083
1-3-propanediammonium-$CuCl_4$, ferromag., antisymmetric and anisotropic exchange, EPR linewidth 8−10761
resin:Cu^{2+}, interaction with ligands, EPR meas. 8−10756
resin:VO^{2+}, interaction with ligands, EPR meas. 8−10756
ruby:Ni, cross relaxation 8−39389
ruby, EPR spectrum, temp. depend., cryst. field parameters determ. 8−15016
strontium acetate hemihydrate:Cu^{2+}, EPR of cryst. 8−19312
tetramethylammonium cadmium trichloride:Mn^{2+}, EPR spectrum temp. depend. 8−19314
TGS:Cr^{3+}, EPR obs. of fluctuations near phase transition 8−43820
TGS:$Cr^{3+}(VO^{2+})$, polarization reversal, static hysteresis loops, switching processes 8−43633
TMMC, one dimens. Heisenberg system, shift of half-field EPR line 8−23325
TSCC:Mn^{2+}, microscopic, mechanism of ferroelectric transition, EPR fine struct. tensor calc. 8−35104
Tutton salt:Mn^{2+}, EPR, 298K, spin-Hamiltonian parameters, cryst. fields 8−27086
zinc bisdiethyldithiocarbamate:Cu^{2+}, exchange interaction of Cu^{2+}-Cu^{2+} pairs, spin-lattice relax. 8−48034
Ag halide photochromic glass:Cu^{2+}, characterisation of Cu ions 8−5530
β-Al_2O_3-Na_2O:Mn^{2+}, EPR of Mn^{2+} 8−6569
β-Al_2O_3-Na_2O:Mn^{2+}, ESR exam. 8−19313
$Al(OH)_3$:Fe^{3+}, thermal decomposition, EPR obs. 8−40047
β-$Al_2O_3.Na_2O$:Cu, EPR, localisation of Cu^{2+} and linewidth effect 8−39395
$Bi_{12}GeO_{20}$:Cr^{3+}, level distrib. of Cr^{3+} ion, spectroscopic parameters, spin Hamiltonian, EPR spectrum 8−48030
$C(NH_2)_3Al(SO_4)_26H_2O$:Cr^{3+}, isotope effect, zero field splitting, vibr. coupling temp. depend. 8−6570
CaO-Fe_2O_3-B_2O_3 glasses, phys. props. rel. to struct. and comp. 8−23331
Cd complex, dichlorobis (pyrazole) cadmium:Cu(II), ESR, compressed tetragonal symmetry 8−6568
CdF_2:Cr^{2+}, orthorhombic Jahn-Teller distortion 8−19007
CdS:Mn^+, cryst., X-band ESR 8−2730
$CoK_2(SO_4)_2.6H_2O$:VO^{2+}, ESR, ion orientations 8−48029
$CoK_2(SeO_4)_2.6H_2O$:Mn^{2+}, Tutton salt, EPR exam. of cryst. field parameters 8−39394
$CoSO_4.7H_2O$:Mn^{2+}, host spin-lattice relax. narrowing in single cryst. 8−27079
Cr^{3+}, in alums, ENDOR, resolution enhancement through multiple quantum transitions 8−19374
Cr_2O_3, EPR linewidth, near Neel temp. 8−23327
Cr_2O_3:Ga_2O_3 EPR, antiferromagnetic coupling energy temp. depend. *(German)* 8−10766
CrTe, mag. ordering under high-press., ferromag. transition, ESR and neutron diffr. *(French)* 8−31053
$CsMgCl_3$:Mn^{2+}, EPR spectrum temp. depend. 8−19314
$CsMn_{1-x}Co_xCl_3.2H_2O$, impure Heisenberg linear chain, EPR meas. 8−43634
$CsSrCl_3$:$Mn^{2+}(Gd^{3+})$, structural transitions, EPR meas. 8−34619
Cu complex, Cu(II)-L-asparagin complexes, ESR spectra, mag. and bonding parameters 8−23326
Cu complex, hexakis pyridine-N-oxide cuprate ion, pure and Zn doped, EPR, Jahn-Teller effect 8−10754
Cu complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
Cu complexes, of polyamines, ESR in soln., coordination around Cu(II) ions 8−5254
Cu complexes, with L-glutamic acid and DL-aspartic acid, EPR, bonding and hyperfine linewidth 8−25572
Cu complexes, with tridentate Schiff bases, exchange interactions, EPR, mag. susceptibility 8−23324
Cu II complex, bis(pyrrolidonecarbodithioato) copper II, ESR, solvent effects 8−1008
Cu II complexes, 5-coord., ESR, optical absorpt., solvent effects 8−5253
Cu^{2+} ions, ground state wave functions, cryst. field effect, ESR data anal. 8−23060
$CuCl_2$-$2H_2O$, mag. g-tensors for ion complexes, spin-orbit coupling 8−10752
$CuInSe_2$, melt-grown, EPR characts. 8−35030
$Cu(NH_3)_4SO_4.H_2O$, EPR around Neel temp. 8−39390
Fe complex, tris-(4-morpholinecarbodithioate-S,S′)Fe(III), and dichloromethane solvate, Mossbauer and EPR spectra, spin 3/2 state 8−9169
GaAs:$Co^{2+}(Ni^{3+})$, mag. and optical props. 8−10763
GaAs:Cr, effect of light on EPR centres 8−10767
GaAs:$Cr^{2+}(3d^4)$, Jahn-Teller distortion, photoinduced charge conversion, EPR 8−10758
GaAs:$Ni^{3+}(Co^{2+})(Fe^+)$, EPR assessment of $3d^7$ transition metal impurity state 8−48031
GaP-$Ni^{3+}(Co^{2+})(Fe^+)$, EPR assessment of $3d^7$ transition metal impurity state 8−48031
H_2SO_4:Fe^{2+}, frozen aq. soln., photolysis, H form., distrib. and diffusion 8−20044
InP:Fe, influence of covalence on EPR spectra 8−26827

paramagnetic resonance of iron group ions and impurities continued
InP:Fe^{3+} (Cr^{2+}), symm., spin Hamiltonian parameters 8−10759
InP:$Ni^{3+}(Co^{2+})(Fe^+)$, EPR assessment of $3d^7$ transition metal impurity state 8−48031
KH_2AsO_4, KD_2AsO_4, slow dynamics from Cr^{5+} EPR 8−15126
KH_2PO_4, KD_2PO_4, slow dynamics from Cr^{5+} EPR 8−15126
KH_2PO_4:VO^{2+}, EPR spectra, Hamiltonian parameters, ferroelec. transition 8−39387
$KMgF_3$:Fe^{2+}, transferred hyperfine interactions, EPR exam. 8−31105
K_2MnF_4, two dimens. Heisenberg system, shift of half-field EPR line 8−23325
$KTaO_3$:Ti^{3+}, EPR meas. 8−35028
$LaMg(NO_3)_2$:Cu^{2+}, spin-lattice recovery rate 8−10760
LiF:Ti, EPR exam., superhyperfine interactions 8−31107
α-$LiIO_3$:$Cr^{3+}(Fe^{3+})$, hyperfine interactions, RF discrete saturation of EPR lines 8−48032
$Li_2Mn_xTi_{1-x}O_3$, EPR exam. of antiferromag. props. 8−15015
MgO:Cr^{3+}, axial centres, EPR and fluoresc. meas. 8−2731
MgO:Fe^{2+}, microwave acoustic relaxation losses 8−43635
MgO:Mn^{2+} EPR, X-band freq., powder pattern for cubic symm. anal. *(Spanish)* 8−43636
MgO:Ni^{2+}, elastic interaction of mag. centres, EPR line width meas. 8−19315
MgO-Al_2O_3-SiO_2 system glasses and glass ceramics, EPR obs. of transition elements, crystn. effects 8−23332
MgTe:Cr^+, cryst. growth and EPR 8−39393
$MgTe_2$:Mn, pyrite phase, strong axial cryst. field of Mn^{2+}, EPR meas. 8−27081
Mn^+, in soln., EPR relax. probe 8−31104
ND_4Cl:Cu^{2+}, high-press. EPR, order-disorder transitions 8−19310
$(NH_4)_2Cd_5Fe_3Al(SO_4)_{12}.18H_2O$, EPR above ferrimag. transition 8−10762
$(NH_4)_2Ni(SeO_4)_2.6H_2O$:$Mn^{2+}$, EPR spectra, spin quenching 8−2732
$(NH_4)_2SO_4$:Cu^{2+}, ferroelec., ESR, Cu^{2+} in trigonal bipyramidal coord. 8−23330
$(NH_4)_2SO_4$:VO^{2+}, ferrielectric phase transition, two-sublattice model, EPR of polar VO^{2+} probes 8−48127
Na_2S:Mn^{2+}, polycrystalline, EPR and luminesc. of Mn^{2+} 8−27082
Ni complex, $Ni(NH_3)_6(ClO_4)_2$, high-press. phase, EPR meas. 8−38842
PbF_2:Mn^{2+}, superionic, cryst. field fluctuation dynamics, EPR 8−23328
PbO-SiO_2 glass, EPR of Cu^{2+}, V^{4+}, and Mn^{2+} 8−39392
$Pt(NH_3)_4CuCl_4$, ferromag., antisymmetric and anisotropic exchange, EPR linewidth 8−10761
$(SnTe)_{1-x}(MnTe)_x$, ESR, effect of Mn ion conc. on line width and area 8−35026
SrO:Co^{2+}, EPR, optical, MCD absorpt. spectra 8−43692
SrO:Ni, EPR of Ni^+, two-stage increase in symmetry, reorientation of cryst. field axes 8−27085
$SrTiO_3$, EPR meas., Hamiltonians with quartic anharmonicities 8−27083
$SrTiO_3$, flame fusion growth, dislocation density, lattice const. and EPR spectra 8−11099
$SrTiO_3$:Mn^{n+}, reduced, EPR of Mn centres 8−35029
Ti-molten glass system, interactions and wetting, EPR anal. 8−14542
TiO_2:Mn, ESR spectrum anal. *(French)* 8−19309
TiO_2:$Mn^{2+}(Mn^{4+})$, anatase single cryst., ESR spectra at 77K, 300K 8−10764
Ti_5O_9, phase transitions, elec. cond., mag. susceptibility, sp. ht., EPR and struct. aspects 8−10526
V^{4+} ion complexes in diamagnetic crystals, ground state wavefunctions, hyperfine interaction parameters, EPR meas. 8−19311
$V_{1-x}Al_xO_{2\pm y}$, mag. and struct. props. meas. 8−2658
V_2O_5 bronze catalysts, α- and β-phase, rel. to decomp. mechanism determ. for isopropanol 8−11553
V_2O_5-TeO_2 glasses, ESR spectra 8−10755
V_2O_5-water, EPR of $VO_{aq}{}^{2+}$ formed by solar light photoreduction, electrolysis appl. 8−11540
Y_2O_3:Fe^{3+}, EPR obs. of non-cubic phase 8−19316
$Zn(BrO_3)_2.6H_2O$:Cu^{2+}, Jahn-Teller system, EPR and spin-lattice relax. 8−10760
ZnS:Co^{2+}, spin-lattice relax., phonon heating effect *(Russian)* 8−19317
ZnS:Cr^{2+}, Jahn-Teller interaction energy calc. 8−2455
$ZnSO_4.7H_2O$:VO^{2+}, single cryst., struct., EPR 8−15014
$ZnSeO_4.6H_2O$:Cu^{2+}, crystal struct. orientational degeneracy removal scheme, space groups, ESR spectra 8−47267
$ZnSiF_6.6H_2O$:Co, influence of hydrostatic press. on Co^{2+} EPR spectrum 8−27084
$ZnSiF_6.6H_2O$:Ni^{2+}, cryst. field, uniaxial compression method *(Russian)* 8−35027
$ZnSiF_6.6H_2O$:Ni^{2+}, spin-lattice relax. at press. up to 6.5 kbar 8−48033

paramagnetic resonance of palladium and platinum group ions and impurities
perovskite, Re containing, new seignettomagnets and ferroelectrics 8−19425
Ag solvation in ice matrix, electron spin echo modulation 8−39396
AgBr:Pd, EPR of Pd^+ ions 8−27087
Au, quadrupole interaction 8−48027
$GE_{40}S_{60}$-Ag glass, EPR exam. 8−23334
Ir, quadrupole interaction 8−48027
KCl:Au, EPR and optical absorpt. 8−39397
NaCl:Au, EPR and optical absorpt. 8−39397
Os, quadrupole interaction 8−48027
Pd complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
RbCl:Au, EPR and optical absorpt. 8−39397
WO_3, single cryst. and amorphous film, ESR of defects 8−10770

paramagnetic resonance of rare earth ions and impurities
ions, optically excited states, EPR, ENDOR 8−43637
$KZnF_3$:Er excitation of 650 GHz phonons in spin-lattice relax. 8−27089
rare earth ethyl sulphate nonahydrates:Gd^{3+}, $g_\parallel$, EPR obs. 8−35031
rare earth trichloride hexahydrate:Gd^{3+}, EPR meas. 8−15017
silicate glass:Eu, redox equilibria, EPR meas. 8−26447
$BaCl_2$:$Gd^{3+}(Eu^{2+})$, electrostatic versus superposition model 8−23337
BaF_2:Gd^{3+}, high-order EPR transitions of Gd^{3+} centre 8−23335
BaF_2:Gd^{3+}-m^+ complex, cryst. field parameters 8−10768

paramagnetic resonance of rare earth ions and impurities continued
$CaF_2:Dy^{3+}$, spin-lattice interaction in Γ_8 quartets, models tested for EPR data 8−23336
$CaF_2:Gd^{3+}$, Eu^{2+}, natural, EPR study of impurity centres 8−19318
$CaF_2:Gd^{3+}$-m^+ complex, cryst. field parameters 8−10768
CaF_2:Tb, EPR in new photoexcited centre 8−19319
$Ca_5(PO_4)_3F:Nd^{3+}$ site symmetries, EPR and spectral obs. 8−6571
α-Ce, ESR of Gd, Dy and Er impurities 8−39398
$CsCdBr_3:Gd^{3+}$, EPR of coupled pairs of Gd^{3+} ions 8−19322
$CsCdBr_3:Gd^{3+}$, EPR spectra of mag. coupled Gd^{3+} ions 8−35032
$CsMgCl_3(Br_3):Gd^{3+}$, EPR spectra of mag. coupled Gd^{3+} ions 8−35032
$CsSrCl_3:Mn^{2+}(Gd^{3+})$, structural transitions, EPR meas. 8−34619
Gd, EPR near Curie temp. 8−19321
$Gd_{0.37}Al_{0.63}$ sputtered film, amorphous, conc. spin glass, microwave reson. spectrum obs. 8−15018
$Gd_xCe_yLa_{1-x-y}Be_{13}$, high electron lattice relax., Gd EPR meas. 8−2736
$Gd_xLa_{1-x}Be_{13}$, high electron lattice relax., Gd EPR meas. 8−2736
KCl:Eu, OH^-, EPR meas. on Eu^{2+} complex 8−10773
$KF+Eu^{2+}$, cryst., hyperfine splitting, EPR 8−2733
$KTaO_3:Gd^+$, influence of external elec. field on EPR 8−15020
$LaBe_{13}$:Er, ESR spectra, Er spin-spin exchange broadening 8−23338
$LuPO_4$:Sc, Gd^{3+} EPR spectrum, satellite resonances 8−2734
$MgO:Er^{3+}$, spin-lattice interaction in Γ_8 quartets, models tested for EPR data 8−23336
$NaF+Eu^{2+}$, cryst., hyperfine splitting, EPR 8−2733
Pd-Er, dilute alloy, EPR spectrum, effect of fine and hyperfine interactions 8−19323
Pd-Gd, dil., 35 and 9 GHz, very dil. limit 8−15019
$RbCaF_3:Gd_2O_3$, Gd^{3+}-O^{2-} pair, EPR study of displacive transform. *(French)* 8−27088
$RbF+Eu^{2+}$, cryst., hyperfine splitting, EPR 8−2733
$SmB_6:Gd^{3+}(Eu^{2+})$, mixed valence compound, ESR g-shifts and linewidths 8−48035
$SrCl_2:Gd^{3+}$-m^+ complex, cryst. field parameters 8−10768
$SrF_2:Gd^{3+}$, high-order EPR transitions of Gd^{3+} centre 8−23335
Tm pnictides, van Vleck paramag., relax., host exchange parameters 8−2735
$ZnS:Yb^{3+}(Nd^{3+})$, spin-lattice relax. times meas. 8−19324

paramagnetism
see also paramagnetic properties of substances
anisotropic, effect of bond dilution on dynamics at high temp. 8−39343
electron gas, mag. susceptibility, RPA calc. 8−43559
free electron paramagnets, muonic and hydrogenic Knight shifts 8−43759
Heisenberg model, sixth frequency function of relaxation shape function 8−39348
Heisenberg paramagnet, dil. isotropic, freq. moments of spin-correlation function 8−31037
Heisenberg paramagnets, low freq. props., nonlinear Langevin eqn. 8−31038
Hubbard chain, strong coupling, electron dynamics 8−39342
insulating solid, nonmagnetic, anisotropic mag. effect 8−6509
intermediate valence compounds, mag. susceptibility and sp. ht., mean-field theory of periodic Anderson model 8−47937
Ising paramagnet, impure, influence of spatial short range order 8−43542
low-dimensional paramagnet, NMR lineshape 8−23356
magnetisation of paramagnet with noninteracting mag. moments *(Russian)* 8−47938
narrow-band s-d magnetic materials, ground state and thermodynamic parameters, cond. electron density depend. 8−47934
NMR paramagnetic material effect on chem. shift and relax. times, mol. struct. effect 8−46373
random Hubbard alloys, paramag. susceptibility singularities, derived from Fermi liquid approach 8−43547
spin systems, conservation of ang. momentum and thermal mixing *(French)* 8−6562
superconducting film, Pauli paramagnetism and Fermi surface topology changes under press. 8−2612
transition metal, dislocation magnetism *(Russian)* 8−39379
velocity of sound, temp. depend. modification due to spin-phonon interaction, phonon relax. 8−19303

parameter estimation
biological stochastic compartmental models 8−40109
BWR power plant, direct cycle, low sensitivity optimal controller study 8−8947
heart left ventricle model, global search algorithms *(French)* 8−3529
liver disease computer-aided diagnosis using nonlinear stochastic modelling technique 8−36024
multidimensional measuring block, parameter tolerance estimation *(Polish)* 8−29079
noninvasive radiocardiographic data, for left ventricular ejection and valvular regurgitant fraction determ. 8−48886
oculomotor system parameter identification, strabismus appl. 8−3478
physiological systems, accuracy anal. 8−31762
pulmonary and recirculation parameter identifiability following sequential bolus inputs of ^{133}Xe 8−44605
radiocardiogram parameter identification *(Slovene)* 8−44586
random pulse train processing by linear filter *(Russian)* 8−46518
water quality modelling, Kalman filter theory and practice 8−45058
O_2 diffusion and reaction in biological tissue, Michaelis-Menten kinetic model 8−31793

parameter identification *see parameter estimation*

parametric amplifiers
see also acoustic parametric amplifiers; microwave parametric amplifiers; optical parametric amplifiers
liquid nitrogen level control, sensing diode and Norton amplifier 8−29121

parametric oscillators
see also acoustic parametric oscillators; microwave parametric oscillators; optical parametric oscillators
nonlinear dielectric resonators, parametric interaction of EM oscillation *(Russian)* 8−13767

parametric varactor diodes *see varactors*

parametrons *see parametric oscillators*

Pariser-Parr-Pople calculations *see PPP calculations*

parity
see also hyperon spin and parity; meson spin and parity; nuclear spin and parity; P invariance
atoms, handedness and parity non-conservation 8−29757
D_{4h} symmetry, even and odd parity orbital combination Clebsch-Gordan coefficients 8−45514
left-right symmetric $SU(2)_l \times SU(2)_r \times U(1)$ theory, atomic parity, e^+e^- collisions asymm. at PETRA, PEP energies 8−12820
neutral current expts., left-right symmetry for $SU_l(2) \times SU_r(2) \times U(1)$ gauge group 8−21375
neutral currents, vectorlike model, parity violation 8−4823
quark fragmentation products parity-odd correls., longit. polarisation 8−433
unstable particles in elec. field 8−562
$\bar{p}$, parity determ. from ang. momentum anal. 8−4889
π condensation and tensor binding, parity and isospin 8−33139
H, atom, parity mixing 8−32999
H, parity mixing of atomic states, spin-depend. weak interaction coupling const. 8−8572
Tl, parity nonconserving effects in $6^2P_{1/2}$-$7^2P_{1/2}$ transition 8−13458

partial differential equations
see also boundary value problems; wave equations
Backlund transform. for nonlinear partial differential-difference eqns. 8−16625
Backlund transformation in language of jet bundles *(French)* 8−28913
blast waves, spherical, time-depend. energy deposition 8−9655
blood flow in artery, math. model 8−31831
boundary layer, thermal, singular parabolic partial differential eqns., impulsive motion appl. 8−38326
brain O_2 transport, nonlinear Monte Carlo simulation, hybrid computer implementation 8−40131
bubbly, two-phase mixtures, numerical anal. of press. transients by explicit-implicit method 8−34185
Cauchy problem, classical mechanics of diffusion and Schrodinger eqn. 8−28985
chemical network, nonlinear pattern as transform. group symmetries 8−27878
conjugate gradient method for singular capacitance matrix equations., algorithm 8−36791
diffusion with chemical reaction, probabilistic interpretation 8−35645
diffusional boundary value problems, approx. analytical soln. 8−36947
electrochemical flux equations, solns. with variable diffusion coeff. and transference number 8−48666
electrochemical machining, approx. method for solving problems 8−44241
elliptic interior layer problem asymptotic soln. 8−12535
elliptic problems with singularities, finite element approx. 8−41140
Euler-Lagrange differential in fibred manifolds 8−45469
extrapolation methods 8−36810
finite element anal., preservation of conservation props. of anal. 8−16628
finite element anal. of nonlinear partial differential eqns., appl. to estuarine flow *(Japanese)* 8−8233
flow between rotating discs, finite element anal. using exponentially weighted basis functions 8−16655
general stochastic differential eqn., existence, unicity of soln. *(French)* 8−36800
Hamilton-Jacobi theory, differential geometrical methods 8−45471
heat cond. in moving anisotropic rectangular slab, generalised Jacobi transform appl. 8−30149
heat conduction, nonstationary, nonlinear inverse problem, soln. uniqueness *(Russian)* 8−22245
heat conduction eqn., inverse, boundary conditions recovery, using Cauchy soln. and regularising algorithms 8−26016
Hill equation, simplified stability criterion, applications 8−36820
hybrid system heat conduction solution 8−5745
hyperbolic conservation laws, Glimm scheme for solving, deterministic version 8−20972
hyperbolic differential eqn., charact. initial value problems, interval-analytic soln., iterative procedure *(German)* 8−8234
hyperbolic heat eqn., equilibrium soln., asymptotic stability 8−13887
hyperbolic mixed problems, leading wavefront propagation 8−36836
hyperbolic orbits, differential eqns. for non-angular elements *(Russian)* 8−16284
initial boundary value problem for three dimensional heat equation, Rothe's line method *(German)* 8−30147
integration, appl. of semi-implicit Runge-Kutta methods 8−12542
Keplerian orbit calc., partial differentiations of vis-viva and Lambert equations 8−7864
Korteweg-de Vries, statistical theory of nonlinear dispersive waves 8−16662
Korteweg-de Vries eqn., higher order, prolongation struct., Lie algebra, soliton solns. 8−8249
laminar to turbulent boundary layer shear flow, three-dimens., stability eqns. 8−38284
least squares approx. for partial differential eqns. of mixed type, indefinite problems 8−36807
linear elliptic and parabolic partial differential eqns. with boundary singularities, numerical soln. 8−41142
linearized evolution eqns., integration 8−32657
many-body problems, special solns. of partial differential eqns., poles and zeros motions 8−41226
metal, axisymmetric drawing simulation, numerical method development 8−30206
MHD liquid nonstationary two-dimens. flow, rot. mag. field, differential eqns. *(Russian)* 8−5814
nerve conduction in squid axon, Hodgkin-Huxley equations, large amplitude periodic solns. 8−20166
neural populations, simplified model eqns. and envelope eqns. 8−31798
nonholonomic Chetaev systems, Lagrange eqns. derivation from modified Pontryagin maximum principle 8−12557
nonlinear, inversion eqn. method generalised to matrix case 8−8223
nonlinear differential eqn. soln. by discrete least squares 8−45474
nonlinear eqns., linear correspondents 8−20949
optimum control theory, Hamilton-Jacobi theorem, canonical transforms 8−20962

partial differential equations continued
partial-wave Schrodinger differential and integral eqns., comparison of numerical solns. 8−16671
particle diffusion across mag. fields, stable profile for nonlinear diffusion eqns. 8−22456
Poisson's, numerical solution using curvilinear finite differences 8−28923
Poisson's equation for isolated source distribs., computer soln. using finite mesh, Green's function 8−35
reaction-diffusion eqns., stability of solns. 8−16759
reaction-diffusion system, instability of stationary solns. *(French)* 8−20055
Schrodinger nonlinear eqns., Cauchy problem soln. blowing up 8−8220
sine-Gordon, N-soliton constructon, domain walls appl. 8−19198
sine-Gordon equation, difference analogue 8−20976
soliton eqns., Lie group framework 8−24635
solitons geometrical interpretation, rigid body motion along helical space curves 8−24684
space shuttle reentry, unsteady nonequilib. chemically reactive flow, parallel computation 8−47065
straight line method for loaded hollow cylinder calcs. *(Russian)* 8−26027
string vibrations, linear and nonlinear, physical discretisation 8−45480
surface loads, reciprocating dynamic stresses produced in elastic half space 8−9562
symmetry and separation of variables, book 8−36798
Szebehely equation for potential of prescribed family of orbits, solns. 8−40808
Szebehely equation in celestial mechanics, modification 8−24447
time varying systems, stability anal. 8−37
time-varying, numerical solns. 8−45463
Voigt function, partial differential equations, for stellar atm. line profile calcs. 8−28507
vortex wakes, implicit finite-difference procedure 8−14018
water-cooled water-moderated reactor cooling system faults, hybrid simulation *(Russian)* 8−5008
wave equations, asymptotic solns. using methods of averaging and two-timing 8−59
wave supporting system, lossless, distributed parameters from boundary meas. 8−16658

partial discharges
epoxy mica generator insulation, dielectric stress conc. influence on voltage endurance 8−15094
polyethylene, DC partial discharge and current 8−43790
N_2, liq., insulation breakdown characts. of composite insulation cryogenic temps. 8−1920

particle accelerator accessories
see also storage rings
anode foil changing system for heavy-current field-emission electron accelerator 8−9005
beam steering unit for cyclotron beam guiding system 8−21799
CERN OMEGA spectrom., slow proton trigger 8−17467
cryogenic pump for long continuous running *(French)* 8−32829
deflecting magnet for external beam of 150 keV accelerator, influence of magnetic fringing field 8−46195
electron 2 MeV injector for pulsed betatron 8−824
electron collimation system for use with electron cones of Varian Clinac 18 accelerator 8−11725
electrostatic accelerator, large stripper foil mounting method 8−29664
FN-7 tandem, matching of heavy-ion direct extraction Penning source 8−13357
foil strippers, remote control system 8−29670
gas discharge ion source for on line EM mass separator at heavy ion accelerator 8−17456
gas discharge ion source for on-line EM mass separator at heavy ion accelerator 8−17457
goniometer for nuclear reaction cross section and channelling expts. 8−21801
heavy ion stripping in dilute gases and C foils, data anal., semiempirical formulas 8−33354
HICONEX 834 sputter source, negative ion test injector of Munich MP tandem 8−13363
injector, with field emission cathode for betatron 8−5064
ionisation profilometer for dynamic measurement of radial dimensions of electron beam in betatron *(Russian)* 8−13359
Lamb shift polarised ion source with spin filter proton acceleration, operating performance 8−33348
microtron booster resonator in HF path 8−830
MP tandem at Munich, variable circular beam apertures 8−33324
MP-Tandem at Munich, light link coupled current monitor 8−33311
muon flux measuring system for neutrino spectrum reconstruction at IHEP accelerator 8−21817
MWPC instrumentation for CERN SPS secondary beams 8−46206
negative heavy ion beam production by charge exchange in metal vapour, EN tandem accelerator accessory 8−33346
neutron shutter for cyclotron facility 8−21794
Orsay MP tandem, zero degree detection system 8−13353
passive filter for annular electromagnet of synchrotron 8−5074
power source, pulsed power conversion with inductive storage, fusion appl. 8−13340
proton synchrotron slow extraction beam parameter monitoring and control system in CAMAC standard online with ES 1010 computer 8−29674
RF ion source, modified extraction geometry 8−33349
shaping of highly stable flat top in excitation current pulse of electromagnet in Sirius synchrotron 8−5075
sputter ion source, low prod. of stable N^- ions, design implications for tandem for sensitive C anal. 8−33350
stochastic betatron cooling, slot type pick-up and kicker 8−33332
stripper foils, energy straggling of heavy ion beams at tandem energies, C foil appl. 8−33353
stripper foils for electrostatic accelerator, new mounting method 8−33355
tandem, for heavy ions, pulsing system 8−33323
tandem accelerators, MV heavy ion injection 8−13356
TOF pulsed neutron diffraction of liquids using electron linac, CCl_4 appl. 8−18504
Tonus 2M accelerator, high-voltage pulse generator of stored energy 135Kj 8−5067

particle accelerator accessories continued
vacuum feedthrough, bakeable, with 22 pins, for monitor system of proton synchrotron 8−21798
vacuus gauge design 8−17546
C foils, stripping of heavy ions with energy 0.4-0.9 MeV/A, straggling, foil behaviour 8−33351
C, stripper foils under 4.8 MeV Ar^{++} ion bombardment, shrinkage, rupture, lifetime 8−33352
Li negative polarised ion beam source at Heidelberg EN-Tandem 8−33356
^{32}S 96 MeV heavy ion ps pulses, rebunching of MP Tandem pulses by spiral resonator 8−33357

particle accelerators
see also beam handling equipment; beam handling techniques; cyclotrons; electron accelerators; electron ring accelerators; electrostatic accelerators; linear accelerators; proton accelerators; synchrotrons
automatic klystron power supply system transient behaviour theory *(German)* 8−5077
betatron oscillations, frequency shift in nonlinear mag. fields 8−1137
cavity instabilities, improvement by mutual coupling *(Slovene)* 8−29663
ceramic accelerator tube of improved construction 8−827
charged particle motion in mag. field, acceleration and focusing 8−1142
dual-ion accelerator, appl. to simulation of radiation damage to fusion reactor materials 8−13325
heavy ion+atom collisions, accelerators and X-ray emission spectra *(Norwegian)* 8−22013
heavy ion toroidal collective accelerator 8−33334
induction accelerator charact. meas. instrument 8−5073
inhomogeneous waveguide system, self-consistent beam dynamics 8−9009
ion autoresonant acceleration, numerical simulation 8−21789
magnetic field configuration recovery, in interpolar gap 8−5070
Munich MP tandem, HICONEX 834 sputter source, negative ion test injector 8−13363
Pelletron, He^- ion source for injector 8−5085
pulsed accelerator for neutron travel time meas. *(German)* 8−17475
radiation shielding, sanitary-safety zone, cost optimization of structural design 8−17443
superconducting magnetic energy storage applic. 8−25360
superconducting magnets, pulsed and DC types, appl. *(German)* 8−21834
synchronous slow space-charge wave accelerator 8−17448
synchrotron radiation, spectral chart of radiation from circular accelerator 8−46498
TRIUMF meson factory, basic and applied research 8−21792

particle backscattering
see also electron energy loss spectra
Auger scanning microscopy, backscattered electron lateral resolution effects 8−15262
beta-ray surface imaging using extended beta-ray sources 8−48588
chalcogenide glass thin film, thermal diffusion of Au electrode layer, α-particle backscatt. obs. 8−10228
channelling in surface, charged particle reflection, two-wave approx. 8−6822
disorder distribution extraction, semiempirical method of applying dechannelling correction 8−22781
EPMA, stopping power and backscatt. factors, rel. to atomic number correction 8−20118
EPMA correction procedure, Monte Carlo derivation of surface ionisation function 8−20119
film reactions, $^{16}O^{2+}$ effect elimination in backscatt. 8−23575
ion implantation depth profiles, influence of straggling using backscatt. and nucl. reacts. 8−47401
ion neutralisation at surfaces 8−35237
ions backscattered from solid surfaces, radiative electron capture 8−11057
low energy ion backscattering, struct. anal. 8−15271
metal, irrad., self-interstitial type defects, combined single-double alignment channelling backscatt. 8−34561
metals, electron penetration and energy transfer in solid metal targets, film bulk method 8−2963
plasmon excitation by large-angle scatt. electrons, density effect and plasmon bremsstrahlung 8−47718
randomly stepped surface, He backscattering 8−11055
Rutherford backscattering, surface comp. and struct. *(French)* 8−43976
SEM, backscattered, using CdS layer scintillator, reflected SEM proposal 8−21291
SEM, backscattered electron image, review 8−21304
SEM, backscattered electrons, contrast mechanisms and detectability limits 8−21305
SEM, electron scattering influence on detection of fine topographic detail 8−21290
SEM with movable Faraday cup, illuminator and backscatt. diode detectors for planar diode characterisation 8−21292
p-Si:P, random and aligned implants, damage form. and annealing, Rutherford backscatt. exam. 8−47454
solid, Monte Carlo simulation of energy distrib. of transmitted or backscatt. keV electrons 8−43057
sputtered layer on metal collector, thickness distrib. meas. by electron backscatt. 8−18927
Au, electroplated, thickness meas. by beta-ray backscattering *(Slovene)* 8−6860
Au, irrad., self-interstitial type defects, combined single-double alignment channelling backscatt. 8−34561
Au-Sn film, evaporated, interdiffusion and phase formation, in situ He ion backscattering meas. 8−22901
Cu, 4-30 keV H_1^+, H_2^+, H_3^+ impact, excited H backscatt., O_2 effect 8−15268
$Ga_{0.64}Al_{0.36}As$, plasma grown oxide, phys. and elec. props. 8−48550
GaAs, disorder distrib. extraction, semiempirical method of applying dechannelling correction 8−22781
GaP, disorder distrib. extraction, semiempirical method of applying dechannelling correction 8−22781
Ge-Au-Ni(Pt)(Pd) trilayered films, annealing, interdiffusion 8−22902
LiH+Te exothermic solid-state reaction, ion backscatt. obs. 8−20064
Li_2O, C atom conc. profile determ. by proton backscattering 8−10079

particle backscattering continued
- Mo, 4-30 keV H_1^+, H_2^+, H_3^+ impact, excited H backscatt., O_2 effect 8−15268
- Mo film, on Si, silicide formation obs. 8−43261
- $NiCr_2O_4$, cooperative Jahn-Teller phase transition, channelling obs. 8−38839
- PtSi, growth under protective layers on Pt covered Si substrates, X-ray diffr. and Rutherford backscattering anal. 8−22965
- Si, channelling surface peak rel. to thin film anal. 8−43966
- Si, dechannelling by twins, ^{4}He backscatt. spectra 8−18691
- Si, disorder distrib. extraction, semiempirical method of applying dechannelling correction 8−22781
- Si, implanted ^{16}O, lattice location of ^{16}O by α-particle backscatt. method 8−10080
- Si, implanted Bi distrib., planar oscills. effects, low angle He^+ backscatt. obs. 8−34534
- Si, ion-implanted, thermally oxidised, Rutherford backscatt. analysis 8−19910
- Si, laser pulse induced amorphous to cryst. transition, thickness depend. 8−47678
- Si layers, solid phase epitaxial growth, crystalline qualities, ^{4}He backscatt. and TEM exam. 8−10306
- Si, postimplantation damage profiles, backscatt. meas. 8−47402
- Si, proton damage, depth profile anal. by channelling 8−43054
- Si, self-implanted, ⟨100⟩ and ⟨111⟩, crystallised layers by laser annealing, struct. 8−47644
- Si:C, disorder profiles by proton backscattering, proton bombardment annealing 8−47449
- Si:Pb, He^+ Rutherford backscatt. and TEM exam., implant species effect on recrystn. 8−47452
- Si:Sb, high dose implanted, orientation dependent annealing effects 8−18665
- Si-As(Sb) temp. depend. of irradiation-induced displacement of impurities, backscattering meas. 8−26605
- Si-N film, passivation layer, density comp., and ref. index, Lorentz-Lorenz correl. 8−39697
- SiO_2, As diffusion , O_2 effects 8−43180
- W crystal, backscatt. energy spectra, channelling particles energy loss determ. 8−2181
- $Zn_xCd_{1-x}S$ solid soln. films, reactive cosputtering, struct., comp. and opt. absorpt. edge *(French)* 8−6237
- ZnS, RF sputtered film, stoichiometry, chem. comp. 8−34727

particle beams
- *see also atomic beams; beam handling techniques; electron beams; ion beams; molecular beams; particle optics*
- beam direct conversion for fusion injection at energies above 100 keV 8−13330
- beam direct conversion for fusion reactor appl. 8−13329
- high-current relativistic beam, bunching, 2-dimens. finite size particle model 8−9310
- light particles, model, three-particle scatt. rates, disconnected T matrix singularity 8−32726
- light particles, three particle scatt. rates, double scatt., T-matrix singularities 8−32727
- neutral beam injection system power supply, 80 to 150 kV, development program 8−13367
- neutral beam injectors for mirror reactors, arc snubbers 8−13333
- neutral beam line upgrade for laser initiated target expt. 8−13334
- neutral beam system for TFTR Tokamak 8−13331
- neutrino, beam channel characts., Protvino Inst. 8−37474
- phase space imaging of charged particle beam by frictional forces 8−17850
- relativistic, in medium, energy meas. by spontaneous γ-radiation emission *(Russian)* 8−29891
- SIN meson factory, facilities and expts. 8−13360
- synchrotron, beam parameter diagnostics via IR undulator emission *(Russian)* 8−836
- thermal neutron polarisation anal. experiments, corrections for instrument component inefficiencies and sample multiple scatt. 8−29725

particle counters *see counters*

particle counting
- *counting of microscopic particles in disperse systems (aerosols, colloids etc.)*
- intensity correl. spectroscopy, spherical particle continuous distrib. meas. 8−21228
- laser applications in particulate analysis, multiple ratio single particle counter 8−35732

particle detectors
- *see also bubble chambers; counters; ionisation chambers; particle track visualisation; position sensitive particle detectors; streamer chambers*
- analogue detection device for mol. beam scatt. expts. and vel. anal. 8−33635
- analogue signal fast acquisition, for large particle detectors, CYCL-OP 8−17534
- black holes and particle detectors 8−12287
- calorimeter, energy calibration of liq. Ar detector for EM showers 8−37497
- calorimeters, for meas. of ions, X-rays and scattered radiation in laser-fusion expts. 8−16800
- CAMAC hodoscopic recording system, coding and reading data unit 8−13397
- channel plate electron multiplier, gain, detection dynamics *(French)* 8−46229
- gravitational emission detectors, optimum quantum meas. *(Russian)* 8−45556
- heavy ion transmission detector, TOF appl. 8−46208
- high energy phys. instrumentation, future needs, detector props. 8−33377
- ion counting, operation of mass-depend. channel electron multiplier 8−5375
- ion detector, Daly-type, plasma ion energy meas. 8−22570
- large mass detector for high energy neutrino interactions in Fe 8−29706
- Lohengrin mass separator, techniques for fission product mass and charge distribs. *(German, English)* 8−16891
- microchannel plates, high gain, performance characteristics 8−37526
- multichannel plate, detectors, operation, struct., performance characts. 8−12758
- optimum design of expts. on exponential absorpt., statistical errors anal. 8−885

particle detectors continued
- plasma-acoustic method of detecting large specific energy yields, principle 8−9037
- tracking chamber based on semiconductor detectors *(Russian)* 8−872
- X-ray imaging, conf., Reston, USA (Apr. 1977) 8−45762
- zero degree detection system at Orsay MP tandem 8−13353
- Pb/liq. Ar shower counter systems of SPEAR Mark II detector 8−37495
- Pt self-powered detector, neutron sensitivity calc. 8−37449
- U liquid Ar calorimeter, response to high energy protons, calc. 8−46224

particle focusing *see focusing; particle optics*

particle lenses, electrostatic *see electrostatic lenses*

particle lenses, magnetic *see magnetic lenses*

particle optics
- *see also aberrations; beam handling techniques; electrodynamics; electron optics; ion optics*
- adiabatic magnetic trap, small axial perturbation due to displaced solenoid *(Russian)* 8−21800
- beam depolarisation in magnetic field 8−33336
- beam optical components, anal. of misalignment effects 8−13355
- betatron oscillations, frequency shift in nonlinear mag. fields 8−1137
- charged particle beam dynamics, moment method 8−33655
- charged particle motion in mag. field, acceleration and focusing 8−1142
- coded aperture imaging of gamma-ray sources, class of near perfect coded apertures 8−40300
- electrostatic transaxial lens, curved charged particle beam focusing, image coords. and aberrations 8−46503
- emittance variations following guidance by quadrupole lens *(French)* 8−29679
- micro-Fresnel zone plates for coded X-ray imaging of laser produced plasmas 8−42814
- multipole magnetic field, orbit-compression 8−17853
- Munich MP tandem beam optical components, anal. of misalignment effects 8−13355
- neutrinos, beam focusing system, Protvino Inst. 8−37477
- phase space imaging of charged particle beam by frictional forces 8−17850

particle range *see energy loss of particles*

particle scattering *see collision processes; energy loss of particles; particle backscattering; potential scattering; radiation effects; transport processes*

particle separators
- electrostatic separator with built in HV generators 8−29693
- EM mass separator at heavy ion accelerator, gas discharge ion source 8−17456
- EM on-line mass separator at heavy-ion accelerator, gas discharge ion source 8−17457
- fission products, short lived, light, beta decay energies using online mass separator 8−8783
- proportional counter, search for heavy particle with single positive charge *(Chinese)* 8−876

particle size
- abyssal sediments, effect of particle size var. on DRM/ARM ratio 8−32067
- aerosol particle size distrib., dynamic behaviour, coagulation, condensation, nucleation and removal 8−35726
- aggregates, influence of particle size ratio on continuity 8−39712
- air-water fogs, particle polydispersity rel. to audible sound propag. 8−1473
- atmospheric dust, imaginary refr. index rel. to particle size 8−7763
- atmospheric extinction coefficients for multimodal particle size distrib. 8−24370
- bend erosion, particle size effect 8−11346
- cloud droplets, interception collection efficiencies 8−3381
- colloid freeze-fracture, for electron microscopy 8−337
- colloidal dispersion, particle size distrib. change kinetics, statistical approach 8−7241
- cometary coma, dust grains sizes and comp. rel. to IR continuum interpretation 8−7923
- component particle size analyser, using X-ray fluorescence *(Japanese)* 8−15615
- conductive filler-polymer composite conductivity theory *(Japanese)* 8−11351
- disperse systems, turbidity spectrum, wave exponent, spherical particle size depend. 8−46514
- distribution, determ. by rot. disc with turbulent boundary layer 8−22333
- haemoperfusion through fixed-bed adsorber 8−31976
- hexadecyltrimethyl-ammonium bromide, micelle form. in aq. soln., laser light scatt. 8−27825
- interstellar dust in Merope nebula, UV phase function and grain size 8−32553
- interstellar grains in NGC 2264, size rel. to polarisation in (Walker No.67) 8−12223
- lunar regolith particles, size distrib. rel. to Rosin's law 8−45248
- marine atmosphere particulate matter, organic C conc. and particle size distrib. 8−32139
- marine sediment particles, surface organic layer containing U and Th, thickness meas. 8−40592
- metal powder suspension in air, spontaneous ignition temperature *(Russian)* 8−47027
- metallic powder, spark erosion prep. 8−27452
- meteoroid albedo and size distrib. in 0.3-4.8 AU range 8−36539
- nucleation in clouds, minimum particle size 8−44939
- particle deposition, onto rot. disc, convective diffusion, external force field 8−40081
- platelet estimation in whole blood by electronic particle size anal. 8−28104
- polydisperse system, rotatory diffusion const., electro- optic decay curve, size distrib. 8−20079
- powder, effect on thermal conductivity *(Japanese)* 8−6191
- salt nuclei, size rel. to critical supersaturation 8−44940
- Saturn, ring particle composition and size distrib. from radar obs. 8−36501
- Saturn A-ring, azimuthal brightness var. and particles size 8−32391
- scavenging, in-cloud, rel. to aerosol particle size, mechanisms 8−16108
- sediments of Ismailia Canal, behaviour of radioisotopes in laboratory-scale aquatic ecosystem 8−3831

particle size continued
sodium dodecyl sulfate, micelle form. in aq. soln., laser light scatt. 8−27825
solid dielectric bridged vacuum gap microparticle collection and analysis 8−5964
spheroids in atmosphere and ocean, scattering rel. to size distrib. determ. *(Russian)* 8−36279
steel, ShKh15, carbide particle size and pearlite grain size changes during deform. and hot working *(Russian)* 8−6946
steel, sorbitic, yield point rel. to average carbide particle size *(Russian)* 8−6967
strengthening phase particle distrib., quantitative analysis 8−15629
superparamagnetism, Mossbauer effect study of relaxation of magnetisation vector 8−19402
Al-Ge alloy, Ge particle size, determ. by small- and wide-angle X-ray scatt. 8−19966
Au black solar absorber, struct. comp. and optical props. 8−27339
$Cd(OH)_2 \rightarrow CdO$, decomp. reaction, crystallite fragmentation, critical sizes and shapes 8−23635
Cu-Ni-Fe alloys superparamag. early stages of decomp. *(Russian)* 8−6890
Fe, carbonyl powder, particle size distrib. anal. by microscopy with statistical anal. of results 8−19691
Fe, cast, air-atomized powder, effect of particle size on C and O contents 8−15340
$Mg(OH)_2$, and calcination product, relations between particle size, shape and surface area 8−48355
NiO-Al_2O_3 powders, coprecipitated particle-size distrib. meas. 8−39726
$PbCrO_4$, cryst. growth kinetics and particle size in precipitating K_2CrO_4-$Pb(NO_3)_2$ mixed soln. 8−26472
PbS, colloidal, light scatt. and electron microscopy 8−3379
Pu distribution in Ohio soils, local and stratospheric sources 8−16015
$^{239}PuO_2$, in vivo solubility in rat lung 8−28093
SiO_2 particulates dispersed in CVD reactor, size distrib., semi-in situ obs. by light scatt. 8−27406
ThO_2, particle size of crystallites in soln. by line-broadening meas. 8−18488
UO_2, condensed vapour following core disruptive accident, particle-size distribs. using first-generation model 8−13295
W powder, hydrostatic pressing 8−11161
WSe_2, lubricant, prep. by self-propagating high-temp. synthesis, technological characts. 8−35338

particle size measurement
abrasive particle shape control and quantitative eval. apparatus 8−4586
aerosol dispersion analysis by Kvant optoelectronic classifier 8−12739
aerosols, granulometric spectrum, in slightly polluted marine atm. 8−44893
aerosols, liquid and solid, size distrib. meas. by Doppler shift spectroscopy 8−33674
atmospheric aerosols, size distrib. of water-soluble and insoluble particles 8−36218
bronze, spheroidal, equivalent sphere diameter calc., Saltykov method 8−31362
crystallites in soln. by line-broadening meas. 8−18488
dense particulate system, particle size meas. device based on scatt. light 8−45006
dispersions, particle size and velocity distribution, in flowing media, meas. methods *(German)* 8−34213
drop size distribution airborne meas. for drops >60 μm diameter 8−45008
drop size in dense fuel sprays, in-line holography meas. 8−37827
electron interference method for particle shape determ. in films, inner pot. determ. and external field determ. *(Russian)* 8−29209
environmental samples, X-ray fluoresc. anal., particle size correction method 8−48705
flowing aerosol, particle size distrib. *(German)* 8−20076
Gulf of Mexico, particle size distrib. of suspended matter in deep water 8−36177
hazes, information provision on particle size distrib. of brightness and polarisation phase functions *(Russian)* 8−44998
holographic droplet image analysis by TV camera and table calculator via IEC-Bus 8−36337
laser applications in particulate analysis, multiple ratio single particle counter 8−35732
laser Doppler particle meas. system, using nonsinusoidal forced vibr. and bispectral analysis 8−41285
laser Doppler velocimetry technique *(Japanese)* 8−24913
laser velocimeter, particle size meas., using forced vibr. synchronised detection, and power spectral anal. 8−36977
light extinction-sedimentation inversion technique, size distrib. meas. of artificial fogs 8−37042
marine aerosols, organic and inorganic Cl gas concs. and particulate Cl size distrib. 8−32187
multiphase flow optical fibre sensors, appls. *(German)* 8−26215
polycyclic aromatic hydrocarbons, in particles from coke oven, size distrib., health hazards 8−36268
polydisperse discs, particle size distrib., transient elec. birefr. data, two-parameter distrib. functions 8−40083
polydisperse ellipsoids, particle size distrib., transient elec. birefr. data, two-parameter distrib. functions 8−40084
powder, grain size determination by transient low press. air transmission 8−32965
powder and particle characterisation, survey of instruments and methods 8−11474
powder crystallite size determ. using SEM *(German)* 8−47218
red blood cell sizing, evaluation of automated Electrozone Celloscope in haemolysis study 8−40455
scattering from naturally occurring aerosols, rel. to particle size statistics, 3.8 μ meas. 8−49136
strengthening phase particle distrib., quantitative analysis 8−15629
water droplets in mists, clouds, size, density distrib. meas., laser remote sensing technique *(Japanese)* 8−49175
Cu, equivalent sphere diameter calc., Saltykov method 8−31362
NaCl, single cubic particles, suspended in laser beam, optical size determ. 8−33673
Pb powder, automatic image analysis for charact. of size and shape distrib. 8−11473

particle size measurement continued
PtI_4, aerosol, X-ray fluoresc. anal., particle size correction method 8−48705
SO_4^{2-}, airborne particles, size meas. and chem. comp. by diffusion sampling 8−45007

particle sources
see also ion sources; neutron sources; radioactive sources
atomic beam source, employing radiant heating 8−330
electron beam, high-current, compression in gas, on current pulse trailing edge 8−12789
electron diode accelerator, electron beam power increase by inductive accumulator 8−33339
electron high dosage source for residual resistance specimens and irradiation expts. *(German)* 8−21274
heavy current electron beams prod., survey 8−33337
high-voltage subnanosecond electron beam generator 8−4733
labelled α particles, miniature source 8−5080
microparticle accelerator and charged particle source description 8−41373
neutral beam, charged particle separation by space target blowup 8−9018
neutral beam injector, decel voltage effect 8−9015
neutral beam system for Princeton Large Torus 8−9019
neutrino, beam channel characts., Protvino Inst. 8−37474
neutrino beam focusing system, Protvino Inst. 8−37477
relativistic electron beam deposition, field-enhanced, bremsstrahlung prod. 8−29677
trajectory of electron in electron beam source for vaporisation *(Russian)* 8−33657
H, cooled microwave discharge source 8−5373
H, D, polarised atoms, cryogenic source 8−5079
O, cooled microwave discharge source 8−5373

particle spectrometers
see also alpha-particle spectrometers; beta-ray spectrometers; gamma-ray spectrometers; neutron spectrometers; X-ray spectrometers
AES and characteristic energy loss spectra, apparatus design 8−27354
atomic beam magnetic resonance system for on-line hyperfine struct. meas. in short lived nuclides 8−25379
beam analyser for electrons and protons 8−37482
Buechner magnet/PSD system, mass spectrom. of unslowed fission products, feasibility 8−29702
CERN OMEGA spectrom., slow proton trigger 8−17467
cosmic ray spectrometer, for study of 6 to 50 MeV electrons 8−45235
differential Cherenkov counters with achromatic ring focus, hadron beam mass identification, CEDAR project 8−37522
double-focusing electron spectrometer, new effective transmission determ. from focalization props. 8−17463
electron, spherical electrostatic, for Mossbauer spectroscopy 8−25378
electron, transmission props. of cylindrical mirror analyser viewed in energy-angle space 8−15745
electron spectrometers, energy calibration 8−24888
electrostatic cylindrical mirror analysers, response functions 8−1146
electrostatic electron energy analysers, cylindrical mirror appls., review 8−21265
electrostatic electron spectrometer, relativistic effects in calibration, toroidal analyser 8−29211
electrostatic electron spectrometer, relativistic effects in calibration, parallel plate and cylindrical mirror analysers 8−29212
energy analyser/electron microscope combination, microanal. accuracy improvement 8−15737
glass track detectors, NaO_2-SiO_2, phosphate, quartz glasses, nculear phys. spectrometric appls., track diameter 8−17466
ionisation chambers, liquid, Fano factor limitations on energy resolution 8−37502
light nuclei, micron spectrometer for meas. with energy resolution of 1 MeV for 400 MeV/c momentum 8−13368
linear multiplexer, 14-channel, resolution, efficiency, nuclear spectroscopy appl. 8−33400
liquid scintillation spectrometry sample pre-processing 8−21816
magnetic large acceptance spectrom. using wire chambers 8−46207
magnetic spectrom., MWPC as counter hodoscope for fast majority discrimination 8−33392
magnetic spectrometers, approx. and ideal design, appl. to STEM 8−8475
MEA, magnetic detector at Adone 8−33367
momentum of particle moving in axially symm. mag. field 8−21806
MWPC instrumentation for CERN SPS secondary beams 8−46206
nuclear spectrometry, 4k, using 2k ADC with two biased amplifiers 8−46234
photoelectron, variable angle, for meas. electrons photoejected by rare gas reson. light 8−1110
photoelectron spectrometer construction 8−27874
plasma-ion analyser for H conc. in metals using pulsed laser and thin film scintillation detector 8−15746
proton spectra, high energy, emerging from 680 MeV synchrocyclotron shielding 8−17530
retarding field spectrometer for Auger spectroscopy, secondary electron emission effects 8−23564
semiconductor detectors, spectroscopy and applied phys. appls. 8−46218
semiconductor thin window detectors for interplanetary particles, Compton-Getting effect complications 8−49269
solid-state detector spectrometer system, energy resolution, electronic aspects 8−46231
spin polarisation detector, experimental exam., using Hg+e scatt. 8−32927
tandem surface analysers 8−33371
Vekton-1 double arm spectrom. for ρ^- meson photoproduction 8−33362
zero time detector for heavy ion spectroscopy 8−33368
Ge diode detector telescope for particle spectroscopy, design and performance 8−13384
$^4He(\gamma,\pi^0)$, reaction cross section meas. equipment 8−29694
Si detectors, automatic anal. of complex charged particle spectra 8−33370

particle track visualisation
see also bubble chambers; cloud chambers; nuclear track emulsions; scintillation chambers; spark chambers; streamer chambers
cellulose diacetate as solid state heavy ion track detector 8−17523
cellulose nitrate, etching behaviour, nuclear track detector 8−17485

particle track visualisation continued
- cellulose nitrate, He (A=3, 4) energy spectroscopy 8−13377
- cellulose nitrate, neutron induced recoil particle tracks, automatic spark counting 8−17492
- cellulose nitrate, nuclear track detectors, etch induction time, particle identification parameter 8−17486
- cellulose nitrate, sensitivity to α-particle registration 8−17498
- cellulose nitrate, track detector direct dosimetry in fast neutron beams 8−20277
- cellulose nitrate film, neutron dosimeter 8−20280
- cellulose nitrate layer, α-particle autoradiography 8−17499
- cellulose nitrate LR115, neutron personnel dosimetry at high energy accelerators 8−20284
- cellulose nitrate plastic detector, spallation products from energetic neutrons 8−17198
- cellulose nitrate track detectors, detect. of efficiency and range meas. of alphas and protons 8−17524
- chlorite, fission track annealing and age determ. 8−36307
- crystals, track form., minimal energy loss rel. to thermal cond. 8−17525
- diffusion of $^{241}Am^{3+}$ ions in ion-exchange membrane, autoradiographic method 8−35721
- electrochemical track etching in plastic foils 8−17521
- feldspar crystals, natural, anisotropy of track registration 8−25397
- fision track method, physical state of fissionable material 8−41899
- fission track etching and annealing anal., muscovite, dating appl. 8−32036
- geological anal., rocks, minerals, nuclear track technique, B, Li, U, Th mapping 8−20553
- glass track detectors, NaO_2-SiO_2, phosphate, quartz glasses, nculear phys. spectrometric appls., track diameter 8−17466
- holographic camera, 2 laser techniques *(Russian)* 8−25827
- Kodak CA 80-15 plastic detector, fast neutron radiography for extended objects 8−20267
- Kodak LR 115 cellulose nitrate films, fast neutron dosimetry 8−20279
- Lexan foil, and nuclear emulsion sandwich stacks, obs. of cosmic rays with $Z \geqslant 34$ 8−20597
- Lexan polycarbonate track detector direct dosimetry in fast neutron beams 8−20277
- Lexan track detector, appl. to ultra heavy comsic ray nuclei 8−20596
- Lexan track detectors, cosmic ray element abundances from Ni-Kr 8−20598
- Makrofol polycarbonate, electrochemical etching of neutron induced tracks, appl. to dosimetry 8−20282
- Makrofol solid state track detector, automatic fission track counting, video-electronic image analyzing system 8−17494
- Makrofol solid-state track recorder for fission rate meas. of $^{235}U/^{238}U$ 8−13396
- mass identification scale depend. on different track form. models 8−17515
- metaphosphate glasses, heavy ions, fission fragments energy determ. 8−17487
- minerals, thermal annealing of ion tracks 8−20604
- multifragment decay reactions induced by heavy ions, mica track detector study 8−17234
- neutron dosimetry with solid state nuclear track detectors, brief review 8−33299
- neutron fluence meas. with solid state track detectors, international intercomparison 8−20283
- neutron personal dosimetry system, ^{237}Np neutron induced tracks in polycarbonate 8−31908
- nonfilm TV method of high-speed process coords. meas., review 8−5093
- olivine from Marjalahti meteorite, cosmic ray tracks 8−36414
- plastic, rare fission track recording by matching method 8−33383
- plastic detector, primary damage and secondary electron damage in heavy ion tracks 8−17514
- plastic detectors, calib., heavy cosmic ray charge distrib. 8−17500
- plastic solid state nuclear track detectors, Rn and Th dosimetry 8−20556
- plastic track detector, heavy ion tracks, automatic meas. device 8−17495
- plastic track detectors, Rn dosimetry 8−33298
- polycarbonate foil, neutron induced recoil particle tracks, automatic spark counting 8−17492
- polycarbonate foils, detection of low energy ^{4}He, ^{12}C, ^{14}N, ^{16}O ions, etching props. 8−13391
- polymer, form. of heavy ion latent tracks 8−17522
- polymer, graft-and-dye method 8−17520
- quartz, grains, fission track dating, Oklo uranium ore deposit 8−20555
- radiography of extended biological and medical objects using fast neutrons *(German)* 8−15880
- sediment age determination, ^{210}Pb, cellulose nitrate sheet 8−20554
- solid state detectors, past and future uses, review 8−17484
- solid state nuclear track detectors, ^{222}Rn and ^{220}Rn meas. 8−25396
- solid state nuclear track detectors, conf., Neuherberg/Munich, (Oct. 1976) 8−17513
- solid state nuclear track detectors, fast neutron dosimetry 8−20278
- solid state nuclear track detectors, real time automatic evaluation with on-line television system 8−17496
- solid state track detector, video electronic measuring system 8−17493
- solid state track detectors, track forming, stabilisation and development processes 8−17516
- solid-state nuclear track detectors, development and use for reactor phys. expts. 8−41886
- solid-state track detectors, international α-particle registration intercomparison 8−17497
- thermal neutron radiography facility on IRT-2000 reactor 8−17286
- thin dielectric track detector as particle discriminator, α dosimetry appl. 8−17511
- track formation model, etch pit parameters, light nuclei, calc. 8−13390
- trigger processor for mag. detector 8−46244
- π^- beams, direct track detector dosimetry 8−20281
- AgCl, defects induced by energetic ion implantation 8−17518
- AgCl single cryst. foil, photographic elementary process 8−17519
- AgCl track detector prep. and props. 8−17517
- Bi, mapping using ^{210}Po α-particle tracks 8−20129
- ^{252}Cf fission fragment tracks in quartz glass, electron microscope obs. 8−17526
- ^{227}Np damage track detectors, effects of subthreshold fission on neutron dose meas. 8−33375

particle track visualisation continued
- $U(^{3}He, f)$, 530 MeV, cross section meas. by glass solid state track detectors 8−13179
- U_3O_8, ^{235}U enriched aerosol, characterisation by solid state track recorders 8−17538

particle tracks
- *see also energy loss of particles*
- alpha particles in mica, prompt process and post effect 8−43053
- bubble chamber tracks, automatic meas. 8−25399
- fission track dating of Himalayan muscovites, Nepal, and U conc. estimation 8−40524
- galactic cosmic ray composition determ. from tracks in lunar and meteoritic feldspars 8−20603
- geological samples, f/α particle track anal. for U, Th and isotropic disequilibria 8−7799
- heavy ion tracks, separation from background by pulsed electric field 8−17491
- heavy ion tracks in plastic detectors, automatic meas. device 8−17495
- mica, fissionable element impurities, nature and distrib., fission track method 8−44436
- muscovite, fission track etching and annealing anal., dating appl. 8−32036
- MWPC, missing data reconstruction in principal component anal. 8−17537
- soil, fissionable element impurities, nature and distrib., fission track method 8−44436
- superheavy nuclei, spontaneous fission, natural 8−13172
- Au ion tracklengths in mica 8−38767
- I ion tracklengths in mica 8−38767
- ^{8}Li, produced by K^- interactions with emulsion nuclei 8−17244
- N nuclei, track in Ilford G-5 emulsion, track with meas. 8−17488
- Ne nuclei, track in Ilford G-5 emulsion, track width meas. 8−17488

particle velocity analysis
- *see also energy loss of particles; ion mobility; mass spectrometers; particle spectrometers*
- thermal neutron monochromators, Monte-Carlo simulation of mechanical velocity selectors 8−24886

particles, elementary *see elementary particles*

parton model
- $\Delta S=0$ weak hadron neutral current, quark parton model, νN and e^+e^- interactions 8−12859
- additive quark parton model, hadronic fragmentation distribs. 8−8711
- asymptotically free parton model, cf. massive muon pair prod. 8−8605
- asymptotically-free parton model, $W^{\pm}$, Z^0, μ-pair prod. 8−12865
- b-quarks, possible obs. in $\bar{\nu}$ interactions, nonleptonic decays and vector Ψ_b hadronic prod. 8−8613
- broken SU(6) parton model, spin depend struct. functions, deep inelastic lepton+nucleon appl. 8−428
- canonical scaling in hadronic high-p_t processes, parton Fermi motion 8−45977
- deep inelastic scatt. and lepton pair prod., covariant parton model approach to scaling 8−21431
- dimensional counting and Landshoff, multihadron reactions at large transverse momentum 8−33092
- dimuon enhancement at 9.5 GeV, vector meson family with hidden 'beauty' *(Russian)* 8−33030
- Drell-Yan trigger, hadronic prod. of dilepton pairs and muons 8−37182
- extended quark model, large p_t hadron prod. 8−29342
- Fermi-motion, canonical scaling of partons in hadronic high p_t processes 8−29314
- gauge model of weak and electromag. interactions, polarised lepton scatt. 8−45901
- generalized quark-parton model study of σ_l/σ_t and large k_t 8−29306
- hadron, fragmentation from heavy quark partons 8−8603
- hadron+nucleus interactions, Fermilab energies, inclusive rapidity distribs., parton-cascade model 8−37252
- hadron bags, interactions under strict quark-line rule 8−41495
- hadron distribs. in reactions with very heavy quarks 8−41486
- hadron interactions, dilepton ang. distrib. 8−21395
- hadron interactions, neutral heavy lepton detection probability 8−8612
- hadron total cross sections in quark parton model 8−45859
- hadron-hadron collisions, hard and soft processes in small p_t inclusive reactions 8−41599
- hadron-hadron large p_t collision, weak interaction effects 8−21462
- hadron-nucleus collisions, transverse momentum distrib. of secondary hadrons *(Russian)* 8−29444
- hadron-nucleus high energy reactions, multiple prod., parton-hadron cascade model *(Russian)* 8−17066
- hadrons, parton distribs. calc. 8−421
- hard scattering models, large transverse particle prod., cross section constraints from opposite side rapidity distribs. 8−29360
- inclusive interactions of fast hadrons with nuclei, parton hard scatt. *(Russian)* 8−45985
- jet structure in high p_t events, importance of parton transverse momentum 8−432
- large $p_\perp$ reactions, parton transverse momentum effect 8−33035
- large p_t production off nuclei, parton tubes, coherent tube model 8−21392
- lepton scatt. off protons and deuterons nonscaling behaviour 8−8642
- lepton-nucleon deep inelastic scatt., modification of Kuti-Weisskopf parton model *(Russian)* 8−17027
- lepton-nucleon scatt., deep inelastic, final state polarisation 8−458
- mass scale effects 8−25017
- mass scale effects in parton model 8−21389
- multiparticle prod. in quark-parton model, Monte Carlo method 8−41607
- nonhomogeneous string model 8−12884
- nonscaling parton models, physical struct. 8−4832
- nuclear collisions, hadron prod. in quark-parton model 8−12868
- nucleon production in quark parton model, e^+e^-, ep and large $p_\perp$ reactions 8−21391
- photoprod. of charged intermediate vector bosons 8−45855
- Q^2 dependence of parton distribs. using asymptotically free gauge theories 8−33034
- QCD, parton and gluon distribs. 8−16981
- QCD, parton transverse mass distrib. 8−8587
- QCD, parton transverse momentum distribution 8−29301
- QCD, struct. functions, perturbation theory *(Russian)* 8−8595
- quark confinement, analyticity of parton model, QCD_2 calc. 8−41484

parton model continued
- quark parton distribs. for deep inelastic scatt., calc. from 1-D Dirac box 8−45845
- quark-parton distributions model, large transverse momentum hadrons, logarithmic scale breaking 8−16989
- quark-parton model, with scaling violations, large p_t processes anal. 8−45927
- Schrodinger handbag model 8−427
- stochastic-field multieikonal theory, high-energy hadron dynamics 8−8634
- structure function scaling between proton and neutron 8−16988
- structure functions of mesons in quark-parton model, appl. to hadron prod. in e^+e^- annihilation 8−41482
- SU(3)×U(1) model, heavy lepton prod. and decay signature 8−45900
- supercritical pomeron, parton model interpretation, appl. to scatt. off nuclei 8−41497
- total cross section rise, parton mechanism *(Russian)* 8−41505
- transverse momenta, parton, influence on large p_t spectra 8−21380
- transverse momenta of sea and valence partons, scaling violation effect 8−41483
- transverse momentum depend. on longitudinal momentum 8−25016
- valence quark-parton transverse momentum distrib. 8−12862
- e^-e^- annihilation, parton model, finite energy results 8−419
- $e^+e^- \to pX$, weak neutral current, polarisation effects, asymm. parameters *(Russian)* 8−459
- $\gamma p \to \gamma p$, expt. cross section energy dependence agreement with parton model 8−37214
- $\gamma p \to hX$, SU(3)×SU(3) invariant interaction of quarks, large p_t, gluon bremsstrahlung 8−33072
- N form factors, parton separation determ. 8−33026
- ν deep inelastic scatt., parton anomalous statistics *(Russian)* 8−29331
- $\nu(\bar{\nu})$ high-energy interactions, dimuon distrib. anal., quark-parton model 8−33056
- $\nu(\bar{\nu})N$ scattering, modified GIM model, scaling violations, naive parton model 8−21414
- $\nu(\bar{\nu})N \to \nu(\bar{\nu})\gamma X$, hadron neutral current, parton model *(Russian)* 8−45910
- νN single- and di-muon prod., colour excitation, weak interaction model anal. 8−45906
- ω backward prod., baryon exchange dip and parton effects 8−17030
- p-nucleus interactions, 20 to 200 GeV/c, parton model anal. *(Russian)* 8−46065
- $p+\text{nucleus} \to \mu^+ + \mu^- + \text{anything}$, 400 GeV, high-mass dimuon continuum 8−37344
- $pN \to \mu^+\mu^-X$, determ. of parton sea 8−29304
- pp, $p\bar{p}$ inclusive interactions, lepton pair prod. and Drell-Yan mechanism 8−8718
- pp, unitary impact-parameter model for multicluster prod. 8−33091
- $\bar{p}p$ annihilation, asymptotic props., parton model, kaon prod. *(Russian)* 8−466
- $pp \to \pi^0X$, parton model, polarised proton, large p_t π^0 prod. asymm. 8−12936
- π inclusive electroproduction, quark-parton model comparison with expt. data 8−37218
- π^0 electroproduction, test of quark parton model 8−8672

Paschen-Back effect *see Zeeman effect*

passenger traffic *see traffic*

passivation
- deposition processes for passivation films, advances, review 8−23620
- organic films, electronics and communications engineering appls. *(German)* 8−44011
- phosphosilicate glass passivation layer P content, SEM analysis and interpretation 8−35759
- steel, Fr-Cr-Al, sulphidation behaviour, 750°C, preoxidation effect *(French)* 8−15566
- steel, mild, surface oxide effect on acid corrosion inhibition 8−11384
- steel, passivation by sulphochromic soln. *(French)* 8−23869
- steel, stainless, depth profiling of passive film by quantitative AES 8−19611
- steel, stainless, ferritic, corrosion in formic acid at 70°C, effect of Mo additions 8−35551
- steel, stainless, long-term corrosion stability rel. to use in joint endoprostheses 8−36059
- steel, stainless, metallic element depth distribution, in passivation layer, luminescent discharge spectrometry exam. *(French)* 8−31585
- Al, corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
- Co, passivation, film form., stability and breakdown 8−19937
- Cr, corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
- Cr, passivation, film form., stability and breakdown 8−19937
- Fe and oxides, passivity, electrochem. exam. *(Japanese)* 8−39946
- Fe, anodic behaviour, in acidic solns. of liq. NH_3 8−27671
- Fe, passivation, film form., stability and breakdown 8−19937
- Fe passive film AC electroreflectance and impedance obs. 8−7093
- Fe powder, passivating oxide layer comp. 8−31558
- Fe, pure, corrosion behaviour, effect of Ta ion implantation 8−31559
- Fe, pure, surface oxide effect on acid corrosion inhibition 8−11384
- Fe-Cr, passivity in H_2SO_4, XPS study 8−44256
- Fe-Cr (5 to 30 wt.%), transpassive behaviour in acidic sulphate soln. 8−15565
- Fe-Cr-Ni (25, 20 wt.%), single crystal, stress corrosion cracking 8−35553
- $Ga_{0.64}Al_{0.36}As$, plasma grown oxide, phys. and elec. props. 8−48550
- $Gd_2(MoO_4)_3$, passivation of c surface against attack by HF by inert ion beam irradiation 8−35545
- Ge film, elec. resist., long term stability rel. to ambient atmosphere changes 8−2597
- Nb, corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
- Ni, passivation, film form., stability and breakdown 8−19937
- Ni-Cr-Co-Mo, long-term corrosion stability rel. to use in joint endoprostheses 8−36059
- Si p-n junction, passivation by slightly conductive chalcogenide film 8−2556
- Si-N, passivation layer, density comp., and ref. index, Lorentz-Lorenz correl. 8−39697
- Si-SiO_2 interface charge effects and related props. 8−10575
- Si_3N_4 off-stoichiometric plasma-deposited layer, AES evaluation of comp. 8−26781

passivation continued
- Si_3N_4:H, amorphous, ion induced H transfer from N to Si, band passivation, elec. props. 8−47439
- Sn-Ni, electroplated, passive layer, ESCA study 8−23867
- Ta, corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
- Ti, corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
- Ti-Al-V, long-term corrosion stability rel. to use in joint endoprostheses 8−36059
- Zr, corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258

passive filters
- SAW, band-pass, transversal, principle, design and performance 8−38147
- SAW filter technological advances 8−46862
- synchrotron, passive filter for annular electromagnet 8−5074

patient care
- arrhythmia monitoring systems evaluation criteria 8−11765
- burn wound covering based on AN-DMAEMA, design and evaluation 8−44676
- cardiac surgical patient postoperative computerised meas., analysis, and treatment 8−36044
- cardiovascular emergency clinical assessment, use of ECG telemetry 8−44677
- catheter, conductive, reduced risk of cardiac fibrillation 8−35972
- coronary care unit interactive ECG monitoring 8−7481
- health care expansion aided by integrated electronics 8−11751
- implanted pacemaker parameter assessment system 8−11778
- mechanical patient handling devices, problems, requirements 8−3667
- medical computing symposium, Toulouse (1977) 8−36003
- percutaneous elec. stimulation of nervous system for pain relief 8−3668
- postoperative cardiac surgical patient care, automation of meas. and interventions 8−20310
- prosthetic power supply requirements for disabled, survey 8−15929
- rural health care delivery system model 8−44633
- tissue breakdown prevention, material design criteria 8−31964
- vascular laboratory instrum. management using computer 8−7460

patient diagnosis
- *see also biomedical ultrasonics; electrocardiography; electroencephalography; medical diagnostic computing; radiography; radioisotope scanning and imaging; scanning radiography*
- abdominal foetal ECG and VCG recording/processing systems 8−31947
- ametropia determination with laser refractor 8−35907
- amniotic fluid, human proton relax. times in low field range, appl. to nucl. magnetography *(French)* 8−3574
- aneurysm detection using bioacoustic signal processing techniques 8−28120
- angiography, standardised general and cerebral under automatic exposure control 8−24121
- angiography, validity of computer simulation of blood vessel imaging 8−3594
- Angioskop multidirectional examination unit for advanced radiographic examinations 8−28039
- apexcardiogram, math. model of endogenous thoracic forces 8−31849
- arrhythmia detection by RR-interval comparison *(Bulgarian)* 8−15919
- arterial insufficiency detect. and quantification using impedance plethysmograph 8−31957
- audiometers, principles, appls. and commercial models 8−44669
- audiosonology, noninvasive diagnostic possibilities of phonocephalography and phonomyelography 8−48920
- binocular oculomotor problems, phoria, vergence and fixation disparity 8−35835
- blood cell high-speed analysis, computer software system 8−44671
- bone biopsies, undecalcified human bone prep. for electron microscopic investigation 8−20332
- bone in vivo properties determ., effect of soft tissue on wave propag. and vibr. tests 8−3660
- bone stress wave detection using piezoelec. effect, non-invasive technique 8−31948
- breast disease, importance and limitations of thermography in diagnosis and treatment *(French)* 8−7419
- breast echography, possibilities, results and indications *(French)* 8−7408
- breast examination by radiography, thermography and US, reviews *(French)* 8−7472
- breast examination methods including radiography, thermography and cytology, review 8−3656
- breast pathology, liq. cryst. thermography *(French)* 8−7420
- breast radiography, foreign body diagnosis *(French)* 8−7432
- breast thermography vein-finding algorithm 8−40393
- cancer detection by microwave thermography 8−24172
- cardiac acoustic model for computer-aided surface acceleration mapping 8−35791
- cardiac arrhythmia, cerebral echo-pulsation curves and plethysmograms comparison 8−7413
- cardiac catheterization laboratory sensitometric system application and clinical evaluation 8−20263
- carotid angiography, eye shield 8−44615
- carotid arterial disease evaluation using noninvasive photoplethysmography 8−40390
- carotid arteriography real-time US imaging system 8−24108
- cartilage generated noise, computer-aided acoustical correl. 8−40391
- cerebral angiography, cortical pO_2 and K^+ dynamics rel. to contrast agent neurotoxicity 8−35954
- cerebral angiography, evaluation of Contrac injector 8−40293
- cerebral regional blood flow meas. by ^{133}Xe inhalation, anal. method comparison 8−44604
- cervical cancer detection, comparison of coherent optical transform processing systems 8−48922
- cervical cytological sample screening, coherent optical processing, via Fourier transforms 8−36006
- cervical cytological sample screening, coherent optical processing via Fourier transforms 8−36007
- cervical cytological sample screening, coherent optical processing via Fourier transforms 8−36008
- chest radiograph texture anal. model 8−40323
- chest X-ray images computer-aided anal. 8−40400

patient diagnosis continued
chest X-ray rib extraction algorithm for pneumoconiosis detect. 8−31904
cine-radiography in peripheral arteriography 8−24123
clinical paediatric gait biotelemetry 8−3652
clinician and computer ECG diagnostic accuracy 8−7494
coal miner spirograms, feature selection appl. 8−40387
computer-processed ECG trends, conference, Amsterdam (1976) 8−7477
computerised tomographic head unit, Siretom 2000, operation 8−28037
computerised tomography, body organ moulded picture representation 8−35951
computerised tomography, Siretom 2000 initial clinical experience 8−28038
computerised tomography, Somatom fast whole body tomograph with direct image reproduction 8−28036
computerised tomography, X-ray photography appl. 8−44588
computerised tomography equipment, for intracranial diagnosis 8−31884
computerised tomography image processing and evaluation using PDP-10 computer 8−44587
computerised tomography performance phantom optimisation 8−48892
computerised tomography spectral artifact correction 8−35953
computerised tomosynthesis serioscopy, and coded scan tomography, reconstruction 8−35920
computerised X-ray tomography, principles *(German)* 8−3601
computerised X-ray tomography, selective I imaging using K-edge energies 8−24131
coronary arteriography, current techniques and equipment 8−35940
coronary artery disease detection by exercise electrocardiograpy, measurements optimisation 8−11756
critically ill patient monitoring by integrated computer systems 8−35998
cytological preparation image processing, filter construction *(German)* 8−36026
cytological preparations, optical real-time filtering *(German)* 8−36025
dermatology, photobiologic phenomena 8−35909
differential energy absorpt. X-ray cassette, radiographic image contrast enhancement 8−20264
ear impedance, interactions among tympanometric variables 8−27964
ear impedance, tympanometric asymmetry 8−27963
ECG, digital storage and analogue distortion 8−44674
ECG, models solving direct and inverse problems, systems approach 8−28121
ECG computerised acquisition, compression, and retrieval 8−36019
ECG P-wave recognition, using adaptive correlating filter *(Japanese)* 8−28119
ECG recording system simplification *(Russian)* 8−40379
ECG skin artifact reduction by skin puncture method 8−44672
ECG U-wave correlation with repolarisation of Purkinje system 8−28122
echocardiogram Fourier analysis 8−28028
echocardiography appl. of pattern recognition 8−35898
echopyelographic visualisation of pacemaker induced contractility in calyceal structs. of human kidney 8−48850
EEG, detect. of intermittent transient patterns of brain elec. activity of unknown waveshape 8−31958
EEG analysis methods and activation techniques *(Croatian)* 8−44666
EEG data compression via computer-generated evoked response to sensory stimuli 8−36016
EEG discriminant function classification from renal patients, methods 8−28115
EEG multichannel radiotelemetry for epileptogenic focus localisation 8−3653
EEG signals with changing spectra, anal. using Kalman estimator 8−24167
EEG technique, in diagnosis of subacute sclerosing panencephalitis 8−20301
elastometer probe system for localised in vivo compliance meas. 8−31960
electric impedance meas. using 4-terminal instrumentation system for oedema detect. 8−48853
electrical stimulation of organs and tissues in clinical medicine 8−35977
electrocardiograms computer anal. 8−48917
electrocardiographs, portable, Phillips Cardiopan 531, clinical/electronic evaluation 8−11757
EMG of Vastus medialis for graded isometric torque tensions, power spectrum distrib. 8−44673
EMI computerised tomography brain scanner, patient dose 8−28080
evoked potentials steady state, recording and appls., review 8−35823
eye, ophthalmological instrument design and construction 8−15918
FET transducer, H^+, Ca^{++} and K^+-sensitive, features 8−28117
fluorescent microscopical technique in diagnostic microbiology 8−20339
foetal development and placental function during pregnancy, US diagnosis and chem. anal. 8−35897
foetal heart and uterus diagnostic monitoring and functional mechanics 8−36009
foetus ECG appl. *(Spanish)* 8−11759
foreign-body detector for intraoperative localisation of stones in biliary tract 8−3657
gait evaluation technique for normal and abnormal subjects 8−11682
glaucoma diagnosis and therapy, importance of tonometry 8−40383
gyroscopic X-ray television apparatus for clinical studies 8−15883
health care expansion aided by integrated electronics 8−11751
hearing loss, electronic aids needing no patient feedback 8−11760
hearing loss, from acoustic reflex thresholds, comparison of three methods 8−3511
hearing loss, LF, simultaneous recording of brain stem and freq.-following responses 8−11665
heart attack early diagnosis appl. of statistical pattern recognition, results 8−40388
heart congenital defect evaluation from dynamic tracer meas. 8−40378
heart monitoring system for rhythm diagnosis of ECG 8−40392
image intensifier fluorography with fast exposure technique 8−31900
image intensifier tomography in exam. of larynx 8−40312
image intensifier with 14 inch input field, clinical experience 8−31899
inflammatory joint disease assessment by quantitative thermography 8−31881

patient diagnosis continued
intestinal motility study by computerised anal. of sounds and EMG wall pots. *(German)* 8−31944
intracardiac shunt noninvasive quantitation using cardiovascular sound complexes 8−48918
intraocular pressure measurement, for glaucoma, comparison of Schiotz standard tonometer and applanation tonometer 8−48915
intraocular tumour diagnosis, Si(Li) detector probe with RFT radiation meas. unit *(German, English)* 8−20265
ionography, optimisation of design parameters 8−31888
ionography sealed chamber system, optically projected X-ray charge images 8−4748
ischaemic and infarctive ECG simulation during ventricular activation and recovery 8−36018
Japanese developments 8−24164
knee analyser for mediolateral stability determ. 8−7475
knee joint impact response, comparison of normal and osteoarthritic joints 8−31848
laryngeal films, ultra high speed, automated anal. 8−36023
laser fibre optic bronchoscope for optical fluoresc. localisation of early lung cancer 8−48921
liver fat content determ. by photon scatt. technique 8−24124
lung isopressure-flow-volume curves, electronic device for automatic recording 8−40382
lung tissue characterisation by US, instrumentation, model and results, book 8−44575
mammarian growths in transilluminated breast, spatial filtering image enhancement 8−40288
mammography, backscatt. factors, var. with field diameter and half-value layer 8−3593
mammography, comparison of film and xerography methods in early diagnosis *(German)* 8−35946
mammography, method for reducing radiation exposure and improving image quality 8−31901
mammography, picture quality test *(German)* 8−20270
mammography modalities, advantages and limitations *(French)* 8−7430
mammography X-ray exposure meas., Baldwin-Farmer chamber response 8−28040
medical X-ray diagnostics, NDT impetus, novel techniques *(German)* 8−7146
Medicor diagnostic bag assembly for out-of-hospital use 8−36014
microchannel plate X-ray image intensifier, image resolution 8−35937
microwave radiometry in detect. of breast cancer 8−40384
mobile X-ray unit, Mobil XR 8−24122
motor nerve conduction vel. and evoked pots. in peripheral nerve lesion localisation 8−31802
Neuroscope, for multiprojectional isocentric fluoroscopy and angiography 8−40292
neutron radiography of extended objects *(German)* 8−15880
NMR, radiographic thin-section image of human wrist 8−24112
NMR image recovery under nonuniform magnetic fields 8−40282
NMR imaging, display of cross-sectional anatomy 8−44579
NMR imaging, three-dimens., using selective excitation 8−21190
NMR relaxation detect. of tumours, spectrum anal. of multiple components data 8−48851
noninvasive diagnostic technology, history and necessity 8−36029
nuclear medicine instrumentation trends 8−44594
ocular foreign body detect. using computerised tomography 8−3577
ocular fundus reflectometry 8−48861
ocular motility test in strabismus and amblyopia evaluation, computer administration and analysis via PAL8 program 8−48784
ophthalmological instrument manufacture, development trends 8−48903
ophthalmology, holography appl. 8−7342
osteoporosis early detection by Compton gamma-ray spectroscopy 8−11729
pancreatic lesion visualisation and documentation by diagnostic US 8−11708
phonocardiogram classification, linear prediction analysis appl. *(Japanese)* 8−36010
phonocardiograph modulator design trends 8−24171
photogrammetric system, cancer diagnosis appl., cytographs automatic analysis *(Russian)* 8−24161
pneumoconiosis of coal-workers, optical-digital system for pattern recognition 8−40389
polygraph for simultaneous recording of diagnostic parameters 8−36011
proptosis diagnosis, contrib. of echography 8−28023
psychophysical laboratory unit organisation and meas. system for persons with impaired locomotor system *(Croatian)* 8−44667
pulmonary diseases, using microwave reflection/transmission meas. method 8−28031
pulmonary function testing, training course features 8−24169
pulmonary oedema detect. by quantitative elec. impedance plethysmography 8−31951
pulmonary testing equipment, training and application techniques 8−24170
pulse/phono pick-up appls. in ambulant cardiological practice 8−40377
pupilometry, instrumentation for stimulating and monitoring human pupil 8−48911
radiograph digital tomogrpahic restoration 8−40322
radiographic mottle, screen sharpness quantum noise depend. 8−20261
radiographic screen-film system comparisons, fluoresc. X-ray source 8−24132
radiography, computed tomographic reconstruction noise, effect on detectability 8−40296
radiography, electrophotographic imaging using high purity Al_2O_3 8−35936
radiography, exposure meas., energy depend. of correction factors for Victoreen 570 Condenser R-meters 8−3597
radiography, image information content and patient exposure 8−35935
radiography, image quality and patient exposure 8−28060
radiography, low dose, intensified minification camera 8−20262
radiography, medical diagnostic decision making and image quality 8−28059
radiography, MTF determ. from edge response function, single step calc. 8−35938
radiography, noise equivalent parameters 8−28058
radiography, problems anal. 8−31903
radiography, sampling tomography multi-sectional reconstruction method using computer *(Japanese)* 8−31896

patient diagnosis continued
radiography, solns. for film and data handling in large diagnostic departments 8−40294
radiography, straight-line tomography, linearising mechanisms 8−35934
radiography, total unsharpness analysis 8−11730
radiography, working places incorporating Medicor equipment 8−35942
radiography grid for elimination of scatter, zig-zag design 8−3598
radiography instrument calibration, energy depend. of correction factors for Victoreen 666 Survey System 8−3596
radiography with fan-beam scanners, circular artefacts reduction 8−35924
radioisotope production in cyclotron for diagnostic medical research appls. *(French)* 8−48895
radiopathology, clinical problems in diagnosis and treatment of radiation damage *(French)* 8−48845
radiopharmaceuticals in diagnosis, patient dose 8−35967
radiotelemetry pill for biomedical meas. of ionising radiation using HgI$_2$ detector 8−40318
respiration, two-stage ladder network model for detect. of small airway disease 8−31846
right ventricular wall thickness meas. by echocardiography, comparison with necropsy 8−40277
spine, evoked elec. response surface recording 8−36028
temperature gradients in low-flow vessels, appl. to blood temp. distrib. 8−27990
thermal burns, multispectral colour photographic anal. 8−3648
thermal imaging, fast response system with 50 element detector 8−18064
thermographic meas., three-dimensional signal detection, expt. 8−3662
thermography, quantitation 8−31946
thoracic sound characterisation by time series anal. using canine model 8−31959
thrombophlebitis patients, venographic, impedance and Doppler US findings 8−48919
thrombosis detection by US, plethysmography and phlebography 8−7435
tomodensitometry, image quality 8−44589
tomographic system error propagation, hybrid anal. 8−40327
tomography, computerised, operating principles, image construction, appls. 8−28047
tomography, computerised, principles and development 8−31945
tomography, proton beams computed reconstruction 8−48870
tomography images, display processing, digital enhancement 8−48875
total cardiac monitoring integrated microcomputer/minicomputer system 8−35997
transaxial X-ray tomography reconstruction using convolution methods, digital simulation *(Japanese)* 8−35931
triaxial vector accelerometry for quantifying tremor and ataxia 8−28116
tumour detection by US Doppler blood-flow signals 8−3571
tympanic membrane vibration study, phase sensitive holographic technique *(German)* 8−3513
tympanic membrane vibrs. in human temporal bones, double pulsed holographic anal. 8−40289
ultrasonographic diagnosis of pancreatic diseases 8−7416
ureteral catheterisation manometry and urodynamics *(Slovene)* 8−44668
urology, universal room using Uro Diagnost 8−31902
US, 1977 state of art and developments 8−48847
US, appls., principles and equipment, review 8−11709
US, principles, instrumentation and appls. 8−44571
US, Vidoson 735, real time scanner for sonography 8−28024
US appl., bibliography 8−7417
US appl. to urology *(Hungarian)* 8−35900
US B-mode scans, speckle reduction 8−22233
US diagnostic equipment development *(Japanese)* 8−44572
US digital moving target indicator system for diagnostic use 8−11710
US echoaortocardiography, Kymo-two-dimensional, aortic root diagnosis appl. 8−24110
US echocardiographic system, two-and three-dimensional, computerised, atrial septal defect detection appl. 8−20237
US echoes from kidney, computer anal. 8−35901
US echoscopic meas., random error sources *(Croatian)* 8−44569
US equipment quality control, tissue phantom *(German)* 8−3567
US grey scale display on storage oscilloscope system 8−3569
US ophthalmological diagnostics and therapy *(Croatian)* 8−44570
US pulse echo and Doppler diagnosis, technical and physical aspects *(Croatian)* 8−44568
US renal diagnosis, clinical results 8−28027
US scattering by human tissue, theoretical models 8−7411
US time-of-flight tomography, computerised, breast pathology appl. 8−24107
US time-position mode scanning in obstetrics, heart model practice aid 8−24111
US tissue characteristics, swept freq. meas. of US attenuation and vel. 8−40278
US tomography, review 8−31876
US vascular imaging, Doppler method, improvement 8−24106
vectorcardiogram automatic anal., computer system 8−20302
ventricular septal defect, prediction by non-invasive examination using interactive terminals 8−31954
virometer, real time virus detect. and identification in biological fluids 8−7555
visual evoked cortical potentials, transient response, techniques review 8−35844
visual evoked potential registration methods *(German)* 8−48916
walking pattern, EMG and temporal data telemetering 8−3638
white blood cells classification and feature extraction 8−3655
X-ray diagnosis of digestive tract, dose to patient and radiologist *(German)* 8−28086
X-ray diagnostic system compatible with DHEW standards 8−7445
X-ray examinations, effects, risks and protection, review 8−3591
X-ray image transmission system response rel. to X-ray diagnosis 8−35941
X-ray isodose curves in water phantom, for radiography machine 8−15892
X-ray picture source coding for compact storage or fast transmission 8−40310
X-ray picture transmission over voice grade telephone channels 8−44607
X-ray transverse tomography with incoherent optical reconstruction 8−28052
X-ray tube, grid control type, diagnostic, quality improvements 8−11733
X-ray TV, high-resolution system and video recorder 8−24120
xeromammography, technique and advantages *(French)* 8−7431
xeromammography exposure timing 8−40291
xeroradiography, for teaching 8−45449
^{19}F NMR imaging for biomedical application 8−20240
^{123}I, prod. and use in nucl. medicine diagnosis *(German)* 8−28061
^{133}Xe trapping and re-use system for nucl. medicine 8−28051
^{133}Xe washout curve discriminant analysis for lower extremity vascular impairment 8−35949

patient monitoring
see also electrocardiography; electroencephalography
ambulatory ECG monitoring problems 8−11763
Argus ECG monitoring system reappraisal 8−7479
arrhythmia analysis, using modified ECG system *(Hungarian)* 8−35981
arrhythmia detection program comparison data bank 8−15921
arrhythmia monitoring systems evaluation criteria 8−11765
arterial tonometer, microprocessor based 8−31955
bioelectric process mag. recording, FM freq. convertor 8−7469
blood gas analysis in vivo using gas chromatography 8−40355
blood gases in artery and vein, quantitative continuous meas. of pO$_2$, pCO$_2$ 8−40363
blood glucose monitoring technique for appl. in artificial endocrine pancreas 8−36062
blood pressure control in hypertensive crisis, closed loop control of sodium nitroprusside infusion 8−44688
blood pressure direct measurement for intensive care and operations, computerised correction system 8−44635
blood pressure monitor, semiautomatic, using electronic sphygmomanometer 8−20300
blood pressure monitor, systolic-diastolic, using display stabilising circuit 8−40364
blood temperature monitoring transducer, during extracorporeal circulation 8−44639
breast disease, importance and limitations of thermography in diagnosis and treatment *(French)* 8−7419
cardiac arrhythmia simulation device 8−44636
Cardiac Surveillance Unit experience with Argus ECG monitoring system 8−11762
cardiogram cart under microcomputer control 8−31942
cardiopulmonary monitoring in respiratory intensive care unit 8−20306
cardiopulmonary monitoring of high-risk infants using microprocessor-controlled memory 8−31962
cardiopulmonary noninvasive noncontacting monitor using coherent microwave interferometer 8−40290
cardiovascular computerised monitoring in medical intensive care unit 8−20304
cardiovascular monitoring in the coronary care unit 8−20308
cardiovascular response to dynamic/static exercise, four-channel radiotelemetry 8−3633
cerebrospinal fluid pressure meas. by passive telemetry, improved instrument 8−31927
clinical paediatric gait biotelemetry 8−3652
computer-aided monitoring of critically ill patients, signal interference problems *(German)* 8−3628
computerised ECG monitoring, state of art 8−11766
computerised ECG ventricualr arrhythmia monitor, performance standards and trends 8−7478
coronary care unit equipment failure finding and prediction 8−44648
coronary care unit interactive ECG monitoring 8−7481
critically ill patient monitoring by integrated computer systems 8−35998
digital pulse counter for cardiovascular monitoring 8−35978
ECG, long-term recordings, rapid computer analysis system Argus/H 8−36002
ECG, two-electrode recording 8−28107
ECG arrhythmias high speed pattern recognition 8−36004
ECG monitor, non-fade, battery-powered, emergency/surgery appl. 8−7528
ECG monitoring, R-R interval prediction models compared 8−35996
ECG monitoring in ambulatory patients 8−20309
ECG signal parameter trend anal. 8−15920
EEG, automatic nocturnal sleep sampling 8−31916
EEG 24-hour recording using 4-channel cassette recorder for epileptic patient 8−3639
EEG digital recording system for epileptic event observation 8−3641
EEG multichannel radiotelemetry for epileptogenic focus localisation 8−3653
EEG seizure-monitoring, cable telemetry system 8−3640
EEG telemetering, FM/PWM, multichannel, from unrestrained psychiatric patients 8−3636
EEG telemetry, including PWM multichannel system 8−31914
epidural intracranial press. monitoring with press.-sensitive on-off type switch sensor 8−44626
exercise stress testing with continuous noninvasive cardiac monitoring 8−36000
foetal breathing movement meas. using US echographic time-distance recorder 8−24109
foetal ECG adaptive real-time noninvasive extraction using near-orthogonal functions 8−28110
foetal ECG and heart rate radiotelemetry monitoring 8−3651
foetal heart and uterus diagnostic monitoring and functional mechanics 8−36009
foetal heart rate on-line data management during labour, prediction of one-minute Apgar scores 8−44655
foetal heart rate variability anal. using spectral anal. 8−28111
foetal weight estimation using US B scanning method 8−3573
health care expansion aided by integrated electronics 8−11751
heart beat counting, digital socially acceptable monitoring instrument 8−40367
heart condition monitoring during bath therapy using immersed electrodes 8−3665
heart monitoring system for rhythm diagnosis of ECG 8−40392
heart rate analyser for long-term continuous ECG recordings *(German)* 8−3649

patient monitoring continued
heart rate on-line statistical anal., using special-purpose computer 8–35984
intra-auricular P wave monitor, experience, performance evaluation 8–11764
intracranial pressure noninvasive monitor for infants, fontogram 8–40373
intracranial pressure telemetering, in vivo and in vitro, with capacitance transducer 8–7457
intracranial pressure/temp. telemetering, implantable two-channel system 8–3637
intraocular pressure, telemetry monitoring 8–3632
IR noninvasive monitoring of cerebral and myocardial O_2 sufficiency and circulatory parameters 8–44583
limb blood flow automated monitoring system using venous occlusion admittance plethysmography 8–31937
lung function meas. system, mobile, computer aided *(German)* 8–3630
microcomputer based cart, self-diagnosing 8–31943
motion 3-dimens. monitoring by optoelectronic means, calibration and meas. 8–31913
oedematous tissue quantification by elec. impedance meas. 8–44630
operating room monitoring, developing crisis 8–40401
orthotics parameter assessment based on telemetric heart rate monitoring, paediatric patient appl. 8–31974
pacemaker patient surveillance by automatic pacemaker function analyser 8–3679
pacemaker tracking system based on microprocessor, hardware considerations 8–36070
postoperative cardiac surgical patient care, automation of meas. and interventions 8–20310
pulmonary artery blood press. anal. algorithm 8–40376
pulmonary diseases, using microwave reflection/transmission meas. method 8–28031
pulmonary gas exchange data online acquisition system 8–28100
pulse rate meter for heart monitoring 8–31915
pupilometry, instrumentation for stimulating and monitoring human pupil 8–48911
second-generation ECG monitoring system development 8–7480
sleep depth determ. by cluster anal. of heart rate data 8–44659
sleep EEG ambulatory monitoring and anal. 8–44650
spike-wave EEG patterns, quantification method clinical evaluation 8–11754
surgery, 4-channel telemetry system 8–31961
surgery, inexpensive general purpose computer 8–36045
surgery, microprocessor-based patient monitoring system 8–44681
telemetry, low power PAM/FM system for ventricular press. and cardiac dimension meas. 8–44747
telemetry system, seven-channel fully integrated, features 8–3634
temperature, using temp. depend. of US vel. in tissue 8–40281
total cardiac monitoring integrated microcomputer/minicomputer system 8–35997
Unibed patient monitoring system based on microcomputer and LSI technology 8–20305
uterine activity monitoring, internal and external methods 8–35973
uterine contraction waveform online digital processing system 8–15916
ventilatory monitoring in operating room, current techniques and future requirements 8–20307
video biofeedback for alpha monitoring of brain activity 8–20299
visual behaviour monitoring system, EMG triggered photographic technique 8–31919
walking pattern, EMG and temporal data telemetering 8–3638
weight, continual in-bed monitoring 8–48910

patient treatment
see also biomedical ultrasonics; radiation therapy; surgery
aerosol, from nebulizer, droplet size distrib., evaporation effect 8–24084
blood pressure control in hypertensive crisis, closed loop control of sodium nitroprusside infusion 8–44688
bone healing in humans, appl. of pulsed mag. field to stimulation 8–28029
bone pyrogenic infection treatment by non-invasive EM technique 8–48854
bone stimulation, EM fields in capacitative and inductive devices 8–40283
bronchopulmonary lavage 8–15910
burn patient closed loop fluid resuscitation using microprocessor 8–36046
cardiopulmonary bypass, portable, appl. to emergency instrumentation 8–44679
cavernous tuberculosis, local drug injection device 8–7520
chemotherapy with 5-fluorouracil, distrib. of ^{18}F labelled tracer in tumour-bearing mice and rats 8–48878
chromatic maculae of the skin, pulsed ruby lasers appl. *(German)* 8–24177
DC therapeutic transistorised apparatus *(Bulgarian)* 8–24175
defibrillation, transthoracic chest resist. of 100 kg calves defibrillated with rectangular pulses 8–36047
defibrillators for emergency medical use, improvements and clinical studies needed 8–44678
dental sealant application by laser 8–48868
dental unit US 10/100 8–36040
dentistry, preventive, laser processes 8–7530
diadynamic current therapy apparatus Tonus-1 8–7523
disabled children's therapeutic aid using myoelectric feedback 8–36048
drug administration, DC micromotor controlling feed rates in syringe pumps 8–48923
drug controlled administration, by implantable electro-osmotic valve 8–40399
drug release supports using reconstituted collagen, mech. prop. consideration 8–3666
drug screening using US intravascular mural thrombi formation technique 8–24091
EEG feedback training, techniques and clinical appls. 8–36043
electrical stimulation of organs and tissues in clinical medicine 8–35977
electroosmotic pump for regulated release of medicaments *(German)* 8–7518
electrostimulator, portable, for transcutaneous analgesia 8–36032
electrostimulator for leg muscles to correct defective walking 8–36051
electrostimulator for muscles, Stimul-1 8–36035

patient treatment continued
functional rehabilitation, myophone appl. *(Spanish)* 8–48924
gastrointestinal tract electrostimulator, Endoton-1 8–36033
glaucoma diagnosis and therapy, importance of tonometry 8–40383
gynaecological cancer care, Ne-He laser appl. *(German)* 8–24176
haemodialysers, hollow fibre type, haemofiltration and thrombus formation effects 8–3672
haemoperfusion device comparative evaluations 8–44690
hemiplegic upper extremities, feedback elec. stimulation trainer 8–44683
hybrid neural stimulator for chronic expts. 8–28124
hyperthermia, dynamic temp. distribs. in normal and neoplastic tissues during diathermy 8–31776
hyperthermia techniques in cancer management, clinical appls. 8–44682
inhalation apparatus, technique of continuous and intermittent working 8–36038
iontophoresis device for safe elec. administration of ionised drugs 8–31965
jet injector, compressor operation mode 8–7524
keratoplasty, fluoresc. angiography of vascularised cornea using camera slit lamp 8–48855
kidney stone non-contact destruction by shock waves *(German)* 8–7517
laser applications, book 8–48857
leg lengthening, tension/stretch ratio, method and clinical results *(German)* 8–36031
lung lavage for removal of inhaled radioactive particles, review 8–3618
medical computing symposium, Toulouse (1977) 8–36003
nerve stimulation apparatus and electrodes 8–36034
nervous system electrostimulation, stainless steel electrode corrosion control 8–7464
nervous tissue damage parameters secondary to elec. stimulation 8–44491
ophthalmological instrument manufacture, development trends 8–48903
oral sensori-motor disorder treatment appliances 8–36030
percutaneous elec. stimulation of nervous system for pain relief 8–3668
phototherapy of neonatal icterus, comparison of blue-light lamps 8–44582
plasma filtration from whole blood, effect of various parameters 8–48826
psoriasis treatment, detect. of 8-methoxypsoralen in ocular lens 8–15937
psychosomatic and rheumatic complaints, magnetiser for generation of 2.5-5.8 Hz magnetic field, construction 8–15878
radiopathology, clinical problems in diagnosis and treatment of radiation damage *(French)* 8–48845
respiration electrical stimulation, appls. and equipment 8–36054
scholiosis treatment, Electro-Spinal instrumentation 8–48925
scoliosis correction, by lateral surface elec. stimulation of muscles 8–44717
sorbent haemoperfusion systems, characterisation of solute removal 8–44689
tibial shaft internal fixation, biomech. study 8–20313
tongue movement observation using dynamic palatography 8–44687
vaccine production, use of ^{60}Co-γ-irradiation, polymerisation conditions 8–40320
O_2 therapy equipment improvements 8–36039

pattern classification *see pattern recognition*

pattern recognition
see also character recognition; computerised pattern recognition; speech recognition
adhesive bond US inspection, aspects of model anal. and pattern recognition 8–31611
atmospheric precipitation probability forecasts, nonparametric technique based on pattern recognition algorithm 8–44946
atomic spectra, classification, pattern recognition method, H model appls. 8–41982
atomic spectra, classification, pattern recognition method, appl. to Cm energy levels 8–41983
cervical cancer detection, comparison of coherent optical transform processing systems 8–48922
chest radiograph texture anal. model 8–40323
cloud classification techniques, comparative study 8–7809
coal miner spirograms, feature selection appl. 8–40387
data management and analysis systems for hydrogeochemical reconnaissance 8–20520
dynamic clustering and strong patterns recognition, automatic classification appl. 8–28322
echo cardiography appl. of classification methods 8–35898
form recognition, scale invariant, in man and machines 8–40176
hearing, nonlinear systems theory appl. 8–40195
heart attack early diagnosis appl. of statistical pattern recognition, results 8–40388
holographic scanner for bar code reader 8–42309
holographic scanners for UPC symbols 8–42308
IR spectra, computer-assisted interpretation, pattern recognition and artificial intelligence methods 8–15732
LANDSAT multispectral images clustering scheme 8–32241
mass spectra, mol. substructures identification and retrieval, K-nearest neighbour methods 8–20084
mass spectra classification via pattern recognition 8–48722
meteorological data, functional dependency recognition *(Russian)* 8–40609
music, MACSIM neural network 8–7373
neural signals, non-stationary, pattern trajectory anal. 8–36082
nonlinear, adaptive spatial filter for image classification *(Russian)* 8–42292
nuclear reactor behaviour unattended surveillance system 8–29621
numerical holography application 8–33692
oil bearing beds in inhomogeneous geological sections, recognition methods *(Russian)* 8–28337
olfactory pattern recognition modelling by adaptive spatial filter 8–24080
one-dimensional projection recording and processing *(Russian)* 8–42291
optical correlation, precision of detail recognition *(German)* 8–9340

pattern recognition continued
optical multiple-invariant space-variant processors 8−42279
phonocardiogram classification, linear prediction analysis appl. *(Japanese)* 8−36010
radiography, medical diagnostic decision making and image quality 8−28059
rotating wedge spatial filter, pattern recognition of biological speciemens (algae) 8−33837
seismic discrimination improvement for nuclear explosions and earthquakes using pattern recognition 8−40694
space variant optical correlators, accuracy and space bandwidth 8−17864
steroids, mass spectra, computer-aided interpretation by pattern recognition, preprocessing effects 8−15733
three-layer random neural net with inhibitory connections, pattern separability 8−44498
turbulent channel flow, meas. of vorticity and turbulence prod., pattern recognition method 8−26194
Universal Products Code supermarket scanners, pattern optimisation 8−42297
visual pattern matching, human performance, spatial freq. anal. model 8−40177
voltammetry, interpretation of severely overlapped data, expt. 8−7255
voltammetry, interpretation of severely overlapped data, theory 8−7254
water usage regions in Lithuania, multi-image classification *(Russian)* 8−16069
weather forecast verification, pattern recognition techniques appl. 8−11958
weather forecasting, adaptive learning network approach 8−40643
white blood cells classification and feature extraction 8−3655

Patterson diagrams *see crystallography; X-ray crystallography calculation methods*

p.c.m. *see pulse-code modulation*

p.c.m. links *see pulse-code modulation links*

PD control *see two-term control*

Peierls instability
A15 compounds, high-temp. superconductors, martensitic transform., microscopic theory based on 3-dimens. band struct. 8−19752
antiferromagnetic Heisenberg chain, first order spin-Peierls transition 8−34986
CDW phase transition, 1-D electron-phonon system, thermodynamic props. 8−14682
interchain bandwidth effect at low temp. 8−10352
one-dimensional conductor, incommensurate Frohlich model, displacement correl. of classical ions 8−6291
one-dimensional Hubbard model, antiferromag. and Peierls instability 8−23233
one-dimensional metallic systems, theory of structural phase transitions 8−38830
one-dimensional Peierls-Frolich state, impurity pinning of charge density wave 8−6298
Peierls-Frohlich state on many-phonon-coupling model, dynamical props. 8−47773
bis cantena pol methylarsenide, energy gap depend. on As electron delocalization *(German)* 8−43296
quasi-one-dimensional conductor, chiral charge density waves form. 8−6302
quasi-one-dimensional conductor, high temp. struct. instability, tight-binding approx. and fluctuation model 8−6292
quasi-one-dimensional conductor, Peierls instability and superconductivity, possibility of coexistence 8−31028
quasi-one-dimensional conductors, order in coupled metallic chains problem 8−6358
quasi-one-dimensional electron-lattice system, three dimensional CDW ordering temp. 8−23037
quasi-one-dimensional systems, charge distrib. and lattice distortion 8−6317
quasi-one-dimensional systems, three-dimens. ordering in system of weakly coupled chains 8−6295
quasione dimensional crystals, effect of band filling on features of struct. transition 8−2424
quasione dimensional structures, collective excitation of CDW 8−18981
spin-Peierls transition, dynamic struct. factor 8−14964
TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
TCNQ salt, HMTTF-TCNQ, quasi-one-dimensional organic conductor, mag. susceptibility meas. 8−6508
TCNQ salts, simple, triplet exciton obs. by ESR 8−10373
TCNQ-HMTSeF, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
$(TSeF)_x(TTF)_{1-x}(TCNQ)$, interstack hybridisation role in metal-insulator transition temp. determ. 8−6304
TSeF-TCNQ, resist., crit. behaviour anisotropy 8−10430
TSeF-TCNQ, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
TTF-TCNQ, electronic props. and comparison with $(SN)_x$, review 8−6306
TTF-TCNQ, isotope effect on Peierls transition temp. 8−43367
TTF-TCNQ, isotope effect on Peierls transition temp. 8−43369
TTF-TCNQ, Kohn anomaly and Peierls-type transition, X-ray obs. 8−14435
TTF-TCNQ, low temp. phase transitions, elastic neutron scatt. obs. 8−14464
TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
TTF-TCNQ, ordering types below 54K, perp. phase depend. 8−6300
TTF-TCNQ, Peierls instability and consequences 8−6303
TTF-TCNQ, phonon dispersion curve meas., Peierls transition exam. 8−10134
TTF-TCNQ, resist., crit. behaviour anisotropy 8−10430
TTF-TCNQ, single cryst., mag. susceptibility in phase transition region, two-gap model 8−6511
TTF-TCNQ, symmetry changes and phase transitions 8−6299
TTF-TCNQ, X-ray, neutron scattering, low temp. modulated lattice, 3D modulated lattice 8−10033
TTG-BDT(Cu), giant struct. distortion, high speed photography obs. 8−43121

Peierls instability continued
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, one-dimensional cond., phys. props. *(Japanese)* 8−30916
$K_2Pt(CN)_4Br_{0.3}.xH_2O$, dynamical props. near Peierls instability, neutron scatt. 8−14436
$NbSe_3$, CDW form., direct electron diffr. 8−30877
Pt complex, $(C(NH_2)_3)_2Pt(CN)_4Br_{0.23}.H_2O$, pseudo-one-dimens. cpd., solitary wave excitations, and cryst. struct. 8−6307
Pt complex, $Mg_{0.82}Pt(C_2O_4)_2.xH_2O$, X-ray diffuse scatt., 1-D Peierls-Kohn anomaly and struct. transforms. 8−14680
$(SN)_x$, electronic props. and comparison with TTF-TCNQ, review 8−6306
TTF-TCNQ , elec. props. in high temp. regime, effect of controlled disorder 8−30912
TaS_3, electron diffr. evidence for one-dimens. Peierls distortion 8−10024
TaS_3, Peierls transition *(Japanese)* 8−30880

Peltier effect
anisotropic thermoelement used as heat pump, transverse Peltier effect 8−39098
inhomogeneous sandwich structure, electrogradient EMF, V-I characts. *(Russian)* 8−47852
LPE, Peltier-induced, in semiconductor films, composition control 8−48343
LPE, Peltier-induced, in semiconductor films 8−48342
novel Peltier junctions, fast transient response 8−21141
thermal conductivity meas. of gases and liqs. using Peltier effect 8−45615
GaAs-GaAlAs heterostructures, LPE growth *(Polish)* 8−6861
Ge, molten zone movement under influence of Peltier effect 8−44007

PEM effect *see photoelectromagnetic effects*

Pendellosung fringes *see X-ray crystallography*

pendulums
see also mechanical oscillations; time measurement
compound, teaching appls. 8−12474
double-pendulum vibration oscillator or seismograph 8−16200
g determination, student expt., linear least squares data anal. 8−45450
horizontal pendulum tiltmeters, recording device 8−40679
internal friction test unit for threadlike crysts. 8−36997
torsion pendulum oscillations recording equipment for internal friction meas. 8−36998
torsional, for internal friction meas. up to 200 Hz, automated control 8−22308
torsional pendulum for internal friction meas. as function of freq. 8−13980
Trieste horizontal pendulum obs. of 1976 Friuli earthquake precursors 8−24216
triple coupled pendulum, analogy with coupled stationary states 8−16598

penetration depth (superconductivity)
nonequilibrium elec. field, temp. depend. *(Russian)* 8−23202
In film, metastable states supercond. parameters 8−47903
Nb, O enrichment of surface layers, penetration depth and resist. meas. 8−19180
Nb_3Sn, fast neutron irradiation, effect on critical current density 8−19197
$V-VO_x-Pb$ Josephson tunnel junction, crit. currents exam. 8−23209

Penning ionisation
collisional ionisation in intense laser field, quasimol. state reson., quantum mechanical anal. 8−33589
electron angular distrib., Born-Oppenheimer approx., probability amplitude 8−25677
excitation transfer and Penning ionisation, unified treatment 8−25672
positron detection, using Penning trap 8−21812
$Ar+N_2$, pulsed microwave discharge, early afterglow and radiative transitions, Penning ionisation 8−9874
CO_2 laser, TEA, with seed gas, Penning ionisation 8−5449
CS_2+Ar^*, Penning ionisation and dissoc. fluoresc, collisional energy depend. 8−33584
$D+He(2^1S)(2^3S)$, associative and Penning ionisation, autoionisation, calcs. 8−25674
$H+He(2^1S)(2^3S)$, associative and Penning ionisation, autoionisation, calcs. 8−25674
$H(1^2S)+He(2^1S)$, Penning ionisation, semiclassical and Born total cross-sections 8−33586
$He^+(He_2^+)+N_2(CO)(CO_2)(H_2S)$, charge transfer Penning ionis. 8−17784
$He^*+Ne^*\rightarrow He+Ne^++e$, Penning ionisation, merging beams obs. 8−33585
$He^*(2^3S)+F$, Penning ionisation and excitation transfer, unified treatment 8−25672
$He(2^3S_1)+Na(K)(Rb)(Cs)$, Penning ionis. in stationary afterglow 8−42184
$Hg+He$, excitation of $Hg^+(7^2P_{1/2}, 7^2P_{3/2})$ in afterglow, rate consts. *(Russian)* 8−29848

penny-shaped cracks
brittle solid materials, critical values and strength relations *(Russian)* 8−18703
composite systems, cracked, finite element microscopic stress anal. 8−34083
crack initiation in elastic/plastic indentation fields, model 8−5668
cylinder, stress-intensity factor for penny-shaped crack 8−30237
glass plate, physically or chemically tempered, contact fracture resist., model 8−19895
stress analysis of penny shaped crack in inhomogeneous medium, high freq. torsional oscills. 8−26086

pentary algebra *see algebra*

pentodes
No entries

perception (hearing) *see hearing*

periodic system of elements
see also elements (chemical)
No entries

peripheral models
see also multiperipheral models
eikonal expansion, scalar meson exchange 8−29278
photoprod. of heavy hadrons, peripheral and VMD models 8−33074
strong exchange degeneracy analysed in Kp and πp reactions, pomeron behaviour 8−41515

peripheral models continued
  two-body reacts., large angle behaviour 8−442
  γp elastic scatt., one-particle-exchange model 8−457
  γp low energy scatt., one particle exchange model 8−33070
  $\gamma p \to \pi\Delta(1236)$, 744 to 1044 MeV, momentum spectra, differential cross sections *(Japanese)* 8−17032
  KN finite energy sum rules, Regge pole models, exchange amplitudes 8−470
  $K^{\pm}N \to K^{\mp}+X$, double hypercharge kaon exchange *(Russian)* 8−29368
  nd scattering, 14.4 MeV, parity nonconserving asymm. 8−21449
  NN, total cross sections, medium energy dynamics, OPE three-body theory 8−25064
  NN low-energy pot., Regge-pole theory 8−45889
  $NN \to NN\pi$, isovector exchange, comparison with πN elastic scatt. 8−37189
  NN scatt., small angle, appl. of eikonal vector meson exchange theory 8−17052
  $np \to p\Delta_{33}{}^0$, 1.39 to 1.90 GeV/c, corrections to one pion exchange amplitudes 8−41560
  $pp \to \delta^{++}(1236)$, Λ^0, 100 GeV/c, one-meson-exchange mechanism anal. 8−8712
  π photoproduction in first resonance region, one particle exchange model 8−4864
  πN low energy scattering, one particle exchange model, spin 3/2 particle 8−4873
  πN scatt., spin flip dynamics and inclusive processes *(Russian)* 8−41589
  $\pi^- p \to (\bar{p}n)p$, 12 GeV/c, peripheral $\bar{p}n$ prod. and decay ang. distribs. 8−33096
  $\pi^- p \to \Delta^{++}(1232)$, 15 GeV/c, multiplicity distrib. determ. 8−45982
  $\pi^+ p \to \Delta^{++}(1236)$, Λ^0, 100 GeV/c, one-meson-exchange mechanism anal. 8−8712
  $\pi^+ p \to \pi^+ p \pi^0$, p diffractive dissociation, ρ^+ prod., one-pion-exchange model 8−21451
  $\gamma N \to \eta\pi^{\pm}$, 9.7 GeV, one-pion-exchange model 8−25054

peripheral speed *see velocity*

peristaltic flow
  nonlinear peristaltic flow, calc. and expt. 8−9718
  viscoplastic liq. in slot channel, peristaltic flow 8−5770

Permalloy
  barrier film, worm-like motion of domain boundaries *(Russian)* 8−39375
  film, break-cross-tie domain walls, thickness depend. 8−43619
  film, corrosion kinetics, mass and resist. change techniques, comparison 8−27675
  film, movement of circular Bloch line in cross-tie wall 8−31099
  film, oxidation, quartz cryst. microbalance, AES and XPS obs. 8−27676
  film, quasistatic and pulsed mag. reversals of Neel domain walls *(Russian)* 8−39374
  film corrosion characterisation by crystal oscillator microbalance and resistance meas. 8−7101
  film magnetometer, mag. props. and LF noise 8−48005
  film oxidation, microbalance, AES, ESCA and sputter profiling 8−15600
  film preparation by RF sputtering 8−3044
  film strip, wall curvature calc. with in-plane magnetisation 8−2717
  garnet films, Permalloy-coated, bubble properties 8−2715
  wear by magnetic tape, Auger spectroscopy exam. *(Japanese)* 8−39916
  $(Fe_yNi_{1-y})_{1-x}(SiO)_x$, dielec. effect on magnetisation and Faraday rot. *(Russian)* 8−39298

permanent magnets
  active permanent magnet suspensions, scientific instruments appls. 8−24829
  defectoscopy of permanent magnets, using electromagnetic method 8−39998
  dynamic vibration absorber, consisting of three permanent magnets 8−9614
  elastic, made from composite material, parameter anal. *(Russian)* 8−29132
  model magnet, for reson. spectrometer, reproducibility of fields, field heights and magnetisation props. of materials *(German)* 8−24832
  plane periodic system, mag field, energy and interaction force distrib. 8−46483
  radial field polariser for magnetising a moving liquid 8−250
  Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
  two-domain analysis of field producing bodies using fictitious poles 8−33649
  Co-Mn, permanent magnetic materials 8−8426
  Sm-Co, permanent mag., O ion impact, 5.5 keV, secondary Co ion emission, magnetisation depend. *(Russian)* 8−2967
  $SmCo_5$, Bloch wall energy determ. *(German)* 8−19271
  $SmCo_5$ magnet, in recording rot. field magnetostrictometer 8−12733
  $SmCo_{3.5}Cu_{1.5}$, single cryst., domain wall motion and domain form. 8−39359

permeability
  acrylonitrile-dimethylaminoethyl methacrylate membrane, as burn wound covering 8−44676
  acrylonitrile-vinylacetate(styrene) copolymer films, gas permeation, chem. struct. effects *(Japanese)* 8−31691
  articular cartilage, asymptotic theory for thin layers with appl. to knee joint 8−44537
  butadiene nitrile rubber, air permeability, subject to high press. 8−27823
  capillary permeability determ. from multiple indicator data, effects of finite red cell permeab. 8−44483
  cell, membrane permeability, review 8−15813
  cellulose membrane, methanol(formamide)-water soln. permeabilities 8−11557
  compressible flow in permeable capillaries under deform., press. loss model 8−26141
  contact lens, hard gas-permeable type, O_2 tension underneath 8−3473
  directional time-lag asymmetry in media with position-dependent sorption and diffusion props. 8−3372
  Earth crust, permeability rel. to transport phenomena in hydrothermal systems 8−36206
  ethylene-vinyl alcohol copolymer, O_2 permeability *(Japanese)* 8−31702

permeability continued
  gallbladder epithelial cells, compartmental anal. of osmotically induced permeability changes 8−3455
  gas mixture separation by membranes *(Japanese)* 8−48691
  gas permselective membranes, irrad. effects on permeation and separation performances 8−29591
  gases through solids, nondissoc. and dissoc. permeation 8−34645
  heat exchanger materials, oxide protective layer formation meas. by hydrogen permeation 8−8895
  Incoloy 903, H_2 permeation and diffusion 8−26730
  Inconel 718, H_2 permeation and diffusion 8−26730
  intercellular contact high permeab. 8−48773
  maternal-placental blood flow model with vel.-depend. permeability 8−40224
  microporous graphite compact, anomalous diffusion of N_2, time-lag and transient-state kinetic analysis 8−34655
  mitochondrial membrane monovalent Tl^+ ion transport 8−31787
  monolayer permeation and evaporation resistance, hard disc fluid model 8−34678
  myotonia and Ca permeab., math. model 8−11620
  nylon 12 membranes, permeation characts. *(Japanese)* 8−31692
  permeable polymer mol. in soln., intrinsic viscosity and friction coeff. 8−30353
  PMMA, water swollen membrane, permeability *(Japanese)* 8−31704
  polycarbonate diflone, air permeability, subject to high press. 8−27823
  polycarbonate membrane, porous, gas permeability *(Japanese)* 8−31698
  polycarbonate porous membrane, pore size effect on gas permeability *(Japanese)* 8−31699
  polydimethylsiloxane membrane, permeability of triethylamine vapour *(Japanese)* 8−31697
  polymer, air permeability subject to high press., testing apparatus 8−27823
  polymer membranes, use of McInnes glass electrode for determ. of CO_2 diffusion coeffs. 8−20067
  polymer powder coatings, water permeability eval. by radioactive tracers *(Czech)* 8−11362
  polypropylene, isotactic, air permeability, subject to high press. 8−27823
  powder, grain size determination by transient low press. air transmission 8−32965
  PVA, hollow fibre membrane for industrial scale dialyser *(Japanese)* 8−31693
  pyrocarbon coating, effect on Pu redistrib. in HTGR fuel 8−29578
  pyrocarbon coatings, mass spectrom. determ. of fission gas permeabilities 8−12785
  radioactive rare gas separation, using cell with two membranse of differing permeability 8−29590
  rocks, permeability rel. to transport phenomena in hydrothermal systems 8−36205
  steel, stainless, D transport through membranes at low driving press. and 15 keV D bombardment 8−34552
  N-vinylpyrrolidone-methyl methacrylate copolymer water swollen membrane, permeability *(Japanese)* 8−31704
  Westerly granite, permeability changes during water flow at 100-400°C 8−40546
  K^+ permeability of E. coli, membrane lipid role in radiation damage 8−48834
  Na_2O-CaO-SiO_2 glass microbubbles, permeation eccentricities of He, Ne and D-T 8−47598

permeability (magnetic) *see magnetic permeability*

permeability measurement (magnetic) *see magnetic permeability measurement*

permittivity
  see also electric strength
  acetic acid, dil. soln., dielectric polaris., linear correlation factor 8−6624
  albumin, bovine serum, hydrated, dielectric props. at 9.9 GHz 8−15758
  alcohol, dielec. const., hindered mol. rot. influence 8−43767
  alkali halide, static dielectric const. temp. depend. 8−43770
  alkali halides, electronic dielec. const., evaluation of second order strain derivatives 8−2792
  alkali halides, off to on centre defect transitions under hydrostatic press. 8−15199
  alkali halides, static dielectric behaviour, vol. depend., many-body interactions effects 8−2786
  alkyl trichloroacetates, solns., intramol. rot., permittivity and dielectric loss, microwave meas. 8−31145
  4′-n-alkyl-4-cyanobiphenyls, dielec. dispersion 8−2798
  4-n-alkyl-4-cyanobiphenyls, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
  amorphous dielectrics, dielectric anomalies at very low temps., acoustic anomalies analogy 8−31146
  aniline, in benzene, polar dielectric system, RF cond. and dipole moment 8−2788
  Arctic drift ice, microwave dielec. const. and absorpt. coeff. anisotropy 8−49037
  azoxybenzenes, nematic, refr. index, birefringence, internal field 8−34427
  benzene, dielec. const. meas. using 3-terminal meas. cell 8−21170
  binary liquid mixtures near crit. pt., nonlinear dielectric effect 8−23384
  butane diol, asymm. dielectric dispersion, 1-25000 MHz 8−15092
  1,4-butanediol, low freq. dielectric dispersion, charge carrier hopping anal. 8−43772
  CBOOA, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
  4-chloro-3-nitrobenzotrifluoride-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
  4-chloro-3-nitrotoluene-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
  o-chloronitrobenzene-benzene (carbon tetrachloride) dilute soln., dielec. relax. time, dipole moment, microwave obs. 8−35084
  CL Al_2O_3, film, dielec. const. and resist., thickness depend. 8−39502
  copper formate tetrahydrate, antiferroelec., dielec. anisotropy 8−43768
  2rystal under hydrostatic press., electronic polarisability and ion size var. 8−26487
  cyclohexane, dielec. const. meas. using 3-terminal meas. cell 8−21170
  cytochrome-c, hydrated, dielectric props. at 9.9 GHz 8−15758

permittivity continued
dielectric attenuation of substituent effects, field transmission in partially occluded cavities 8−2789
dielectric matrix with spherical metallic inclusions, permittivity, conductivity 8−48108
diethylene glycol, asymm. dielectric. dispersion, 1-25000 MHz 8−15092
diglycine nitrate, dielec. relax. in paraelec. and ferroelec. regions 8−31149
dimethyl propane diol, dioxane soln., asymm. dielec. dispersion, 1-25000 MHz 8−15092
dye, dielec. const. and loss meas., 10^2 to 10^5 Hz 8−6622
elastic dielectric, many-body theory, appl. to NaCl-structure 8−38805
electrolyte, strong, lattice-like network of ions thermodynamic quantities 8−35699
electroreflection exam., short range order in surface layers 8−6703
EM wave reflection from boundary of medium with sinusoidally modulated permittivity 8−25778
emulsion, permittivity of nonpolar dielectrics *(French)* 8−39497
ethanediol, 10 MHz-70 GHz, 10-40°C, Debye dispersion 8−43769
ethyl trichloroacetate, in non-polar solvents, dielectric const., dielec. loss meas. 8−2796
ethyl trichloroacetate, soln., dielectric props. and relax. mechanisms at microwave freqs. 8−15089
ferroelectric, disorder excitation relax. effects, LF dielec. const., phonon-excitation coupled model 8−10852
ferroelectric ceramic, elec. and thermoelec. props. of grains and grain boundaries 8−43382
ferroelectric crystal with defects, permittivity, nonlinearity 8−27170
ferroelectric mixed crystals CPA theory dielec. const. 8−10855
ferroelectric semiconductor, solid solution, phys. characts. nonlinearity near phase transition 8−43812
fluid, hard sphere, nonspherical mols., dielectric const., Monte Carlo simulation 8−23385
fluids, dipolar hard spheres, dielectric const., pair distrib. function, Monte Carlo study 8−6001
formamide, 10 MHz-70 GHz, 10-40°C, Debye dispersion 8−43769
gases, dipole, nonlinear theory of complex dielectric constant 8−1787
Gaussian beam diffr., by periodic permittivity layer 8−33663
glass fibre reinforced non woven epoxy laminates comparison with paper phenolic and woven glass epoxy, dielec. props. 8−35635
glass-textolite shell, NDT 8−11471
glasses, acoustic and dielec. props. at low temps., review 8−6128
guanidinium uranyl sulphate trihydrate, new ferroelec., dielec. props. 8−43824
heptanol isomers, static permittivity and density, press. and temp. depend. 8−35078
4-heptyl-4′-cyanobiphenyl, liq. cryst., dielec. props. *(French)* 8−10820
heterogeneous dielectric, Dirichlet problem, Green's function method 8−37782
heterogeneous dielectric system, Maxwell-Wagner losses, theory, crit. anal. 8−43781
heterogeneous material, crit. behaviour of complex dielec. const. near percolation threshold 8−19012
high-loss dielectrics, applic. of cavity perturbation method to complex permittivity meas. 8−24815
ice, VII to VIII transition, lattice model 8−10187
ice microcrystals, emulsion, complex dielec. permittivity meas. *(French)* 8−10821
inhomogeneous insulating materials, AC dielectric props., effect of superimposed DC voltage 8−31144
inhomogeneous medium, effective dielectric const. calc., exact and approx. methods 8−48110
integrated absorption due to superimposed resonances 8−39500
ionic conductor, AC props. 8−47578
liquid crystal, internal field, dipole correlation factor 8−34428
low-to-medium loss standard liquids, complex permittivity meas. at 285 GHz 8−15083
lysozyme, hydrated, dielectric props. at 9.9 GHz 8−15758
metal oxide film, optical and diffusion consts. meas., dynamic method *(Russian)* 8−43950
metals, energy gap determ. by optical methods *(Russian)* 8−30867
methanol, 10 MHz-70 GHz, 10-40°C, Debye dispersion 8−43769
methyl trichloroacetate, soln., dielectric props. and relax. mechanisms at microwave freqs. 8−15089
microwave conductivity measurement by eddy current loss method, effect of permittivity 8−24817
naphthalenes, substituted, dielectric relax. in solns. 8−2795
nitroethane, crit. soln. in cyclohexane, nonlinear dielectric effect 8−27152
o-nitrotoluene-saturated hydrocarbon soln., critical exponent, permittivity meas. 8−22858
nonstoichiometry and dielectric props. 8−43135
optical properties, temp. depend., transport eqn. 8−23421
organic liquids with branched chain, dielectric const. temp. coefficient *(Japanese)* 8−35079
PBLG solns., dielec. meas., using pseudorandom noise dielectric spectrometer 8−15084
pentachloronitrobenzene crystal, anomalous microwave permittivity, IR absorption and Raman spectra *(Japanese)* 8−15169
phenylpyrimidines, liq. crysts., synthesis and phys. props. 8−1995
PMMA-wood polymer composite, dielec. prop. at low temp. *(Japanese)* 8−31545
polar liquid, integrated absorpt., microstruct. effect *(French)* 8−10823
polar liquid, nonlinear effects, permittivity, dipolar pot. 8−39493
polar molecules, in nonpolar solvent, dipole moments and relax. times 8−43782
polar molecules in liq. state, dielec. relax. time, dielec. const. 8−19408
polar/nonpolar mixtures, pot. of mean force, approx. theories, clustering of solute mols. 8−26401
polydiethylene terephthalate chains, dipole moment, config. props. 8−9288
polydimethylsiloxane fluid permittivity and dielectric loss 8−6621
polymers, conversion of dielectric to viscoelastic data 8−48109
polymers, elec. props. and morphology, correl. review 8−43786
polyvinyl fluoride, dielectric support for glass transition 8−2239
polyvinylidene fluoride, piezoelectric and dielectric consts. rel. to suitability for underwater transducers 8−1531
n-propyl trichloroacetate, soln., dielectric props. and relax. mechanisms at microwave freqs. 8−15089

permittivity continued
PVC, magnetoelectret form., RF thermomagnetic treatment, dielectric aftereffects 8−6625
pyridines, substituted and N-oxides, dielec. relax. in solns. 8−6627
quasi one dimensional organic materials, microwave cond., dielectric const. *(Hungarian)* 8−26850
trans-retinal, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
trans-retylidene-n-butylamine, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
rotational swings of colliding dipoles, contrib. to nonlinear dielectric constant 8−27171
SELFOC fibre, non-Gaussian laser beam propag. 8−1335
semiconductor thin film, dispersive props., effect of multilayer dielec. medium, anal. *(Russian)* 8−31004
silicone, film deposition, glow discharge polymerisation, elec. and thermal characts. 8−6467
snow, dielectric breakdown characteristics *(Japanese)* 8−40669
soda glass, ageing effect of HF discharge on conductivity and dielec. const. 8−39138
solid-liquid interfaces, permittivity matching on flashover 8−1945
stearic acid film, using varying gap immersion method 8−6620
structuring dispersions, meas. device for dynamic dielectric behaviour 8−31710
TCNQ salt, pyridine $(TCNQ)_2$, phase transition at 80K investig. and interpret. 8−6530
tetraglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
tetraselenotetracene bromide, positive microwave dielectric const. 8−47771
tetrathiotetracene iodide, positive microwave dielectric const. 8−47771
textured surface reflectance and transmission props. rel. to complex permittivity variation in boundary layer 8−1165
TGS, complex dielec. permitt. near Curie temp., ferroelec. polarisation mechanism interpretation 8−43808
TGS, deuterated and undeuterated, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
TGS, dielec. behaviour near transition temp. 8−15127
TGS, domain wall dynamics and small signal permitt., loss mechanism absence 8−43825
TMBP.HCNB and TMBTP.HCNB complexes, elec. and mag. props. 8−6512
toluene, dielec. const. meas. using 3-terminal meas. cell 8−21170
trans-p-n-alkoxy-α-methyl p′-cyanophenyl cinnamates, liq. cryst. of strong positive dielec. anisotropy, static dielec. consts. meas. 8−2790
transition metal oxide films, dielec. dispersion and polarization 8−2803
triglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
triglycine fluoberyllate, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
TTF-TCNQ, positive microwave dielectric const. 8−47771
two phase mixtures, prediction formula 8−48107
DL-α-valine in aq. soln., dielectric dispersion 8−20141
water, dielectric constant of bonded lattice model 8−23386
water, Earth surface forms, at frequencies below 1000 GHz 8−24310
water, struct. effect of small additions of nonelectrolyte, dielec. const. obs. 8−9937
water, Van der Waals interaction, Kramers-Kronig eqn. with full spectral data vs. oscillator model approx. 8−5998
water vapour dielectric constant, rotational part, engineering method of calc. 8−40717
Au-MgO cermet film, dielectric const. and selective solar absorption 8−2937
(Ba, Ca)(Ti, Zr)O_3, segregation of $CaTiO_3$ and effect on dielec. props. 8−38849
BaF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
$BaMnF_4$, dielec. anomaly, mechanism, spin canting 8−10744
$Ba_3Nb_{10}O_{28}$, diffuse ferroelec. phase transition, dielec. const. and X-ray diffr. meas. 8−23419
$Ba_xSr_{1-x}Nb_2O_6$, struct. and dielec. props., isomorphic substitution effect 8−27165
(BaSr)TiO_3 film, ferroelec., dielec. props. in strong elec. fields 8−27163
$Ba_xSr_{1-x}TiO_3$, disordered ferroelec., dielec. const. and spontaneous polarisation meas. 8−48130
$BaTiO_3$, low freq. and lattice contribs. 8−15105
$BaTiO_3$ polydomain crystals, dielec. props. 8−43827
$BaTiO_3$, single cryst., dielec. const., var. with applied AC field and temp. 8−2787
$BaTiO_3$, tetragonal, model for temp. depend. of dielec. const., ferro-paraelectric transition 8−43771
$BaTiO_3$, tetragonal, over-damped soft E-polariton and dielec. dispersion 8−15111
$BaTiO_3$, X-ray irrad. effect on dielec. props. 8−15082
$(Bi_{0.25}Sb_{0.75})_2Te_3$, opt. props. of bulk and films 8−27206
CS_2, emulsion theory, appl. to the permittivity of nonpolar dielectrics *(French)* 8−39497
CaF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
CaF_2, rare-earth-doped, cluster-associated relax., 5.5-400K 8−31153
CaO-B_2O_3-Fe_2O_3 glasses, effect of heat treatment on electronic props. 8−2480
CaO-MgO-Al_2O_3-SiO_2, shale glass, glass forming and dielec. props. 8−22660
$CaTiO_3$-TiO_2, ceramic, phys. props. 8−43784
$Cs_8Nb_{22}O_{59}$, melt growth and struct., dielec. and optical characterisation 8−35294
Cs_2SO_4-$(NH_4)_2SO_4$ mixed cryst., ferroelec. transition, structural and dielec. props., proton spin-lattice relax. 8−39512
$Cu_3B_7O_{13}Cl(Br)$, piezoelectric, elastic and electromechanical coefficients *(French)* 8−39504
EuO, mag. semicond., dielec. and optical props. 8−10824
EuSe, mag. semicond., dielec. and optical props. 8−10824
$FeSiF_6.6H_2O$, dielec. props., 100-270K, rel. to $NiSiF_6.6H_2O$ 8−35088
HgI_2, dielectric const., up to 500 bar, press. depend. 8−27153
KCN-KCl mixed system, order-disorder transition, dielec. props. meas. 8−15112
KD_2PO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8−43118

permittivity continued
KH_2AsO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8−43118
KH_2PO_4, and isomorphs, dielec. props. and birefr., simultaneous obs. 8−15130
KH_2PO_4, Landau-Devonshire coeffs. 8−15116
$KTa_{1-x}Nb_xO_3$, quantum limit of ferroelec. transitions, dielec. and elastic consts. meas. 8−15128
$LiClO_4$, organic solns., complex permittivity meas., dielec. relax. spectrum *(French)* 8−27154
$Li_2Gd_4\ (MoO_4)_7$, ferroelec. and paramag. props. 8−39517
α-$LiIO_3$ single crystals, electrical conduction and dielectric behaviour *(Chinese)* 8−30783
5 wt.% MgO-Si_3N_4, hot-pressed, dielec. props. 8−10822
$(NH_4)_2BeF_4$, polycrystalline, surface layer effects on dielec. behaviour 8−39494
$(NH_4)_3H(SO_4)_2$, pressure-induced ferroelectricity, dielec. const. meas. 8−23412
$(NH_4)_3H(SeO_4)$, ferroelec. transition, press. and temp. effects on dielec. props. 8−23413
$(NH_4)_2SO_4$, pure and Rb doped, ferroelec. transition, light scatt. meas., dielec. and elastic props. 8−43822
$(Na,Li)NbO_3$ ceramic, optimum prep. conditions and characterisation 8−3079
$NaH_3(SeO_3)_2$, dielec. props. 8−43764
$(Na_{0.5}La_{0.5})_xBa_{1-x}TiO_3$, dielec. and IR spectra exam., ferroelec. transition 8−23418
$NaNO_2$, nonlinear dielec. anomaly in paraelec. phase 8−39495
$NaNbO_3$, photoferroelectric effect 8−35108
$NaNbO_3$-$BaTiO_3$ solid soln. form. and props. *(Russian)* 8−48378
Na_2O-TiO_2-SiO_2 glass, elec. props. and energy gap 8−26921
$NiSiF_6.6H_2O$, dielec. loss and relax., 100-270K, reorient. mech. 8−35088
PLZT ceramic, optical gate, dielec., optical props., electro-optical effect meas. 8−42418
PLZT, effect of ageing on temp. depend. of permittivity, for ferroelectric and antiferroelectric compositions 8−48121
$(Pb,La)TiO_3$, paraelec. phase, anomalous dielec. behaviour 8−23387
$(Pb_xBa_{1-x})_5Ge_3O_{11}$, electrogyration, and dielectric props. 8−19444
β-PbF_2, complex impedance exam. 8−47579
PbF_2, cubic, dielec. const., ionic cond., soft modes 8−14427
$Pb(Fe_{1/2}Nb_{1/2})O_3$-$La_2O_3(CeO_2)$ ferroelec. ceramics, electrophysical props. 8−35099
$PbFe(_{2/3}W_{1/3})O_3$-$Pb(Co_{1/2}W_{1/2})O_3$ solid soln., crystallographic, dielectric, magnetic props., Mossbauer spectra 8−43807
$Pb_{0.9}K_{0.1}(Zn_{1/3}Nb_{2/3})O_{2.95}$-$PbZrO_3$-$PbTiO_3$, morphotropic tetragonal-rhombohedral phase boundary 8−48129
PbO, disordered photoconductor, dielec. props., temp. depend. anomalies 8−43765
$Pb_3(PO_4)_2$ ferroelastic, dielec. consts. and birefringence meas. 8−2793
$Pb_{0.95}Sr_{0.05}(Ti_xZr_{1-x})O_3$, solid solns., parameters of Curie Weiss law, permittivity meas. 8−15129
PbTe, lattice permittivity determ. by magnetoplasma waves method 8−19075
$PbTiO_3$-$CaFe_{2/3}W_{1/3}O_3$, solid solutions 8−43816
$PbTiO_3$-$Pb(Ni_{1/2}W_{1/2})O_3$ system, solid soln. form., struct., dielec. props. and thermal expansion *(Japanese)* 8−27501
$Pb_3(VO_4)_2$-$Pb_3(PO_4)_3$ solid solutions, ferroelastic, dielec. consts. and birefringence meas. 8−2793
$Pb_3(VO_4)_3$, ferroelastic, dielec. consts. and birefringence meas. 8−2793
$Pb(Zr,Ti,Sn)O_3$ ceramics, ferroelec., doped with tri- and pentavalent oxides, piezoelectric props. 8−19413
$Pb(Zr,Ti)O_3$, dielectric response in solid-medium high-pressure device 8−43766
$PbZrO_3$-$PbCd_{0.5}W_{0.5}O_3$, phase transitions 8−43817
$Pb(Zr_xTi_{1-x})O_3$, elec. props. temp. and composition depend. 8−47817
$PrCl_3$, cooperative Jahn-Teller ordering of elec. dipoles in non-Kramers doublets 8−15115
Pr_6O_{11}, mag. and transport props., multiphonon hopping conduction 8−19211
$RTiNbO_6$, R=rare earth, electrophys. props. 8−23388
RbH_2PO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8−43118
$RbHSO_4$, ferroelec. with small Curie-Weiss const., dielec. props. 8−39496
$RbNO_3$, single cryst., DC cond., dielec. and thermophys. props., temp. depend., transitions interpret. 8−26682
Rb_2SO_4-$(NH_4)_2SO_4$ mixed cryst., ferroelec. transition, structural and dielec. props., proton spin-lattice relax. 8−39512
Rb_2ZnBr_4, ferroelectricity, hysteresis loops and dielec. const. meas. 8−23416
Rb_2ZnCl_4, ferroelectricity, hysteresis loops and dielec. const. meas. 8−23415
Sb_2S_3, phase transitions and improper photoconductivity, effect of growth conditions *(German)* 8−39515
SbSI, aggregates of needle-like crystals, nonstoichiometric, ferroelectric properties *(Japanese)* 8−43821
SbSI, domain struct. relaxation 8−48135
SbSI, dynamic dielectric nonlinearity, in microwave band 8−35109
SbSI ferroelectric, dielectric behaviour, particle-size dependence 8−2811
Si-CaF_2 film, dielectric const. and selective solar absorption 8−2937
Si-MgO film, dielectric const. and selective solar absorption 8−2937
$Si_{(6\ -z)}Al_zO_zN_{(8-z)}$, sialons, hot-pressed, dielec. props. 8−10822
$Si_{100-x}Au_x$, amorphous, dielec. anomaly, rel. to nonmetal-metal transition 8−2791
Si_3N_4, hot-pressed, dielec. props. 8−10822
SiO_2 film formed by ion implantation, dielectric props. 8−35090
SrF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
$Sr_nTi_{n-4}Nb_4O_{3n+2}$ layer ferroelectrics, physical props. 8−10854
Ta_2O_5, elec. props. as dielec. in Ta solid dielectric capacitor *(Spanish)* 8−19405
ThO_2 ceramics, CaO and Y_2O_3 stabilised density, elec. cond., permittivity 8−47838
TiO_2 based ceramic dielec. materials, medium permittivity, elect. charact. 8−35086
TiO_2, sintered ceramic, props. rel. to additives, impurities 8−35329
$(Tl,NH_4)_2Cd_2(SO_4)_3$, langbeinite type mixed cryst., ferroelec. transitions, dielec. and elastic meas. 8−2810

permittivity continued
$TlGaS_2$, mechanism of cond., AC cond. and permittivity meas. 8−14754
$TlGaSe_2$, mechanism of cond., AC cond. and permittivity meas. 8−14754
Tl_2TaO_6, Tl I lone pair stereochem. activity rel. to ferroelectricity 8−15131
V, energy gap determ. by optical methods *(Russian)* 8−30867
V_2O_5, dielec. polarisation, permittivity meas., 50-200K *(Russian)* 8−39498
W-MgO cermet film, dielectric const. and selective solar absorption 8−2937
$Zn_{1-x}Cd_xS$ films, polycryst., reactively sputtered, MSM struct. obs. of dielec. props. and cond. mechanism *(French)* 8−14841
ZnO film, sputtering using Zn target, technique and characterisation 8−3040
ZnS, natural and stress induced birefringence dispersion 8−6651
$ZnSiF_6.6H_2O$, dielec. props., 100-270K, rel. to $NiSiF_6.6H_2O$ 8−35088
ZrO_2 film, CVD from organometallic cpds. and characterisation 8−23626

permittivity measurement
aggressive liquids, cell for meas. of dielec. props. 8−21170
automatic equipment, for solid and liquid dielectrics meas., temp. dependence *(Polish)* 8−32836
ceramic low-loss foils, microwave meas. method *(Polish)* 8−37028
coaxial line resonator used for complex dielectric data measurement 8−8419
complex, at microwave freq. of nonmagnetic materials, rapid determ. *(German)* 8−21161
complex, of dielec. materials, at microwave, two coupler method 8−21167
dielectric constant meter, Tangens-2M, sensitivity and static charact. anal. 8−45651
dielectric detector in LF freq. range 8−29126
dielectric thin film permittivity calc. in partly-filled resonator cavity 8−45652
high-loss dielectrics, applic. of cavity perturbation method 8−24815
liquid, complex permittivity measurement by node displacement method *(Russian)* 8−27155
liquid dielectrics, method and apparatus 8−241
liquids under shear, Couette cell for birefringent, viscous and dielectric props. meas. 8−37034
low-loss solids, at 1 GHz, coaxial resonator method *(German)* 8−32834
material testing, nonuniformity of dielec. props., at mm wavelengths, method of determining 8−40001
one-dimensional conductor, microwave permittivity measurement techniques 8−10825
precision waveguide cells, for lossy liquids meas. at 70 GHz 8−37032
pseudorandom noise dielectric spectrometer, appl. of Fourier synthesis 8−16813
solid electrolyte cells, inductive effects and AC meas. 8−6623

personnel
see also education; management; teaching; training
direct reading pen dosimeters, radiation exposure meas. aspects *(German)* 8−5050
nuclear power plant, radiation monitoring systems, review 8−33292
power line elec. field effect on communication line maintenance personnel 8−40353

perturbation techniques
see also control system analysis; control system synthesis
$\varepsilon XY(dY/dX)=X-Y(Y+1)$, exact perturbation soln., stellar struct. theory 8−32439
asymmetric-slab optical waveguide losses due to refractive index inhomogeneities 8−1381
atom, Sturm expansions in the Hartree-Fock method 8−25409
bifurcations, singular perturbations 8−16626
classical mechanics, invariants, stability, KAM theorem 8−41
conservative elastic continua, stability anal. with adjacent equilibrium method 8−28951
convective fin, with internal heat generation and temp.-depend. cond., perturbation approx. soln. 8−5633
dynamic loading of thick rectangular membrane, viscous damping effect 8−46906
electrogravitational conversion cross sections in static EM background fields 8−24711
electrons in logarithmic pots., Dirac eqn. soln. 8−41448
EM plane wave, vertically polarized, refl. from periodic rough surface 8−22073
Euclidean $\varphi_3{}^4$ theory, phase space cell expansion, Borel summability 8−8501
flow, plane parallel, finite amplitude stability, perturbative and iterative methods 8−38293
frozen shock wave in two-dimensional steady flow past thin wedge *(Japanese)* 8−26212
geothermal reservoir, effect of magma dike intrusion on free convection 8−7599
highly nonlinear oscillation equation, perturbation soln. 8−33938
highly prestressed anisotropic plates, numerical perturbation technique 8−18214
Hubbard model, ground state energy, using degenerate perturbation theory 8−18938
laminar flow in 2-D nonlinear perturbations, secondary flow existence *(Russian)* 8−22326
LMFBR, space time dynamics for localized disturbances 8−21674
multimode optical fibre transmission, perturbation soln. 8−1380
Newtonian viscous fluid, flow through thin pipe, with thin linear elastic wall 8−42664
non-Newtonian fluid, boundary-layer flow in convergent channel 8−30322
nonholonomic system, constrained perturbation procedures 8−16637
nuclear reactor system fixed end-point problem suboptimal control, appl. *(Japanese)* 8−33259
plasma, trapped-electron cyclotron instability, in Tokamak, 2-dimens. eigenvalue problem, analytic soln. 8−30434
polytrope n=3, poloidal mag. field effect on linear and adiabatic oscills. 8−24505
QCD, IR struct. of quark-antiquark scatt. kernel, quark binding pot. 8−8588

perturbation techniques continued
randomly perturbed one dimens. wave eqn., multiple-scales space-time anal. 8−8247
Rayleigh wave scatt. by thin surface layers, singular perturbation anal. 8−58
semiclassical stochastic radiation theory 8−21010
transformation group and limit cycle containing nonlinear differential eqns., connection with perturbation techniques 8−20941
Wien dissociation in weak electrolytes 8−23950
Yang-Mills theory, large order calcs. 8−8511

perturbation theory
see also quantum theory
$(\theta^4)_4$ field, Borel summability, renormalization group, perturbation theory 8−16922
Abelian spontaneously broken gauge model, perturbation expansions *(Chinese)* 8−8500
Aitken's δ^2 transformation generalisation, summing perturbation series 8−24652
alkali atom+alkali atom, laser-induced ionis. collisions 8−5333
alkali metal atoms, laser three-photon absorpt., ionisation cross-sections *(French)* 8−5182
almost degenerate, partitioning type treatment 8−32701
asymptotically free massless field theory, self-consistent β functions 8−16911
atom, HFS, many-body and relativistic effects 8−37565
atom, nucl. quadrupole coupling const., relativistic many-body perturbation theory 8−37566
atom, screened Coulomb pots., anal. perturb. theory for relativistic case 8−21861
atom+molecule collisions, differential cross section, classical perturbation scatt. theory 8−5319
atom-solid surface scattering, quantum theory 8−27357
atoms, heavy, parity non-conservation, relativistic many-body perturbation theory 8−923
avoided-crossings, spurious, variationally calc., perturbation theory approach 8−5295
baryon-quark phase transition, asymptotic freedom studied using renormalised coupling constant 8−4830
Be, Rayleigh-Schroedinger perturbation calculations 8−9064
Bethe lattice, vibration 8−30706
binary alloy, electron theory of short range order 8−10390
black holes, gravitational and EM perturbation functions, Reissner Nordstrom geometry 8−49472
black holes, rotating, electromagnetic perturbations 8−12279
blood flows, oscill. freq. effects in plane wavy conduit flows 8−20209
bodies disposed from aircraft, dynamic flight characteristics *(Polish)* 8−18311
bond order matrix differentiation, in nonorthogonal basis, density matrix perturbation theory 8−887
Borel summation of perturbation series 8−16683
Born-Oppenheimer approx., IR absorption, circ. dichroism using vibronic gauge function 8−967
Born-Oppenheimer approx., IR absorption, vibr. intensity using vibronic gauge function 8−966
branched polymer molecules, second virial coeff., chain length effects calcs. 8−37775
Brillouin-Wigner perturbation expansion, convergence props. 8−45491
Brownian particles, independent, multiple light scatt. calcs. 8−22087
caffeine, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
closure approximation, appl. to perturbation theory, muon capture and pion electroproduction 8−16680
cone and plate oscillatory motion, secondary flow effects, perturbation anal. 8−1618
configuration interaction, perturbation theory, partial transformation 8−37562
conservation laws, infinite set for Thirring model, massive and quantum sine Gordon model 8−29226
convection-diffusion problem, singular perturbation problem with nearly resonant operator 8−22352
Coulomb centres at small separation when (Z_2-Z_1) is large *(Russian)* 8−12583
Coulomb Green's function Sturmian expansion, Goldstone diagrams and reduction theorems 8−898
Coulomb scatt., perturbation theory, renormalised half-off-shell T-matrix 8−32996
coupled multiconfiguration SCF perturbation theory, analytic techniques 8−17550
dimensional anal. in renormalised perturbation theory 8−24950
dipole-dipole elastic scatt., second-order perturbation theory 8−5317
Dirac type essentially self adjoint operators 8−16957
Drell-Yan formula in QCD, lepton pair prod. 8−33025
dynamic conductivity in metals, generalised linear Boltzmann eqn. perturbation soln. 8−34818
education, quantum mechanics and perturbation theory, perturbed harmonic oscillator *(Spanish)* 8−36786
effective operators in nuclei, nuclear shell model 8−12990
elastic rod, perturbation methods for soln. of linear eigenvalue problem *(German)* 8−18175
electrodynamics, asymptotic estimates of higher approx. *(Russian)* 8−12584
electrostatic ion cyclotron wave, nonlinear propag. and modulational instability 8−1823
enzymatic catalysis, orbital perturbation anal. 8−31623
exchange, intermolecular forces, primitive function 8−37701
Feynman path integrals, generalised meas. 8−384
fission reactor, one-group model, convergence acceleration in perturbation theory problems 8−37406
FitzHugh-Nagumo equations, perturbation anal. of slow periodic wave soln. 8−24060
fluid, (12-6-n), thermodynamic perturbation theory 8−26414
fluid, hard-core plus Yukawa tail pot., eqn. of state 8−26410
fluid mixtures, analytic and perturbation theories 8−18516
fluorene conjugate bases, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
formaldehyde, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
gravit. wave propagation calcs., perturbations of analytic background metric 8−8302

perturbation theory continued
gravit.-EM perturbations, Reissner-Nordstrom geometry, forced perturbations 8−8303
Green's function, effective mass formalism 8−28915
Heisenberg classical nearest-neighbour chain, dynamics, exact perturbative results 8−10700
higher order, appls. to quantum mech. and field theory *(Russian)* 8−36886
homonuclear diatomic molecule, united-atom projected perturbation theory 8−37705
hydrogenic atom, model perturbation theoretic calculations with finite continuum basis sets 8−25412
incompletely optimized variational parameters, corrections, perturbation theory anal. 8−41180
inert gases, mean force constants and rectilinear law of mean force calcs. 8−33414
infinite order, by transformation of Schrodinger eqn. 8−12589
ionisation potential, closed shell systems, including electronic relax. and correlations 8−906
ions, ionisation potentials, electron affinities, perturbation theory-CI calcs. 8−9084
Ising model, random, $\varepsilon^{1/2}$ expansion of crit. behaviour, higher order corrections 8−27050
isotropic magnet, Goldstone mode singularities eqn. of state, magnetisation curve, perturbation theory calcs. 8−43607
Kerr black hole, gravit. perturbations in spin coeffs and Weyl tensor components 8−12273
Kerr black hole, gravit. perturbations of quantities finite in stationary state 8−12274
Kramers-Heisenberg dispersion formula, Dirac transformation generalisation 8−16960
large order behaviour for potential with degenerate minima 8−4516
lattice soliton, scatt. by mass interface, reductive perturbation method 8−18889
Lennard-Jones fluid, 2-D, radial distrib. function, integral eqn. perturbation theory 8−26409
Lennard-Jones low temp. gas, eqn. of state, integral eqn. and perturbation method 8−26228
linear polymer molecules, second virial coeff., chain length effects calcs. 8−37775
liquid, hard sphere mixture, nonadditive dias., perturbation theory, double reference system 8−38597
liquid, props. of optimisation condition 8−38598
liquid metals, structure, perturbation calcs. using Percus-Yevick equation 8−42889
localised perturbation theory for projected states, two element group 8−24685
lubrication, asymptotic approximation to class of regular perturbation problems 8−18258
macromolecular multicomponent system, phase separation, thermodynamic perturbation theory, calculus 8−18778
magnetic elastic system, one-Fermion-one-Boson model 8−43539
mean field perturbation theory, path integral formulation 8−12803
metal, vacancy formation energies and volumes, exam. of models 8−47349
metastable liquid, instability and freezing, theory 8−18746
methane, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
methane, proton mag. shielding const., HF perturbation theory 8−46258
model-space effective operators construction 8−4508
molecular correlation energy calc. by many-body diagrammatic perturbation theory 8−9087
molecular polarisability, ground and excited state, perturbation treatment 8−5144
molecules, ionisation potentials, electron affinities, perturbation theory-CI calcs. 8−9084
monolayer mobile adsorption, 2-D hard disc model, perturbational method 8−38932
multicentre electron systems, Eisenschitz-London perturbation theory 8−41915
multicentre electron systems, exchange perturbation theory 8−41914
multicentre electron systems, Hirschfelder-Silbey exchange perturbation theory 8−41916
$N_2H_5[Fe(N_2H_3COO)_3].H_2O$, elec. field gradient at Fe^{2+}, perturbation theory calcs. 8−19002
N-level system, generator of completely positive dynamical semigroups 8−45513
nearly free electron metal surface, at. chemisorption 8−14588
Newtonian cosmologies, homogeneous, review 8−16584
nonlinear, stochastic differential eqn., perturbation theory, projection operator method, statistical linearisation 8−41229
nonlinear field theory, spherical symmetric solution stability, influence of weak perturbations *(French)* 8−16904
nonlocal nonpolynomial interactions, strong coupling in quantum field theory 8−21319
nuclear field theory of three-particle system outside closed-shell nuclei 8−25129
nuclear matter theory, review, comparison of perturbative to variational techniques 8−33136
nuclear pairing force model, perturbation theory for projected states 8−33126
nuclear two-body effective interactions from large matrix diagonalisations 8−41644
operator ordering and perturbation expansion, path integral formalism 8−16682
optical fibre, step or graded index, refr. index dip effect on propag. 8−18053
optical plane wave intensity fluctuations in turbulent medium *(Russian)* 8−1156
particle in EM field, group formulation *(Russian)* 8−12627
particle system in rot. frames, rigid flow impossibility 8−45497
Percus Yevick eqn. for square mound pot., perturbation soln. 8−22619
perturbed boundary conditions, for differential equations in theory of atoms 8−33432
perturbed eigenvalues, perturbation expansions and variational constraints 8−16670
perturbed ladder operator method, analytical determ. of generalised central field energies and wavefunctions 8−32704
plasma, ion-acoustic waves, Korteweg-de Vries soliton, higher order terms in reductive perturbation theory 8−1824

perturbation theory continued
plasma wave trapped particles, resonance interactions *(Russian)* 8−26236
Polyakov-'t Hooft monopole and dyon, quantum theory *(Russian)* 8−392
polymer chain, irregular, lattice distortions, SCF perturbation calcs. 8−6018
polymers, statistical theoretical methods 8−18535
potential reconstruction by differential scatt. cross section, perturbation theory *(Russian)* 8−45818
potential scattering , perturbation methods for local and nonlocal pots. 8−16696
QCD, struct. functions, perturbation theory *(Russian)* 8−8595
QCD calc. of three-jet processes in leptoprod. and hadronic μ-pair prod. 8−21338
QED, asymptotic estimates 8−8564
quantum dynamics in effective system states basis, not in radiation field, perturbation theory 8−33499
quantum mechanical kinetics problems, averaging principle, degenerate states and reson. effects 8−19996
quantum mechanical kinetics problems, averaging principle appls. 8−19995
quantum mechanical perturbation theory, convergence props., energy series 8−80
quantum molecular crystal, quantum quadrupolar phase theory *(Russian)* 8−22929
quark form factor, non leading contribs. to asymptotic behaviour 8−8586
quark high momentum transfer scatt., perturbation theory *(Russian)* 8−45883
quasibound state energy calc. 8−41191
quasimolecules, intermediate, relax. times 8−42170
radiation shielding, cross section sensitivity analysis 8−21778
radius perturbation theory, appl. to NN system and pionic atoms 8−21007
Rayleigh wave scattering from topographical irregularities at oblique incidence 8−38927
Rayleigh-Schrodinger many-body theory, up to 3rd order, appl. to H_2O, BH, HF, Ne 8−894
reactor boundary changes, generalised perturbation theory 8−4980
Reggeisation of meson trajectories quark-gluon gauge theories 8−25005
Reggeon field theory, perturbation theory at large orders 8−8510
Reissner-Nordstrom black hole, stationary interacting fields 8−24710
relaxation phenomena, general treatment 8−44398
RF, average specific absorpt. rate in ellipsoidal conductor and dielec. models of humans and monkeys 8−40349
rod, current-carrying, steady-state heat conduction, perturbation soln. 8−5629
scattered wave focusing in periodically inhomogeneous layers *(Russian)* 8−1158
Schrodinger equation, nonlinear, perturbation expn. 8−47124
screened Coulomb potentials, energy levels, perturbation theory appl. 8−25406
self-consistent perturbation theory, generalisation for perturbation-dependent nonorthogonal basis set 8−17563
small gyromagnetic sphere, EM excitations 8−15030
solitons, in dispersive media, nonlinear evolution eqns. soln., review 8−60
spherical mirror resonator, misaligned, open, spatial struct., phase and amplitude distrib. 8−46676
stationary state function ambiguity resolution; for teaching 8−24603
stiff reactor model, exponential collocation using perturbation technique appl. 8−40032
SU(2)-flavour Schwinger model on the lattice, Hamiltonian lattice perturbation exam. 8−16747
surface waves, perturbation anal. of attenuation and dispersion 8−47653
syndnone, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
three-particle scatt., on-shell prescription 8−8559
tidal flow, periodic, anal. by finite element perturbation method 8−24290
time-dependent convergence range 8−68
two photon absorption, time varying perturbation theory *(Rumanian)* 8−46311
two-body scatt. T matrix in real-time formalism 8−41230
two-k-shell-vacancy systems, excited states, radiationless decay probability calcs. 8−41993
variational bounds to excited states from generalised Brillouin-Wigner eqn. 8−45507
vertical ionisation energies, finite order perturbation theory 8−33630
Yang-Mills theory gauge symmetries, perturbation theory 8−359
e scatt., in presence of intense EM field 8−33014
e^-e^+ prod. from two photons in nucl. field *(Russian)* 8−45819
$\Upsilon \to$photons+gluons, QCD perturbation theory 8−33028
Ar, double photoionisation, many-body perturbation approach 8−17634
As_3, 3-body nonadditive interaction, nodal struct. 8−1049
BH^{5+}, spurious avoided-crossings, variationally calc., perturbation theory approach 8−5295
Be, electric dipole polarisabilities and hyperpolarisabilities, perturb. theory calcs. 8−17563
Be+Be(Li) 8−5310
Be_3, 3-body nonadditive interaction, nodal struct. 8−1049
CS, $X^1\Sigma^+$ ground state, diagrammatic perturbation theory calcs. 8−29737
Cs, elec. dipole approx. and elec. quadrupole resons. allowed in multiphoton absorpt. *(French)* 8−5190
Dy, magnetocrystalline anisotropy, perturbation theory 8−2675
Eu, HFS, many-body and relativistic effects 8−37565
Fe^{2+}, nuclear quadrupole interaction, theory, including many-body effects 8−34813
H atom perturbation λr, hypervirial relations, energy values without perturbed wavefunctions 8−33416
H+H, interaction energy, modified perturbation theory calc. 8−9217
H_2, electric dipole polarisabilities and hyperpolarisabilities, perturb. theory calcs. 8−17563
H_2, electric dipole polarisability, many-body perturbation theory calcs. 8−21839
H_2, liquid, effect of ortho-para composition *(Russian)* 8−34419

perturbation theory continued
H_2, liquid, perturbation theory and quantum effects, thermodynamic props. and quantum stat. corrections *(Russian)* 8−22867
H_2^+, intramol. interaction energy, convergence of perturbation expansions 8−17745
H_2^+, spurious avoided-crossings, variationally calc., perturbation theory approach 8−5295
HCN, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
HF, mol. hyperpolarisability, second-order SCF perturbation method, coupled Hartree-Fock calc. 8−33422
HF, nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
HF, pot. curves, diagrammatic perturbation theory, spectrosc. consts. 8−25458
H_2O, ground state, energy, bond parameters, diagrammatic perturbation theory calcs. 8−25414
H_2O, nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
H_2O, proton mag. shielding const., HF perturbation theory 8−46258
H_2O, vertical ionis. pot., many-body Rayleigh-Schrodinger perturbation theory 8−9063
He, ^1S ground state, variational perturbation calc., teaching 8−41129
He, electric dipole polarisabilities and hyperpolarisabilities, perturb. theory calcs. 8−17563
He, ground state radial limit, piecewise polynomial basis functions 8−37560
He, transition probabilities in constant electric field, general perturbation theory 8−13466
He, two-photon ionisation cross-section calcs. 8−21888
He_3, 3-body nonadditive interaction, nodal struct. 8−1049
^3He-^4He, liq., excitation spectrum and quasiparticle interactions 8−10250
^4He, liq., elementary excitations, Brillouin-Wigner perturbation theory with correlated basis functions 8−2319
Li, autoionisation states, config. decays and excitation energies 8−13475
Li+Li(Be), London coeffs. for long range interaction, CI variation-perturbation method 8−5310
LiH, correlation energy calc. by many-body diagrammatic perturbation theory 8−9087
LiH, electric dipole polarisabilities and hyperpolarisabilities, perturb. theory calcs. 8−17563
LiH, mol. elec. polarisabilities and dipole moments calcs. 8−41976
Mn, HFS, many-body and relativistic effects 8−37565
N, nucl. quadrupole coupling const., relativistic many-body perturbation theory 8−37566
N_2, electronic ground state correl. energy, many-body diagrammatic perturbation theory calc. 8−917
NH_3, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
NH_3, proton mag. shielding const., HF perturbation theory 8−46258
Ne, double photoionisation, many-body perturbation approach 8−17634
Ne, second-order correl. energy calcs. 8−33436
Ne, vertical ionis. pot., many-body Rayleigh-Schrodinger perturbation theory 8−9063
Ne_3, 3-body nonadditive interaction, nodal struct. 8−1049
Pb+Pb quasimolecules ab initio calc. of K X-ray spectra 8−21941
Pr^{3+}, nuclear quadrupole screening parameter, many-body perturbation theory calcs. 8−47751
Rb, HFS, many-body and relativistic effects 8−37565
Tb, magnetocrystalline anisotropy, perturbation theory 8−2675
ZnO/SOS monolithic SAW amplifier 8−6205

petrol engines *see internal combustion engines*

petroleum industry
acoustic logging in cased wells, effect of excited wave freq. on results *(Russian)* 8−40707
automation level analysis 8−28327
oil and gas well profiles, appl. of combined well-logging techniques *(Russian)* 8−40705
well mud logging, online data processing *(Russian)* 8−40706

p.f.m. *see pulse frequency modulation*

pH
calcium phosphates, seeded growth, effect of solid/soln. ratio, calcification 8−15303
chemical durability, thermodyn. approach 8−7063
chloroplast, EPR signal II and Mn-water splitting, factors influencing stability 8−24038
chloroplast membrane proton gradient and osmotic vol. determ. 8−28143
haemoglobin, human, liganded, kinetics of alkaline tetramer-dimer dissoc., laser scatt. obs. 8−48749
3-hydroxy-2-methyl-1,4-naphthaquinone, pH indicator *(Rumanian)* 8−23947
intestinal epithelium, effect of Ca ions and pH on osmotic pot. 8−20156
Lake Shlavantas, deep autumnal cooling and freezing *(Russian)* 8−36213
muscle Na channel use-depend. block by local anaesthetic, pH effect, frog 8−20160
neurons, Aplysia, effects of NH_4^+ and HCO_3CO_2 on intracellular Cl^- level 8−44485
precipitation chemical composition around Tokyo, 1967-68 obs. *(Japanese)* 8−49120
C, black, surface acidity effects on work function 8−2548
Fe, corrosion inhibition in pH range 9.3 to 12.6, tartrate ion effect on oxide film thickening 8−44251
$Mg(OH)_2$, cryst. growth from aq. soln. at 60°C, pH effects 8−23591

pH factor *see pH*

pH measurement
biomedical ion sensitive FET micro pH sensor 8−44643
digital voltmeter appl., with high input impedance *(Spanish)* 8−20133
FET transducer, H^+, Ca^{++} and K^+-sensitive, biomedical appls. 8−28117
physiological monitoring, by integrated FET micro ion sensor 8−44641
reference ion sensitive FET for compensation, biomedical appl. 8−44642
thick film hybrid fabrication of pH-sensitive implantable bioelectrode *(German)* 8−40369

- **pH measurement** continued
  - water quality meas., continuous, in tubular columns, probes utilisation *(French)* 8–3836
  - Cu-Ni alloy, in 0.1 M NaCl, electric pot. and pH meas., crevice corrosion 8–31564
- **phase angle meters** *see phase meters*
- **phase comparators**
  - digital phase detection used for computing phase angle averages 8–21163
- **phase-contrast microscopy** *see microscopy*
- **phase control**
  - gas lasers, mechanical cavity length modulation technique 8–46571
  - RF frequency standard transmission, phase instability due to effect of ionosphere 8–41279
  - synchronous machine phase shift control cct. 8–22054
- **phase diagrams**
  - *see also phase equilibrium; phase transformations*
  - AB-type compounds, high-press. and high-temp. behaviour, review 8–22850
  - alloy, solidified, thermophysical charact. in region of special points of phase diagram *(Russian)* 8–44082
  - alloy, solidus temperature determ. by method of moving specimen boundary projected on screen 8–35353
  - Approximation of the phase diagrams of complex binary systems with unlimited solid solutions and peritectic transitions 8–23680
  - binary alloys, mag. interactions effects on phase separation 8–27047
  - binary system with degenerate eutectic and monotectic transition approx. 8–3101
  - binary systems of eutectic type, phase diagrams, approximations, appls. 8–43094
  - carbon tetrachloride, liq. and plastic cryst. phases, thermodynamic props., light scatt., US propag. 8–2863
  - ceramic, rational molecular engineering 8–11179
  - ceramists users 8–15380
  - conference, 6th CALPHAD meeting, Harwell, England (18-21 Apr., 1977) 8–35350
  - crystal growth from melt, impurity distrib. ratios, kinetic depend. 8–43044
  - diemthyl sulphoxide-H_2O-NaCl system, DTA exam. of primary ice phase field 8–48382
  - III-V semiconductor phase diagram and thermodynamic data analysis 8–6913
  - isoxazolines, thermodynamics charact. of phase diagrams 8–23673
  - KCl-$BaCl_2$ system, solid solns., phase diagram, enthalpy of soln., vibr. entropy. 8–39751
  - kinetic exchange interaction, doubly degenerate narrow bands 8–23263
  - latex, monodisperse, mechanical props. 8–48701
  - liquid crystal, mean-field equations, phase diagrams 8–18751
  - melting curve maximum phenomenon, computer simulation using two species soft core model 8–6146
  - metal silicide growth on Si 8–10230
  - multicomponent systems, comput. techniques for thermodynamic data treatment and equil. calc. 8–10172
  - nematic binary mixture, smectic phase form. 8–26670
  - nematic-cholesteric binary mixture, EHD instability, phase diagram 8–1980
  - nonionic emulsifier blend-oil-H_2O system, ternary phase diagram 8–20074
  - nylon II, high-press. X-ray structural study 8–14296
  - 4′-n-octyl-4-cyanobiphenyl, smectic bilayers, press. effects, phase diagrams *(French)* 8–10177
  - 4′-n-octyloxy-4-cyanobiphenyl, smectic bilayers, press. effects, phase diagrams *(French)* 8–10177
  - optimisation by least squares method using simultaneously different types of data 8–6143
  - organic eutectic, heat of fusion and excess thermodynamic functions 8–3104
  - polyethylene high press. phase, struct., phase diagram and compressibility 8–9961
  - rare earth metal-B systems, phase equilibria, phase diagrams, book contrib. 8–48389
  - semiconductor mixed crysts, calc. from diffuse scatt. of X-rays *(German)* 8–30517
  - single-phase domain boundary identification by X-ray diffraction line broadening 8–1949
  - solid-liquid phase equilib., binary and ternary systems, excess Gibbs free energy 8–30736
  - spinodal decomposition, light scattering, depend. on method of quench 8–18782
  - standards for single substances and mixtures 8–14481
  - steel, eutectoid and hypoeutectoid, time-temp.-austenization diagram *(Japanese)* 8–6900
  - synthesis of soln. thermodynamics, computer anal. 8–30739
  - thermochemical data and calc. of phase diagrams, systems for storage and retrieval 8–31682
  - transition metal solid solutions, max. or min. liquidus temps. 8–39741
  - triangular Ising model, renormalisation group calc., appl. to adsorption 8–10631
  - Ag-Cu, metastable solubility lines on Ag side 8–39737
  - Ag-Se mixture, activity of Se *(German)* 8–27492
  - $AgGa(Se_{1-x}S_x)_2$, crystal growth, phase studies, optical props. 8–48305
  - $Ag_8GeS_6(Se_6)(Te_6)$, Ag_8SiSe_6, $Ag_8SnS_6(Se_6)$, absorpt. edge investigs. at phase transitions 8–35149
  - Ag_8GeSe_6, polymorphic transition, absorpt. coeff. meas. 8–2257
  - $AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8–35377
  - $AgNO_2$, high-pressure phase behaviour, crystal chemistry of univalent nitrites 8–30749
  - Ag_2S-(As)(Sb)(Bi), temp.-comp. diagram 8–44105
  - Ag_2S-In_2S_3-SnS_2 system quaternary and ternary sulphide spinels, solid solubility and struct. 8–35376
  - Ag_2Se-(As)(Sb)(Bi), temp.-comp. diagram 8–44105
  - Ag_2Te-(As)(Sb)(Bi), temp.-comp. diagram 8–44105
  - Al-B, enthalpies and free energies, effusion and mass spectra, phase diagram 8–23665
  - Al-Cr-Zn (2.5, 1.5 wt%), phase equilibrium, solubility *(Russian)* 8–19723
  - Al-La, thermodynamic interaction in liquid phase *(Russian)* 8–44080
  - Al-Li-Mg system, isothermal sections comput. 8–6896
- **phase diagrams** continued
  - Al-Mg-Zr, phase diagram *(Russian)* 8–11205
  - Al-Si-Sr phase diagram *(Russian)* 8–15363
  - Al-Zr (0.8 and 1.5 wt.%), hyperperitectic, non equilibrium solidification 8–3113
  - $Al_yGa_{1-y}As_{1-x}Sb_x$ LPE phase diagram 8–11137
  - Al_2O_3-CaF_2, phase relns. 8–23700
  - Al_2O_3-$Eu_2O_3(Gd_2O_3)$, phase diagrams at high temps. exam. 8–44114
  - Al_2O_3-Sm_2O_3, phase diagram at high temps. *(Japanese)* 8–19732
  - As_2S_3-Tl_2S glass, phase relns. and crystallisation 8–23675
  - Au-Cu-Ga, solid soln., phase systems, valence electron density effects *(French)* 8–19724
  - Au-Si, melt, thermodynamic study of phase diagram *(French)* 8–27482
  - B-C(Si) systems, phase diagrams, review, book contrib. 8–48388
  - B_2O_3-Nb_2O_5 complexes, high resolution TEM obs. 8–35378
  - Ba-Al-Si system, phase diagrams construction by simplex designing method 8–6899
  - BaF_2-YF_3 system, phase diagram 8–35363
  - BaO-$MMOo_4$, M=Cd,Pb, phase diag. cross sections and reactions 8–27487
  - Bi, low-temp., using diamond anvil pressure cell and X-ray diffr. 8–1951
  - BiI_3-$Sb(As)I_3$, phase diags. 8–6905
  - Bi_2Te_3-Sb_2Te_3 solid soln., deviation from stoichiometric cross section 8–35362
  - CaF_2-AlF_3, phase equilibria, DTA and X-ray diffr. study 8–27493
  - CaO:$MMoO_4$; M=Cd,Pb, phase diag. cross sections and reactions 8–27487
  - $CdCr_2Se_4$-$CdCl_2$, rel. to crystn. of $CdCr_2Se_4$ from high temp. soln. 8–3009
  - $CdGe(As_{1-x}P_x)_2$, crystal growth, phase studies, optical props. 8–48305
  - $Cd(PO_3)_2$-$Sr(PO_3)_2$, physicochemical investigation 8–44102
  - CdTe-Tl, quasibinary cross section 8–3102
  - Ce-Ga, phase diagram *(Russian)* 8–27478
  - $Ceh22S_3$-Ga_2S_3 system *(French)* 8–3108
  - Co-Fe (2.92 to 30.05 wt.%), determination of phase equilibrium diagram *(Japanese)* 8–48374
  - Co-Sb system, partial phase diagram, rel. to cryst. growth and cryst. chem. of CoSb 8–35286
  - Co-W-O system, phase relations in dioxide-trioxide region, 1373K 8–11212
  - $CoCl_2$-KCl-NaCl system, melting diagram investigation by thermographic anal. *(Russian)* 8–3111
  - Cr-Co-P, phase diagrams, lattice constants of phosphides 8–44099
  - Cr-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8–23662
  - Cr-S system, phase diagram exam. between 873 and 1364K 8–3105
  - CsF-EuF_3 system, thermal anal. and X-ray diffr., phase equilibria *(French)* 8–44107
  - Cu rich dental amalgams, SEM and energy dispersive X-ray analysis 8–24184
  - α_2-Cu-Al, antiphase period and tetragonality 8–15374
  - Cu-Be-Co (2,0.3 wt.%) alloy, heat treatment, influence of tempering on hardness, tensile props. transform diagram *(French)* 8–31384
  - Cu-Cd-Se system, Cu-CdSe cross section and props. of cpds. formed 8–27491
  - Cu-Fe-O system, ternary phases, activities in spinel solid soln., phase equilibria and thermodynamic props. 8–6910
  - Cu-Pt alloy, temp.-press. phase diagram *(Russian)* 8–3100
  - Cu-Se mixture, activity of Se *(German)* 8–27492
  - $CuInS_2(Se_2)$-$GeS_2(Se_2)$, degree of solid solubility and phases characts. 8–35377
  - CuO-Nb_2O_5, phase anal., density determ. 8–10015
  - Cu_2O-Nb_2O_5, phase anal., density determ. 8–10015
  - $Cu_2S(Se)$-Ge(Sn)S, phase diagrams 8–44100
  - Dy_2S_3-Ga_2S_3 system *(French)* 8–3108
  - Er_2S_3-Ga_2S_3 system *(French)* 8–3108
  - Eu-As system, cryst. struct. of phases formed 8–26493
  - Eu-Ce(Pr)-Fe-O system, solid solns. of ferrogarnet and ferroperovskite type 8–27488
  - Eu_2O_3-Y_2O_3-Ta_2O_5, struct., phase form., luminesc. and X-ray diffr., obs. *(Russian)* 8–6765
  - Fe, cast-Ni, 8–44086
  - Fe, commercially pure, time-temp.-austenization diagram *(Japanese)* 8–6900
  - Fe corrosion, temp. and Zn aggregates influence *(Dutch)* 8–48571
  - Fe-Cr-C system, isothermal sections, 873 to 1373K, computer plotting 8–6894
  - Fe-Cr-Co phase diagram, lamination region, resist. meas. *(Russian)* 8–27479
  - Fe-Cr-Ni(Mn)(Ni-Mn)-C alloy, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8–44085
  - Fe-Ga, phase constitution depend. on heat treatment, phase diagram *(German)* 8–39748
  - Fe-Ga, solid soln., order-disorder transform. *(French)* 8–3121
  - Fe-lanthanid-O systems, thermodynamic props., composition and lattice constants 8–31390
  - Fe-Mn-C system, isothermal sections, 873 to 1373K, computer plotting 8–6893
  - Fe-Mn-O, phase equilibrium diagram *(German)* 8–15355
  - Fe-Mo-C system, isothermal sections, 973 to 1273K, thermodynamic analysis 8–6895
  - Fe-Mo-Cr(Ni)(Mn)-C, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8–44085
  - Fe-Ni-C, Redlich-Kister eqns., activity coeffs., phase equilib. 8–23664
  - γ-Fe-Ni-Cr, magnetic phase diagram *(Russian)* 8–39292
  - Fe-Ni-Pt system, ordered phase fields of equilibrium diagram 8–48373
  - Fe-W-O system, phase relations in dioxide-trioxide region, 1373K 8–11212
  - Ga-alloys, thermodynamic properties 8–14480
  - Ga-In-As-Sb system LPE layers, pseudoquaternary phase diagram 8–10293
  - Ga-P-Bi(Sb), liquidus isotherms, GaP solubility in Sb, Bi, rel. to epitaxial growth 8–34721
  - Ga-rare earth alloys, phase diagram determ. 8–15366
  - GaAs layers, heteroepitaxy, grown on Si and Ge from multiple component solns. *(Russian)* 8–15319
  - $Ga_xIn_{1-x}As$-InP, lattice matched LPE film growth and characts. 8–15320
  - GaP layers, heteroepitaxy, grown on Si and Ge from multiple component solns. *(Russian)* 8–15319

phase diagrams continued
Ge-GaP system, phase analysis 8−23674
Ge-InP system, phase analysis 8−23674
GeS-GeSe, limits of solid soln. region, microstructural, X-ray and DTA meas. 8−47530
H-He fluid planets, phase diagram and transport props. 8−28554
H_2O-NaCl-sucrose, phase diagram determ., appls. in cryobiology 8−15777
HfC-TiC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
Hg-HgTe-CdTe system, liquidus isotherms 8−35359
Ho-Tb (50 wt.%) alloy, mag. phase diag. from anomalous US propag. 8−6526
In-Ga-As-P, phase diagram rel. to lattice matched LPE 8−39708
In-Sb-Bi system, solid solns., solubility limits, microhardness, microstruct. investig. 8−35368
In_2Se_3-Sb_2Se_3 system, phase diagram 8−44090
In_2Te_3-PbTe system, phase diagram, elec. props. 8−35361
K-Cs alloys, elec. resist., minima for K_2Cs, K_7Cs_6 concs. *(German)* 8−14708
$KAsO_3$-K_3AsO_4, phase diag. 8−23681
KF-AlF_3 system, compared with NaF-AlF_3, rel. to use of $NaBF_4$ and Na_2TiF_6 in manufacture of Al alloys 8−27453
KF-BeF_2-DyF_3, crystalline and vitreous phases of cross sections 8−44096
KF-BeF_2-DyF_3, phase diagrams, intensification region 8−44097
KF-YbF_3, KF-LuF_3, phase analysis 8−44101
K_2SO_4-$CdSO_4$, re-exam., and cryst. growth of $K_2Cd_2(SO_4)_3$ 8−31335
K_2SO_4-$ZnSO_4$ system, glass formation and phase diagram study, physical props. 8−27500
La-Re-B, annealed and quenched, X-ray structural and phase anal. 8−11207
La_2S_3-Ga_2S_3 system *(French)* 8−3108
La_2Se_3-Ga_2Se_3-$GeSe_2$ ternary system, phase diags., glass formation *(French)* 8−3109
Li-B (0-60 at.%), density, elec. resist. and Hall coeff. 8−39089
Li-Mg, liq., elec. transport props. and phase diagram 8−23070
Li-Rh-H system, intermetallic cpds. and phase relationships, cryst. struct. 8−44084
Li_2CrO_4-K_2CrO_4, phase diagram determination by DTA and X-ray diffr. 8−31391
$Li_{0.5}Fe_{2.5}O_4$-$Bi_2O_3(V_2O_5)$ systems, phase diagrams, sintering conditions 8−35366
LiH plasma, phase transition 8−42710
$LiNH_4SO_4$, press.-temp. phase diagram, NMR and SHG meas. 8−23690
Li_2O-NiO-O_2, phase diagram and mag. props. of $Li_xNi_{1-x}O_{1\pm y}$ 8−48380
Mg-Li-Sn-Al, investigation in Mg rich region *(Russian)* 8−15364
MgO-Nb_2O_5-Al_2O_3, solid state equilibria at 1400°C phase diagram *(Italian)* 8−23671
Mn-Ga (19 to 30 at.%), phase equilib. diagrams, X-ray diffr., thermal expansion, and mag. meas. *(Japanese)* 8−39743
Mn-W-O system, phase relations in dioxide-trioxide region, 1373K 8−11212
Mo-Co-Al, phase diagram *(Russian)* 8−19722
Mo-N system, phase diagram of solid and liq., high and low press. 8−44083
Mo-TiC(ZrC)(TiN), phase diagram *(Russian)* 8−27476
Mo-Zr-Nb-C, polythermal sections *(Russian)* 8−15365
$(ND_4)_3D(SO_4)_2$, press.-temp. phase diagram 8−38834
Na-K-Cs alloys, liquid contact material, phase diagram calcs. 8−6145
$NaCaPO_4$-Ca_2SiO_4 partial system, phase diagram 8−35364
$NaCaPO_4$-$Ca_3MgSi_2O_8$(CaO) systems, phase diagrams of partial system 8−35369
$NaCaPO_4$-Ca_3SiO_5 partial system, phase diagram 8−35365
$NaCaPO_4$-$CaMgSiO_4$ system, phase diagram 8−35370
NaCl-CsCl-$CrCl_3$ system, phase struct. anal. by X-ray method *(Russian)* 8−3112
NaF-Al_2O_3, β-Al_2O_3 form. *(Japanese)* 8−6912
NaF-AlF_3 system, rel. to use of $NaBF_4$ and Na_2TiF_6 in manufacture of Al alloys 8−27453
Na_2MoO_4-Na_2SO_4, phase diag. and isomorphism 8−27486
$NaNbO_3$-$BaTiO_3$ solid soln. form. and props. *(Russian)* 8−48378
Na_2O-Ga_2O_3 system, new superionic conductor *(French)* 8−14504
$NaVO_3$-BaV_2O_6-SrV_2O_6, phase diagrams, simple eutectic system 8−48379
Nb-Ga alloy, A15 type, melt produces specimens, supecond., homogeneity, transition temp. *(German)* 8−2608
Nb-H interstitial alloys, prep. and props. 8−23669
NbC-NbB_2, phase relns. 8−23677
Nd-Ga, phase diagram *(Russian)* 8−27478
Ni-Cr-Al aluminised coating, diffusion paths for formation and degradation of oxidation resistant coatings 8−11431
Ni-Cr-Mo-Fe-Mn, Kh12M23, intermetallic phases exam. *(Russian)* 8−39740
Ni-Sb system, partial phase diagram, rel. to cryst. growth and cryst. chem of NiSb 8−35286
Ni-W-O system, phase relations in dioxide-trioxide region, 1373K 8−11212
Ni_3Al-Ni_3Nb eutectic alloy, aluminide coating microstruct. exam. 8−15593
NiO-WO_3, phase relns. 8−3106
Ni_3Si, homogeneity region 8−23678
Pb-Rb, phase diagram *(Russian)* 8−19720
Pb-Te-O system, PbTe-$PbTeO_3$ and $PbTeO_4$-PbO cross sections 8−23679
$PbFe_{(2/3}W_{1/3)}O_3$-$Pb(Co_{1/2}W_{1/2})O_3$ solid soln., crystallographic, dielectric, magnetic props., Mossbauer spectra 8−43807
PbI_2-$PbBr_2$, optical spectra, solid soln. struct. 8−48247
$Pb_{0.9}K_{0.1}(Zn_{1/3}Nb_{2/3})O_{2.95}$-$PbZrO_3$-$PbTiO_3$, morphotropic tetragonal-rhombohedral phase boundary 8−48129
$Pb_xMo_6S_{8-y}$, phase relns., stoichiometry, T_c 8−15378
$Pb_3(PO_4)_2$-$Pb_3(VO_4)_2$ mixed crystal, crit. stress and phase diagram temp. depend. 8−26623
$Pb_{1-x}Sn_xSe(Te)$ epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
$PbTiO_3$-$CaFe_{2/3}W_{1/3}O_3$, solid solutions 8−43816
$PbTiO_3$-$Pb(Ni_{1/2}W_{1/2})O_3$ system, solid soln. form., struct., dielec. props. and thermal expansion *(Japanese)* 8−27501
$Pb(Zr,Ti)O_3$, piezoelec., compositional fluctuation and props. 8−18742

phase diagrams continued
$PbZrO_3$-$PbCd_{0.5}W_{0.5}O_3$, phase transitions 8−43817
Pd-Zn system, struct. stability of B2 and $L1_0$ phases 8−26495
Rb-Se system, phase equilibria 8−44079
RbF-EuF_3 system, thermal anal. and X-ray diffr., phase equilibria *(French)* 8−44107
Re-Al-Si , X-ray determ.of system *(Russian)* 8−19763
S, melting curves and polymorphism 8−43104
Sb-S, saturated vap. press. 8−43116
Sb-Se-I, phase diagrams of various cross-sections 8−44093
SbI_3-AsI_3, phase diags. 8−6905
Sc-Fe-Si system, phase obs. at 800°C *(Russian)* 8−23661
Sc_2O_3-ScF_3 system, phase ratios at 100 kbar press. 8−19729
β-SiC, polytype stability, α→β phase transformation during growth 8−6028
SiO_2-Al_2O_3, calculated thermodynamic data and metastable immiscibility 8−27495
Sm-Cu phase diagram *(Russian)* 8−27477
Sm-Ga, phase diagram *(Russian)* 8−27478
$Sm_{1-x}Gd_xS$ system, equilib. of isomorphous phases and crit. point 8−34772
SnS_2-SnI_4, T-x projection of phase diag. 8−23683
SnSe-Se, p-T projection of phase diag. 8−27485
SnTe-In_2Te_3 system, thermoelec. props., phase diagram, transitions 8−43424
Sr-Al-Nd phase diagrams *(Russian)* 8−27480
Sr-Al-Si system, phase diagrams construction by simplex designing method 8−6899
SrO-$MMoO_4$, M=Cd,Pb, phase diag. cross sections and reactions 8−27487
Ta-D system, thermodynamic stability of Ta_2D, rel. to long-range order parameters *(Japanese)* 8−15376
TeO_2-CoO, phase diag. from thermographic analysis 8−23687
Ti-H, H diffusion and phase consistution, V influence, proton spin-lattice relax. meas. 8−27484
Ti-Ni-Cu system, phase relations at 800 and 870°C 8−27481
TiC-ZrC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
TiCu-H, construction from absorption isotherms and X-ray data *(Japanese)* 8−23668
TiO_2-Ga_2O_3 system, phase relations and microstructs. 8−3107
TiO_2-NiO-Sb_2O_3 phase equilibria 8−44098
$(Tl,NH_4)_2Cd_2(SO_4)_3$, langbeinite type mixed cryst., ferroelec. transitions, dielec. and elastic meas. 8−2810
U-Ce-C system, phase equilibrium exam. *(German)* 8−23670
U-Nb-C system, phase equilibrium exam. *(German)* 8−23670
V-H, phase diagram, resistometric contribution 8−15372
V-H system, DTA, phase diagrams, low temp. phase 8−6903
V-S system, order-disorder transition of metal vacancies, statistical thermodynamics 8−43012
V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
$V_{1-x}Al_xO_{2\pm y}$, mag. and struct. props. meas. 8−2658
VN_{1-x}, vacancy ordered structure in cubic mononitride phase, transition entropy determ. 8−43011
V_nO_{2n-1}, V_6O_{13}, V_2O_5, Magneli phases, chem. transport using $TeCl_4$ *(German)* 8−31343
Ve-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
W-Nb (0-30 at.%), average thermal expansion coeff., 500-1200K 8−14483
Y-Re-B, annealed, and quenched X-ray structural and phase anal. 8−11207
$Y_{3-x}Bi_xFe_{5-y}Ga_yO_{12}$-PbO-$B_2O_3$-$Bi_2O_3$ system, crystn. fields 8−43996
Y_2O_3-Lu_2O_3-Eu_2O_3-CaO-GeO_2-Fe_2O_3-PbO-B_2O_3 system, garnet crystn. fields 8−43995
Y_2S_3-Ga_2S_3 system *(French)* 8−3108
YbIG, mean field phase diagrams 8−23269
Zn-Sb diffusion couple, ZnSb phase layer growth kinetics, 240-320°C, up to 30 kbar 8−10229
ZnO-Nb_2O_5 system, Czochralski growth, phase relations and cryst. data 8−9975
ZnTe-CdSe, solid soln. formation and effects 8−27489
ZnTe-Ga_2Te_3, phase diagram 8−35360
Zr-Cr-Cu, phase diagram in Zr corner *(Russian)* 8−19721
Zr-O, high temp. phase diagram 8−11211
ZrC-HfC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
ZrO_2-CaO, phase equilibria and ordering 8−27498

phase equilibrium
see also phase diagrams; phase transformations; solutions
acetic acid, PVT props., 448.15-603.15K, press. up to 10 MPa 8−14455
acetone-benzene(cyclohexane), vap.-liq. equilibria 8−30745
alcohol-solvent, associated, excess free energy and enthalpy of mixing 8−31680
alkali nitrates, molten, pVT data, internal energies, eqn. of state 8−43098
alkali nitrates, molten, pVT data, thermal press. coeffs., compressibilities 8−43097
alloy, binary, theory for initial stage of grain growth and unmixing kinetics 8−19714
alloy phase stability, computer calc. using modified pair potentials 8−35352
benzene, free convection heat transfer in tube at supercrit. press. 8−42518
benzene-cyclohexane, vap.-liq. equilibria 8−30745
binary alloys, and intermetallic cpds., struct. and stability, ab initio pseudopot. calcs. 8−34460
binary liquid-vapour equilib. data, numerical anal. 8−26675
binary vapour-liquid equilibrium experiments, design of experiments 8−14440
binary vapour-liquid equilibrium experiments, parameter estimation and consistency tests 8−14439
borosilicate glass, phase separation effect on HF etch rate 8−11208
charnockite series, form. temp. and press., evidence for geothermal gradients 8−40553
chemically irreversible systems, liquid-vapour equilibrium *(Russian)* 8−3369

phase equilibrium continued
- chrome-forsterite-periclase refractory constitution and props., phase reactions during firing *(German)* 8−11175
- cordierite glass ceramics, effect of TiO_2 and ZrO_2 content on phase sequence during heat treatment 8−48381
- critical fluctuation pattern, effect of large-scale inhomogeneities, 2nd kind transform. *(Russian)* 8−18741
- decahydronaphthalene-H_2O, liq.-liq. phase equilib., crit. phenomena 8−18764
- diamond-graphite equilib. line, from synthesis and graphitisation of diamond 8−24811
- dynamical equations for system with interface 8−38914
- elastic mixtures, stability criteria 8−18514
- equations of state calculation methods *(German)* 8−34588
- ferrite, phase composition in magnetic field, use of DTA-TG-DTG *(Polish)* 8−31393
- ferromagnetic minerals in basalts, stability region 8−16000
- free energy for phase interface, solar-prod. expression, Ising model and cluster approx. 8−34591
- gas-gas equilibrium, thermodynamics at high press. 8−18734
- gas-liquid surface, penetrable sphere model 8−10261
- gas-liquid system, phase equilib. determ. by gas chromatographic head-space anal. *(German)* 8−18753
- gas-solid system, phase equilib. determ. by gas chromatographic head-space anal. *(German)* 8−18753
- glass, internal parameters, ordering parameters, history function, rel. to glass transition 8−30738
- III-VI compound layered materials, prep. and growth, book contrib. 8−19661
- immiscible liquids, separation kinetics in low gravity environment, computer simulation study 8−34629
- inter-transition metal phase constitution 8−39749
- interfacial stability theory, moving symmetric model 8−2230
- interfacial stability theory, stationary symmetric model 8−2229
- liquid mixture, excess Gibbs free energy, quasilattice local composition model, phase equilib. 8−31681
- liquid-liquid phase equilibria, theory, chem. models 8−18781
- liquid-vapour equilib., Andiappan-McLean eqns. at infinite dilution 8−43115
- liquid-vapour equilib. of systems with and without salts, Wilson eqn. 8−43114
- liquid-vapour system, microheterophase state, characteristic time and size *(Russian)* 8−18740
- macromolecular multicomponent system, phase separation, thermodynamic perturbation theory, calculus 8−18778
- magnetic contributions to phase stability calc. 8−6141
- martensitic transformations, thermodynamics and morphology, under influence of external stresses *(Russian)* 8−23701
- metal, simple, phase stability and elastic const. 8−31387
- methane-trifluoromethane, liq.-liq. phase equilib., crit. phenomena 8−18764
- mixture, strongly nonideal, vap.-liq. equilib. data correlation eqn., heat of mixing 8−30763
- mixtures, high-press. vap.-liq. equilib., phenomenological description, review 8−30737
- molecular thermodynamics appl. to phase separation and critical phenomena *(German)* 8−14447
- molecular thermodynamics calculations, practical appls. *(German)* 8−18733
- mullite, crystallisation from SiO_2-Al_2O_3 melts 8−47243
- multicomponent systems, comput. techniques for thermodynamic data treatment and equil. calc. 8−10172
- nucleation theory, fundamentals *(Spanish)* 8−43101
- phenanthrene-d_{10}, oriented in biphenyl, triplet zero-field splittings, conc. depend. 8−2773
- rare earth-Cd double tungstates, with scheelite structure 8−44103
- rod-like molecules in extensional flow field 8−26158
- semiconductor, binary, estimation of heats of formation from melting temp. 8−27810
- sigma phase stability and irrad. effect 8−11200
- slag equilibria Flood-Grjotheim treatment 8−39752
- slag-metal equilibrium, thermodynamics 8−44108
- spinels, oxo and sulpho, boundary conditions for existence 8−23684
- spinodal decomposition dynamics, generalised diffusion eqn., numerical soln. 8−10193
- β-spodumene-mica glass ceramics, phase evolution and TiO_2, MgF_2 additive effects, exam. 8−44089
- stability properties of equilibrium states, free Bose gas 8−8368
- standards for single substances and mixtures 8−14481
- steam-water two phase mixture, relative vel. of vapour phase, determ. of void fraction 8−5791
- steel, carbonitrided 25KhGT, 25 KhGM, exam. of hardenability and phase composition 8−44272
- steel, Cr (1 to 5 wt.%), effect on transform. of Cr content and all round press. of 25 kbar *(German)* 8−11219
- steel, stainless, sigma phase stability and irradiation effect 8−11200
- steel, U15 and 130 Gz, upper bainite, relation between cementite and ferrite lattice orientations *(Russian)* 8−23663
- struct. and form. of metastable phase m-TiBe 8−48375
- ternary liquid-liquid equilibrium, NRTL equation calcs. 8−34597
- 1,2,3,4-tetrahydronaphthalene-H_2O, liq.-liq. phase equilib., crit. phenomena 8−18764
- toluene, free convection heat transfer in tube at supercrit. press. 8−42518
- transition metal, phase stability, band theory 8−34757
- transition metalloid atom solubility and electronegativity difference correl. with phase stability and d-electron/atom ratio 8−6914
- two order parameter systems, Landau-Ginzburg-Devonshire theory 8−10164
- two-phase fluid equilibrium, thermodynamic functions and surface tension 8−2262
- vapour pressure, between triple and crit. pts., predictive eqn. 8−30744
- vapour-liquid equilibrium, ebulliometric determ. 8−18754
- vapour-liquid equilibrium, generalised one-parameter Redlich-Kwong eqn., mixtures 8−34589
- vapour-liquid equilibrium, high-pressure, isothermal, meas. and correl. 8−18755
- X-ray analysis of minority phases *(German)* 8−26387
- β-$Ag_xW_yV_{2-y}O_5$ bronzes, β-phase existence range, elec. cond. and Ag diffusion 8−35373

phase equilibrium continued
- AgZn-AgMg quasibinary alloy, phase relation and superlattice form. 8−3097
- Al-Li-Mg system, isothermal sections comput. 8−6896
- AuIn-Pb pseudobinary system, DTA 8−23667
- B_2O_3-NaF-$NaBF_4$, crystalline compounds and glasses 8−11210
- B_2O_3-Nb_2O_5 complexes, high resolution TEM obs. 8−35378
- BaO-TiO_2-Cr_2O_3, new compound, phase relations *(Japanese)* 8−6911
- Be-Si-O-N polytypes, X-ray study 8−27496
- BeF_2-LiF, thermodynamically predicted miscibility gap 8−11209
- $Bi_{0.52}Sb_{1.48}Te_3$-Te, phase-equilibrium boundary, Hall coeff. meas. 8−44094
- BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
- C, solid-liquid vapour triple point 8−48377
- $Ca_2Nb_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
- CaO-Al_2O_3-CaF_2, electroslag remelting slag, solubility of N_2 and C, equilibria 8−44110
- CaO-MgO-Al_2O_3-Cr_2O_3-Fe-O_2-SiO_2 system, exptl. determ. of periclase and spinel comps. 8−6906
- ZCaO.SiO_2-2CaO.Na_2O.P_2O_5 system, polymorphism and solid soln. 8−19731
- Cd-Pb(Sn)(Bi) alloy, molten, EMF meas. of liquid separation 8−39747
- Ce-Mn-Co, temp. conc. limits of homogeneous compounds *(Russian)* 8−23666
- $CeNbO_{4+x}$, oxidation-reduction reactions 8−39930
- CeO_{2-x}, $1.5<O/Ce<2$, physicochemical equilibria, statistical thermodynamics model *(French)* 8−38688
- $CeTaO_{4+x}$, oxidation-reduction reactions, phase equilibrium, thermogravimetry and magnetic susceptibility meas. 8−39930
- Co-CoAl eutectic, invariant composition redeterm. 8−3099
- Co-W-C system at 1150°C, phase equilibria, isothermal reactions and thermodynamic study 8−31385
- $CsLaF_4$ and $CsCeF_4$, phase equilibria *(French)* 8−44107
- Cu-Cr system, optimal mutual orientations between FCC and BCC phases *(French)* 8−15371
- Cu-Ni-O, liquid alloy, thermodynamic study by EME method *(Japanese)* 8−15367
- Cu-Ni-W melt, solubility of W, primary solidification 8−19726
- Cu-O system, deposition by chem. transport, thermodynamic anal. *(German)* 8−31344
- Er_2O_3-ZrO_2, subsolidus phase relations, X-ray diffr. and thermal expansion exam. 8−31382
- Fe-Cr-C alloys, equilibrium partition coeffs. for ferrite/liquid, austenite/liquid 8−39744
- Fe-Cr-C system, isothermal sections, 873 to 1373K, computer plotting 8−6894
- Fe-Fe_2O_3-SiO_2-Si melt, interacting system, oxidation products *(Russian)* 8−19728
- Fe-lanthanid-O systems, thermodynamic props., composition and lattice constants 8−31390
- Fe-Mn-C (11.5, 0.2 to 1.6 wt.%), water quenched, effect of C on phase composition, abrasion, plasticity *(Russian)* 8−35445
- Fe-Mn-C system, isothermal sections, 873 to 1373K, computer plotting 8−6893
- Fe-Mo-C system, isothermal sections, 973 to 1273K, thermodynamic analysis 8−6895
- Fe-Mo-Cr(Ni)(Mn)-C, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8−44085
- Fe-Ni-C alloys, FCC, effect of two gamma states on C activity 8−6897
- Fe-Ni-Co base alloys, composition changes during electron radiation melting *(Russian)* 8−19718
- Fe-WO_3 system, struct. phase exam. by optical microscopy and X-ray diffr. 8−31389
- FeO-Fe_2O_3-SiO_2 -Al_2O_3-$CuO_{0.5}$/Cu slag-metal system, distrib. equilib. of Sn, Se, Te 8−44111
- Gd-Co-B system, phase composition, struct., phase equilibria 8−35355
- Ge, liquid, solubility and activity of O_2, 1233 to 1397K 8−44109
- Ge-Cu, liquid, solubility of O_2 at 1373K, in equilibrium with GeO_2 8−44109
- Ge-Si-Sb solid soln., distrib. of components in universal furnace expt. in Soyuz-Apollo programme *(Russian)* 8−31381
- Ge-Te, exam. of new compound, using light microscopy and X-ray diffr. exam. 8−48383
- Hf-Cr-Ga, X-ray microanalysis of phase equilibria *(Ukrainian)* 8−6898
- Hf-Fe-Ga, X-ray microanalysis of phase equilibria *(Ukrainian)* 8−6898
- Hf-Ge-B system, phase equilibria 8−35356
- HfC-HfB_2, reactions, cpd. formation and props. 8−23685
- HfO_2-Eu_2O_3, phase equilibrium, 960 to 1900°C, X-ray anal. 8−23688
- InSb+Ga reaction 8−23682
- $LaMnO_3$, O_2 environment, phase stability and nonstoichiometric behaviour, 1200°C 8−43134
- $La(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
- $La_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
- $La_2Ti_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
- Li-Na alloy, liq., conc. fluctuations and struct. factors 8−30534
- MgO-Ga_2O_3-SiO_2 system, subsolidus phase equilib. 8−44106
- MgO-$MgCl_2$-H_2O, cement paste, reaction products, X-ray diffr. study 8−23689
- $Mg_yU_{1-y}O_{2+x}$, thermodynamics from EMF meas., high Mg conc. 8−43143
- Mo-Cu-Al, phase equilibrium *(Russian)* 8−15361
- MoO_2-I_2, heterogeneous equilib., vapour transport and cryst. growth 8−27405
- N_2-Ar-O_2, liq. vap. equilib. prediction using cubic eqn. of state 8−18737
- NaF-MgF_2-MgO-SiO_2, phase formation 8−27460
- Na_2O-Bi_2O_3-TiO_2, subsolidus phase equilibrium at 1000 degrees C 8−48384
- Nb-Al (20 at.%), diffuse scatt. before Nb_3Al phase form., unstable phase *(Russian)* 8−3131
- Nb-Ir-O, phase struct., supercond. H-phase 8−39246
- Nb-Zr-O, corrosion resistance in molten Li *(Russian)* 8−31567
- $NbSe_x$, nonstoichiometric, thermodynamic props. and crystal struct. *(Japanese)* 8−11206
- Nd-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
- $Nd(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372

phase equilibrium continued
- $Nd_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8–35372
- $Nd_2Ti_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8–3110
- Ni, β-phase form., H enriched, at surface and grain boundaries during H_2 absorption *(Russian)* 8–31410
- Ni-Al-Si, β-phase stability *(Russian)* 8–39738
- Ni-Be bronze, Fe and Si alloying addition effect on phase composition *(Russian)* 8–15360
- Ni-Cr alloys, crystallisation anomalies *(Russian)* 8–19719
- $(Ni_{1-y}Y_y)_3Al_{1-x}Sc_x(Ti)_x$, quarternary gamma prime $(L1_2)$ pseudobinary props. revealed by ionicity modified pair model 8–19725
- Pb-In-Sn system, liquidus and solidus isotherms 8–44088
- Pb-S-O system, phase equilib. *(Rumanian)* 8–19727
- Pb-Te-O, thermal stability 8–44104
- PdO, semiconductivity and stability, optical props. 8–43497
- Pr-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8–31388
- $Pr(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8–35372
- $Pr_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8–35372
- $RbRF_4$, R=La, Ce, Pr, Nd, Sm, phase equilib. and cryst. struct. *(French)* 8–44107
- Re-Al-Si system, phase equilibria, $ReAl_{1.2}Si_{0.8}$, $ReAl_{1.25}Si_{0.75}$ prod., struct. 8–35357
- Re-Fe-Al, physical-chemical investigation *(Russian)* 8–15362
- Si-Al-O-N system, exam. of compounds and properties 8–48387
- SiC, polycrystalline, quantitative phase analysis, statistical estimation and mathematical splines *(Bulgarian)* 8–39753
- Si_3N_4, oxidised, with Y_2O_3 densification aid, temp. and compositional stability of $Y_6Si_6O_{21}$ 8–27664
- Si_3N_4, phase content determ., using X-ray diffr. anal. 8–44281
- Si_3N_4-SiO_2-MgO, phase relations and interrelation with mech. strength, and oxidation 8–48386
- Si_3N_4-Y_2O_3-Al_2O_3-SiO_2, X-ray diffr. exam., phase equilib. at 1400 degrees C *(Japanese)* 8–44113
- Sm-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8–31388
- $(Sr/Ba)(Fe/Al/Ga)_{12}O_{19}$ solid soln. crystal for hexaferrite layer substrate *(German)* 8–23672
- Ta carbides, changes in phase structure during prolonged heating in vacuum 8–44095
- Ti-B-Mo system, phase equilibria at 1400°C 8–35354
- Ti-V-Si, equlibrium silicide, X-ray and electron diffr. obs. 8–27483
- TiO_2-NiO-Sb_2O_3 phase equilibria 8–44098
- TiO_2-Sb_2O_3 system, phase comp. of roasted coprecipitates 8–23651
- Ti_2O_3-$MgTiO_3$, phase analysis 8–3103
- U-O system, phase equilibrium, thermal, X-ray and cond. meas. 8–35371
- V-Mn-O system, phase comp. during oxide prep. 8–27447
- V-N system, phase formation *(Russian)* 8–39739
- VSe_2 phase, stability and Se equilib. vapour press., homogeneity range 8–43133
- W-C-(Zr)(Hf)(Nb)(Ta)(Re) alloys, vacuum melted, phase composition, struct. and props. 8–31403
- W-Re, sigma phase stability and irradiation effects 8–11200
- $YO_{1.5}$-PrO_x, phase relns. and electrophys. props. of solid solutions 8–23686
- Zr-Ge-B system, phase equilibria 8–35356
- Zr-Mo (3 wt.%), β-phase stability 8–39742
- Zr-Mo-Al (3, 1 wt.%), β-phase stability 8–39742
- ZrH_x, two-phase (δ+ε), homogenisation during neutron bombard. *(Russian)* 8–18684
- ZrO_2-Al_2O_3-SiO_2, subsolidus equilibria and stabilization of tetragonal ZrO_2 8–27497
- ZrO_2-Sc_2O_3, phase system, X-ray and thermal anal. 8–27494
- ZrO_2-W, eutectic microstruct. 8–27499
- ZrO_2-Y_2O_3, phase equilibria and ordering 8–48385

phase equilibrium diagrams *see phase diagrams*

phase-locked loops
- 400 Mb/s optical fibre communications, integrating and transimpedance front end performance comparison *(German)* 8–33879
- automatic internal friction and modulus meas. apparatus using phase-locked loop 8–13981
- digital signals, phase measurement using PLL method for low S/N ratio 8–16810
- flowmeter, implantable Doppler design with phase-locked loop 8–31873

phase measurement
- controlled-current impedance meas. equipment design *(Spanish)* 8–8421
- detector produces unambiguous output 8–4627
- digital phase detection used for computing phase angle averages 8–21163
- digital signals, measurement using PLL method for low S/N ratio 8–16810
- optical fibre material dispersion meas. by baseband modulated envelope detection 8–1368
- pulse continuous RF signal amplitude and phase difference measuring device 8–12719

phase meters
- detector produces unambiguous output 8–4627
- digital, optimal threshold determ., meteorological Doppler radar station appl. *(Russian)* 8–20560
- digital, with seven-segment luminescent vacuum display, counter scheme 8–4648

phase modulation
- *see also phase shift keying*
- saturated absorption spectroscopy, optical feedback-effects suppression by phase modulation of refl. light 8–21225

phase regulation *see phase control*

phase shift circuits *see phase shifters*

phase shift keying
- turbulent atmosphere, optical DPSK system performance 8–42293

phase shift microphones *see microphones*

phase shifters
- commutable circulator, with increased mean-power level 8–4637

phase space methods
- semiclassical statistical mech., phase space sampling approach 8–32753

phase transfer function *see optical transfer function*

phase transformations
- *see also critical fluctuations; heat of transformation; isothermal transformations; liquid crystal phase transformations; liquid-vapour transformations; order-disorder transformations; phase diagrams; phase equilibrium; solid-liquid transformations; solid-state phase transformations; solid-vapour transformations; spinodal decomposition; vaporisation*
- Abelian lattice gauge theories, phase transitions 8–12812
- abrupt transformation, data partitioning, cluster anal. optimisation 8–36956
- bifurcation approach to phase transitions, external field inclusion 8–14446
- binary mixtures an and liquid-gas transitions, model for coupling between molecule polarisation and order parameter 8–22823
- capillary discharge with evap. walls, phase transitions 8–42839
- catastrophe and renormalisation theories, transitions with several order parameters 8–32782
- critical behaviour of first order transition, mean-field theory, master eqn. and nonlinear Fokker-Planck eqn. 8–8375
- Dicke model, two-level atoms, phase transition 8–5442
- Dicke model with external fields, simple Green function approach, lack of phase transition 8–9353
- diffusionless first order phase transform. eqns. appl. to liquid crystals and solids 8–30734
- distinguishable quantum particles in one-dimens. box, continuous system, dynamics, phase transitions 8–32755
- distribution functions, high order reduced, truncation procedure 8–36958
- elastic continua, modelling, thermodynamic restrictions 8–12568
- external-noise-induced, chem. model 8–16764
- finite size scaling theory, static, dynamic, based on renormalisation group approach, critical phenomena exam. 8–16745
- fluid mixtures, analytic and perturbation theories 8–18516
- Frenkel exciton system, phase transition and exciton-photon coupling 8–23024
- gauge theory, spontaneously broken, first-order phase transitions 8–24943
- gradient invariants and incommensurate phase transitions 8–22824
- growth-disorder model, three-dimensional 8–26462
- Kirkwood-Salsburg eqns. for bounded stable Kac pot., instability and phase transitions 8–4553
- Landau theory for chem. instabilities 8–16763
- lasers and phase transitions, intracavity absorber expt. 8–13676
- lattice gauge theory, phase transitions, recursion relations 8–24953
- Lifshitz point, critical wavevector 8–36954
- limit cycles and multiperiodic flow bifurcation and nonequilibrium phase transitions 8–24759
- lipid monolayer phase transitions, model 8–2338
- local critical properties, near isolated impurity 8–6142
- manifolds of phase coexistence 8–16749
- metastable states in classical continuous model 8–24756
- microemulsions, lattice gas model, surfactant effects 8–23974
- models for transitions with continuous constant energy surfaces 8–29078
- molecular thermodynamics appl. to phase separation and critical phenomena *(German)* 8–14447
- Mossbauer radiation inelastic scatt. near phase transition 8–15073
- negative specific heat paradox, canonical ensemble theory rel. to phase transtions 8–9557
- non-conducting chain systems, 3-d Coulomb coupling and charge ordering 8–18980
- nonequilibrium phase transition, exact results, stochastic anal. 8–29076
- nuclear matter, shock wave matter, shock wave dynamics, phase transition effects 8–21509
- one dimensional system with phase transform., exact linear renormalisation 8–32769
- percolation clusters, as teaching aid for Monte Carlo simulation and crit. exponents 8–12477
- Prigogine-Defay ratio, rel. to order parameter theory 8–2232
- quantum molecular crystal, quantum quadrupolar phase theory *(Russian)* 8–22929
- quasi-one-dimensional electron-lattice system, three dimensional CDW ordering temp. 8–23037
- renormalisation group approach to critical phenomena, ferromagnetic example 8–8497
- second kind, critical fluctuation pattern, effect of large-scale inhomogeneities *(Russian)* 8–18741
- simple fluid, correls. near phase transition 8–9928
- spatially coherent laser beam form., phase transitions 8–17898
- spin systems, tricritical phase transition, eqn. of state, critical exponents, logarithmic corrections 8–27048
- synergetics approach 8–16717
- thermodynamic partition function, analytic props. of Lippman-Schwinger variational approx. *(German)* 8–36953
- three-dimensional model, cubic anisotropy effect 8–10170
- transition probability, system size depend., consequences for stochastic eqns. 8–41258
- tricritical phase transition, critical exponents, classical N-component spin systems 8–4579
- tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8–26681
- two-dimensional systems, phase transitions, theory 8–38811
- two-level atom, phase transition induced by laser field *(Russian)* 8–29924
- water, transient heat transfer (0-220°C, 1-10 bars) *(Russian)* 8–38183
- Al-Cr(Mn), struct. form. and phase transform. kinetics *(Russian)* 8–15359
- n-$Bi_{0.924}Sb_{0.076}$, one-ellipsoid to two-ellipsoid fermi surface transition in extended cryst. *(Russian)* 8–14657
- H-He fluid planets, molecular-metallic transition rel. to dynamics He distrib. 8–28555
- H-He fluid planets, phase diagram and transport props. 8–28554
- Zr-Al-Fe (8.9, 0.001 to 0.006 wt.%) Fe partitioning to Zr_2Al during peritectoid transformation 8–39784

phase transitions *see phase transformations*

phased arrays (antenna) *see antenna phased arrays*

phased locked oscillators *see parametric oscillators*

phi mesons
- dual unitarisation, renormalisation of trajectories with zero quantum numbers 8–21400

phi mesons continued
e^+e^- annihilations, radial excitations of ρ, ω, φ mesons 8−4866
$e^+e^- \rightarrow K_s^0K_l^0$, φ meson mass meas., ωφ interference obs. *(Russian)* 8−45935
K^-p, 10 GeV.c, prod. of φ and f′ 8−4874
$p+Be \rightarrow \varphi+X$, 400 GeV/c, φ decay modes, OZI rule 8−599
$\varphi \rightarrow e^+e^-$, decay widths from QCD *(Russian)* 8−45812
$\varphi \rightarrow \pi^+\pi^-$, search in $e^+e^- \rightarrow \pi^+\pi^-$ reaction *(Russian)* 8−45915
$\varphi \rightarrow \rho\pi$, dynamical calc., energy depend. of Zweig-rule violating couplings 8−33063
$e^+e^- \rightarrow \pi^+\pi^-\pi^0$, φ meson mass meas., ωφ interference obs. *(Russian)* 8−45935
philosophical aspects
see also humanities
1950s, philosophy and history of science 8−4452
causation analysis refinements rel. to revolutions in modern physics 8−12522
duality, fundamental development 8−36788
general relativity, initial value formulation, anti-Machian nature 8−8276
Helmholtz, H. von, evolution of empiricism, study of a universalist 8−8212
high energy physics paradigm analysis 8−20935
induction problem interpretation in approximation theory of truth *(German)* 8−12530
Mach's philosophy, genesis of relativity theory 8−8211
Polish logic and philosophy of science after Second World War 8−12529
quantum mechanical observables with continuous spectra, hidden variables problem 8−16690
quantum theory, philosophically different interpretations and their consequences *(Spanish)* 8−41202
research project methodology 8−12528
special relativity, relative simultaneity, empirical determ. 8−16642
statistical mechanics in classical physics, foundations 8−8334
phonographs *see gramophones*
phonon bottleneck *see phonons*
phonon-defect interactions
see also lattice localised modes
colour-centre-phonon many-mode interaction, absorption band shape, adiabatic approx. 8−2883
defect tunnelling, phonon assisted, in-band defect-induced phonon reson. modes effect 8−14419
diamond, natural, thermoluminescence, phosphorescence, defects, low temp. 8−11000
dislocation motion, soliton-like, piecewise linear force model 8−2119
multiphonon effects on dispersion, Faraday rot., associated with point imperfections 8−43839
Bi, deformed cryst., phonon scatt. by lattice defects, thermal cond. calc. 8−22802
$Ca(WO_4)_x(MoO_4)_{1-x}$, Raman scatt. line shape 8−10898
GdS, FCC metallic phase, Raman scatt., phonon density of states 8−19480
KCl, F-centre phonon many-mode interaction, absorption band shape 8−2883
KCl, phonon scattering on small radius colloids 8−38798
$Nb_{80}Mo_{20}$, $Nb_{75}Mo_{25}$, supercond., phonon cond. below 1k 8−14881
$Nb_{80}Ta_{20}$, supercond., phonon cond. below 1k 8−14881
TiC, high temp. thermal cond., ambipolar diffusion contrib. 8−26742
phonon dispersion relations
A15 compounds, coherence length and phonon softening 8−34587
alkali halide, lattice dynamics calc., extended three body force shell model 8−47491
alkali metal, crossing of dispersion curves in (ξ00) direction 8−38795
alkali metals, phonon dispersion and electron gas pressure, theory 8−2208
binary alloys, three mode, long wavelength optical vibr., appl. to Ge_xSi_{1-x} 8−6135
charge density distortions and lattice dynamics, appl. to Nb 8−30714
graphite, intercalation compound, C_8Rb, elastic and inelastic neutron scatt. 8−30597
inert gas, anomalous terms at small wavenumber 8−2210
interface plasmons, longitudinal optical phonons, multilayer struct. 8−19118
metal, in mag. field phonon spectrum, nonadiabatic effects *(Russian)* 8−19106
metals, BCC, phonon dispersion, modified de Launay model 8−34573
metals, Krebs and Cheveau models, three-body forces inclusion and equilibrium condition 8−47480
metals, lattice dynamics and three body interaction 8−10139
microscopic theory, anomalous terms at small wavenumber 8−2210
naphthalene-d_8, phonon dispersion meas. and calc. 8−2211
noble metal, phonon frequency determ. in noninteracting band scheme 8−47483
noncrystalline solid, dispersion relation of phonon-like excitations 8−18727
optical characts., bound polaron and phonon states *(Russian)* 8−39556
solid, phases I, II, acoustic phonon dispersion curve meas. by neutron inelastic scatt. 8−2212
solid, phonon dispersion effects on nonradiative transitions 8−43926
transition metal, cubic, phonon dispersion, Fielek and extended Cheveau models 8−22801
TTF-TCNQ, inelastic neutron scatt., re-examination 8−30721
TTF-TCNQ, Kohn anomalies, phonon dispersion curves 8−10133
TTF-TCNQ, phonon dispersion curve meas., Peierls transition exam. 8−10134
Ag, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Au, electron-ion pseudopot., form factor, liquid elec. cond., phonon dispersion 8−34785
Au, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Au, thermal properties and Gruneisen parameter, Toya's first principle approach 8−38806
Bi_2Te_3, lattice vibrs. coherent inelastic neutron scatt. meas. 8−34576
CaBr(Cl)(I), Gruneisen γ and other thermodynamic props. at zero and elevated press. 8−43142
Cd, phonon dispersion relations, specific heat by modified Cheveau model 8−38792
$CeD_{2.12}$, phonon dispersion relations 8−30716
phonon dispersion relations continued
Co, lattice dynamics and compression curves 8−38793
$Co_{0.65}Ni_{0.35}$, precursory phonon obs. of FCC to HCP transition 8−43082
Cr, lattice dynamics, phonon dispersion and atomic force constants, phenomenological model 8−26640
Cu, interatomic pot., vacancy form., migration energy from phonon dispersion curves 8−42950
Cu, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Cu, resonant model potential and phonon frequencies 8−30713
CuCl, phonon dispersion curves determined by neutron scatt. at 4.2K 8−6132
β-CuI, phonon spectra calc. 8−10138
EuSe, mag. phase depend. Raman scatt. 8−10886
Ge_xSi_{1-x}, long wavelengths optical vibr. 8−6135
He FCC, high press., inelastic neutron scatt. 8−10255
Hg, solid, neutron inelastic scatt. 8−14410
$Hg_{3-\delta}AsF_6$, one-dimens. phonons and phase-ordering phase transition, neutron scatt. expts. 8−26644
K, phonon spectrum calc., microscopic theory of force constants 8−26647
KCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
KCN, lattice dynamics in disordered cubic phase 8−38794
KI, dispersion of phonons calc. 8−26646
$K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, Kohn anomalies, phonon dispersion curves 8−10133
$K_{0.33}WO_3$, hexagonal, neutron scatt. obs. 8−14411
Li, phonon frequency, liquid electrical resist. and interionic pair potential 8−10140
LiH(D), elastic constants, lattice dynamics and phonon dispersion 8−30711
Li_3N, IR and Raman spectra and lattice dynamics 8−48177
Mg, HCP, appl. of model for lattice dynamics 8−22795
Mo, phonon dispersion, anomalous struct., tight-binding calcs. 8−10137
N_2 monolayer on graphite, phonon dispersion curves for postulated four sublattice struct. 8−47667
NH_4I, ND_4I, lattice dynamics calcs. 8−6133
NaBr, dispersion of phonons calc. 8−26646
NaCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
NaCN, lattice dynamics in disordered cubic phase 8−38794
NaCl, far IR dispersive-reflection meas. at room temp., comparison with calc. 8−35139
Na_2S, phonon dispersion curves, inelastic neutron scatt. obs. *(German)* 8−14414
Nb, charge density distortions and lattice dynamics 8−30714
Nb, Nb-Mo alloys, phonon dispersion, anomalous struct., tight-binding calcs. 8−10137
NbC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
NbC, supercond., phonon anomalies, microscopic theory 8−14867
Ni, phonon dispersion curves, θ-T curves 8−26642
$Ni_{1-x}Pt_x$, disordered phonon dispersion relations, neutron inelastic scatt. 8−43085
Pb, estimation of stacking fault and twin boundary energies using phonon dispersion curve 8−43031
Pb, phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
PbF_2, inelastic neutron scatt. study of phonon dispersion relation 8−30712
$Pb_{1-x}Sn_xSe$, gapless state and phonon spectrum *(Russian)* 8−30715
Pd, phonon dispersion curves, θ-T curves 8−26642
Pd-D alloys, phonon dispersion relation meas., elastic constants and Debye temp. 8−26639
$PdD_{0.63}$, inelastic neutron scatt. line shapes, Pd-D, D-D force consts. 8−47481
Pt, phonon dispersion curves, θ-T curves 8−26642
Pt, phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
$(SN)_x$, acoustic phonons, inelastic neutron scatt. obs. 8−6136
$SrGa_2$, layered, dispersion of acoustic phonons, inelastic neutron scatt. 8−47484
Th, crystal equilib., lattice dynamics 8−47479
Th, one parameter model pseudopotential calc. 8−26643
Th, phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
TiC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
TiN, phonon dispersion curves, soft-mode behaviour, inelastic neutron diffr. 8−43083
V, lattice dynamics, phonon dispersion and atomic force constants, phenomenological model 8−26640
V_3Si, lattice dynamics, inelastic coherent neutron scatt. 8−26645
YS, soft-mode behaviour in phonon dispersion, inelastic neutron scatt. meas. 8−38807
ZnS, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnSe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnTe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895

phonon drag
alkaline earths, cubic, deviations from Wiedemann-Franz law 8−39086
graphite, cryst., thermoelec. power, anomalous phonon drag effect 8−19065
metal, phonon drag magnetothermoelectricity, semiclassical theory 8−6354
metals, low temp. elec. resist., comparison between first principles form factor and empirical form factor 8−2463
semiconductor, Nernst-Ettingshausen effect, thermopower, strong elec. field 8−23122
semiconductor filament, thermoelectric power 8−19069
semimetal, phonon drag, role of surface in thermoEMF *(Russian)* 8−47819
thermal phonon drag by coherent acoustic waves, Umklapp processes 8−14417

phonon drag continued
wurtzite structure semiconductor, transport in longit. quantizing mag. field 8−26891
Al, band struct. effects on electrical and thermal cond. 8−34820
Al, low temp. thermopower of Frenkel defects 8−19024
Al, Nernst-Ettingshausen coeff., electron-phonon Umklapp scatt. 8−26848
As, electrical and thermal props. 8−14747
n-Ge, drag effects, heated electron-phonon system 8−23078
n-Ge, elastically deformed, anisotropy of thermoelec. effect 8−19066
Ge, electron-hole drops, kinetics of spatial distrib. *(Russian)* 8−43312
$Hg_{2.86}AsF_6$, thermoelectric power 8−34852
n-InSb, thermoelec. power in longit. quantising field, phonon drag component 8−19064
p-Si:B, thermoelec. power, 20-300K 8−19067

phonon-electron interactions *see electron-phonon interactions*

phonon-exciton interactions
anthracene mol. cryst., exciton-lattice interaction and exciton absorption line shape 8−18968
anthracene-TCNB charge transfer crystal, EPR spectra of triplet excitons, and Raman spectra 8−26817
9-cyanoanthracene, cryst., excimer emission, spectra, photochem. and multiphonon processes 8−10914
(1,4)-dibromonaphthalene, triplet exciton scatt., absorpt. spectra 8−6696
p-dihalobenzene, mixed cryst., Raman spectra, phonons and vibr. excitons, criteria for solid solns. 8−43840
exciton drops, effect of repulsion on formation 8−23029
hot exciton scattering and decay due to interaction with acoustic phonons 8−47709
molecular crystal, exciton transport, variational method 8−30870
molecular crystals, exciton-lattice interaction and exciton absorption line shape 8−18968
molecular crystals of 1-D, linear approx. 8−18717
naphthalene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
organic solids, cryst. and amorphous, optical spectra, Urbach rule, struct. disorder effect 8−23479
phenanthrene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
phonon effect on centre of mass or motion, relative motion of particles in exciton 8−6277
phonon wind effect, interaction of electron-hole drops with ballistic phonon in heat pulse 8−6279
polar semiconductor, multiphonon cascade theory of light scatt. 8−19490
polar semiconductors, effective Hamiltonians and binding energies of Wannier excitons 8−34777
Raman effect in solids, interacting elementary excitations, review 8−43846
resonant secondary radiation of excitons weakly interacting with phonons, theory 8−31241
scattering and decay of hot excitons interacting with longitudinal optical phonons 8−34774
semiconductor, exciton-phonon energy transfer 8−18715
semiconductor, impure, rel. to exciton absorpt. line shape calc. *(Russian)* 8−10934
spectral parameter calculation for exciton-phonon system *(Russian)* 8−43311
superconductor and normal metal, Raman nound scattering *(Russian)* 8−23199
CdS, free-exciton multiphonon luminesc. 8−6741
CdSe, free-exciton multiphonon luminesc. 8−6741
CdSe:Ag, In, cryst., photocurrent and electroreflection, 77 to 300K *(Russian)* 8−23136
Cu_2O, fine struct. of exciton spectrum 8−18972
EuO(S)(Se), rel. to spin assisted Raman scatt. theory 8−43866
$Ga_x In_{1-x}P$, localised exciton-phonon complex as intermediate state in light scatt. 8−39543
$GaAs_{1-x}P_x$, localised exciton-phonon complex as intermediate state in light scatt. 8−39543
Ge, acoustic phonon scattering by electron-hole drops, deform. potential 8−10360
Ge, electron-hole drops size effect on far IR absorption and scatt. *(Russian)* 8−10903
NaI, exciton-phonon polarisation interaction *(Russian)* 8−35195
$NaNO_2$, hot luminescence 8−10976
PbI_2, photolum. and reflectivity temp. depend., cryst. anisotropy effect on electron-phonon interaction *(Russian)* 8−15225
Se, trigonal, cathodolum. at 10K *(German)* 8−2923
Si, amorphous, phonon interaction in luminescence 8−43927
Si, intrinsic, two-phonon assisted free exciton recomb. radiation 8−2922

phonon-impurity interactions
see also lattice localised modes
alkali halide: O^{2-}, photoluminesc. spectra, phonon using struct. *(Russian)* 8−2912
cubic metals, impurity-host force-constant changes from Mossbauer data, review 8−48097
ferroelectric phase transition, by impurity carriers, electron-phonon interaction *(Russian)* 8−48134
molecular crystal with isotopic impurity molecule, phonon spectrum under Fermi resonance 8−34583
multiphonon nonradiative transition rates, quadratic impurity-phonon coupling 8−23506
nonresonance interaction parameters of rare earth ions, luminescence kinetics obs. *(Russian)* 8−31246
paramagnetic ion, reson. phonon scatt. 8−18716
particle dechannelling with phonon scatt., quantum theory 8−18695
phosphate glass:Nd^{3+}(Yb^{3+}), nonresonance interaction parameters of rare earth ions, luminescence kinetics obs. *(Russian)* 8−31246
soliton-impurity scatt. in Toda lattice, localised modes 8−14420
tunnelling, phonon assisted, in-band defect-induced phonon reson. modes effect 8−14419
zero-phonon transitions, spectral characts. 8−2884
$Al_{10}V$-Ga, dil., well defined local modes 8−26648
$CaWO_4$:Nd^{3+}, thermal behaviour of shape and width of 9145 Å laser line 8−6755
Ge, hole diffusion 8−6372
KCl:CN^-, phonon-internal mode hybridisation, neutron scatt. 8−2217

phonon-impurity interactions continued
K_2SO_4:XO_4^{2-}, X=Cr, Se, Mo, W, lattice-impurity interactions, IR spectra 8−19522
MgO:Cr^{2+}, reson. scatt. of phonons by ions 8−18716
MnF_2, thermal cond., temp. depend., role of reson. scatt. of phonons by OH^- defects 8−38889
MnF_2, thermal cond. mechanism 8−38890
NaCl, doped by Ca^{++} and OH^-, thermal conductivity in 5-190K range 8−14520
Na_2SO_4:XO_4^{2-}, X=Cr, Se, Mo, W, lattice-impurity interactions, IR spectra 8−19522
Nb, thermal cond., 0.3-20K, temp. and impurities effects 8−14883
PbSe:Tl, scatt. of holes and phonons by impurities 8−19068
Ta, thermal cond., 0.3-20K, temp. and impurities effects 8−14883
V, phonon assisted tunnelling in impurity induced lattice strains 8−47601

phonon-magnon interactions
antiferromagnet, mechanism for hard excitation of spin waves *(Russian)* 8−19235
antiferromagnet, sound damping by phonon-magnon interaction, high Neel temp. *(Russian)* 8−43626
ferromagnet, spin reorientation and magnon-phonon hybridization 8−19233
YIG, spinwave dispersion curves 8−19230

phonon-phonon interactions
see also Umklapp process
arsenates, ferroelec. phase, E-mode splitting 8−15163
graphite, Poco AXM-5Q1, thermal and elec. transport props., 4-3000K 8−6375
hydrostatic deformation effect, rot. of polarisation vectors of lattice vibrs. calc. 8−18721
molecular crystal, two-phonon resonances, bound states absorpt. coeff. 8−47486
molecular crystal, two-phonon resonances, bound-states, general theory 8−47485
Peierls-Frohlich state on many-phonon-coupling model, dynamical props. 8−47773
plastic crystal, dipolar autocorrelation function, phonon contrib., IR absorption 8−42928
polar semiconductor, secondary emission, multiphonon cascade process *(Russian)* 8−2850
semiconductor, absorption of EM and sound waves in strong coupling case, effect of acoustic superlattice 8−26630
superconducting properties, effects of anharmonism *(Russian)* 8−39255
thermal conductivity, lattice, contrib. due to correction term, generalised Callaway integral 8−2318
thermal phonon drag by coherent acoustic waves, Umklapp processes 8−14417
Al_2O_3:Ni, heat transfer at low temp. 8−38888
As, amorphous, phonon frequency distrib. 8−30723
As, electrical and thermal props. 8−14747
AsH_3, plastic cryst., dipolar autocorrelation function, phonon contrib., IR absorption 8−42928
As_2S_3, crystalline, two phonon vibrational spectra 8−35142
As_2S_3, two-phonon vibrational spectra, crystalline and amorphous forms, Raman and IR spectra 8−39537
BeF_2-KF-CaF_2-AlF_3:Nd^{3+} (Er^{3+}) glass, multiphonon relax., fluoresc. obs. 8−15219
$Ca(WO_4)_x(MoO_4)_{1-x}$, Raman scatt. line shape 8−10898
Ge, lattice thermal conductivity, contrib. due to correction term, generalised Callaway integral 8−2318
Ge, lattice thermal conductivity three phonon processes 8−34662
Ge, US attenuation and nonlinearity const., temp. depend. 8−43075
GeO_2 amorphous, phonon frequency distrib. 8−30723
KH_2PO_4, damping of transverse acoustic and ferroelec. modes 8−14413
KH_2PO_4, depolarised light scatt., dynamic central peak 8−10858
KI, far IR, quartic damping, and quasiselection rule for gap compounds 8−31195
$LiNbO_3$, IR reflectivity temp. depend. 8−27202
Mg_2Ge, three-phonon relaxation rate and phonon conductivity 8−14416
Si, lattice thermal cond., 2-1400K, phonon scatt. calcs. 8−2311
SiF_4, mol. cryst., coupled phonon modes and IR band shapes 8−26641
UCl_5, single crystal, thermal broadening of IR energy levels 8−35121
$Zn_4O(BO_2)_6$, phonon coupling exam. by Raman spectroscopy 8−30719
Zn_3P_2, multiphonon absorption in IR spectra 8−39554

phonon-plasmon interactions
anomalous EM fluctuations, quantum theory 8−14679
interface plasmons, longitudinal optical phonons, multilayer struct. 8−19118
polar semiconductor, optical phonon-magnetoplasmon interface oscills. 8−43467
p-PbTe film, for IR magneto-optics, 8-30K 8−23543
SnS, coupling of plasma waves with optical phonons 8−31204

phonons
see also crystal surface and interface vibrations; electron-phonon interactions; lattice phonons; phonon-defect interactions; phonon dispersion relations; phonon-exciton interactions; phonon-impurity interactions; phonon-magnon interactions; phonon-phonon interactions; phonon-plasmon interactions; spin-phonon interactions; tunnelling spectra; tunnelling spectroscopy; vibrational states in disordered systems
A=18 nuclei, negative parity spectra, phonon dynamic interaction propagator approach 8−8739
biological functions of LF phonons *(Chinese)* 8−24024
Bose fluid, structure factor determ. 8−34667
cancerous cell culture, phonons, long-range coherence, microwave effects 8−35816
generation and detection expts. with supercond. tunnelling junctions, sources of losses 8−18718
glasses, acoustic and dielec. props. at low temps., review 8−6128
polymers, thermal conductivity, temp. crystallinity and orientation depends., review 8−10234
spectrometer, appl. of supercond. Al-PbBi tunnel junction 8−47477
superfluid Fermi system, Bose spectrum, hydrodynamic action functional *(Russian)* 8−14534
AgBr melt, Raman spectra, rel. to sublattice melting in α-AgI 8−10882

phonons continued
AgCl melt, Raman spectra, rel. to sublattice melting in α-AgI 8−10882
He, film, surface backscatt. phonon pulse time delay, heat-sensitive detector obs. 8−22927
^{3}He-^{4}He dilute mixture, ballistic phonons, transition to second sound 8−10249
^{4}He, elementary excitations, Brillouin-Wigner perturbation theory with correlated basis functions 8−2319
^{4}He, liq., condensate fraction, low temp. and density calcs. 8−43196
^{4}He, liq., excitations produced by impinging ^{4}He atomic beam 8−10241
PbCu film, amorphous supercond., phonon heat transport, thermal cond. meas. 8−19181
Rb, liq., phonons, collective modes calcs. 8−2218

phosphate glasses
for iron and vanadium phosphate semiconducting glasses see amorphous semiconductors
absorption spectrum of Nd^{3+} ion, chem. composition effects, group IV element effects *(Polish)* 8−10932
alkali, mech. and dielec. relaxs. and interpet. 8−27159
aluminophosphate, alkali free, comp. effect on elec. cond. 8−26725
electron detection efficiency of phosphate glass channel multiplier 8−41898
electron-irradiated, charge accumulation, comp. depend. 8−2159
fluorescence properties, energy transfer for Sb^{3+}, Dy^{3+} dopants 8−6778
fluorophosphate optical glass melt, disintegration of vitreous C 8−30101
fluorphosphate glass for SHIVA laser, nuclear fusion reactor appl. 8−37440
heat treated, thin foil prep. for TEM obs. 8−7154
laser amplifiers and optical isolators 8−25885
metaphosphate:Ag, dosimeter, optical absorpt. and radiophotolum., effect of temp. 8−40333
nonresonance interaction parameters of rare earth ions, luminescence kinetics obs. *(Russian)* 8−31246
nuclear track detector, heavy ions and fission fragments energy meas. 8−17487
optical filter glasses with band-pass characts. for red spectral region 8−25936
phase separated, EPR rel. to struct., elec. and opt. props. 8−23333
phosphate glass:Yb^{3+}, impurity centres, migration of excitations, math. modelling 8−48225
rare earth activated, polarised luminesc. 8−48224
secondary and tertiary coordination number of Co^{2+} and chem. composition *(Polish)* 8−9960
sodium metaphosphate glasses, γ-irrad., ESR 8−23339
thermo-optical properties Li_2O and Na_2O effects 8−18029
track detectors, nuclear phys., spectrometric appls., track diameter 8−17466
AgI-Ag_2O-P_2O_5 system, glass form. and superionic cond. characts. 8−26722
Al^+ ion coordination study by $AlK_{\alpha1,2}$ X-ray fluorescence spectra *(Japanese)* 8−7308
Al_2O_3-B_2O_3-P_2O_5 system, glass formation by laser melting 8−44074
Al_2O_3-P_2O_5:Nd^{3+}, high Nd conc., spectroscopy and lasing obs. 8−46609
Al_2O_3-P_2O_5-Mg(Ca)(Sr)O glasses, Na^+, Sr^{2+} diffusion coeffs. rel. to temp. 8−30787
$Al(PO_3)_3$, vitreous struct. 8−26443
CuO-CaO-P_2O_5 system glasses, DC cond., hopping transport, 300 to 620K 8−23096
Fe_2O_3-P_2O_5 system, vitreous, struct. obs. using neutron scatt. 8−22667
K_2O-Al_2O_3-P_2O_5-Nb_2O_5 glasses, struct. singularities, IR spectra *(Russian)* 8−2861
MoO_3-P_2O_5, varying compositions, DC conductivity, high temp. range, conduction due to polaron hopping 8−6376
$Na_5P_3O_{10}$, γ-irrad., PO_3^{2-} EPR obs. 8−27091
P_2O_5-GeO_2 glass, absorption spectrum of Nd^{3+} ion, chem. composition effects, group IV element effects *(Polish)* 8−10932
TiO_2-P_2O_5 reduced glasses, prep., elec. transport, chem. anal., DC, AC cond., seebeck coeff. 8−30924
V_2O_5-P_2O_5, DC conductivity, high temp. range 8−6376
V_2O_5-P_2O_5-CaO glass with metal electrodes, elec. characts., thermal conditions effect *(Russian)* 8−47884
W-glass discs, plasma prod. processes 1.06 μm laser irrad. 8−18431
WO_3-P_2O_5, DC conductivity, high temp. range 8−6376
WO_3-P_2O_5, DC elec. cond., 100-400K 8−39106

phosphorescence
see also fluorescent screens; MIDP; phosphors
acenaphthene, vibronic spectra, electronic-vibr. interactions 8−1021
acetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
acetophenone, triplet-triplet energy transfer, naphthalene-d_8, in EPA rigid soln., donor phorphoresc. decay 8−10971
3- and 4-acetylamino-N-methylphthalimide, in alcoholic solns., phosphoresc. decay laws 8−17709
anthracene/TCNB, charge-transfer cryst., fluoresc., 1.2-300K, mobile triplet excitons 8−43913
anthracenes, long-lived luminesc. in solid state *(German)* 8−23528
aromatic hydrocarbons, aqueous micellar soln., triplet state room temp. phosphoresc., hydrophillic quenchers 8−9181
benzaldehyde, and deuterated forms, in p-xylene, 4.2K, $n\pi^*$ phosphoresc. assignments 8−9197
benzaldehydes, in mixed cryst., T_1/T_2 interstate interactions, modulation polaris. phosphoresc. spectra, 4.2K 8−9185
benzene-d_0,-d_6, phosphoresc., Boltzmann population and spin-lattice relax., decay processes 8−31230
benzil triplet-anisole, reversible exciplex form., phosphorescence, photostationary and transient obs., simulation 8−9182
biacetyl, SO_2 photosensitised phosphoresc., triplet energy transfer 8−25608
biological cells, phosphoresc. microscopy 8−3454
p-chlorobenzene, and deuterated forms, in p-dibromobenzene and p-dimethoxybenzene, 4.2K, $\pi\pi^*$ phosphoresc. assignments 8−9197
coronene, solution in bromobutane, Zeeman effect in phosphoresc. at laser $T_1 \leftarrow S_0$ excitation 8−37679
3,6-diacetylamino-N-methylphthalimide, in alcoholic solns., phosphoresc. decay laws 8−17709

phosphorescence continued
diamond, natural, thermoluminescence, phosphorescence, defects, low temp. 8−11000
diarylalkane, in isooctane soln. triplet excimer form., phosphoresc., delayed fluoresc., triplet-triplet absorption 8−25597
4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
p-dibromobenzene, cryst. electronic and vibr. energy transfer and relax. 8−31229
diphenyl:(benzophenone, naphthalene), triplet exciton diffusion, phosphoresc. obs. 8−10964
diphenylene sulphide, phosphoresc. vibronic struct., solvent heavy at. effect 8−17710
2,5-diphenyloxazole, phosphoresc., 77K, solvent effect 8−42118
DNA, luminescence, excitation wavelength depend. in UV/VUV region 8−31768
gelatin in nuclear photoemulsion, effect of pulsed elec. field on physical and mech. props. *(Russian)* 8−869
α-(β-)heptacyclene, vibronic spectra, electronic-vibr. interactions 8−1021
hexamethylbenzene charge-transfer complexes, heavy atom effect on radiative and radiationless transitions 8−25607
hydroxypyridines, phosphoresc. emission, polarisation and lifetimes 8−31232
8-methoxypsoralen detection in ocular lens, rel. to psoriasis treatment with photosensitising agent 8−15937
12-methoxypyridine, phosphoresc. emission, polarisation and lifetimes 8−31232
molecular crystal, coherent 1-dimens. exciton transport and impurity scatt. 8−14666
molecular crystals, triply-excited impurity centres, effect of acoustic wave on phosphorescence 8−27115
molecule, complex, Zeeman effect in phosphoresc. at laser $T_1 \leftarrow S_0$ excitation 8−37679
naphthalene, isotopic mixed cryst., phospheresc., photoselection of pure initial triplet states 8−35189
naphthalene-h_8, and -d_8 mixed crystals, phosphoresc. excitation spectra of clusters 8−43914
2-naphthalensulphonate, fluoresc. and phosphoresc., external heavy atom effect 8−29812
α-NPO in polystyrene, 77K phosphorescence *(Russian)* 8−27286
phthalic anhydride and halogen derivatives, phosphorescence spectra *(Japanese)* 8−48217
platinum phthalocyanine single cryst., triplet state Zeeman effect, phosphoresc. 8−6747
porphinatocopper(II), phosphoresc., appl. to porphyrin 8−11574
proteins, triplet state energy transfer 8−20143
proteins, UV irradiated, luminesc. quenching, EPR and absorpt. spectra 8−15768
pyrazine, lowest triplet state, phosphoresc., intersystem crossing 8−5269
pyrene-PMDA complex, electron-phonon interaction, phosphoresc. 8−48208
1,2,4,5-tetrachlorobenzene, in durene host, phosphoresc., cross-relax. between spin levels 8−9186
1,2,4,5-tetrachlorobenzene, mol. cryst., coherent 1-dimens. exciton transport and impurity scatt. 8−14666
time resolved phosphorimetry, phosphoroscope, analogue switch type 8−45725
1,1,1-trifluoroacetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
xanthione, solns., triplet state quenching by ground state xanthione 8−42180
xanthone in n-hexane, 77 and 4.2K, phosphoresc. spectra, triplet lifetime 8−21957
CaS-Bi, Mn, phosphors, thermoluminesc., phosphoresc. 8−2928
Cr complex $[Cr(NCS)_{6-n}(DMSO)_n]^{n-3}$, spectra and decay times 8−10970
1,6-di-(N-carbazolyl)-2,4 hexadiin, cryst. struct., luminesc., γ-ray polymerisation 8−18629
1,3-diphenylpropane, in isooctane soln., monomer phosphoresc., low binding energy triplet excimer not obs. 8−25597
KBr:P, colour centre fine struct., ODMR 8−6604
KCl:P, colour centre fine struct., ODMR 8−6604
KCl(Br), triplet state lifetime of F_2 centre, mag. field effect 8−35177
Mn complex, $[Mn(urea)_6](UO_4)_2$, thermal expansion coeff., crystal field parameters, phosphoresc., absorv., excitation spectra 8−43932
SO_2 ($^3B_1$), phosphorescent lifetimes, press. saturation effect on quenching by CO_2, CO, N_2 8−1017
ZnS:Cu, polycryst. phosphor, excitation storage, recombination barrier participation 8−27316
ZnS:Cu,Pt phosphors, photoluminesc., thermoluminesc. 8−43915

phosphorescence microwave double resonance *see PMDR*

phosphorescence microwave photoexcitation spectroscopy *see PMDR*

phosphors
see also fluorescent screens; luminescence
alkali halide:Eu^{2+} phosphor, explosive loading method form., spectra, luminesc. characts. *(Russian)* 8−35212
alkali halide phosphors, Tl^+ doped, uniaxial stress effects 8−48202
aluminate:Ce^{3+}, hexagonal, luminesc. rel. to host lattice structure 8−6776
anthracene:2-chloroanthracene, electrolum., voltage- and freq.-brightness characts., dopant conc. depend. 8−2916
cathodluminescence measurement techniques 8−41354
cathodoluminophor, nature of ageing 8−10994
CRTs appl., observer perception improvements 8−24076
mammographic X-ray screen sensitivity and resolution 8−7449
physical chemistry, optimum conditions for producing and examining phosphors 8−10940
radiographic screen-film system comparisons, fluoresc. X-ray source 8−24132
rare earth activated phosphors, for low press. fluoresc. lamps, luminesc. characts. 8−10960
rare earth oxyhalides and oxysulphides, thermochromic luminescent mats. *(Russian)* 8−48230
rare earth phosphor development survey 8−6781
rare earth phosphor intensifying screen speed gain 8−7447
scintillation beta counting of $^{90}Y(^{90}Sr)$, improved method with reusable phosphors 8−9024

phosphors continued
  semiconductor, interpretation of thermolum. and TSC, extensions of conventional model 8−27335
  sensitised luminescence in crystals, with rare earth activators, computer simulation 8−6723
  thermoluminescent, for radiation dosimetry and dating 8−11004
  X-ray image intensifier output screens 8−4755
  zeolite, new crystal phosphors *(Russian)* 8−2903
  BaFCl:Eu X-ray intensifying screen 8−11735
  $CaF_2:Mn^{2+},Yb^{3+}$, efficient luminesc. energy transfer from Mn^{2+} to Yb^{3+} 8−19536
  $CaF_2:Mn^{2+},Yb^{3+}$, luminescent energy transfer efficiency obs. 8−6777
  $CaMoO_4$, luminesc. efficiency, temp. and high-press. 8−23507
  $Ca_5(PO_4)_3F:Nd^{3+}$ site symmetries, EPR and spectral obs. 8−6571
  $Ca_{10}(PO_4)_6X_2$, halophosphate luminophor, forming during annealing of briquetted mixture 8−11173
  $Ca_{10}(PO_4)_6X_2$:Sb, halophosphate luminophor, causes of Sb loss during synthesis 8−11172
  CaS optical flash stimulation, optical absorption, MCD, thermally stimulated luminescence expts. 8−10951
  CaS:Zr, Gd phosphors, thermoluminesc., trap distrib., activator effects 8−2929
  CaS-Bi, Mn, phosphors, thermoluminesc., phosphoresc. 8−2928
  $CaSO_4$:Dy phosphors, photomag. susceptibility 8−2724
  $CaWO_4$, luminesc. efficiency, temp. and high-press. 8−23507
  $CdMoO_4$, luminesc. efficiency, temp. and high-press. 8−23507
  CdS, effect of halide (NaCl, $CdCl_2$, $CdBr_2$, CdI_2) and polysulphide (Na_2S_x, K_2S_x) on recrystn. 8−11171
  CdS, single cryst., surface treatment effects on photoluminesc., struct. and optical props. *(Russian)* 8−15224
  CdS-based, microstruct. and luminesc. efficiency 8−10959
  CdSe, effect of halide (NaCl, $CdCl_2$, $CdBr_2$, CdI_2) and polysulphide (Na_2S_x, K_2S_x) on recrystn. 8−11171
  $CdWO_4$, luminesc. efficiency, temp. and high-press. 8−23507
  Eu^{2+} activated phosphors, luminesc. efficiency, temp. and high pressure 8−23508
  Gd neutron radiographic amplifying screen sensitivity 8−7448
  $GdNbTiO_6:Eu^{3+}$ emission under UV excitation 8−6770
  $HgMoO_4$, luminesc. efficiency, temp. and high-press. 8−23507
  KCl-KBr:Mn mixed cryst. system for thermoluminescence dosimetry, glow curves, dose response 8−24150
  $KI:Tl^+$ type, press. effects on triplet relaxed excited states, quadratic Jahn-Teller interaction 8−23510
  LaOBr:Tb phosphor X-ray mottle reduction by multilayer screen construction 8−4756
  LaOBr:Tm X-ray emission spectra and screen-film system design 8−11024
  $La_2O_2S:Yb^{3+},Er^{3+}$, IR excited visible luminesc. of Er^{3+} 8−2910
  $LaSiO_3F(Cl)(Br)$, phosphor host, luminesc. and struct. props. 8−48212
  $LiGaO_2$:Fe IR emitting phosphor preparation and props. 8−6789
  $MgWO_4$, luminesc. efficiency, temp. and high-press. 8−23507
  O containing, cathodoluminescence, photoluminescence, afterglow excitation spectra 8−10952
  SnO_2:Eu powder phosphor, prep., low energy electron excitation 8−39608
  $YAG:R^{3+}$, CRT and X-ray phosphor lattice-activator energy transfer model 8−6792
  $YNbTiO_6:Eu^{3+}$ emission under UV excitation 8−6770
  Y_2O_2S:Tb, cathodoluminesc. efficiency at low electron energy 8−6790
  $YSiO_3F(Cl)(Br)$, phosphor host, luminesc. and struct. props. 8−48212
  $(Y_{0.80}Yb_{0.19}Er_{0.01})F_3$ phosphors, IR to visible conversion 8−48210
  $(Y_{0.80}Yb_{0.19}Ho_{0.01})F_3$, IR to visible conversion 8−48210
  (Zn, Hg)S:Cu, Cl, effect of superposition of two sinusoidal fields and freq. on electroluminesc. 8−39606
  $Zn_xCd_{1-x}S:Cl, Cu^+(Ag^+)$, high pressure luminesc. 8−19533
  ZnO:Er,Ag, photoluminescence and electroluminescence 8−27327
  ZnS electroluminophors, ageing effects *(Russian)* 8−15231
  ZnS, interimpurity high press. luminesc. 8−19532
  ZnS, optical flash stimulation, optical absorption, MCD, thermally stimulated luminescence expts. 8−10951
  ZnS, rare earth activated phosphor, scintillation mechanism *(Russian)* 8−48231
  ZnS:Ag, electroluminesc., surface barriers *(Russian)* 8−2919
  ZnS:Ag,Sm, recomb. centre interaction, luminesc. quenching 8−10946
  ZnS:Ag phosphor prep., physicochemical investigation of processes 8−11170
  ZnS:Cu, H, double band phosphor, electrolum., −100 to +100°C 8−10987
  ZnS:Cu, polycryst. phosphor, excitation storage, recombination barrier participation 8−27316
  ZnS:Cu,Al phosphor, shallow hole traps 8−31237
  ZnS:Cu,Pt phosphors, photoluminesc., thermoluminesc. 8−43915
  ZnS:Cu phosphor, electric field quenching of photoluminesc. and flash-like rise in luminesc. 8−2911
  ZnS:Mn on SnO_2/glass transparent conductive base, surface morphology effects on electroluminesc. *(Russian)* 8−48238
  $ZnS:Pb^{2+}(Mn^{2+})$, high press. luminesc., localised excitations 8−19534
  ZnS-based, microstruct. and luminesc. efficiency 8−10959
  ZnS-CdS phosphor coating for large-screen IR visualiser 8−18070
  ZnS-CdS:Tm,Ni, recomb. centre interaction, luminesc. quenching 8−10946
  ZnS-Mn sublimated phosphor films, annealing effects *(Russian)* 8−43949
  ZnS.CdS, flux growth, processes accompanying roasting of CdS+NaCl 8−23590
  ZnSe:Cu, Cl, high press. luminesc. 8−19532

phosphorus
  see also nuclei with ......
  atom, excited config., Hulthen and Slater type 2d functions 8−41972
  chemisorption on Cu, Auger spectra 8−43248
  determination, in organic media, using at. absorption with graphite atomiser, sample prep. 8−31729
  determination, in phosphosilicate glass passivation layer, SEM analysis and interpretation 8−35759
  dietary intake, effect on ^{90}Sr balance in man 8−15911
  diffusion in Si, influence of dislocations 8−18840
  diffusion in W, 1880-2180°C *(Russian)* 8−43182
  implantation in GaAs, influence of damage on diffusion 8−6082
  interstellar abundance towards 20 stars, Copernicus obs. 8−36646

phosphorus continued
  intestinal absorption of Ca and P in rat, simultaneous in vivo determ. using ^{47}Ca and ^{32}P 8−48882
  life on primitive Earth, P availability 8−20518
  nuclear thin red target preparation 8−46196
  reaction with Ti, at high temp. 8−44260
  segregation to free surface in ferritic Fe-Ni-Cr-C, 723 to 823K 8−48411
  $Si:P^+$, ion-implanted, annealing characts., X-ray diffr. exam. 8−14372
  Texas impoundments, critical levels of P and N_2 8−11929
  white, dendritic solidification, fluid flow effect 8−11215
  $Cd_{1-x}Mg_xTe$:P, luminescence centres, photoluminesc. meas. 8−31236
  CdS:N, P, As, Sb, Bi photoluminescence obs. 8−10965
  Ge:P, doping of epitaxial layers, in chloride and hydride processes 8−43036
  n-Ge:P,Ga, compensated, uniaxially compressed, anisotropy of mm. and submm. wave absorpt. 8−19074
  KBr:P, colour centre fine struct., ODMR 8−6604
  KCl:P, colour centre fine struct., ODMR 8−6604
  P III, UV and vis. spectrum, ionisation limit calcs. 8−936
  P VI, UV spectrum, anal. 8−17595
  P XIV, intercomb. line obs., in laser-produced plasma 8−9106
  P_2, $(A^1\Pi_g \rightarrow A'^1\Sigma_u^-)$, IR emission spectra, Fourier spectroscopy, mol. parameter determ. 8−42056
  P_2, vertical valence ionis. pot., many-body Green's functions 8−22051
  P_4, allowed multiplets, coordinate wavefunctions 8−33444
  P_4, closed-shell SCF calcs., mol. symmetry 8−41930
  $P(P^+)(P^{2+})$, static quadrupole polarisability and shielding factor, Hartree-Fock calc. 8−41950
  ^{31}P NMR of DNA in nucleosome core particles of chromatin 8−40112
  Si, floatzone, P doping by thermal-neutron irradiation 8−22750
  Si:B,P, high conc. diffusion without disloc. generation 8−10072
  Si:P, absorpt. due to creation of bound excitons 8−23025
  Si:P, acceptor bound multiexciton complex recomb., shell model, luminesc. line splitting 8−6275
  Si:P, and of P diffused layers 8−38736
  Si:P, defects, SEM in EBIC mode vs. HVEM images 8−9923
  Si:P, dislocated crystals, DC conductivity, Hall effect, energy spectrum 8−10400
  Si:P, dislocated crysts., microwave cond., localised electron energy spectrum 8−14694
  n-Si:P, doping, by zone melting using solid dopant source 8−43035
  Si:P, ESR-induced changes in DC resistance 8−35037
  Si:P, effect of annealing on charge carrier conc. on floating zoned crystals 8−47805
  Si:P, electrical conductivity oscillation, effect of dislocations 8−6388
  Si:P, exciton two-electron luminesc., temp. and impurity-conc. depend. 8−39585
  Si:P, expt. evidence against shell model of bound multiexciton complexes 8−10368
  n-Si:P, heavily depend., spin-lattice relax. at high temp. 8−39403
  n-Si:P, heavily doped, elec. cond. and Hall effect meas., impurity effects 8−19032
  Si:P, heavily doped, electronic sp. ht. meas., rel. to metal-nonmetal transition 8−6162
  Si:P, heavily doped, IR bound-exciton luminesc. spectra 8−15211
  Si:P, heavily doped wafer, anomalous bending obs. 8−10074
  Si:P, homogeneous epitaxial layers, production, appl. of neutron transmutation doping 8−38737
  Si:P, impact excitation of P at low temps. 8−23098
  Si:P, ion implantation, 20-2800 keV, obs. of X-rays produced 8−14367
  Si:P, ion implantation doped, positron annihilation meas. 8−14380
  Si:P, ion implanted, ionisation enhanced annealing, resist. changes meas. 8−30667
  Si:P, ion implanted, sheet resistance variations at elevated temps. 8−43041
  Si:P, ion-implanted layers, CESR meas., impurity distrib. inhomogeneity 8−2738
  Si:P, luminescence associated with transitions from bound exciton excited states 8−23534
  Si:P, many-valley semicond., donor binding energies, variational calc. 8−23041
  Si:P, multiple-particle exciton-impurity complex form. *(Russian)* 8−43925
  Si:P, N implantation through Si_3N_4 film, depth distrib. of knock-on N, SIMS meas. 8−10066
  Si:P, neutron irradiated, influence of growth defects on change in cond. 8−39117
  Si:P, neutron transmutation doped, electron trap annealing, deep level transient spectra 8−14368
  Si:P, polycryst., neutron transmutation doped, elec. props. 8−34836
  p-Si:P, random and aligned implants, Rutherford backscatt. and TEM exam. 8−47454
  Si:P, sputter-deposited polycryst. films, resist. meas. 8−14842
  Si:P bound multiexciton complexes, expt. evidence for shell model 8−39036
  Si:P Czochralski crystal donor homogenisation by thermal neutron irradiation 8−6108
  Si:P film, doping and transport props. *(French)* 8−47403
  Si:P implantation profiles, neutron activation anal. 8−7284
  Si:P mean square dynamic displacement of atoms, effect of electron-phonon interactions *(Russian)* 8−10145
  $Si:P^+$, misfit dislocation formation mechanism, effect of implantation temp. 8−38708
  WC-Co alloys, P additions, effect on hot pressing, hardness and wear resist. 8−11162
  ZnTe:P, excitations spectra of donor-acceptor pair photoluminesc. 8−23522
  ZnTe:P, g-values, spin temp., determ. from Raman spectra 8−43856

phosphorus compounds
  chemisorption on Cu, Auger spectra 8−43248
  doping of Si epitaxial layers, process parameters effect on electrophys. characts. 8−38734
  pentaphenylphosphorus cyclohexane, cryst. packing 8−9994
  phosphate bonded refractory plastics, hot modulus of rupture, 1500 to 2500°F 8−19855
  phosphates, chem. determ. of Ca 8−23976
  phosphates in Atlantic and Mediterranean near Gibraltar *(Russian)* 8−16058

phosphorus compounds continued
phosphosilicate glass passivation layer P content, SEM analysis and interpretation 8−35759
₂, photoluminesc. spectrum, ^{31}P Fermi interaction, hyperfine struct. 8−33536
Al_2O_3-B_2O_3-P_2O_5 system, glass formation by laser melting 8−44074
Ar+PCl_3 reaction PCl emission spectra 8−21938
OPF_3, forbidden transitions, mol. beam elec. reson. obs. using avoided crossings 8−29775
$(P,As)_2O_7^{4-}$, vibr. calc. by method of normal coordinates 8−22796
P-Se system, glass form. props., effect of P concentration *(Russian)* 8−2019
PCl, visible and near IR emission, $A^3\Pi \rightarrow X^3\Sigma^-$ and $b^1\Sigma^+ \rightarrow X^3\Sigma^-$ systems vibr. anal. 8−21938
PF_3, chemisorption on Fe (110), UV photoelectron obs. 8−19629
PF_3 pyramidal mols., intramol. forces, fundamental vibr. freqs., centrifugal distortion consts. 8−5202
$PF_5.BrF_3$ complex, F NMR 8−37658
PH, $b^1\Sigma^+$ band emission visible and UV regions 8−46357
PH_3, absorpt. lines in far IR spectrum of Saturn 8−12147
PH_3, electron impact dissoc. ionisation, mass spectrometric obs. 8−9264
PH_3, Jupiter atmos. comp., IR spectral obs., 800-1000 cm^{-1} 8−16336
PH_3, vac. UV photolysis, emission spectra 8−46357
PH_4^++Ca, proton transfer reaction cross sections, 1-6 eV 8−20003
PH_2F, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
PH_xF_{3-x}, geometry changes during inversion, ab initio calcs. 8−5154
PH(PF), effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
P_3N_3, matrix isolated, IR isotope freq. and intensity patterns 8−46338
P_3N_5, appl. in P doping of Si by zone melting method 8−43035
$PN(X^1\Sigma^+)$, VUV photoelectron spectrum 8−1024
PO_4^{2-} anion radicals + organic compounds, reaction rate consts. 8−15669
PO_4^{3-}, O isotope effect in ^{31}P NMR spectra 8−42100
P_2O_5, glass, refractive index, effects of alkali oxide comp. changes *(Russian)* 8−22182
P_2O_5, vitreous, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
$POCl_3$-$SnCl_4$:Nd^{3+} laser, relaxation oscillations with high power spikes obs. 8−42331
$POCl_3$+N,N-dimethylformamide or N,N-dimethylbenzamide, reaction products 8−7199
POF_3, IR rot.-vibr. spectrum, mol. consts., laser Stark spectroscopy obs. 8−33508
P_2S_5-Ag_2S glass, Ag diffusion, 50-120°C 8−18828
P_4S_{10}, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
P_4S_3, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
P_4S_7, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
$P_2Se_xS_y$ glass, thermophysical props., 303-413K, struct. interpretation 8−47615
SiO_2:P_2O_5 optical fibres intrinsic attenuation 8−30067
U content, α-ray autoradiography, fluorimetry, comparison of results 8−20414

phosphosilicate glasses
etching characts. by plasma reactive sputter etching 8−27661
film, props., rel. to deposition conditions, appl. in semicond. devices 8−23612
passivation films, advances in deposition processes, review 8−23620
passivation layer P content, SEM analysis and interpretation 8−35759
single-mode fibre birefringence and optical activity obs. 8−1394
SiO_2-P_2O_5, optical fibre, wavelength dispersive props. and comp. 8−33793

photoacoustic effect
aerodynamic effects of supersonic flow past laser beam 8−38366
fluid half-space, sound generation by modulated laser absorpt. 8−9526
laser beam energy monitoring, photoacoustic detector, construction and calib. *(Czech)* 8−29156
laser radiation interaction with liquids and solids, sound generation 8−1485
liquid, pulse phenomena 8−1486
liquid half-space, sound generation by FM modulated laser beam 8−38781
liquid waveguide, sound generation by modulated laser beam 8−1539
moving inhomogeneous fluid, optical generation of sound 8−34568
opto-acoustic antenna, floating, acoustic field statistical characts., surface waviness depend. *(Russian)* 8−1536
physical and technical acoustics, conf., Parnu, USSR (Apr. 1976) 8−1451
sound generation of absorpt. of laser radiation in fluid half space 8−18089
supersonic optoacoustic antenna, acoustic field 8−1540
water, photoacoustic effect, nsec. and psec. laser pulse induced 8−38777

photoacoustic spectroscopy
absorption coefficients meas., photoacoustic calorimetry technique 8−24839
absorption coefficients meas. technique 8−24864
atmospheric aerosol absorption of visible light, spectrophone meas. 8−4000
cell, high-performance, small vol. 8−8451
cell design, reson. enhancement, background signals 8−4700
dermatological applications, water content meas. and drug detect. 8−31883
dye solution, fluoresc. yield, photoacoustic determ. method 8−42117
excited state vibrational energy transfer, for optoacoustic spectroscopy 8−37724
laser window materials, surface and bulk absorpt., photoacoustic meas. 8−25912
linear base spectroscopy opto-acoustic technique, review 8−29170
liquid, laser induced acoustic pulses, photoacoustic cell arrangement 8−21222
optical communications appl. *(French)* 8−48143
photothermophone, device for absolute calibration of photoacoustic spectrometers 8−16854
quinine bisulphate, aq. soln., abs. fluoresc. quantum efficiency, optoacoustic determ. 8−16849
response of optoacoustic cell, data taken with fixed-freq. lasers 8−37077

photoacoustic spectroscopy continued
review, theory, operation of instruments and test results 8−4705
solids, criteria for light sources, sample chambers and data acquisition systems 8−4709
trace gas analysis, with reson. optoacoustic cell operating inside CO_2 laser cavity 8−27836
Al_2O_3, films on Al, photoacoustic refl.-absorption spectroscopy 8−31264
Al_2O_3:Cr^{3+}, crystal, radiationless relaxation processes exam. 8−27264
$BaTiO_3$:Cr^{3+} crystal, radiationless relaxation processes exam. 8−27264
CO, sensitive optoacoustic detection by reson. absorpt. 8−44981
CO_2+$CO(N_2)$, vibr. relax., optoacoustic obs. *(French)* 8−42178
Li seeded in acetylene-air flame, optoacoustic pulses, energy transfer from laser excited atoms 8−25490
MgO:Cr^{3+} crystal, radiationless relaxation processes exam. 8−27264
NO excited state vibrational energy transfer, for optoacoustic spectroscopy 8−37724
^{15}NO, vibr.-rot. transitions, Λ-doubling, optoacoustic spectroscopy meas. 8−42062
NO_2, optoacoustic detect. using pulsed dye laser 8−27835
Na seeded in acetylene-air flame, optoacoustic pulses, energy transfer from laser excited atoms 8−25490
SF_6Ar, multiple photon excitation, saturation and linear absorpt., pulsed optoacoustic detect. 8−42148
SO_2, optoacoustic detect. in air-pollution control below parts per billion level 8−41355
$SrTiO_3$:Cr^{3+} crystal, radiationless relaxation processes exam. 8−27264

photobleaching *see optical saturable absorption*

photocapacitance
MOS system photocapacitance, influence of surface charge fluctuations *(Russian)* 8−43480
$Ba_xSr_{1-x}Nb_2O_6$, nonequilibrium processes 8−48124
$CdIn_2S_4$, impurity centres, photoluminesc. and photocapacitance data on config.-coordinate diagrams 8−10938
CdTe:Cl, description of anomalous centres by non-purely electronic model 8−30886
GaAs epitaxial film, deep centre reson. charging, photocapacitance meas. on Schottky barrier 8−26908
n-GaAs, Schottky barriers, minority carrier trap meas. 8−26951
GaAs:O, evidence for metastable state of O centre, Schottky barrier photocapacitance meas. *(French)* 8−10556
n-InP Schottky barriers, photocapacitance effects of deep traps 8−43325
InSb inversion layer, spectroscopy of electron subband levels 8−10569
-Si:Fe, effect of γ-irradiation, photocapacitance meas., impurity centre conc. 8−18993
Si:Ir, precipitation of solid soln., photocapacitance, electrical resistivity meas. 8−47833
Si:Pt, photoionisation cross-sections, photocurrent and photocapacitance meas. 8−10497
ZnSe, deep centres, photolum., photocapacitance and photocurrent expts. 8−39053

photocatalysis *see catalysis*

photocathodes
see also photoemission
alkali metal multilayers, high field enhancement of photoemission 8−19639
extra-fast shutter, for soft X-ray photography *(French)* 8−41397
high resolution imaging X-ray detector, for astronomical meas. 8−49333
multialkaline antimonides, (Sb, Na, K, Cs) type, photoemission rel. to chem. struct. *(French)* 8−39655
semiconductor photofield emission cathode, potential distrib. and model 8−2977
Ag-O-Cs, for image convertor tube, temporal resolution 8−33908
Al_2O_3, anodised film, arc cathode root initiation, electron emission, UV radn. effects 8−2985
Al_2O_3, anodised film, charge storage, UV radn. effect on electron emission arc roots 8−6827
GaAs-Cs-O, negative electron affinity, fabrication and characts. 8−2979
GaP, Cs(Cs-O) activated, with negative electron affinity, thermalised electron emission 8−11073
GaP, Cs(Cs-O) activated, with negative electron affinity, near UV photoemission and secondary emission 8−11074
p-GaP electrode, spectral response extension by metal adatoms 8−34895
$In_{0.53}Ga_{0.47}As$, LPE growth on (100) InP, for field assisted photocathode appl. 8−15318
InGaAsP heterojunction cathode, transferred electron photoemission 8−48272
InP-InGaAsP bias assisted photocathodes, photoemission in 1-2 μm range 8−48289
K_3Sb, and Na_2KSb, band struct., empirical pseudopotential calc. 8−10346
Na_3Sb, and Na_2KSb, band struct., empirical pseudopotential calc. 8−10346
p-Si, achievement of negative electron affinity 8−2980
Si, single-tip and multitip cathodes, fabrication, and photofield emission characts. 8−2976
Si_xGe_{1-x} multitip photofield emission cathode, fabricated by crystn. from vapour, emission characts. 8−2975
ZnO electrode surface, dye sensitisation mechanism, from reson. Raman spectrum obs. 8−42066
ZnO-Cs, fabrication, UPS meas. 8−15279

photocells *see photoelectric cells*

photochemistry
see also photochromism; photodissociation; photolysis
air pollutants from N oxides 8−36271
air pollution, weekend-weekday differences 8−3921
amino acid photodegradation in presence of TiO_2 8−11531
anthracene, spectral evidence for green incipient dimers after photooxidation and photodimerisation 8−15687
aqueous glasses, mixed solute, luminesc. following laser excitation of trapped electrons 8−31666
atmosphere, hydrocarbon concentrations meas., photochemical reaction appl. *(Dutch)* 8−36300
atmosphere, O_3 layer, photochemical-diffusive model, chlorocarbon industry impact 8−40648

photochemistry continued
azoethane, in hydrocarbon glass, 77K, photoisomerisation, matrix memory effect, quantum yield 8−7213
bacteriorhodopsin 580 nm ultrafast transient, psec kinetics 8−44455
bacteriorhodopsin isomers, dark equilib. and photochem. 8−15771
bacteriorhodopsin photoconversion products, EPR and low temp. spectrophotometry 8−15769
benzophenone, sensitised crosslinking, polymerisation, UV curing, IR investig. 8−35709
biological photochemical and photophys. processes, conf., New Delhi, India, (Jan.' 72) 8−11694
calorimetric techniques for excited states detection 8−32847
CdTe thin polycrystalline film for photoelectrochemical cell 8−23162
cells, electrochemical, photovoltaic phenomena and mechanisms 8−8198
chlorophyll, photooxidation, triplet state mechanism 8−27791
chlorophyll, photosynthesis mechanism, upconversion, EPR and O_2 evolution data anal. 8−35811
chlorophyll-a, photoinduced electron transfer to duroquinone in micellar soln., charge separation 8−23955
curing, UV, photochem., liq. ink appl. 8−35709
9-cyanoanthracene, cryst., excimer emission, spectra, photochem. and multiphonon processes 8−10914
cycloheptatrienes, substituted, photoisomerisation, rate consts. 8−35708
cyclohexane-NO_2-air mixtures, photochem. particulate form. 8−11529
cytosine derivatives, photosensitised induction by H-addition radicals in frozen aqueous soln. 8−20146
diacetylene single crystals, photopolymerisation, optical transmission spectroscopic exam. 8−27757
N,N-diethylaniline-pyrene, photochem. polarisation transfer, scalar paramagnetic exchange mechanism 8−25557
dihydroporphin free base, in n-octane cryst., zero-field optically detected mag. reson., triplet state kinetics 8−42103
2-(2,4-dinitrobenzyl)pyridine, powdered sample, kinetic photochromic characts. 8−23957
fluorescence quantum yield measurements, real, observed and mol. parameters, ref. soln. standards 8−32898
fluoromethane+$Br(^2P_{3/2})(^2P_{1/2})$, photobromination 8−11535
heterogeneous catalysis, photoinduced, review 8−40080
laser dyes, fluoresc. efficiency and standards 8−35205
laser dyes, inert gas halide laser pumped, photochem. stability 8−33733
laser properties, survey of existing lasers *(German)* 8−13744
lysozyme, light-induced riboflavin binding 8−27899
membranes, carrier-mediated photodiffusion 8−23965
methane, $1B_1(1T_2)$ state, photodissoc., extended basis calcs. 8−9093
methyl isocyanide, intracavity CW dye laser state-selective activation of isomerisation 8−11533
molecular excitation, laser induced, effect of chem. reactions 8−21979
3-nitropyrene, triplet state, absorption spectra in soln. 8−33440
nonmethane hydrocarbons, photochemical effects in atmosphere 8−49090
origin of life, form. of self-sustaining coacervates 8−11611
oscillations and runaway states in closed illuminated system 8−7188
s-trans-1,3-pentadiene, photoisomerisation, excited state pot. energy curves, CIPSI calc. CNDO/2 parametrisation 8−11505
m-phenylene diacrylic acid, four-centre-type photopolymerisation in cryst. state, holographic appl. 8−37832
photochemical smog, transferred contaminant air pollution model *(Japanese)* 8−32217
photochromic powder, with photochem. reaction and/or thermal reverse reaction, kinetics 8−23957
photosynthesis of green plants, tripartite model for photochem. apparatus 8−44474
phytochrome, role of light in regulating plant growth and development, review 8−11695
PMMA, laser initiated polymerisation kinetics, mol. wt. distrib. of resultant polymer 8−15673
PMMA, photodielectric media for holographic recording, photochem. response 8−7219
polymer fibre, lifetime under load, in presence of UV radiation stress depend. 8−48534
polymer fibre, lifetime under load, in presence of UV radiation, stress depend. 8−48535
polymerisation, laser initiated, mol. wt. distrib. 8−15673
polymethine, IR-140 laser dye, photoisomerisation processes 8−27800
polymethyl-α-cyanoacrylate, photodielectric media for holographic recording, photochem. response 8−7219
polypeptide copolymer, trans-cis photoisomerisation 8−3331
porphin, free base, in n-octane crystal, S_1 from S_0 transition, freq. shift and dephasing temp. depend. 8−25584
porphyrin free base in n-octane, $S_1 \leftarrow S_0$ transition homogeneous linewidth, photochemical hole burning 8−7217
prebiotic model atmospheres, far UV irradiation effects 8−40668
prelumirhodopsin, psec. kinetics, primary photochem. event in vision, proton translocation 8−44508
prereaction effects on laser-initiated reaction rate meas. by chemilum. obs. 8−44386
protein aggregates exposed to UV radiation, limiting conc. of paramag. centres 8−24029
proton transfer photoreaction kinetics, in singlet excited state 8−48671
purple membrane of Halobacterium halobium, energy transfer 8−44467
purple membrane protein chromophore, fluoresc. 8−44454
purple membrane protein retinal chromophore, role of protein in photochem. 8−15772
radical ion reactions, photo-initiated, CIDNP 8−13526
resonance picosecond spectroscopy of physical stages of photosynthesis using returnable generators *(Russian)* 8−15688
retinal, highly polar excited electronic states, electron transfer 8−48757
retinal chemical processes, reprint of 1879 paper 8−20933
retinal isomers, dark equilib. and photochem. 8−15771
11-cis-retinal prep. by irrad. of all-trans-retinal and high press. liq. chromatography 8−40453
retinal Schiff-base, photochem. step of vision, H-bonds, intermol. associations 8−31812
retinal-entrapped membrane, photo-induced potential 8−20148
rhodamine 6G in soln., photochem. stability 8−37878

photochemistry continued
rhodamine B, adsorption on ZnO single crystal, photooxidation, electrochem. meas. 8−31645
rhodopsin, isorhodopsin and bacteriorhodopsin, and photoproducts, temp. and wavelength effects on photochem. 8−11612
rhodopsin, primary photophys. and photochem. processes in visual excitation 8−15773
rhodopsin and intermediates, absorpt. spectra and orientational change of chromophore 8−7321
selective dissociation, ionis., and chem. reaction stimulation, by ultrashort pulses, isotope separation *(Russian)* 8−29825
semiconductor electrodes, photoelectrode kinetics of H_2 evolution reaction 8−44388
semiconductor-electrolyte interfaces, prediction of flatband pots. from atomic electronegativities 8−40068
semiconductor-metal system, photosensitivity, theory *(Russian)* 8−3357
semitransparent rotating disc electrode, photochem. and electrochem. surface reactions 8−40056
silicate glasses:Cu^+, effect of UV irrad., absorption bands 8−31222
smog, rate parameters and computer simulation 8−48677
stratosphere, at. Cl and ClO radical in situ obs., rel. to O_3 depletion 8−36241
stratosphere, laser photochemistry of O_3 and distant spectroscopy *(Russian)* 8−28314
stratosphere, photochemical-radiative damping and instability in the stratosphere 8−28259
1,2,4,5-tetrachlorobenzene, in durene host, phosphoresc., cross-relax. between spin levels 8−9186
s-tetrazine-benzene, mixed cryst., 2K, lifetime limited photochem. hole burning 8−9183
thermosphere, ion photochemistry from Atmosphere Explorer C meas. 8−32261
transparent polymers, laser-induced optical breakdown, chem. reactions effects *(Russian)* 8−35676
triphenylantimony, single crystal, irrad. by UV, diphenylantimony radical prod., ESR 8−31662
troposphere, nonurban, oxidation of NH_3, H_2S and methane 8−32183
troposphere, O_3 budget, one-dimens. photochem. model 8−32180
troposphere, photochemical mechanisms, computational methods 8−49084
troposphere, urban photochemistry, computer simulation 8−49085
uracil derivatives, effects of UV radiation, IR spectra obs. 8−27801
uracil derivatives, photosensitised induction by H-addition radicals in frozen aqueous soln. 8−20146
urban atmospheric photochemistry, O group anal. and O_3 prod., theory 8−48626
Venus atmosphere, photochemical ractions rel. to UV absorbers identification 8−20665
visual pigment retinal chromophore, role of protein in photochem. 8−15772
zinc etioporphyrin I anion radical, photoreduction obs. *(Russian)* 8−23958
Ag halide, photographic image form., defect and impurity states, LCAO calc. 8−16876
AgBr photographic emulsions, sensitivity, fog rel. to treatment in redox-buffered solns. 8−32906
As_2S_3-Ag system, activation energy for photochem. conversion, 80-340K, radiation intensity depend. *(Russian)* 8−3356
BCl_3-$COCl_2$, impurity removal by laser irrad., IR spectra meas. 8−15686
n-CdS electrode, photoelectrochemical behaviour in acetonitrile solns. 8−31644
n-CdS, photoanodic behaviour in acetonitrile-iodide solns. 8−47868
n-CdS-CdSe mixed polycryst. electrode for photoelectrochem. cell 8−47867
ClOO, stratospheric chem., formation and loss reactions 8−16138
$Fe(CO)_4$, IR laser induced isomerisation, non-Berry pseudorotation 8−31658
$Fe(CO)_4$, in N_2, Ar low temp. matrix, IR laser photochemistry, orientational and site selectivity 8−23954
n-GaAs, preferential photoelectrochemical dissolution in Fe(III) based etches 8−7066
p-GaP, cathode of photoelectrochemical cell 8−10552
n-GaP electrode, photoelectrochemical behaviour in acetonitrile solns. 8−31644
GaP photoelectrode, role of Au overlayers 8−14812
HOCl, HOOCl, stratospheric chem., formation and loss reactions 8−16138
HO_2NO_2, in stratosphere, photochemistry and abundance 8−20467
HO_2NO_2, photochemistry and significance in atmospheric NO_x chemistry 8−11971
Hg, determ., in fresh and saline waters, automated UV digestion-AAS method 8−44414
KBr(I): $O^{2-}(S^{2-})(Se^{2-})(Te^{2-})$, low temperature photochemistry on chalcogen vacancy centres 8−18641
$^{83}Kr_2F$ radical, in UV-irrad. Kr/CF_3OF, 10K, ^{83}Kr hyperfine EPR spectrum, struct. 8−42101
NO+O_3, (001), laser enhanced reaction, temp. depend., reactive and nonreactive channels 8−48642
NO+O_3(001), laser-enhanced reaction, rates, temp. depend. 8−48675
NO_2+SO_2 aerosol, form. kinetics, irrad. by 488 nm light 8−40067
O_3 column, increase rel. to NO_x emission from SST and subsonic aircraft 8−11979
OClNO, form. in matrix reaction, IR absorpt. obs., photoisomerisation 8−15667
PbI_2, cryst., photochem. phenomena investig. *(Russian)* 8−35204
$RbAg_4I_5$-metal interface, photocurrents, photoelectrochem. effects 8−34897
SF_6 mixtures, laser initiated explosions, chemilum. in near UV, visible and IR 8−48674
SF_6, multiphoton isotope selective dissoc., pulse shape, energy, press. and geometry effects 8−25733
SF_6, unimolecular reaction model 8−7189
SF_6+NO+O_3, laser sensitised reaction, time-resolved NO_2^* emission obs. 8−20017
$SF_6+SiH_4 \rightarrow S_2^*+SiF_4+HF+H_2$, laser augmented reaction, isotopic selectivity retention during detonation 8−48673
$SO_2+CO(C_2H_2)$, photochem. reactions, rate consts. 8−23956
TiO_2 (100), chemisorption of H_2, O_2, and H_2O, electron spectroscopy, evidence for Ti^{3+} photogeneration 8−38940

photochemistry continued
- UO$_2^{2+}$ in aq. solns., luminescence quenching by metal ions 8−39588
- UO$_2^{2+}$ in aq. solns., luminescence quenching by H$_2$O mols. 8−39589
- Xe+F$_2$, collision induced photoabsorpt. indicating $Xe+F_2+H\nu \rightarrow XeF^*+F$ 8−27786
- n-ZnO electrode, photoelectrochemical behaviour in acetonitrile solns. 8−31644

photochromism
- anils, cryst., high-press. optical effects 8−31170
- anils, polystyrene soln., high-press. optical effects 8−31171
- bilevel absorber, partial differential rate eqns. 8−37950
- borosilicate photochromic glasses, photosensitivity rel. to AgCl particle shape 8−31223
- 2-(2′,4′-dinitrobenzyl)-pyridine, photochromism, ns laser absorption spectra 8−48138
- 2-(2,4-dinitrobenzyl)pyridine, powdered sample, kinetic photochromic characts. 8−23957
- glass, holographic data recording optimisation, diffr. efficiency 8−25829
- hologram storage in inorganic photochromic materials, book contrib. 8−25835
- membranes, carrier-mediated photodiffusion 8−23965
- optical data storage material requirements and possibilities *(German)* 8−25937
- photochromic tracer film, measurements using POLLY, film reading computer system 8−42696
- photochromic tracer technique, for nondisturbing flow measurement 8−38435
- powdered sample, with photochem. reaction and/or thermal reverse reaction, kinetics 8−23957
- retinal-entrapped membrane, photo-induced potential 8−20148
- N-salicylideneanilines, photo- and thermo-chromic, ^{14}N quadrupole resonance temp. depend. 8−48077
- Ag halide photochromic glass:Cu^{2+}, characterisation of Cu ions 8−5530
- Ag halide photochromic glass, darkening mechanisms under pulsed laser excitation 8−25938
- Bi$_{12}$SiO$_{20}$, optical quality, Czochralski growth 8−31324
- CaF$_2$:Ce^{3+}, ENDOR meas. on Ce^{3+} photochromic centre 8−19372
- CaF$_2$:Tb, EPR in new photoexcited centre 8−19319
- CdO-SiO$_2$ glasses, photochromism *(Japanese)* 8−15140
- Na$_2$O-SiO$_2$:CeO$_2$, photochromic glass, form. and decay kinetics of absorpt. centres 8−13774

photoconducting devices
- *see also photoconductive cells; photodiodes; phototransistors*
- electroluminescent, photoconductive image intensifier parameters *(Russian)* 8−42421
- holographic recording materials and devices, book contrib. 8−25838
- semiconductor switch, light controlled, with picosecond precision, appl. to Kerr cell 8−1327
- UHF biased semicond., cylindrical resonator for photoconductivity investig. 8−21117
- Si light-controlled switch, appl. to high speed Kerr and Pockels cells 8−26925
- Si-GaAs heterojunction photothyristor, spectral characts. 8−10546

photoconducting materials
- *see also photoconductivity*
- bisphenol-A-polycarbonate, hole transport meas. in solid soln. 8−43438
- p-diiodobenzene, phase transition obs. using interferometry 8−34616
- electrophotography, process configuration, architectures, review 8−29188
- molecular crystals, electronic props. *(German)* 8−23089
- optical data storage material requirements and possibilities *(German)* 8−25937
- thermoplastic-photoconductor, holographic recording technique 8−9346
- thermoplastic-photoconductor hologram recording media, frost suppression 8−17869
- As$_2$Se$_3$, film, amorphous, fatigue and recovery of electrophotographic props. 8−21253
- Bi$_{12}$GeO$_{20}$, vol. hologram recording, charge transfer process 8−5437
- Bi$_{12}$SiO$_{20}$ photoconductive electrooptic crysts. for time average holographic interferometry 8−25813
- Bi$_{12}$SiO$_{20}$, vol. hologram recording, charge transfer process 8−5437
- CdS films, growth, residual cond., inclusions 8−43492
- CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
- CdSe:Cu surface layer of CdSe, microstruct., photoelec. props. 8−43221
- Cd$_{1-x}$Zn$_x$S reactively sputtered phtoconductive films for high field applications *(German)* 8−39154
- PbO, disordered photoconductor, dielec. props., temp. depend. anomalies 8−43765
- Se-Bi-I, amorphous, high sensitivity visible-near IR photoconductor development and characterisation 8−39153
- Si:H amorphous semiconductors, prep. from SiH$_4$ and characts. 8−48326
- ZnO-binder system, reciprocity failure, photoconductivity 8−39151
- ZnTe single crystal, power depend. of photocurrent on excitation intensity, sublinear behaviour 8−43442

photoconductive cells
- photoelectrolytic, water decomp. with semicond. materials 8−2562
- radiometer/photometer appl., commercial devices survey and classification 8−16830
- surface-channel insulator-semicond. photocell, photoelec. characts. 8−26909

photoconductivity
- *see also photoconducting devices; photoconducting materials*
- ambipolar photoconductivity and its optical quenching, possible obs. in photoconductors 8−14764
- amorphous material, carrier recomb. and trapping, exponential trap distrib. case 8−14760
- amorphous semiconductors, doped, electronic props. 8−19030
- anthracene crystal, triplet exciton absorpt., high resolution photoconductivity spectroscopy 8−10504
- anthracene crystals, carrier trapping in deformed surface region 8−47806
- anthroquinone, temp. depend. and anisotropy of electron drift mobilities 8−19089

photoconductivity continued
- auramine single crystal, lifetime and mobility of photogenerated charge carriers 8−2516
- biphenyl, electron mobility and photogeneration temp. depend., polaron hopping 8−19033
- black-body radiation field interaction with photoconductor, noise, Langevin method 8−30950
- Chlorella microwave photocond., rise/fall kinetics, depend. on physiological state 8−15793
- Chorella cell microwave photocond., long wave illum. and Emerson effect 8−15794
- cytosine monohydrate, cryst. growth from aq. soln., elec. props. 8−3007
- diamond, N9 and ND1 energy levels, electron irrad. photocond. obs., thermolum. 8−6324
- N,N′-diphenyl-p-phenylenediamine, current carrier traps, space-charge-limited currents 8−47799
- ESCA expt., photoconducting effect on charging 8−21971
- ethanol glass, 4K γ-irradiated, presolvated electron photoconductivity 8−47827
- fluorene, photoconductive props., sample purity depend. 8−10508
- heat treatment effects on elec. props. 8−43411
- hexamethyltriaminotriphenylcarbenium chloride, cryst. violet, photoconductive characts. 8−39163
- insulator with uniform distrib. of traps, nonequilib. photocond. *(French)* 8−43433
- l 8−10515
- Lexan:triphenylamine, photosensitisation using rhodamine B or thiapyrylium 8−34856
- merocyanine dye monolayer on p-chloranil cryst. in sandwich cell, electrochromic detection of internal charges 8−11549
- MIS structures, surface recombination and photoeffect, statistics *(Russian)* 8−39221
- naphthalene, electron band hopping transition 8−39155
- noncrystalline materials, optical props., lecture 8−27263
- perovskite oxides, single cryst., photocond. and TSC meas. 8−43436
- photoexcitation phenomena, low density 8−27319
- photoexcited hot electrons in high mag. field, mean energy 8−30955
- phthalocyanine, X-metal-free in polyvinylacetate, elec. field induced fluoresc. quenching, carrier photogeneration 8−48207
- poly(n-vinylcarbazole)-trinitrofluorenone films, charge carrier trapping 8−14846
- poly(N-vinylcarbazone), charge transport and struct., bromination effect 8−11516
- polycarbonate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
- polydiacetylene-bis(toluenesulphonate), transient photocond. meas. 8−30951
- polyethylene, carrier traps, photostimulated detrapping currents and TSC meas. 8−10458
- polyethylene naphthalate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
- polyethylene terephthalate, photocarrier transport mechanism 8−10499
- polyethylene terephthalate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
- polyethylene terephthalate photoelectret, TSC and photostimulated detrapping current obs. 8−10459
- polymalononitrile, plasma polymerized film, photoelec. props. 8−39158
- polyolefins, elec. cond., review 8−26867
- polyparaxylyrene, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
- polystyrene, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
- polythiourea, plasma polymerized film, photoelec. props. 8−39158
- polyvinyl carbazole in UV range, organic thin film appls. in electronics *(German)* 8−44011
- pyrene-TCNE, vapour-grown cryst., transit-time meas. of photocarriers 8−39149
- quartz, photoelectric and photoluminescent props. in fundamental absorpt. region 8−39596
- semiconducting polycrystalline films, cond., photocond. mechanisms 8−47891
- semiconductor, carrier relax. time and effective masses determ. by microwave photocond. meas. *(Russian)* 8−19071
- semiconductor, due to phonon scatt. and emission 8−10514
- semiconductor, high intensity photoexcitation, hot electrons and phonons 8−26905
- semiconductor, irradiated, Hall mobility, dark and photo-conductivity calc. 8−47835
- semiconductor, kinetics of photoinjection currents 8−47834
- semiconductor, nonequilibrium processes exam. by method of transient holograms 8−23105
- semiconductor, spin-depend. recomb. effect 8−34841
- semiconductor, transport equation and photocurrent of electrons, in EM field 8−26913
- semiconductor, two-photon absorpt., free carrier storage by deep centres *(Russian)* 8−23131
- semiconductor, wafer characterisation by photonic injection+microwave meas., appl. to Si *(French)* 8−23106
- semiconductor, weakly inhomogeneous, impurity absorpt. and impurity photocond. line profiles 8−19098
- semiconductor with anisotropic conductivity, elec. and photoelec. props., review 8−10447
- semiconductor with uniform distrib. of traps, nonequilib. photocond. *(French)* 8−43433
- semiconductors with UHF biasing, investig. using cylindrical resonator 8−21117
- solid discs and flakes, cond. meas. cells with variety of contacts 8−24816
- strong inhomogeneous magnetic field meas. using n-type Si photoconductance 8−45661
- TCNQ-pyrene complex, evaporated layers and single crysts. *(Russian)* 8−6416
- p-terphenyl, carrier generation and transport, temp. depend. around phase transition at 180K 8−47783
- trap-controlled transient photoconduction 8−10507
- N-vinylcarbazole-1-vinylnaphthalene copolymer, triplet-triplet annihilation carrier photocurrent, delay fluoresc. 8−2513
- zinc etioporphyrin I anion radical, photoreduction obs. *(Russian)* 8−23958

photoconductivity continued
- Ag halide, Dember effect, photographic emulsion grain parameter depend. 8−16870
- AgBr(I) microcrystals, photohole motion 8−26903
- AgBr(I) microcrystals, photocond. and luminesc. 8−26904
- Ag_2O, film, photocond., annealing and time effects *(French)* 8−23135
- Ag_2O, photoconductivity of crystals grown under hydrothermal conditions 8−14765
- AlH_3, photocond., photocurrent carrier-type 8−34855
- Al_2O_3, high purity, pot. for electrophotography in radiographic imaging 8−35936
- As_2S_3, crystalline and vitreous, nonlinear absorption of ruby laser radiation *(Russian)* 8−22165
- As_2S_3-PbS glass, DC elec. cond. and photocond. 8−39107
- As_2Se_3, amorphous, modulated photocurrent 8−10500
- As_2Se_3, amorphous, photoconductivity exam. 8−30953
- Au-ZnSe:Ga(Al), Schottky diode, wavelength modulated photoresponse spectra 8−6714
- β-B, rhombohedral, localised states charact., review, book contrib. 8−47728
- β-B, rhombohedral, photo-EPR, book contrib. 8−48041
- $Ba_xSr_{1-x}Nb_2O_6$, nonequilibrium processes 8−48124
- $BaTiO_3$:Co, trap recomb. consts., photocurrents 8−43435
- BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
- CaO, electron irradiated, photocond. and luminesc. meas., F-centre electronic struct. determ. 8−6409
- Cd_x-Hg_{1-x}Te, cyclotron magneto-optical resons., photoconductivity meas. *(Russian)* 8−23133
- $CdCr_2Se_4$:In , impurity band, photocond. spectral depend. 8−19088
- CdF_2: $YF_3(YbF_3)$, photoconversion from insulating to semicond. state, IR absorption and elec. cond. 8−14759
- $CdIn_2S_4$, photocond. and trap. distrib. 8−39164
- $CdIn_2S_4$, single cryst., oscill. behaviour of photocurrent and luminesc. 8−10501
- $CdIn_3Se_4$, cryst. growth, photoresponse and optical props. 8−39165
- CdP_2:Bi,Zn, photolum. and photocurrent stationary characts. 8−27317
- CdS, evaporated film, effects of heat treatment on photosensitivity *(Japanese)* 8−39237
- CdS film, chemically sprayed, elec. and photocond. props. 8−34913
- CdS film, dark cond., negative temp. depend. 8−47892
- CdS film, on Si, structural and transport props. 8−6463
- CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
- CdS, impurity cond., temp. depend. *(Russian)* 8−47829
- CdS, photoconductivity, luminescence, radiative and radiationless transition mechanisms 8−10948
- CdS precipitates from acetate solns., crystal structure and photocond. obs. *(Japanese)* 8−10502
- n-CdS, reson. obs. in far IR transverse magnetophotoconductivity 8−30949
- CdS single crystal growth by sublimation *(Japanese)* 8−11093
- CdS sintered film, photolum. and recomb. photocurrent noise spectra 8−6743
- CdS sputtered film, photocond. props. 8−10586
- CdS:Bi film, spectral response characts. 8−2512
- CdS:Cu, Fermi level position, luminesc., and photosensitivity, electron irrad. effects *(Russian)* 8−14652
- CdS:Li film, photocond., effects of annealing, S vacancies, and O_2 adsorption 8−34854
- CdS:N photoluminescence, resistivity and photoconduction obs. 8−10965
- CdS-Cu_2S heterojunction, slow relax. of photocurrent 8−26943
- $CdS_{1-x}Se_x$ single crysts., photocond. and excitonic luminesc. under high laser excitation 8−23127
- CdSe, effect of heat treatment in Se vapour, photocond. acoustoelec. effect and surface morphology 8−39152
- CdSe, single crystal, low-frequency current noise, effect of temperature quenching of photoconductivity 8−34874
- CdSe:Ag, In, cryst., photocurrent and electroreflection, 77 to 300K *(Russian)* 8−23136
- p-$CdSnP_2$, photocond. meas., polarisation depend. 8−39157
- CdTe, bipolar photoconductivity exam. 8−6410
- CdTe, photoconductivity, extrinsic, contrib. by hopping through excited states of donors 8−6411
- CdTe, shallow donors, excited state transitions 8−6710
- CdTe:Fe, annealed, magnetically ordered, Hall effect and photocond. 8−19060
- $CuGaS_2$, photoelectronic props., 77 to 300K 8−34865
- p-$CuInSe_2$, minority carrier lifetime and surface recomb. velocity, photoelectromag. meas. 8−19085
- Cu_2O, photoconductivity of crystals grown under hydrothermal conditions 8−14765
- Cu_2S-CdS heterojunction characteristics and CdS polarity *(Japanese)* 8−23154
- Cu_2S-CdS p-i-n structure diode, photoelec. characts. 8−2557
- EuO, photoelectron anomalous transport phenomena 8−23114
- n-GaAs, electron irradiated, defect energy levels, influence of irrad. temp., photocond. meas. 8−2446
- GaAs, high-purity, residual donors, ionisation energies determ. 8−6333
- GaAs, photoexcitation phenomena, low density 8−27319
- n-GaAs, real epitaxial surface, photoelec. spectroscopy, mechanisms 8−34858
- GaAs, relaxation of photoexcited carriers 8−19080
- GaAs, shallow donors, excited state transitions 8−6710
- GaAs, struct., elec. props., effects of illumination, O_2 absorpt., electron bombard. *(French)* 8−34690
- GaAs:Cr, photoconductivity and photo Hall spectra 8−19091
- GaAs:Cr, semiinsulating, I-V characts., photocond., Fermi level, and deep levels 8−39118
- GaAs:Cr, single cryst., optical quenching spectrum, disappearance of stationary high-field domain 8−47830
- GaAs:Cr(O), deep impurity levels, AC photocond. meas. 8−19082
- GaAs:Cu, diffused layers, photocond. spectra, hole conc. and mobility *(Russian)* 8−14758
- GaAs:Cu, LPE, photoelec. meas. of electron density for different Cu introduction methods 8−43437
- GaAs:Cu(Cr) S-type diodes, thermal quenching of injection currents and current-voltage characts. 8−26942
- GaAs:Ni, behaviour of Ni impurity in $3d^8$ state, optical absorption and photocond. meas. 8−47737

photoconductivity continued
- GaAs:O, impurity photocond. in high elec. field, 90K 8−19095
- GaP:Cu, LPE, photoconductive props. obs. 8−47836
- Ge, amorphous, elec. and opt. props., review 8−23094
- n-Ge, compensated, impurity photoconductivity 8−10512
- Ge, photocurrent oscillations in mag. field, intense excitation *(Russian)* 8−26915
- Ge shallow hydrogenic centres, ground states, isotope shifts, photoelectric spectrosc. 8−39055
- Ge, sputtered hydrogenated amorphous, steady-state and transient photocond. meas. 8−10506
- p-Ge, uniaxially deformed, magneto-impurity oscills. of photocond. 8−34862
- Ge:Al, acceptor levels, Zeeman splitting, far IR photoconductivity spectrum 8−43444
- Ge:Al(B), uniaxially stressed, photoionisation of acceptors, impurity photocond. meas. 8−10509
- Ge:As(Sb), D^-states investigated by long wavelength photoconductivity 8−6323
- n-Ge:Au, negative photoconductivity 8−34863
- Ge:Cu short wavelength quenching of photoconductivity 8−26907
- Ge:Ga, uniaxially stressed, aar IR photocond. meas. 8−10496
- Ge:Hg, anomalous room-temp. impurity photocond. 8−39159
- Ge:Sb(Ga), fast electron radiation defects, 0.52 eV absorpt. band, impurity photocond. and Hall effect meas. 8−27273
- HgCdTe, radiation effects on low-temp. carrier recombination lifetimes, photocond. meas. 8−6400
- $HgGa_2Se_4$, anisotropic photocond., pleochroism, and band struct. 8−19094
- HgI_2, photoelectronic props. 8−41897
- HgTe, photocond. and magnetoabsorption, 1.4-20K 8−34859
- p-In-Sb, effect of static mag. fields on transverse photocurrent spectrum 8−14766
- p-InSb, deformed, Landau levels, photocurrent spectra obs. 8−19097
- n-InSb, magneto-photoconductivity, phonon assisted combined reson. magneto-optical absorpt. reson. 8−47831
- n-InSb, n-type, photoconductivity with different surface treatment 8−2517
- InSb, optical mixing by mobile carriers 8−25920
- p-InSb, phonon assisted cyclotron harmonic transitions 8−48046
- InSb, photoresistor in mag. field, increased responsivity 8−39162
- InSe, current induced by impurity-absorbed IR radiation 8−10511
- $KNbO_3$, photoconductivity and TSC 8−2520
- $KNbO_3$:Fe, photorefr. effects and photocurrents 8−43434
- LiH, excitons, reflection, cathodolum. and photocond.-excitation spectra 8−10989
- $LiNbO_3$, photocond. induced by N_2 laser *(Japanese)* 8−2521
- $LiNbO_3$, photorefractive effect sensitivity 8−43833
- $LiTaO_3$, characterisation as holographic storage materials 8−29909
- MOS, photocurrent-voltage characts., insulator bulk trapped charge 8−30991
- NaCl crystal with aggregate colour centres, photocond. kinetics 8−19100
- $NaNbO_3$, photoconductivity and TSC 8−2520
- PbI_2, cryst., photocond., energy gap localised level obs. 8−43443
- PbI_2 film, photolyzed, refr. index change 8−11010
- $PbMg_{1/3}Nb_{2/3}O_3$, photoinduced phenomena at diffuse phase transition 8−43814
- PbS film, form. by chem. spraying, elec. and optical props. 8−2588
- PbS-Ge heterojunction, influence of conduction band discontinuity on lux-ampere characts. 8−39200
- $Pb_6Sb_{14}S_{27}$, zinkenite, electrophysical properties 8−34834
- $Pb_{0.83}Sn_{0.17}$Te, recomb. at high levels of optical excitation 8−10503
- $Pb_{1-x}Sn_x$Te, charact. of photocond., 12-130K 8−26914
- $Pb_{1-x}Sn_x$Te film, Burstein-Moss effect, absorpt. and photocond. spectra 8−18961
- $Pb_{1-x}Sn_x$Te:Cd, long-wavelength photosensitivity shift on annealing, Cd influence 8−26912
- $Pb_{1-x}Sn_x$Te:In(Cd), photoconductivity 8−23129
- PbTe film, residual conductivity 8−2595
- PbTe film, struct. anal. and sensitisation 8−22982
- PdO, semiconductivity and stability, optical props. 8−43497
- $RbAg_4I_5$-metal interface, photocurrents, photoelectrochem. effects 8−34897
- Sb_2S_3, phase transitions and improper photoconductivity, effect of growth conditions *(German)* 8−39515
- Sb_2Se_3, energy gap, light absorpt., elec. cond., photocond. meas. 8−47826
- Se, amorphous, thermal quenching of photocond. 8−23137
- α-Se, multiple-trapping model and time-dependent random walk 8−34842
- α-Se, multiple-trapping model of anomalous transit time dispersion, transient photocurrent data 8−34860
- Se:Tl, hole drift mobility meas. by light pulse technique 8−19086
- Se-Bi-I, amorphous, high sensitivity visible-near IR photoconductor development and characterisation 8−39153
- p-Si (100) inversion layers, intersubband spectroscopy by photocond. and absorpt. 8−10566
- Si, amorphous, discharge produced, optical and photocond. props. 8−39147
- Si, amorphous, elec. and opt. props., review 8−23094
- Si inversion layer, photoconductivity meas. 8−10498
- Si inversion layers, discrepancies between absorption and photocond. meas. 8−6451
- Si, nonequilib. carriers generated by Nd laser, relax. rate temp. depend. 8−26911
- Si p-n junction in surface region obtained by evaporation in UHV 8−39198
- Si, photoconductivity, extrinsic, contrib. by hopping through excited states of donors 8−6411
- Si, spin dependent recombination and photoconductive resonance 8−43439
- Si, surface, spin-depend. carrier recomb., photocond. expt. 8−19096
- Si, two-step photoconductivity by dislocations 8−14761
- Si:Ag, photoexcitation of electrons from ionised AG acceptors 8−2519
- Si:As, neutron damage mechs. in IR detectors 8−30668
- Si:In extrinsic detectors, compensation of residual B by neutron transmutation 8−281
- Si:Mn, photosensitivity, residual cond. effects 8−19099
- Si:Ni deep impurity levels, electron capture probabilities rel. to temp. 8−2523

photoconductivity continued
Si:Pt, photoionisation cross-sections, photocurrent and photocapacitance meas. 8-10497
Si:S IR detectors, performance and elec. transport props. 8-45702
Si/Si-Ge junction, elec. and photoelec. props. 8-10545
n-Si-Ag(Au) evaporated contact photoelectric props. *(Russian)* 8-43473
Si-$As_2Se_3Ge_4$ heterojunction, elec. props. 8-6434
SiC, negative photoconductivity and photoconductivity quenching 8-6414
α-SiC, short-wavelength photocond. and capacitance photo-EMF meas. 8-26906
$Si_{12}Ge_{10}As_{30}Te_{48}$, dark cond. and thermoelec. power, thermal activation energies interpret. 8-23123
Si_3N_4 film, in MNS structures, dark conduction and photoconduction phenomena 8-30989
SiO_2 film, localised states, low-temp. photocurrent spectroscopy 8-19090
SiO_2, in MIM struct., dye sensitisation of photocond., steady state and pulse photoelectric props. 8-6408
SiO_2 in MOS struct., room temp. cond., mobile Na^+ location 8-39217
SiO_2, vitreous, photoelectric and photoluminescent props. in fundamental absorpt. region 8-39596
p-SnS, IR photocond., direct and indirect gaps 8-2514
p-Te, photocond. and lifetime, surface trapping, spectral distrib. 8-34840
$TlGaSe_2$, impurity conductivity and TSC 8-23128
to film, vacuum-deposited, gas adsorpt. effects on photoelec. props. 8-15298
$ZnGeP_2$, single cryst., polarised light photocond., optical transparency anisotropy *(Russian)* 8-2518
ZnO, powder layers, conductivity, O_2 chemisorpt. and photodesorpt. effects 8-43441
ZnO-electrolyte interface, electron transfer sensitisation by salt additions 8-34894
ZnS, S annealed, IR enhancement and quenching of photocond. 8-14763
ZnS:Cl, spectral distrib. of photocond., effect of powerful UV illumination 8-14767
ZnS:Cr^+, Fe^{3+}, luminesc., cond. and paramag. centre conc. parameters 8-6724
ZnS:Ga(Cl), deep traps, impurity electroabsorpt. and photocond. meas. 8-6707
ZnS:S, photoconductivity and negative differential photo-effect 8-39156
ZnSe, deep centres, photolum., photocapacitance and photocurrent expts. 8-39053
a-ZnSe, elec. and optical meas., Mott-type model for amorphous semicond. 8-2414
a-ZnSe, low temp. photocond., increase of activation energy as temp. decreases 8-26902
ZnSe:B(F), ion implantation, photocond. and cathodoluminesc. meas. 8-26586
ZnSe:Co, effect of in-band position of states on photoelec. props. 8-23132
ZnSe:Cr^+, Fe^{3+}, luminesc. cond. and paramag. centre conc. parameters 8-6724
ZnTe film, LF oscills. of dark current obs. 8-19093
ZnTe single crystal, power depend. of photocurrent on excitation intensity, sublinear behaviour 8-43442

photoconductors *see photoconducting materials*

photocopying
see also electrophotography
colour correction requirements, dependence on original 8-21239

photocurrent *see photoconductivity; photoemission*

photodetectors
angle meas., freq. doubler nonlinear distortions effect on errors 8-36968
angular displacement meas. by photoelec. amplitude-phase modulation method 8-16774
avalanche, electron and hole impact ionisation coeffs., influence on performance 8-6389
avalanche photodiode, for fibre optical communication lines 8-46793
avalanche photodiode receiver sensitivity, specification and testing *(German)* 8-38015
birefringence small area change real-time detection *(Japanese)* 8-15938
book, photoelectron statistics 8-25842
coherent laser detection system, radiation effects analysis 8-30056
cooling element for radiation detector, shape effect on heat removal efficiency 8-12691
detection process, basic theory and modern appl., book contrib. 8-37067
digital optical communication receiver amplifier design *(German)* 8-33878
elementary cells, of photodetector matrices and scanistors, switching transients 8-45703
fibre-optic communications source and detector props. and performance 8-22212
fibre-optic LED and laser source and Si photodetector development 8-42430
fluorescence lifetime measuring system with picosecond resolution CW laser and AM radio 8-41357
frequency response meas. using laser mode beating 8-8442
holographic recording of 1-D data 8-1195
interference measuring devices, parameter optimisation 8-16844
IR focal planes in intrinsic semiconductors 8-37994
IR imaging, doped Si detector photoresponse measurement problem 8-37000
lag correction network ccts. 8-288
laser beam, spectral analysis, photomixing method 8-46698
laser beam position sensor, using single photodetector 8-46705
laser detection using tunable acoustooptic filters 8-29159
laser pulse detection using receivers with photoresistors 8-45705
laser radiation fluctuation-spectrum recording for USSR state standard 8-45696
lecture on optoelectronic devices 8-25990
low level light detectors for astronomy 8-28525
MIS Schottky barriers, photocurrent suppression and interface state recomb. 8-39222

photodetectors continued
multichannel plate, detectors, operation, struct., performance characts. 8-12758
noise power spectrum density meas. using null radiometer scheme 8-21197
noiselike optical signals, photoelectron counting statistics and error rate characteristics 8-1178
optical antennas focused at finite distances, angle-distance pattern 8-33842
optical fibre systems receiver design, review 8-30077
optimisation for radiation environments 8-29158
p-i-n photodiode with internal reflection 8-37059
p-n junction, direct integration with $Ga_{1-x}Al_xAs$ LOC DBR laser 8-38066
parameters measurement, via optomechanical/electronic unit 8-284
photodiode array, self-scanned, for high dispersion astronomical spectrophotometry 8-45230
photodiode array for single-particle light scatt. meas. 8-28146
photodiode detector for optical cable, optimal filter struct. and characts. 8-18067
photodiode detector for optical fibre communication *(German)* 8-33874
photodiodes, gas-filled, improved detectivity for UV radn., μs-order risetime 8-37062
photoemissive detectors, classical and modern device study, book contrib. 8-37070
photomulitplier meas. of threshold optical radiation fluxes, errors 8-12760
photomultipliers as quantum receivers in red region *(Bulgarian)* 8-45704
photon bunching in thermal radiation, temp. depend., photodetector thermal fluctuation 8-24748
photon pulse delay estimation, nonregularity 8-29157
plasma position detector, using segmented photodiode 8-1901
polariscope quartet for induced birefringence meas. 8-21204
pulse rate meter for heart monitoring 8-31915
pulse receivers for distance meas., basic params. determ. 8-33843
receiving optical antenna, angle-distance sensitivity variation anal. 8-33841
rectilinear scanning, optimal meas. of optical signal parameters 8-17865
rocket attitude control, solar sensor system pointing accuracy *(Japanese)* 8-24420
rotary incremental transducer, design problems *(French)* 8-21121
scattered radiation reception by optical quantum amplifier 8-17946
semiconductor, determ. of theoretical threshold 8-37065
semiconductor, for optical fibre communications, state of art *(Czech)* 8-5575
semiconductor junction transceiver, for fibre optic communication 8-42410
solar flux mapping sensor, Si p-n junction, for high intensity appl. 8-40720
spectrophotometry, solid state image sensor, photodiode appl. *(Japanese)* 8-4677
submillimeter radiation field, transverse distribution, scanning device for visualisation 8-4693
sunlight polarisation detection, ships compass adjustment appl. in fog 8-24831
technology and technical anal., book 8-37066
temperature dependent response of optical radiation meas. instrumentation 8-24857
test installation for elec. contact transducer testing 8-12683
thin film detector for integrated optical systems, description and exam. 8-38080
time characts. meas. using meter with programmed strobing of anal. zone 8-283
time position accuracy determ. of optical pulsed signals for correlated noise types 8-12761
time resolution capabilities of microchannel plate and static crossed field photomultipliers 8-37061
transient process anal. in photoreceiver 8-29162
vibration meas., non-contact and non-reactive, at 60 kHz *(German)* 8-32805
Cu_2Se-$AgInSe_2$ heterojunction, photodetection props. 8-39195
GaAs high speed avalanche photodiode design 8-8446
GaP:Te, photon drag, optical rectification response meas., anomalous polarisation depend. 8-33769
Ge:Cu, I-V characts. 8-19141
Ni-NiO-Ni, integrated MOM junctions, characts. at DC and optical freqs. 8-41349
PbTe:In, diffused planar detector arrays 8-41348
PbTe-$Pb_{0.82}Sn_{0.18}Te$, p-n heterojunctions, electrical and photoelectrical properties 8-39193
PbySn_{1}-$_x$Se epitaxial film narrow band photovoltaic detectors, detection at long wavelengths 8-8443
Si crystal production and perfection for photodetectors 8-11107
Si digital Sun sensor electrical and optical props. *(Japanese)* 8-32313
Si, free carrier absorption 8-37060
Si photodiode, light detection in dielec. waveguide through direct evanescent field coupling 8-30094
Si, photodiode, shallow junction n^+-p, spectral response limitation mechanisms 8-37058
Si photovoltaic detector, radiometric meas. description 8-29140

photodiffusion effects *see Dember effect*

photodiodes
2 km 20 Mb/s optical fibre transmission system 8-42437
array for single-particle light scatt. meas. 8-28146
avalanche photodiode receiver sensitivity, specification and testing *(German)* 8-38015
avalanche semiplanar mesa-type passivation by slightly conductive chalcogenide film 8-2556
detection of light in dielec. waveguide by photodiode through direct evanescent field coupling 8-30094
differential optical polarisation device for angular velocity meas., expt. *(Russian)* 8-29093
fibre communication lines, use of semicond. lasers and avalanche photodiodes 8-46793
gas-filled, improved detectivity for UV radn. μs-order risetime 8-37062

phase equilibrium continued
  $Nd_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
  $Nd_2Ti_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
  Ni, β-phase form., H enriched, at surface and grain boundaries during H_2 absorption *(Russian)* 8−31410
  Ni-Al-Si, β-phase stability *(Russian)* 8−39738
  Ni-Be bronze, Fe and Si alloying addition effect on phase composition *(Russian)* 8−15360
  Ni-Cr alloys, crystallisation anomalies *(Russian)* 8−19719
  $(Ni_{1-y}Y_y)_3Al_{1-x}Sc_x(Ti)_x$, quarternary gamma prime ($L1_2$) pseudobinary props. revealed by ionicity modified pair model 8−19725
  Pb-In-Sn system, liquidus and solidus isotherms 8−44088
  Pb-S-O system, phase equilib. *(Rumanian)* 8−19727
  Pb-Te-O, thermal stability 8−44104
  PdO, semiconductivity and stability, optical props. 8−43497
  Pr-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
  $Pr(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
  $Pr_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
  $RbRF_4$, R=La, Ce, Pr, Nd, Sm, phase equilib. and cryst. struct. *(French)* 8−44107
  Re-Al-Si system, phase equilibria, $ReAl_{1.2}Si_{0.8}$, $ReAl_{1.25}Si_{0.75}$ prod., struct. 8−35357
  Re-Fe-Al, physical-chemical investigation *(Russian)* 8−15362
  Si-Al-O-N system, exam. of compounds and properties 8−48387
  SiC, polycrystalline, quantitative phase analysis, statistical estimation and mathematical splines *(Bulgarian)* 8−39753
  Si_3N_4, oxidised, with Y_2O_3 densification aid, temp. and compositional stability of $Y_6Si_6O_{21}$ 8−27664
  Si_3N_4, phase content determ., using X-ray diffr. anal. 8−44281
  Si_3N_4-SiO_2-MgO, phase relations and interrelation with mech. strength, and oxidation 8−48386
  Si_3N_4-Y_2O_3-Al_2O_3-SiO_2, X-ray diffr. exam., phase equilib. at 1400 degrees C *(Japanese)* 8−44113
  Sm-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
  $(Sr/Ba)(Fe/Al/Ga)_{12}O_{19}$ solid soln. crystal for hexaferrite layer substrate *(German)* 8−23672
  Ta carbides, changes in phase structure during prolonged heating in vacuum 8−44095
  Ti-B-Mo system, phase equilibria at 1400°C 8−35354
  Ti-V-Si, equlibrium silicide, X-ray and electron diffr. obs. 8−27483
  TiO_2-NiO-Sb_2O_3 phase equilibria 8−44098
  TiO_2-Sb_2O_3 system, phase comp. of roasted coprecipitates 8−23651
  Ti_2O_3-$MgTiO_3$, phase analysis 8−3103
  U-O system, phase equilibrium, thermal, X-ray and cond. meas. 8−35371
  V-Mn-O system, phase comp. during oxide prep. 8−27447
  V-N system, phase formation *(Russian)* 8−39739
  VSe_2 phase, stability and Se equilib. vapour press., homogeneity range 8−43133
  W-C-(Zr)(Hf)(Nb)(Ta)(Re) alloys, vacuum melted, phase composition, struct. and props. 8−31403
  W-Re, sigma phase stability and irradiation effects 8−11200
  $YO_{1.5}$-PrO_x, phase relns. and electrophys. props. of solid solutions 8−23686
  Zr-Ge-B system, phase equilibria 8−35356
  Zr-Mo (3 wt.%), β-phase stability 8−39742
  Zr-Mo-Al (3, 1 wt.%), β-phase stability 8−39742
  ZrH_x, two-phase (δ+ε), homogenisation during neutron bombard. *(Russian)* 8−18684
  ZrO_2-Al_2O_3-SiO_2, subsolidus equilibria and stabilization of tetragonal ZrO_2 8−27497
  ZrO_2-Sc_2O_3, phase system, X-ray and thermal anal. 8−27494
  ZrO_2-W, eutectic microstruct. 8−27499
  ZrO_2-Y_2O_3, phase equilibria and ordering 8−48385

phase equilibrium diagrams *see phase diagrams*

phase-locked loops
  400 Mb/s optical fibre communications, integrating and transimpedance front end performance comparison *(German)* 8−33879
  automatic internal friction and modulus meas. apparatus using phase-locked loop 8−13981
  digital signals, phase measurement using PLL method for low S/N ratio 8−16810
  flowmeter, implantable Doppler design with phase-locked loop 8−31873

phase measurement
  controlled-current impedance meas. equipment design *(Spanish)* 8−8421
  detector produces unambiguous output 8−4627
  digital phase detection used for computing phase angle averages 8−21163
  digital signals, measurement using PLL method for low S/N ratio 8−16810
  optical fibre material dispersion meas. by baseband modulated envelope detection 8−1368
  pulse continuous RF signal amplitude and phase difference measuring device 8−12719

phase meters
  detector produces unambiguous output 8−4627
  digital, optimal threshold determ., meteorological Doppler radar station appl. *(Russian)* 8−20560
  digital, with seven-segment luminescent vacuum display, counter scheme 8−4648

phase modulation
  see also phase shift keying
  saturated absorption spectroscopy, optical feedback-effects suppression by phase modulation of refl. light 8−21225

phase regulation *see phase control*

phase shift circuits *see phase shifters*

phase shift keying
  turbulent atmosphere, optical DPSK system performance 8−42293

phase shift microphones *see microphones*

phase shifters
  commutable circulator, with increased mean-power level 8−4637

phase space methods
  semiclassical statistical mech., phase space sampling approach 8−32753

phase transfer function *see optical transfer function*

phase transformations
  see also critical fluctuations; heat of transformation; isothermal transformations; liquid crystal phase transformations; liquid-vapour transformations; order-disorder transformations; phase diagrams; phase equilibrium; solid-liquid transformations; solid-state phase transformations; solid-vapour transformations; spinodal decomposition; vaporisation
  Abelian lattice gauge theories, phase transitions 8−12812
  abrupt transformation, data partitioning, cluster anal. optimisation 8−36956
  bifurcation approach to phase transitions, external field inclusion 8−14446
  binary mixtures an and liquid-gas transitions, model for coupling between molecule polarisation and order parameter 8−22823
  capillary discharge with evap. walls, phase transitions 8−42839
  catastrophe and renormalisation theories, transitions with several order parameters 8−32782
  critical behaviour of first order transition, mean-field theory, master eqn. and nonlinear Fokker-Planck eqn. 8−8375
  Dicke model, two-level atoms, phase transition 8−5442
  Dicke model with external fields, simple Green function approach, lack of phase transition 8−9353
  diffusionless first order phase transform. eqns. appl. to liquid crystals and solids 8−30734
  distinguishable quantum particles in one-dimens. box, continuous system, dynamics, phase transitions 8−32755
  distribution functions, high order reduced, truncation procedure 8−36958
  elastic continua, modelling, thermodynamic restrictions 8−12568
  external-noise-induced, chem. model 8−16764
  finite size scaling theory, static, dynamic, based on renormalisation group approach, critical phenomena exam. 8−16745
  fluid mixtures, analytic and perturbation theories 8−18516
  Frenkel exciton system, phase transition and exciton-photon coupling 8−23024
  gauge theory, spontaneously broken, first-order phase transitions 8−24943
  gradient invariants and incommensurate phase transitions 8−22824
  growth-disorder model, three-dimensional 8−26462
  Kirkwood-Salsburg eqns. for bounded stable Kac pot., instability and phase transitions 8−4553
  Landau theory for chem. instabilities 8−16763
  lasers and phase transitions, intracavity absorber expt. 8−13676
  lattice gauge theory, phase transitions, recursion relations 8−24953
  Lifshitz point, critical wavevector 8−36954
  limit cycles and multiperiodic flow bifurcation and nonequilibrium phase transitions 8−24759
  lipid monolayer phase transitions, model 8−2338
  local critical properties, near isolated impurity 8−6142
  manifolds of phase coexistence 8−16749
  metastable states in classical continuous model 8−24756
  microemulsions, lattice gas model, surfactant effects 8−23974
  models for transitions with continuous constant energy surfaces 8−29078
  molecular thermodynamics appl. to phase separation and critical phenomena *(German)* 8−14447
  Mossbauer radiation inelastic scatt. near phase transition 8−15073
  negative specific heat paradox, canonical ensemble theory rel. to phase transtions 8−9557
  non-conducting chain systems, 3-d Coulomb coupling and charge ordering 8−18980
  nonequilibrium phase transition, exact results, stochastic anal. 8−29076
  nuclear matter, shock wave matter, shock wave dynamics, phase transition effects 8−21509
  one dimensional system with phase transform., exact linear renormalisation 8−32769
  percolation clusters, as teaching aid for Monte Carlo simulation and crit. exponents 8−12477
  Prigogine-Defay ratio, rel. to order parameter theory 8−2232
  quantum molecular crystal, quantum quadrupolar phase theory *(Russian)* 8−22929
  quasi-one-dimensional electron-lattice system, three dimensional CDW ordering temp. 8−23037
  renormalisation group approach to critical phenomena, ferromagnetic example 8−8497
  second kind, critical fluctuation pattern, effect of large-scale inhomogeneities *(Russian)* 8−18741
  simple fluid, correls. near phase transition 8−9928
  spatially coherent laser beam form., phase transitions 8−17898
  spin systems, tricritical phase transition, eqn. of state, critical exponents, logarithmic corrections 8−27048
  synergetics approach 8−16717
  thermodynamic partition function, analytic props. of Lippman-Schwinger variational approx. *(German)* 8−36953
  three-dimensional model, cubic anisotropy effect 8−10170
  transition probability, system size depend., consequences for stochastic eqns. 8−41258
  tricritical phase transition, critical exponents, classical N-component spin systems 8−4579
  tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8−26681
  two-dimensional systems, phase transitions, theory 8−38811
  two-level atom, phase transition induced by laser field *(Russian)* 8−29924
  water, transient heat transfer (0-220°C, 1-10 bars) *(Russian)* 8−38183
  Al-Cr(Mn), struct. form. and phase transform. kinetics *(Russian)* 8−15359
  n-$Bi_{0.924}Sb_{0.076}$, one-ellipsoid to two-ellipsoid fermi surface transition in extended cryst. *(Russian)* 8−14657
  H-He fluid planets, molecular-metallic transition rel. to dynamics He distrib. 8−28555
  H-He fluid planets, phase diagram and transport props. 8−28554
  Zr-Al-Fe (8.9, 0.001 to 0.006 wt.%) Fe partitioning to Zr_2Al during peritectoid transformation 8−39784

phase transitions *see phase transformations*

phased arrays (antenna) *see antenna phased arrays*

phased locked oscillators *see parametric oscillators*

phi mesons
  dual unitarisation, renormalisation of trajectories with zero quantum numbers 8−21400

phi mesons continued
e^+e^- annihilations, radial excitations of ρ, ω, φ mesons 8−4866
$e^+e^- \to K_s^0 K_l^0$, φ meson mass meas., ωφ interference obs. *(Russian)* 8−45935
K^-p, 10 GeV.c, prod. of φ and f′ 8−4874
$p+Be \to \varphi + X$, 400 GeV/c, φ decay modes, OZI rule 8−599
$\varphi \to e^+e^-$, decay widths from QCD *(Russian)* 8−45812
$\varphi \to \pi^+\pi^-$, search in $e^+e^- \to \pi^+\pi^-$ reaction *(Russian)* 8−45915
$\varphi \to \rho\pi$, dynamical calc., energy depend. of Zweig-rule violating couplings 8−33063
$e^+e^- \to \pi^+\pi^-\pi^0$, φ meson mass meas., ωφ interference obs. *(Russian)* 8−45935

philosophical aspects
see also humanities
1950s, philosophy and history of science 8−4452
causation analysis refinements rel. to revolutions in modern physics 8−12522
duality, fundamental development 8−36788
general relativity, initial value formulation, anti-Machian nature 8−8276
Helmholtz, H. von, evolution of empiricism, study of a universalist 8−8212
high energy physics paradigm analysis 8−20935
induction problem interpretation in approximation theory of truth *(German)* 8−12530
Mach's philosophy, genesis of relativity theory 8−8211
Polish logic and philosophy of science after Second World War 8−12529
quantum mechanical observables with continuous spectra, hidden variables problem 8−16690
quantum theory, philosophically different interpretations and their consequences *(Spanish)* 8−41202
research project methodology 8−12528
special relativity, relative simultaneity, empirical determ. 8−16642
statistical mechanics in classical physics, foundations 8−8334

phonographs *see gramophones*

phonon bottleneck *see phonons*

phonon-defect interactions
see also lattice localised modes
colour-centre-phonon many-mode interaction, absorption band shape, adiabatic approx. 8−2883
defect tunnelling, phonon assisted, in-band defect-induced phonon reson. modes effect 8−14419
diamond, natural, thermoluminescence, phosphorescence, defects, low temp. 8−11000
dislocation motion, soliton-like, piecewise linear force model 8−2119
multiphonon effects on dispersion, Faraday rot., associated with point imperfections 8−43839
Bi, deformed cryst., phonon scatt. by lattice defects, thermal cond. calc. 8−22802
$Ca(WO_4)_x(MoO_4)_{1-x}$, Raman scatt. line shape 8−10898
GdS, FCC metallic phase, Raman scatt., phonon density of states 8−19480
KCl, F-centre phonon many-mode interaction, absorption band shape 8−2883
KCl, phonon scattering on small radius colloids 8−38798
$Nb_{80}Mo_{20}$, $Nb_{75}Mo_{25}$, supercond., phonon cond. below 1k 8−14881
$Nb_{80}Ta_{20}$, supercond., phonon cond. below 1k 8−14881
TiC, high temp. thermal cond., ambipolar diffusion contrib. 8−26742

phonon dispersion relations
A15 compounds, coherence length and phonon softening 8−34587
alkali halide, lattice dynamics calc., extended three body force shell model 8−47491
alkali metal, crossing of dispersion curves in (ξ00) direction 8−38795
alkali metals, phonon dispersion and electron gas pressure, theory 8−2208
binary alloys, three mode, long wavelength optical vibr., appl. to Ge_xSi_{1-x} 8−6135
charge density distortions and lattice dynamics, appl. to Nb 8−30714
graphite, intercalation compound, C_8Rb, elastic and inelastic neutron scatt. 8−30597
inert gas, anomalous terms at small wavenumber 8−2210
interface plasmons, longitudinal optical phonons, multilayer struct. 8−19118
metal, in mag. field phonon spectrum, nonadiabatic effects *(Russian)* 8−19106
metals, BCC, phonon dispersion, modified de Launay model 8−34573
metals, Krebs and Cheveau models, three-body forces inclusion and equilibrium condition 8−47480
metals, lattice dynamics and three body interaction 8−10139
microscopic theory, anomalous terms at small wavenumber 8−2210
naphthalene-d_8, phonon dispersion meas. and calc. 8−2211
noble metal, phonon frequency determ. in noninteracting band scheme 8−47483
noncrystalline solid, dispersion relation of phonon-like excitations 8−18727
optical characts., bound polaron and phonon states *(Russian)* 8−39556
solid, phases I, II, acoustic phonon dispersion curve meas. by neutron inelastic scatt. 8−2212
solid, phonon dispersion effects on nonradiative transitions 8−43926
transition metal, cubic, phonon dispersion, Fielek and extended Cheveau models 8−22801
TTF-TCNQ, inelastic neutron scatt., re-examination 8−30721
TTF-TCNQ, Kohn anomalies, phonon dispersion curves 8−10133
TTF-TCNQ, phonon dispersion curve meas., Peierls transition exam. 8−10134
Ag, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Au, electron-ion pseudopot., form factor, liquid elec. cond., phonon dispersion 8−34785
Au, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Au, thermal properties and Gruneisen parameter, Toya's first principle approach 8−38806
Bi_2Te_3, lattice vibrs. coherent inelastic neutron scatt. meas. 8−34576
CaBr(Cl)(I), Gruneisen γ and other thermodynamic props. at zero and elevated press. 8−43142
Cd, phonon dispersion relations, specific heat by modified Cheveau model 8−38792
$CeD_{2.12}$, phonon dispersion relations 8−30716

phonon dispersion relations continued
Co, lattice dynamics and compression curves 8−38793
$Co_{0.65}Ni_{0.35}$, precursory phonon obs. of FCC to HCP transition 8−43082
Cr, lattice dynamics, phonon dispersion and atomic force constants, phenomenological model 8−26640
Cu, interatomic pot., vacancy form., migration energy from phonon dispersion curves 8−42950
Cu, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Cu, resonant model potential and phonon frequencies 8−30713
CuCl, phonon dispersion curves determined by neutron scatt. at 4.2K 8−6132
β-CuI, phonon spectra calc. 8−10138
EuSe, mag. phase depend. Raman scatt. 8−10886
Ge_xSi_{1-x}, long wavelengths optical vibr. 8−6135
He FCC, high press., inelastic neutron scatt. 8−10255
Hg, solid, neutron inelastic scatt. 8−14410
$Hg_{3-\delta}AsF_6$, one-dimens. phonons and phase-ordering phase transition, neutron scatt. expts. 8−26644
K, phonon spectrum calc., microscopic theory of force constants 8−26647
KCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
KCN, lattice dynamics in disordered cubic phase 8−38794
KI, dispersion of phonons calc. 8−26646
$K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, Kohn anomalies, phonon dispersion curves 8−10133
$K_{0.33}WO_3$, hexagonal, neutron scatt. obs. 8−14411
Li, phonon frequency, liquid electrical resist. and interionic pair potential 8−10140
LiH(D), elastic constants, lattice dynamics and phonon dispersion 8−30711
Li_3N, IR and Raman spectra and lattice dynamics 8−48177
Mg, HCP, appl. of model for lattice dynamics 8−22795
Mo, phonon dispersion, anomalous struct., tight-binding calcs. 8−10137
N_2 monolayer on graphite, phonon dispersion curves for postulated four sublattice struct. 8−47667
NH_4I, ND_4I, lattice dynamics calcs. 8−6133
NaBr, dispersion of phonons calc. 8−26646
NaCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
NaCN, lattice dynamics in disordered cubic phase 8−38794
NaCl, far IR dispersive-reflection meas. at room temp., comparison with calc. 8−35139
Na_2S, phonon dispersion curves, inelastic neutron scatt. obs. *(German)* 8−14414
Nb, charge density distortions and lattice dynamics 8−30714
Nb, Nb-Mo alloys, phonon dispersion, anomalous struct., tight-binding calcs. 8−10137
NbC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
NbC, supercond., phonon anomalies, microscopic theory 8−14867
Ni, phonon dispersion curves, θ-T curves 8−26642
$Ni_{1-x}Pt_x$, disordered phonon dispersion relations, neutron inelastic scatt. 8−43085
Pb, estimation of stacking fault and twin boundary energies using phonon dispersion curve 8−43031
Pb, phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
PbF_2, inelastic neutron scatt. study of phonon dispersion relation 8−30712
$Pb_{1-x}Sn_xSe$, gapless state and phonon spectrum *(Russian)* 8−30715
Pd, phonon dispersion curves, θ-T curves 8−26642
Pd-D alloys, phonon dispersion relation meas., elastic constants and Debye temp. 8−26639
$PdD_{0.63}$, inelastic neutron scatt. line shapes, Pd-D, D-D force consts. 8−47481
Pt, phonon dispersion curves, θ-T curves 8−26642
Pt, phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
$(SN)_x$, acoustic phonons, inelastic neutron scatt. obs. 8−6136
$SrGa_2$, layered, dispersion of acoustic phonons, inelastic neutron scatt. 8−47484
Th, crystal equilib., lattice dynamics 8−47479
Th, one parameter model pseudopotential calc. 8−26643
Th, phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
TiC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
TiN, phonon dispersion curves, soft-mode behaviour, inelastic neutron diffr. 8−43083
V, lattice dynamics, phonon dispersion and atomic force constants, phenomenological model 8−26640
V_3Si, lattice dynamics, inelastic coherent neutron scatt. 8−26645
YS, soft-mode behaviour in phonon dispersion, inelastic neutron scatt. meas. 8−38807
ZnS, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnSe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnTe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895

phonon drag
alkaline earths, cubic, deviations from Wiedemann-Franz law 8−39086
graphite, cryst., thermoelec. power, anomalous phonon drag effect 8−19065
metal, phonon drag magnetothermoelectricity, semiclassical theory 8−6354
metals, low temp. elec. resist., comparison between first principles form factor and empirical form factor 8−2463
semiconductor, Nernst-Ettingshausen effect, thermopower, strong elec. field 8−23122
semiconductor filament, thermoelectric power 8−19069
semimetal, phonon drag, role of surface in thermoEMF *(Russian)* 8−47819
thermal phonon drag by coherent acoustic waves, Umklapp processes 8−14417

photoelectron spectra continued
p,p′-thiobenzophenones, (He I) photoelectron spectra, assigned by perturbational mol. orbital and CNDO/2 calcs. 8−46396
transition metals, chemisorption of H, O and CO, interpretation of photoemission spectra 8−2378
triallyl orthoformate, photoelectron spectra, ionisation pot. bands, conformation, SPINDO calc. 8−9194
trichlorofluoromethane, UV photoelectron spectra, vibr. fine struct. 8−9196
trimethyl orthoformate, photoelectron spectra, ionisation pot. bands, conformation SPINDO calc. 8−9194
TSeF salts, mol. props., one-dimens. cond. salts form. 8−6363
upper atmosphere, photoelectron energy spectra 8−49190
UPS, angle-resolved, in modified LEED system 8−15293
UV photoelectron spectra at high temp., interpretation 8−17718
UV photoelectron spectroscopy, basic concepts, spectra 8−17715
valence bands in solids, photoelectron spectroscopy, review 8−39668
Ag (111), adsorbed layers of $O_2(N_2)(S)$, electronic props., XPS and UPS 8−10279
Ag, (111) surface, failure of plane wave, OPW and APW final states 8−11080
Ag, angular resolved photoemission from low index faces 8−48282
Ag film, initial stages of growth on Si (111) 7×7, LEED, AES and UPS expts. 8−38988
Al(100), angular resolved photoemission from intrinsic surface states 8−39665
Ar, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
Au alloys, surface electron states, photoelectron spectra meas., rel. to Au 8−14781
Au, CO physisorption and chemisorption, high resolution UPS 8−39666
Au, photoelectric cross sections of low energy photons 8−46309
Au, surface electron states, photoelectron spectra meas., rel. to Au alloys 8−14781
BiI_3, excitonic shifts of quasiatomic optical core to cond. band transitions, UPS obs. 8−11079
BiI_3, layered semicond., valence bands UPS and XPS obs. 8−11078
$Bi_xSb_{2-x}Te_3$, 2-dimens. cryst. interface props. of Bi overlayer UPS obs. 8−34881
Br, He (I) PES 8−37609
BrCl, photoelectron spectrum, assignments 8−5284
$BrO(X^2\Pi_i)$ radical, ionisation potential, photoelectron spectroscopic determ. 8−25612
C_2N_2, valence excitation and UV spectra by HAM/3, expt. photoelectron spectra 8−25454
CO, chemisorpted on Ni, UV PES *(German)* 8−29751
CO, chemisorption on Pt (111) and Ni (100), (111), C-O bond lengths, electronic struct. 8−6210
CO, condensed film, UPS linewidths 8−31294
CO, core ionisation and single orbital relax. calcs. 8−5133
CO, inner-valence ionisation, correl effects calcs. 8−9198
CO oxidation by NO on Ir surface XPS and UPS 8−15702
CO, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
CO^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
CO_2, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
$CO_2{}^+(C^2\Sigma_g{}^+)$, formation and predissoc., photoelectron spectra 8−5300
Cd, partial photoionis. cross section 8−42022
CdI_2, band struct., tight binding calcs. and photoemission spectra 8−23018
$CdIn_2Se_4$, defect zincblende semicond., valence band, cryst. struct. effects 8−48278
CdSe (1120), surface electronic struct. and chem. struct. 8−14788
$CdSe-As_2S_3(AsSbS_3)$ heterostructure, energy bands and interface props., photoelectron spectroscopy 8−2551
CeF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
Cl_2, chemisorpt. on Ag (110), XPS and UPS meas. 8−31293
Co, UPS, single cryst. and polycryst. film, electronic struct. 8−11081
CsCl(Br)(I), electron-phonon interaction effects, Monte-Carlo calc. and expt. 8−11071
Cu (111), angle-resolved UPS, free electron final state model calcs. 8−31302
Cu, adsorption of NO, NH_3 and N_2H_4 8−6830
Cu, angle resolved photoemission spectra 8−43986
Cu, CO physisorption and chemisorption, high resolution UPS 8−39666
Cu, ordered monolayer on Zn (0001), electronic struct., photoelectron spectra 8−39660
Cu, photoelectric cross sections of low energy photons 8−46309
Cu, photoelectric interaction around the K edge 8−5183
Cu, photoemission with polarised light, cryst. symm. effects 8−23581
Cu-Zn, α-phase, photoelectron meas. 8−35247
$Cu_{0.83}Ga_{0.17}$, α-phase, photoelectron meas., impurity level 8−35247
$Cu_{0.87}Ge_{0.13}$, α-phase, photoelectron meas., impurity level 8−35247
Cu(100), chemisorption of CO, angle resolved UV photoemission spectroscopy exam. 8−10284
Cu(100) surface, oxidation studied by angle-dispersive photoemission spectra 8−15585
EuO:Gd, surface depolarisation of photoelectrons 8−15286
F, He (I) PES 8−37609
Fe (110), complexes with PF_3, CO and cyanomethane, UV photoelectron obs. 8−19629
Fe surface, (111) and (100), adsorpt. and decomp. of NH_3 8−40077
Fe surface, H_2 chemisorption LEED, UPS, thermal desorption spectroscopy, work function meas. 8−14566
GaAS, O_2 chemisorption on (110) surface, bonding sites 8−38938
GaAs (110) surface, exposed to O and O_2 photoemission spectra meas., Space Shuttle expt. 8−35246
GaAs, adsorbed O, (110), surface electronic struct., synchrotron irradiated photoemission 8−43453
GaAs, epitaxially grown (001), (111) and $(\bar{1}\bar{1}\bar{1})$ surfaces, LEED, AES, photoemission 8−38924
GaAs, surface, (110), ang.-resolved photoelectron spectra 8−43984
n-GaAs, valence band studies of clean and O_2 exposed surfaces 8−43298
GaAs-Cs-O photoemitter, negative electron affinity, fabrication and characts. 8−2979

photoelectron spectra continued
GaP, Cs(Cs-O) activated, with negative electron affinity, thermalised electron emission 8−11073
GaP, Cs(Cs-O) activated, with negative electron affinity, near UV photoemission and secondary emission 8−11074
GaP, surface states, UPS meas. 8−14780
GaSe, core-level photoemission anisotropy 8−11076
GaSe(Te), optical spectra in 2 to 50 eV range 8−10915
Ge (100), chemisorption of H, expt. results compared with pairing model calcs. for Si (100) 8−34719
Ge, chemisorption of Cl_2, photoemission polarisation effects with synchrotron radiation 8−14580
Ge, film, electronic struct. charge on ordering, double beam photoemission 8−19634
Ge, ultra pure, method to determ. composition and struct. of non-elemental acceptor and donor centres 8−39658
GeS, electron-hole interaction in d-electron excitations, photoelectron and optical spectra 8−34776
H_2, photoelectron ang. distrib., rot. states anal. 8−33550
H_2, photoelectron angular distrib. and intensity, vibr.-rot. struct. 8−46393
H_2O, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
He, photoabsorption, modified RPA calcs. with exchange 8−13477
He, two-electron photoionis., threshold law and photoelectron spectra 8−29767
HfX_4, (X=Cl,Br,I), He I and He II photoelectron spectra, ionis. energy, chem. bonding 8−46394
Hg, partial photoionis. cross section 8−42022
$HgCl_2$, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
InSb, external photoelec. effect 8−27366
InSe, core-level photoemission anisotropy 8−11076
Ir (111), chemisorption of CO, UPS and XPS obs., comparison with Pt 8−38942
Ir (111), oxidation, combined LEED/UPS obs. 8−19955
KCl:Eu crystallophosphores, aggregation of $Eu^{2+}v_c{}^-$ centres *(Russian)* 8−43909
K_2CsSb, evaluation as photocathode material 8−11072
$KMnF_3$ film, photoelec. yield spectra, rel. to band struct. 8−43980
$KZnF_3$ film, photoelec. yield spectra, rel. to band struct. 8−43980
Kr, 4p asymmetry parameter and cross section photoelectron energy depend. pseudopot. method 8−9130
LaB_6 (001), surface state exam. by angular resolved UPS 8−19114
$LaBr_3$, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
LaF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
$LaNi_5$, self restoring of active surface, photoemission, mag. susceptibility study 8−48280
$LaO_4{}^{5-}$, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
Mg, polycryst., adsorpt. of O_2 at 100 and 300K, XPS, UPS, XAES 8−18906
$MnO_3F(Cl)$, He (I) photoelectron spectra, metal-ligand bonding, EHMO calc. 8−9193
Mo complex, hexadimethylamino molybdenum, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
Mo, photoelectric cross sections of low energy photons 8−46309
Mo, UPS, angle-resolved, surface resonances on (100) face 8−2987
Mo-Ca, ion implanted, range distrib. of Ca^+ ions, work function and AES obs. 8−27365
$Mo_2(NH_2)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
$Mo_2(OH)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
MoS_2, UPS meas. band struct. determ. 8−35250
Mo(110), surface densities of states for normal photoemission 8−35251
N_2, condensed film, UPS linewidths 8−31294
N_2 inner-valence ionisation, correl effects calcs. 8−9198
N_2, partial cross sections depend. on photon energy, 16 to 40 eV 8−1025
N_2, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
$N_2{}^+$, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
NH_3, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
NH_2Br, He(I) photoelectron spectrum 8−25615
N_2O_4, He I photoelectron spectrum, new interpretation 8−17713
NaCl, photoemission exam. of Na^+-2p core excitons 8−43982
Na_2KSb, evaluation as photocathode material 8−11072
NdF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
Ne, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
Ni (100), resonant photoemission exam. 8−27371
Ni (100) surface, electron binding energies of core levels in adsorbed Cs 8−18896
Ni, adsorbed O, electronic struct. and UPS 8−15281
Ni, angle resolved photoemission spectra 8−43986
Ni, ferromag., exchange splitting, angle-resolved photoemission meas. 8−43985
Ni film, surface properties and photoelectron spin polarisation 8−14782
Ni, hydrocarbon chemisorption, C 2s levels, initial state shift 8−34703
Ni, S and CO chemisorption, surface struct. from ang. resolved UPS 8−31303
Ni surfaces, clean and S saturated, directional UV photoemission 8−15295
$Ni_{1-x}Cu_x$ (x=0.03, 0.16, 0.24), photoemission study, surface, bulk electronic struct. 8−48281
Ni(001) surface, p(2×2) and c(2×2) O superstructure, angle resolved photoemission from adsorbates 8−23585
Ni(111), adsorption of acetylene, chemisorbed O_2 effects, CH formation 8−18902
O, photoelectron ang. distrib. anal. branching ratios determ. 8−5181
O_2, RH-GTO-MCSCF calc., 1s photoelectron spectra, multiplet intensity ratio 8−5134

photoelectron spectra continued
O_2^+, predissociation of $b^4\Sigma_g^-$, $c^4\Sigma_u^-$ states, threshold photoelectron-photoion coincidence 8−42144
O_2^+, vibr. intensity distribs. for electronic states prod. by photoionis. 8−25614
O_3, photoelectron spectra, HAM/3 MO calcs. 8−13414
O_2^*, vibrationally excited, study by variable temp. photoelectron spectroscopy 8−21972
PN($X^1\Sigma^+$), VUV photoelectron spectrum 8−1024
Pb, photoelectric cross sections of low energy photons 8−46309
Pb, photoelectric interaction around the K edge 8−5183
Pb, VUV photoelectron spectra, spin polarisation autoionis. reson. 8−33483
$PbCl_2$, valence band electronic struct., XPS and UPS obs. 8−6826
$PbCl_2(Br_2)(I_2)$, valence band electronic struct., XPS and UPS obs. 8−6826
PbI_2, excitonic shifts of quasiatomic optical core to cond. band transitions, UPS obs. 8−11079
PbI_2, layered semicond., valence bands UPS and XPS obs. 8−11078
PbI_2, semicond., band struct., angle resolved photoemission meas. 8−15296
PbS, (100), angular resolved UV photoemission 8−2989
PbSe, spin-orbit splitting in valence bands, angle-resolved UV photoemission 8−2991
PrF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
Pt, adsorption of CO, O_2, H_2, UV photoemission spectra 8−14608
Pt(100), adsorpt. of ethylene 8−18905
Rb_2CsSb, evaluation as photocathode material 8−11072
$(SN)_x$, electronic struct., X-ray and UV photoemission obs., OPW and pseudopot. calcs. 8−6832
ScAg(Pd)(Ir)(Ru), UPS exam. 8−48276
Si (100), chemisorption of H, pairing model calcs., compared with expt. 8−34719
Si, (111), 7×7 and 1×1, chemisorption of Cl_2, UPS obs. 8−34704
Si (111), surface reproducibility and impurity segregation ion neutralisation spectra and UPS obs. 8−34688
Si, amorphous, hydrogenated bonding 8−19636
Si, chemisorption of Cl_2, photoemission polarisation effects with synchrotron radiation 8−14580
Si, O_2 adsorption, UPS, new adsorption state 8−34702
Si surface, UPS before and after N_2^+ bombardment, 500 eV, chem. reactions 8−48265
Si:B, detection of atomic plane displacement in near-surface layers, ang. depend. of photoemission during X-ray Bragg diffr. 8−47207
Si-SiO_2 interface, Auger sputter profiling and photoelectron spectroscopy obs. 8−10287
Si_xGe_{1-x} multitip photofield emission cathode, fabricated by crystn. from vapour, emission characts. 8−2975
Si_2H_6, bond lengths, photoelectron spectrum, mol. orbitals calcs. 8−5132
SiO surface, UPS before and after N_2^+ bombardment, 500 eV, chem. reactions 8−48265
SiO^6, vac. UV photoelectron spectra, ab initio mol. orbital and Xα calcs., ($X^1\Sigma^+$) state 8−46395
SiO_2 surface, UPS before and after N_2^+ bombardment, 500 eV, chem. reactions 8−48265
SiO_2, vitreous, photoelectric and photoluminescent props. in fundamental absorpt. region 8−39596
Sm, divalent surface states, photoemission meas. 8−47841
Sn, photoelectric cross sections of low energy photons 8−46309
Sn, photoelectric interaction around the K edge 8−5183
Sn, UPS, electron distrib. curve 8−15282
$SnCl_2$, valence band electronic struct., XPS and UPS obs. 8−6826
SnF_2, valence bands, electronic struct., UPS 8−39656
SnS, electron-hole interaction in d-electron excitations, photoelectron and optical spectra 8−34776
$SnSe_2$, single crystal, reflectivity, XPS, UPS, and band struct. 8−6701
$SrTiO_3$, chemisorbed phases of water, UPS meas. 8−10285
$SrTiO_3$ photoelectrolytic electrodes, defect surface states obs. 8−14815
Ta, photoelectric cross sections of low energy photons 8−46309
Te, film, electronic struct. charge on ordering, double beam photoemission 8−19634
Th, photoelectric cross sections of low energy photons 8−46309
$TiCl_4$, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
TiO_2 (100), chemisorption of H_2, O_2, and H_2O, electron spectroscopy, evidence for Ti^{3+} photogeneration 8−38940
TiO_2, chemisorbed phases of water, UPS meas. 8−10285
TiX_4, (X=Cl,Br,I), He I and He II photoelectron spectra, ionis. energy, chem. bonding 8−46394
Tl, polycryst. film, UV incident 8−2986
TlCl, valence band electronic struct., XPS and UPS obs. 8−6826
TmSe, electron energy loss spectroscopy and UV photoemission meas. 8−31305
U, He (I) PES 8−37609
U, photoelectric interaction around the K edge 8−5183
UO_2, valence electronic configuration determ. by photoelectron spectroscopy 8−15284
V, photoelectric cross sections of low energy photons 8−46309
VU_4, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
W (001) surface with adsorbed Cs, core-level photoemission anisotropy 8−11076
W, UPS, angle-resolved, surface resonances on (100) face 8−2987
WCl_5, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
W(100) surface, angle-resolved photoemission from surface states, refraction effects 8−48279
W(111), surface densities of states for normal photoemission 8−35251
Xe, 5p subshell photoelectron branching ratio, Dirac-Fock calcs. 8−42021
Xe, 5s photoelectron ang. distrib. 8−33482
Xe, satellite lines in 5s-5p photoelectron spectrum 8−25493
Xe_2, photoelectron spectra, $X^1\Sigma^+_{(1/2)g}$ ground state pot. 8−5280
ZnO (0001), $(000\bar{1})$ and $(10\bar{1}0)$, UPS rel. to elec. struct. 8−15288
ZnO, electronic surface and bulk transitions exam. by electron energy loss spectra 8−30964
ZnO-Cs, fabrication, UPS meas. 8−15279
ZrX_4, (X=Cl,Br,I), He I and He II photoelectron spectra, ionis. energy, chem. bonding 8−46394

photoemission
see also photoelectron spectra; photoemissive devices
adsorption effects, theory 8−2996
alkali metal multilayers, high field enhancement of photoemission 8−19639
angular distribution, cosine law theory 8−35233
book, photoelectron statistics 8−25842
chain method appl. to electron emission 8−43983
coronene, electron escape depths and absorpt. coeffs. 8−23580
dielectric-metal bounds, derivations of Fresnel eqns., use in theory of angle-resolved photoemission 8−39659
final states in photoemission and field emission 8−15299
light intensity probability density determ., from photoelectron statistical distrib. 8−24840
metal, creep-electron emission relation 8−6994
metal, negative ion emission during microsecond laser pulse irrad. 8−2981
metal, volume photoemission, theory 8−2978
metal surface, nonlinear photoelectric effect, laser-induced electron emission 8−19638
microscopy, bacteriochlorophyll monolayer quantum yield and image contrast 8−44453
molecular crystal, photoemission theory 8−39662
MOS insulator trapped electron release by UV photoinjection 8−6453
multialkaline antimonides, (Sb, Na, K, Cs) type, photoemission rel. to chem. struct. *(French)* 8−39655
naphthacene, electron escape depths and absorpt. coeffs. 8−23580
nonlinear photoelectric emission from metals by high power layer radiation review 8−48288
nuclear explosions EMP, system generated by photoelectron emission current, anal. 8−21772
pentacene, electron escape depths and absorpt. coeffs. 8−23580
perylene, electron escape depths and absorpt. coeffs. 8−23580
soft X-ray induced electron emission, yield and energy spectrum prediction 8−31297
soft X-ray photoemission, electron transport method development 8−31296
spectrometer, variable angle, for meas. electrons photoejected by rare gas reson. light 8−1110
student laboratory experiment and apparatus design, Planck's const. determ. 8−41109
synchrotron radiation appls., including angle-resolved photoemission 8−32963
transition metal, extraatomic relaxation energies *(Russian)* 8−31295
violanthrene-A, electron escape depths and absorpt. coeffs. 8−23580
AlGaSb, growth and characts. for 1.0-1.8 μm heterojunction devices 8−6870
Au-Si internal photoemission struct., spatial distrib. of excited electrons *(French)* 8−23166
β-B, rhombohedral, photon energy depend. of work function 8−19637
CN violet ($B^2\Sigma$-$X^2\Sigma$) band system, photoelec. intensity meas., transition probabilities 8−37649
CdF_2-metal Schottky diode, photoemission, capacitance and I-V meas. barrier heights 8−26950
Cu-phthalocyanine, electron escape depths and absorpt. coeffs. 8−23580
Cu_2O films arc cathode emission study 8−23583
n-GaAs, real epitaxial surface, photoelec. spectroscopy, mechanisms 8−34858
Ge, amorphous layer on Ge bulk, photoemission during X-ray Bragg diffr. 8−47209
InP-InGaAsP bias assisted photocathodes, photoemission in 1-2 μm range 8−48289
Pt (100), adsorption of S, obs. 8−14606
Si-SiO_2 interface, props. 8−23170
Ta, photo field emission characteristics, band struct. influence 8−27373
Ta, photofield emission spectroscopy of band struct. 8−35261
to film, vacuum-deposited, gas adsorpt. effects on photoelec. props. 8−15298
W field emitter, periodic field-dependent photocurrent 8−35260
W, photo field-emission, periodic current deviation, wavelength depend. *(German)* 8−23579
W, photoemission of spin polarised electrons 8−35248

photoemission spectra *see photoelectron spectra*

photoemissive devices
see also photocathodes; photoemission
No entries

photoemissivity *see photoemission*

photofission
^{227}Ac, 7 to 16 MeV photofission, giant resonance and nuclear deformation *(Russian)* 8−41795
^{232}Th, quadrupole photofission and role of nucl. symm. *(Russian)* 8−17258
^{232}Th(γ,f), 9, 15, 38 MeV peak bremsstrahlung 8−33229
^{235}U, fission product mass. distrib. from 25 MeV bremsstrahlung irradiation 8−13175
^{238}U, deep subthreshold photofission using 3.8 to 5.7 MeV γ-rays 8−41787
^{238}U, fission product mass. distrib. from 25 MeV bremsstrahlung irradiation 8−13175
^{238}U, subbarrier photofission, differential cross section 8−41796

photoflash lamps *see flash lamps*

photoglow tubes *see phototubes*

photographic applications
see also photolithography; remote sensing
acetone, condensation in presence of instabilities, photographic study 8−10180
aerial photography, high altitude, aspects and results 8−36309
aerodynamics, parachute opening flowfield computation, using He bubble technique 8−30374
astrometric reduction of photographs and calibration of wide-angle cameras *(Russian)* 8−28532
astronomical telescope, large, photographic detection optimisation 8−24468
borosilicate glass, microparticle impact, high speed photography obs. 8−44223
bubble condensation, in subcooled liquid, high-speed photographic study 8−42654

photographic applications continued
cavitation emulsification mechanism employing high-speed photography *(Chinese)* 8−14049
cavitation shock wave, investigation by coherent optical methods 8−38431
combustion phenomena deflection mapping, speckle superposition techniques 8−44379
composite insulation breakdown under AC and impulse voltages 8−23398
Earth resources surveying, multispectral photography from space *(Russian)* 8−16197
Earth surface multispectral photography from space *(Russian)* 8−16198
electron microscope calibration by photogrammetric technique 8−336
explosive cratering phenomena, small scale, in geologic materials, photographic study 8−37093
filament velocity measurement, during spinning, streak photography 8−41367
fluid velocity measurement by speckle photography and interferometry 8−26221
fluorescence angiography, colour and black and white, use of interference filters 8−48856
fluorescence photomacrography, bone growth and remodelling exam. 8−31982
Fresnel zone plate imaging, of solar active regions 8−49342
high speed cine photography, in industrial engineering environment 8−37099
high-speed cineradiography, of projectiles 8−41395
high-velocity gas jets, interaction, photographic study 8−42695
holographic recording of digital colour TV signals on photographic film *(German)* 8−22101
hot gas plasma, building up compression rings by dielectric spark discharge in layers of liquid 8−38493
hybrid image processing 8−25810
hypersonic ballistics experiment, application of laser light source 8−38433
land-use photo classification using optical spectrum anal. 8−12023
laser energy meas. of Q-switched ruby laser, photographic film calibration 8−5517
laser fusion, shadowgraph and interferometry experiments, with tenpicosecond light source 8−42824
laser produced plasma, ultraviolet probing with picosecond pulses 8−42827
laser speckle photography for fluid flow vel. meas. 8−14112
laser-matter interactions, automatic treatment of data *(French)* 8−42830
light sectioning, three-dimensional measurement system in medicine 8−24113
lunar photography for amateur astronomers 8−45238
marine profiling images, recording, signal amplitude preservation 8−36326
mechanical impulse testing techniques, computer evaluation, high-speed film recording 8−44343
medicine, diagnostic radiology, radiation therapy, nuclear medicine, sensitometry, review 8−20260
metal erosion by solid particles, high-speed photography 8−39919
meteor observation, effective field of view for line sources 8−36535
micrographic information storage and image retrieval, perforated film, mag. striped film, pocket microfilm reader 8−16779
miniature exploding foil, pulsed laser stereophotography 8−41364
multiband photography for geomorphology, soils and land use study, feasibility 8−12025
multispectral camera, use on Soyuz 22 spacecraft 8−40794
North Sea pollution detection by remote sensing *(Dutch)* 8−36202
numerical photogrammetry, orientation, triangulation and digitisation 8−36312
one-dimensional coded apertures, applications 8−45746
particle motion in gas stream, motion parameters determ. with photographic system 8−5837
patient diagnosis on thermal burns 8−3648
pendant drops, surface area meas. 8−30813
photochromic tracer film, measurements using POLLY, film reading computer system 8−42696
photochromic tracer technique, for nondisturbing flow measurement 8−38435
photogrammetric system, cancer diagnosis appl., cytographs automatic analysis *(Russian)* 8−24161
photomicrometry with moire 8−4690
projectile rotation meas., Brenneke slugs 8−45744
rapid events, photographic study by picosecond techniques 8−42826
satellite photogrammetry, dynamical constraints 8−15943
SAW grating, Ag film on piezoelectric quartz *(Russian)* 8−18134
SEM, instant imaging systems appl. 8−21300
sensitometry, use of photographic film in radiometric meas. 8−269
silhouette photography, high-speed, of small biological subjects 8−44743
Skylab photographic X-ray images, analysis 8−49341
soda lime glass, microparticle impact, high speed photography obs. 8−44223
speckle, meas. of longit. rot. and lateral motion of diffuse surfaces 8−21235
spectrum analyser photographs improved using double-exposure technique 8−12714
spherical blast wave, high-speed photogrammetry of real and ideal reflections 8−42694
stereo-ophthalmoscope 110, stereophotography of fundus 8−48906
stereophotography, using camera slit lamp, ophthalmic applications 8−48904
surface rapid motion under dynamic loading, high speed photography of Moire fringes 8−32789
sweeping slit camera, characterisation of 1060 nm picosecond laser impulse *(French)* 8−42366
thermoplastic moulding quality assurance using holography and speckle photography 8−27720
three dimensional deformation measurement, Moire and light slicing methods 8−8382
three-dimensional trajectory of luminous pointlike object, recording method 8−12671
time-resolved coded aperture imaging system, for nuclear fuel motion HCDA conditions 8−45764

photographic applications continued
transient cavitation, on marine propellers, high-speed photography 8−38432
transient jet experiment, multiple-laser light source 8−14114
visual behaviour monitoring system, EMG triggered photographic technique 8−31919
water jet, penetration through water surface, high-speed photography 8−42693
X-ray diffraction patterns, recording on photographic film 8−41130
X-ray imaging, conf., Reston, USA (Apr. 1977) 8−45762
CO_2 pin-bar TEA laser, internal arcing, ultra high speed photography 8−9357
I laser energy profile meas. using hypersensitised photographic plates 8−5518

photographic developers *see photographic materials*

photographic development *see photographic process*

photographic emulsions
chlorobromide halide-exchange emulsion, mass and distrib. of photolytic Ag in solarisation region 8−29185
colour cine film emulsion, math. model of charact. curve, developing effects *(Russian)* 8−16888
couplers-gelatin (hydrophilic synthetic polymer), viscometric behaviour 8−16866
developers, ID2 and ID11, development rate parameters 8−16868
diazo film, dark image stability 8−16882
dichromated gelatin as holographic material, book contrib. 8−25833
dye clouds, random-sphere model 8−4722
electron microscopy, HV, design features of photographic film 8−8478
grain size, uniform, sensitivity spread contributory factors 8−16864
layer, scattering indication in forward hemisphere *(Russian)* 8−37091
preparation, explosion hazard of ammoniated silver salt solns. 8−4727
proton detection, fluorescent intensification screen+photographic film combination, response, radiography appl. 8−20268
redox potential evolution during development, potentiometric anal. 8−16865
semiconductor mask, emulsion processing chemical and plastic factors 8−16872
sensitivity, empirical density function anal. of gradient curves 8−32909
swollen gel layer, solute penetration times 8−16867
ultracontrasting film, Schwarzschild const. determ. *(Russian)* 8−37092
Ag halide, Dember effect, photographic emulsion grain parameter depend. 8−16870
Ag halide, for holography, book contrib. 8−25832
Ag halide, grains, breakdown of $Na_2S_2O_3$, electron microscopy 8−21237
Ag halide emulsions, spectral sensitisation, review 8−4719
Ag halide photography and xerography compared *(Japanese)* 8−24876
Ag in developed emulsion, X-ray emission microanal. for β-ray quantitative microautoradiography 8−20545
Ag iodobromides, spectral absorpt. curves, density, wavelength and temp. depend. 8−16871
Ag-halide microcryst., space charge characts. 8−15097
AgBr, crystal growth behaviour, influence of Gibbs-Thomson effect 8−24883
AgBr developed layer, light scattering and absorption *(Russian)* 8−37090
AgBr, epitaxial layer, ionic field effect 8−10588
AgBr, hydrosol, latent-image stability, chem. sensitisation 8−21236
AgBr, low-intensity reciprocity failure *(French)* 8−37085
AgBr, monodisperse emulsion, cubic or octahedral, Ag sub-specks due to chem. reduction 8−16875
AgBr, photographic emulsions, dye spectral sensitization, latent image form., subcond. band events 8−32905
AgBr photographic emulsions, sensitivity, fog rel. to treatment in redox-buffered solns. 8−32906
AgBr photographic emulsions, adsorpt. of thiolic antifoggants, chem. struct., ESCA investig. 8−32907
AgBr, photographic gelatin dispersion, cryst. habit. rel. to Br^-, cyanine absorpt. 8−32908
AgBr, sub-image and latent image specks form. and props. 8−21245
AgBr(I) microcrystal dispersed in gelatin, effect of I^- on interstitial Ag ions 8−26726
AgBr(I) microcrystals, photohole motion 8−26903
AgBr(I) microcrystals, photocond. and luminesc. 8−26904
AgI-AgBr, low-intensity reciprocity failure *(French)* 8−37085
S and Au sensitisation, internal image speed 8−16869

photographic filters *see optical filters*

photographic lenses
see also aberrations
cinematographic, photo-pattern producing by optical method *(Russian)* 8−37959
image detection and recognition visual factors, optimal viewing conditions 8−4724
image formation, lenslet array with periodic sampling structure 8−37964
interchangeable lens evaluation for 35 mm cameras, MTF based test method 8−41363
objective matching with film channel in serial prod., tolerances 8−16885
objectives in large scale production, testing 8−18035
Pinatar 4/125, aerial multispectral-photography appl. *(German)* 8−4717
retrofocus type, for motion-picture cameras 8−37963
teleconcentric system for underwater use *(Russian)* 8−305
teleobjective types, image sharpness adjustment *(Hungarian)* 8−12780
TV 300 m lenses, modular construction method, Gaussian optics, Seidel aberrations 8−311

photographic light sources *see light sources; photography*

photographic material sensitivity
amplitude hologram efficiencies, photographic film model 8−9345
astronomical plates, hypersensitisation, testing, for threshold imagery 8−32351
cardiac catheterization laboratory sensitometric system application and clinical evaluation 8−20263
colour negative film, rapid access processing 8−21240
edge response curve, midpoint location, development microeffects effect 8−29196
emulsion gradient curves, empirical density function anal. 8−32909
grain size, uniform, sensitivity spread contributory factors 8−16864
high-speed cassette film fogging and shielding 8−8460

photographic material sensitivity continued
Judd's phase simulation for daylight and W illum. in Xe sensitometers 8−29192
Kodak SO-143 film sensitivity, comparison with CCD for streamer chamber appl. 8−21820
polyvinyl alcohol, dichromated, sensitisation to visible laser wavelengths 8−4716
sensitometer for exposures 100 to 10^{-7} sec 8−29189
sensitometry, black and white, photographic testing procedures, film evaluation 8−29191
spectral sensitivity meas., automated densitometer system 8−29190
vesicular film sensitometry, review 8−16878
Ag halide emulsions, spectral sensitisation, review 8−4719
Ag halide high resolution materials, 3-D hologram recording, exposure characts. 8−17880
Ag halide photography and xerography compared *(Japanese)* 8−24876
Ag iodobromides, spectral absorpt. curves, density, wavelength and temp. depend. 8−16871
AgBr, free holes in spectral sensitisation 8−4720
AgBr, hydrosol, latent-image stability, chem. sensitisation 8−21236
AgBr, photographic emulsions, dye spectral sensitization, latent image form., subcond. band events 8−32905
AgBr photographic emulsions, sensitivity, fog rel. to treatment in redox-buffered solns. 8−32906
AgBr photographic emulsions, adsorpt. of thiolic antifoggants, chem. struct., ESCA investig. 8−32907
As_2Se_3, film, amorphous, fatigue and recovery of electrophotographic props. 8−21253
$Na_2S_2O_3$, breakdown on Ag halide grains, electron microscopy 8−21237
S and Au sensitisation, internal image speed 8−16869
Se-Bi-I, amorphous, high sensitivity visible-near IR photoconductor development and characterisation 8−39153
ZnO binder layers, regeneration of sensitising dyes 8−21241

photographic materials
see also photographic emulsions
alpha naphtol, developer, use in nuclear photography 8−17490
biazide-polymer based photoresist. films, positive image production *(Russian)* 8−16887
colour developing agents in processing solns., polarographic determ. 8−4726
colour motion picture using diffractive surface-relief structures 8−37089
colour negative film, rapid access processing 8−21240
developing solutions, temperature control *(Russian)* 8−29202
diazo compounds, continuous tone diazotype imaging films, model 8−32911
3,3′-diethylthiatricarbocyanine iodide, cryst. and molecular struct. 8−26554
emulsion, for spectrographic anal., calibration curve computer calcs. 8−4706
film, versatile X-ray detector 8−45763
gelatin, gel-sol transition, gel characts. 8−35724
holographic methods developments use of photothermoplastic instant film *(German)* 8−39975
latent-image bleaches, enhancement of latent-image and fog 8−24879
photothermoplastic film in holography *(German)* 8−22097
Polavision, first instant colour movie system 8−24882
poly-N-vinylcarbazole, electrophotographic film, dark discharge 8−34864
sensitometry, black and white, photographic testing procedures, film evaluation 8−29191
ternary chalcogenide sensors, imaging by photo- and thermal doping 8−1342
thiocarbocyanine dye, adsorpt. on AgBr photographic gelatin dispersion 8−32908
thiolic antifoggants, chem. struct., adsorpt. on AgBr emulsions, ESCA investig. 8−32907
vesicular film sensitometry, review 8−16878
Ag film, photodissolution in amorphous As_2S_3 8−26737
Ag halides, defect sites and impurities, latent image formation, LCAO calc. 8−16876
AgBr, photoexcited, dye sensitized bleaching of surface silver specks 8−308
AgCl, luminesc. excited by UV radiation at 80K *(Russian)* 8−31256
AlH_3, photo-and thermochem. reactions, 200-350K, UV Induced local states 8−31667
As_2S_3-Ag photosensitive film systems, hologram recording 8−1194
Cu-PbI_2 photosystems, null-refl., cermet and Fabry-Perot types 8−46738

photographic process
see also photochemistry
AgBr, monodisperse emulsion, cubic or octahedral, Ag sub-specks due to chem. reduction 8−16875
colour negative film, rapid access processing 8−21240
developers, ID2 and ID11, development rate parameters 8−16868
developing of colour cine film emulsion, math. model of charact. curve *(Russian)* 8−16888
development by aminophenols, rate/conc. relationship 8−21244
development course plotting 8−24880
diazotype imaging film, continuous tone, for duplicating of radiographs 8−32911
dye clouds, random-sphere model 8−4722
edge response curve, midpoint location, development microeffects effect 8−29196
gelatin, layers, swollen, electrolyte diffusion 8−32910
granularity theory approximations 8−4721
hypersensitisation in astrophotography, review 8−32348
induction period, additives on physical development, const. pAg 8−16873
latent-image bleaches, enhancement of latent-image and fog 8−24879
orthophotoquad processing using photodensity control system 8−7807
photopolymer latent imaging system, for vol. phase hologram recording 8−42298
photoresist, positive, simultaneous exposure and development model 8−4715
Polavision, first instant colour movie system 8−24882
redox potential evolution during development, potentiometric anal. 8−16865

photographic process continued
sub-image and latent image Ag specks, thermodynamics of formation 8−16874
Ag halide, absorpt. and vac. photolysis 8−8458
Ag halides, defect sites and impurities, latent image formation, LCAO calc. 8−16876
Ag, photolytic, mass and distribution in the solarisation region 8−29185
AgBr emulsion, sub-image and latent image specks form. and props. 8−21245
AgBr, hydrosol, latent-image stability, chem. sensitisation 8−21236
AgBr, photoexcited, dye sensitized bleaching of surface silver specks 8−308
AgBr, photographic emulsions, dye spectral sensitization, latent image form., subcond. band events 8−32905
AgBr photographic emulsions, sensitivity, fog rel. to treatment in redox-buffered solns. 8−32906
AgBr:I, refilling of recombination centres during thermal stimulation 8−10464
AgBr(I) microcrystal dispersed in gelatin, effect of I^- on interstitial Ag ions 8−26726
AgBr(I) microcrystals, photohole motion 8−26903
AgBr(I) microcrystals, photocond. and luminesc. 8−26904
AgCl single cryst. foil, photographic elementary process 8−17519
$Na_2S_2O_3$, breakdown on Ag halide grains, electron microscopy 8−21237
S and Au sensitisation, internal image speed 8−16869

photographic recording media *see photographic materials*

photographic techniques *see photography*

photography
see also cinematography; colour photography; electrophotography; microphotography; photographic applications; photographic lenses; photographic materials; photographic process; radiography; streak photography
anaglyphs, printed, use of fluorescent green ink 8−4714
aspectrograms, produced with hexagonal lens raster, props. 8−46528
astronomical, hypersensitisation, testing of emulsions for threshold imagery 8−32351
charged particle detection by photographic recording systems, appls. 8−17527
coherent optical processing cervical cytological samples 8−36007
coherent optical processing equipment cervical cytological samples screening 8−36006
composite photographic-human visual system, spatial-freq. filtering effects in performance 8−4725
contrast enhancement viewer for film 8−16879
dark room timer, logarithmic calibrated 8−8457
data processing by coherent light, photographic noise *(Italian)* 8−22088
electronic flash unit, synchronised or free running, cct. details *(German)* 8−21250
flash trigger, multimode 8−21248
granularity measuring system 8−21200
high speed, in aeroballistic range, track facilities of von Karman gas dynamics facility 8−37094
high speed photography of water jet turbulence fine struct. 8−26178
high speed silhouette photography 8−37088
high-speed, conf., Toronto, Canada (Aug.1976) 8−32912
high-speed mirror photochronograph 8−37098
high-speed photography combined with real-time holographic interferometry 8−37839
history, contribution of W.H. Fox Talbot 8−17
holographic method for hypervelocity particle meas. 8−36978
holography appl., commercial methods development *(Czech)* 8−37838
image detection and recognition visual factors, optimal viewing conditions 8−4724
image quality, scattered light effect 8−16884
interference fringe localisation, by double exposure speckle photography 8−37803
Kirlian photography, ‘camera’ construction 8−12779
laser speckle photographic technique, strain, small displacement measurement appl. *(German)* 8−1616
multispectral projector, colour synthesis instrument for evaluating multispectral photographs 8−40688
Mylar, shells, conical and cylindrical, high speed photographic exam. of buckling 8−44184
nuclear, use of alpha naphtol, developer 8−17490
photo flood dimming, thyristor circuit, to reduce heating and extend life of lamps *(German)* 8−29193
photolamps, thermal interference reduction using Therm-O-lux 85 film 8−41302
photomacrography and photomicrography, oblique transmitted light techniques 8−306
photomicrographs, high quality image prod. 8−24881
Sayce test chart, modified design 8−16877
schlieren image colorisation using electro-optical technique 8−33904
sensitometer, Xe flash, for daylight, W illum. simulation 8−29192
single-exposure, with channel-plate intensifiers 8−38036
solar observations using Hα filters 8−40833
speckle noise and object contrast, detection thresholds eval. technique 8−5434
speckle photography, effect of lens aberrations 8−32866
streamer chamber, rapid-cycling cameras, stereo images 8−37484
thermoplastic record and electrocapillary effect, frost deform. anal. *(Russian)* 8−16889
time resolution improvement in high-speed holography 8−37840
transients, shutter mechanism for oscilloscope photography *(Danish)* 8−234
triple frame camera, with beam-splitting prism 8−37097
ultrafast photography, with 10.6 μm radiation, fast IR switches 8−38035
velocity measurement technique, error estimation *(German)* 8−304

photoionisation
acetaldehyde-d_1(-d_3), fragmentation processes, H scrambling, photoionis. mass spectra 8−42139
acetophenone, enolate anion, electron photodetachment cross-section resons. 8−5298
alkali metal, two-photon ionis. via reson. intermediate state 8−42023
alkali metal atoms, laser three-photon absorpt., ionisation cross-sections *(French)* 8−5182
alkali metal atoms, two-photon ionisation, polarisation effects 8−1039

photoionisation continued
allene, photoionisation and threshold photoelectron photoion coincidence obs. 8−21981
amines, caged, multiphoton ionisation, two-photon transition resons. 8−33558
1,8-anilinonaphthalene sulphonate, aq. and ethanolic solns., excited singlet state decay pathway 8−17703
aromatic compounds, two-stage photoionisation in solns., UV laser irrad. effects *(Russian)* 8−13556
atom, doubly resonant multiphoton ionisation 8−42024
atom, multiphoton ionis., intense field, via complex dressed states 8−17629
atom, reson. interaction of intense EM waves *(Russian)* 8−33480
atom, resonant two photon ionisation, polarisation effects *(Dutch)* 8−5185
atom, two-photon reson. ionis. with sub-ns laser pulses 8−9131
atomic multiphoton ionisation probability, Green's function model pot. 8−25498
atoms, in gas-filled photodiodes, improved detectivity for UV radn. 8−37062
colliding atoms, two-photon ionisation 8−13482
collisional ionisation in intense laser field, quasimol. state reson., quantum mechanical anal. 8−33589
complex atoms, multiphoton ionisation cross-section calcs. 8−21888
Compton bound electron state scatt., binding and off-mass shell effects, relativistic anal. 8−17637
cross sections, positive integer spectral power moments in moment-trace calcs. 8−17729
diphenylmercury, mol. photoionisation, up to 13.5 eV, formation of $HgPh^+$ 8−25633
electron wavefunctions for (γ,2e) and (e,3e) processes at high energy, double Fourier transform 8−17628
formaldehyde, vertical photoexcitation and photoionisation spectra, CI calc. 8−918
fumaronitrile exciplexes, photoisomeris. and photoionis, dissolved O_2 effect 8−27789
gas atom, photoionisation cross-section, multiconfig. Hartree-Fock calc. 8−17630
heteroaromatic compounds, two-stage photoionisation in solns., UV laser irrad. effects *(Russian)* 8−13556
inert gas metastable atoms, photoionisation rel. to laser development 8−13476
ions, photoelectric cross-section, scaled from neutral atom 8−13479
ketene, photoionis., ion fragmentation kinetic energy 8−9206
laser selective detection of ultralow concentrations of atoms 8−3407
mass spectroscopy, ion registration, stepwise selective photoionisation technique *(Russian)* 8−21262
methane, photoionis., ion fragmentation kinetic energy 8−9206
molecule, ground and selectively excited states, by vac. UV laser *(Russian)* 8−9205
molecule, oriented or rot. resolved unoriented, ang. distribs., dynamic and struct. data 8−37682
molecules, diatomic, photoelectron ang. distrib. and intensity, vibr.-rot. struct. 8−42128
multiphoton near-reson. ionisation, chaotic versus coherent light 8−33489
multiplet ratios for photoionisation and electron attachment, shell model, LS coupling and correl. 8−17636
organic seedants for UV preionised lasers, photoionisation and photoabsorpt. characts. 8−13688
photoelectric cross section, total to K-shell ratios in Zr, AG, Ta, Th 8−5188
photoelectron angular distribution, theory 8−17730
pyrazine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
pyrene, laser-induced two-photon photoionisation, simulation, double pulse investig. 8−37690
pyridine, multiphoton ionisation spectra, of three-photon ionisation region 8−37689
quantum beats in light absorption from atoms, expression for photoioisation of Rydberg states 8−25499
quasars, emission spectra, photoionisation anal. 8−16560
quasienergy formalism, for multiphoton ionisation induced by circularly polarised radiation 8−37610
rare earth atoms at surface, photoionisation of 4f electrons 8−11077
rare earth elements, laser isotope separation by two-step photoionisation 8−46461
relative cross-section meas. by X-ray detection 8−33369
relativistic R-matrix theory 8−5184
resonant multiphoton ionisation by pulsed excitation, Beers-Armstrong model 8−17645
Rydberg atoms, expts., metastable states, multiphoton ionisation, spectroscopy, Stark struct., collisions, polarisability *(Dutch)* 8−5160
selective dissociation, ionis., and chem. reaction stimulation, by ultrashort pulses, isotope separation *(Russian)* 8−29825
selective photoionisation of atoms by laser radiation, appls. 8−5189
semiconductor impurities, photoionisation cross section calcs. 8−2450
two-level atom, reson. pulse excitation, ionisation 8−42029
vacuum UV radiation, circularly polarised, for spin-polarised photoelectrons prod. 8−1310
(γ, e) reaction, determ. of atomic wave function, electron energy levels *(Russian)* 8−957
Ar, 3s electron partial photoionis. cross section, branching ratios 8−29765
Ar, double photoionisation, many-body perturbation approach 8−17634
Ar, isoelectronic sequence, many-body photoionization calcs. 8−17631
Ar, photoelectron angular-distribution β parameters, resonance parameters 8−21886
Ar, photoionis. cross section ratio, energies 0 to 0.05 eV above $^2P^0_{3/3,1/2}$ thresholds 8−25492
Ar, photoionisation cross-sections, ground state inversion pot. method 8−33481
Au L-subshell, relative cross-section meas. by X-ray detection 8−33369
Ba+HCl, beam-gas reaction, multiphoton ionisation, product identification 8−23946
Be atoms, double-photoionisation cross section, core polarisation effects 8−17626
C III, photoionization cross sections calc. 8−17625
CO, photoabsorption and photionisation, UV region meas. 8−42087

photoionisation continued
CO^+, fluoresc. and production cross-sections by photoionis. of CO 8−9204
CO_2 dimer, photoionisation efficiency curve, supersonic mol. beam expt. 8−46406
CO_2 laser, spark photoionisation, tripropylamine additive 8−13679
CO_2, partial photoionisation cross-sections, branching ratios, synchrotron radiation meas. 8−42141
CO_2, photoionisation efficiency curve, supersonic mol. beam expt. 8−46406
CO_2, pulse laser, UV photoionisation, impurities effect 8−1206
CO_2 waveguide lasers, high-power, high-press., photoionisation-stabilised 8−46641
$CO_2{}^+(C^2\Sigma_g{}^+)$, formation and predissoc., photoelectron spectra 8−5300
COS^+, photoionis. reson. study of $(^2\Pi)$ and $(^2\Sigma^+)$ states, vibr. freqs., ionis. pot. 8−29821
$CS_2{}^+$, photoionis. reson. study of $(^2\Pi)$ and $(^2\Sigma^+)$ states, vibr. freqs., ionis. pot. 8−29821
Ca, multiphoton ionisation by Nd laser radiation *(Russian)* 8−21889
Cd, partial photoionis. cross section 8−42022
Cd UV subshell photoionisation cross section, expt. and GIPM theory 8−21887
$CdTe:Ti^{2+}$, Jahn-Teller effect on $^3T_1(^3F)$ state, resonance on $^3T_1(^3P)$ state 8−27271
Cr, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
Cs, 16^2P states, reson., 3-photon ionisation, DC Stark effect 8−42026
Cs, elec. dipole approx. and elec. quadrupole resons. allowed in multiphoton absorpt. *(French)* 8−5190
Cs, excited states photoionis. cross-section, quantum defect method 8−25494
Cs, four-photon ionisation, new resonances 8−5187
Cs, four-photon resonant ionisation calculations 8−37613
Cs, multiphoton ionisation spectroscopy, molecular satellites of 6^2S-7^2P doublet 8−17632
Cs, reson. multiphoton ionisation by pulsed excitation, Beers-Armstrong model 8−17645
D_2O, collisionless multiphoton ionis. energy depend. by TEA-CO_2 laser 8−46405
Fe, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
GaAs, surface photovoltage due to photo-thermo-ionization of surface states 8−14787
GaP:Si(s)(O)(Ta), donor centre struct. and conduction band nonparabolicity 8−14695
H I, ionisation pot. photoionisation mass spectra 8−25632
H, metastable quenching, subsequent photoionis., polarised proton prod. *(Russian)* 8−46202
H, multiphoton ionis., intense field, via complex dressed states 8−17629
H, photoionisation, two- and three-photon, calc. methods comparison 8−956
H plasma hemispheric layer total radiation calc. *(Russian)* 8−34278
H, two-photon ionis. simultaneously with one-photon ionis. 8−33484
H^-, photodetachment cross section, dynamic polarisability calc., sum rules, basis set depend. 8−17635
H_2, photoelectron ang. distribs., oriented or rot. resolved unoriented mol., dynamic and struct. data 8−37682
H_2, photoelectron angular distrib. and intensity, vibr.-rot. struct. 8−46393
H_2, photoionisation cross sections, photoelectron ang. distribs. 8−5299
H_2, photoionisation cross-section, calc. for vibr. excited mol. 8−17732
$(HF)_2$, photoionis., HF proton affinity 8−17731
H_2O, dipole oscillator strengths, 10-60 eV, for photoabsorpt., photoionis. and fragmentation 8−42133
$(H_2O)_2$, photoionis., H_2O proton affinity 8−17731
He, absolute photoionisation cross section curve 8−37612
He excited atom photoionization, for UV photopreionisation CO_2 laser 8−17902
He, ionisation by UV radiation from CO_2 laser produced Cu plasma 8−17624
He, photoabsorption, modified RPA calcs. with exchange 8−13477
He, photoionisation cross-sections, ground state inversion pot. method 8−33481
He, two-electron photoionis., threshold law and photoelectron spectra 8−29767
He, two-photon ionisation cross-section calcs. 8−21888
Hg, partial photoionis. cross section 8−42022
HgPh, photoionisation effectiveness curves 8−25633
I, reson. UV fluoresc. and photoionis. obs., in nonlinear I_2 photodissoc. 8−37692
K_2, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
Kr, photoionisation cross-sections, ground state inversion pot. method 8−33481
KrAr, photoionisation spectra of ground and excited states 8−5297
Li atoms, photoexcitation and ionisation cross sections, Stieltjes-Tchebycheff procedure 8−17633
Li, photoionisation, two- and three-photon, calc. methods comparison 8−956
Li_2, isotopes fractionation in two step photoionization, due to Ar laser beam 8−25631
Mg, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
Mn, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
N, photoionis. cross section, many-channel quantum defect method 8−17638
N_2, ionisation by UV radiation from CO_2 laser produced Cu plasma 8−17624
N_2, photoabsorption, moment anal. 8−46321
N_2, photoabsorption and photionisation, UV region meas. 8−42087
$N_2{}^+$, fluoresc. and production cross-sections by photoionis. of N_2 8−9204
NH_3, photoionisation branching ratios and partial oscill. strengths 8−5303
NO, photoabsorption and photionisation, UV region meas. 8−42087
N_2O, photoabsorption and photionisation, UV region meas. 8−42087
N_2O, photoionisation and ion dissoc., isotope effects, mass spectra 8−9203

photoionisation continued
N_2O^+, fluoresc. and production cross-sections by photoionis. of N_2O 8−9204
Na (3p state), partial photoionis., cross sections $\sigma_{3p,s}$ and $\sigma_{3p,d}$, expt. separation and study 8−42020
Na, core polarisation effects, influence on photoionisation cross sections, ground and excited states 8−46308
Na, single atom detection by laser photoionisation *(Russian)* 8−33487
Na_2, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
Na_2, supersonic mol. beam, characterisation by multiphoton ionisation 8−23946
Ne, double photoionisation, many-body perturbation approach 8−17634
Ne, electron or photoionisation, electron shake-off, continuum states interaction 8−29766
Ne, isoelectronic sequence, many-body photoionization calcs. 8−17631
Ne, metastable, photoionis. cross section calc. 8−33485
Ne, photoelectron angular-distribution β parameters, resonance parameters 8−21886
Ne, photoionisation, relativistic R-matrix theory 8−5184
O, dipole transition oscill. strengths, photoionis. cross section 8−9120
O_2, photoabsorption and photionisation, UV region meas. 8−42087
O_2, photoionisation cross-sections, 100-800 Å 8−5302
Rb, isotopically selective ionisation through Rydberg states 8−5186
Sr, autoionisation reson. states elec. field depend., three-photon ionisation 8−33478
Sr, Zeeman effect of J=2 states, g-factor, interacting Rydberg series 8−17609
Tl, photoionis. cross section, spin polaris. and ang. distrib. of photoelectrons, RPA calc. 8−13478
Tl, photoionis. cross section and spin polarisation of photoelectrons 8−46307
U atom, by Ar ion laser radiation, appl. to U laser isotope separation 8−42233
U, L-shell photoionis., transition radn. ang. distrib. 8−33486
U, laser isotope separation, atomic spectroscopy requirements 8−33638
V, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
Xe, 5p subshell photoelectron branching ratio, Dirac-Fock calcs. 8−42021
Xe, 5s electron photoionisation cross section with synchrotron radiation 8−5180
Xe, atom, photoionis., collective level existence RPA with exchange calc. 8−42025
Xe, intershell correlation, double electron ejection from outer shell 8−42019
Xe, multiphoton ionisation spectrum, interatomic effects in multiphoton transitions 8−29764
XeAr(XeKr) photoionisation spectra of ground and excited states 8−5297
Yb, photoionisation cross-section of $^3P_1$ excited state, laser isotope separation *(Russian)* 8−25496
Zn, UV subshell photoionisation cross section, expt. and GIPM theory 8−21887

photolithography
see also masks; photoresists
guided-wave optical components, electron-beam and photolithographic fabrication 8−13818
integrated optics techniques 8−46844
interdigital transducer and 1.1 GHz SAW oscillator, photolithographic contact printing *(Japanese)* 8−33981
surface relief gratings with linewidths below 2000 Å, fabrication 8−42478
As_2S_3 thin film, diffr. grating production, using laser photolithographic process, image evaluation 8−42479
Si alignment chips for optical fibre cable connector 8−1411

photoluminescence
see also fluorescence; phosphorescence
activated crystal, electronic excitation energy migration efficiency, inverse transfer influence 8−19546
activated crystals, electronic excitation energy transfer efficiency, inverse transfer effects 8−2897
alkali halide: O^{2-}, photoluminesc. spectra, phonon using struct. *(Russian)* 8−2912
alkali halide:$Cu^+(Ag^+)$, luminesc. spectra and lifetime, high-press. effects 8−35194
alkali halide crystals, deformation spectroscopy, dislocation interactions with electron and hole centres 8−10983
alkali halide surface light emission, 10.6 μm laser pulse irradiation *(Russian)* 8−27352
alkali halides, aq. solns. with extrinsic O_2^- ions, spectral props. *(Russian)* 8−6766
alkali halides, luminesc. polarisation and low-temp. photoinduced orientation change in O_2 and S_2 mol. centres 8−6735
alkali halides, luminescence excited by vacuum UV lasers 8−10941
alkaline earth fluorides, luminescence excited by vacuum UV lasers 8−10941
alkaline earth oxides, luminescence excited by vacuum UV lasers 8−10941
alkaline glass: tryptophan (tyrosine), γ-irrad., electron traps, stimulated luminesc. 8−11536
aluminate:Ce^{3+}, hexagonal, luminesc. rel. to host lattice structure 8−6776
amorphous semiconductors, doped, electronic props. 8−19030
anthracene, excitation and propagation of phonons, luminesc. meas. *(Russian)* 8−35202
anthracene, film substruct., vacuum deposited, low temp. luminesc. *(Russian)* 8−15226
anthracene crystals, local biexciton formation, luminesc. spectra *(Russian)* 8−2428
aqueous glasses, mixed solute, luminesc. following laser excitation of trapped electrons 8−31666
binary inorganic crystal, activation conditions 8−10394
chalcogenide semiconductors, optical and elec. props., comparison with SiO_2 8−6721
chlorophyll pigments, aggregated forms in soln., spectral-luminesc. characts. *(Russian)* 8−23529
conference, Szeged, Hungary (Aug. 1976) 8−27279

photoluminescence continued
9-cyanoanthracene, metastable crystal, red excimer emission 8−6757
deconvolution of expt. data 8−5369
Diffusion of excitons and energy transfer to impurity molecules *(Russian)* 8−27282
electron excitation energy transfer between molecules, theory, including reabsorpt. *(Russian)* 8−10981
exciton luminescence, RF coherence and polarisation 8−10937
GG GaS, indirect exciton exam. 8−39029
glass, rare-earth activated, polarised luminesc. 8−48224
hot electron distribution functions, expts., review 8−27231
hot luminescence and relaxation 8−6722
impurity luminescence quantum efficiency, temp. depend. 8−35198
LiH, cubic, vibronic struct. and anisotropy of excitons, refl. and edge luminesc. spectra 8−23523
Long-range energy transfer in systems of different dimensions 8−27283
metal oxide:U^{6+}, luminesc. sensitivity to vibrational fine structure 8−6772
metaphosphate glass: Ag dosimeter, optical absorpt. and radiophotolum., effect of temp. 8−40333
Migration of the excitation energy in luminescent media 8−27280
minority carrier recombination at surfaces, dislocations and microdefects, luminesc. evaluation 8−6769
nonresonance interaction parameters of rare earth ions, luminescence kinetics obs. *(Russian)* 8−31246
nonresonant transfer of energy between impurities in solids 8−23520
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
oxide glass:Cr^{3+} absorption and emission 8−6774
oxide semiconductor crystals, with forbidden energy gap, review of spectroscopic props. 8−2876
p-n junction, luminesc. due to photoinduced injection 8−10939
phonon spectroscopy, phonon pulse spatial, spectral and temporal evolution 8−34580
phonon spectroscopy, phonon pulse spectral distrib. 8−34579
phosphate glass:$Nd^{3+}(Yb^{3+})$, nonresonance interaction parameters of rare earth ions, luminescence kinetics obs. *(Russian)* 8−31246
phosphors, containing O, intensity relation between synchronous and delayed luminesc. 8−10952
polybutylene terephthalate film, photoluminesc. exam. 8−48213
polyethylene terephthalate film, photoluminesc. exam. 8−48213
polymonochloroparaxylylene film, photoluminesc. exam. 8−48213
polyparaxylylene film, photoluminesc. exam. 8−48213
pyridinium tetrachloromanganate II, luminesc. spectra, expt. and calrs. *(French)* 8−10967
quantum and radiant efficiency meas. methods, standard materials 8−32899
quartz, photoelectric and photoluminescent props. in fundamental absorpt. region 8−39596
rare earth oxyhalides and oxysulphides, thermochromic luminescent mats. *(Russian)* 8−48230
rare earths, trivalent, 5d states charge transfer and intershell spectra, separation and overlap 8−10966
recombination interactions, unimolecular processes, diffusion-limited kinetics 8−6794
relaxation between systems with equidistant levels *(Russian)* 8−23526
rhodamine B, in glycerine-water mixtures mol. agglomeration effect on fluoresc. polaris. spectrum 8−25595
ruby, cryst., lasing action, spectrum, luminesc. spectrum effects *(Russian)* 8−13716
ruby, excited state spin-phonon interaction, time resolved spectroscopic exam. 8−19549
scintillator systems, liq., organic, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
semiconductor, broad-band, meas. setup with GDM 1000 grating double monochromator 8−21226
semiconductor, high intensity photoexcitation, hot electrons and phonons 8−26905
semiconductor, photoexcitation phenomena, low density 8−27319
semiconductor, radiative spectra from hot photocarriers 8−31249
semiconductor, variable-gap, photoluminesc. 8−48222
semiconductor heterostructure, multipass, effective lifetime of nonequilibrium carriers 8−6435
semiconductor-metal structure, luminesc. due to photoinduced injection 8−10939
silicate galss:Eu^{3+}, fluoresc. linewidth variation, electron-phonon coupling 8−19531
silicate glass: Cr^{3+}, optical props., 88-273K, energy levels in crossing region 8−6709
tetracene, optical obs. of charge transfer 8−35199
three component system, nonradiative energy transfer parameters 8−27292
time-dependent resonant secondary radiation spectra *(Russian)* 8−48228
triboinduced luminescence 8−19581
uniaxial crystal, macroscopic exciton luminesc. characts., high reabsorption conditions 8−19545
$_2$, photoluminesc. spectrum, ^{31}P Fermi interaction, hyperfine struct. 8−33536
AgBr, decay of proposed Bose-Einstein condensed excitons 8−15221
AgBr, electron-hole liq. and biexciton pocket, luminesc. obs. 8−15216
AgCl, luminesc. excited by UV radiation at 80K *(Russian)* 8−31256
Al anodisation, 'flaw-free' film growth and luminesc. characterisation 8−15605
AlAs-GaAs double heterostructure, effective lifetime of nonequilibrium carriers 8−6435
AlGaAs layer, epitaxial, grown from pre-heated Ga soln., photolum. study 8−39591
$Al_xGa_{1-x}As$ DH, origin of n≃2 injection current, photolum. expts. 8−14799
$Al_xGa_{1-x}As$ film, hot photoluminescence spectrum, polarisation depend. 8−31254
$Al_xGa_{1-x}As$, VPE growth and characterisation 8−35315
$Al_xGa_{1-x}As$:Cr, exptl. verification of Cr^{2+} models of photoluminescent transitions 8−27320
$Al_xGa_{1-x}As$-GaAs heterostructures, nonradiative large dark spots exam. 8−23149
AlGaSb, growth and characts. for 1.0-1.8 μm heterojunction devices 8−6870

photoluminescence continued
$Al_xGa_{1-x}Sb$, solid soln., depend. of forbidden-band width on composition 8-39602
Al_2O_3, anodic oxide films, luminesc., breakdown and colouring 8-19528
α-Al_2O_3:V^{3+}, near IR spectra, line lifetime, 2, 10, 77K 8-10972
Ar, cryst., luminesc., absorpt. spectra, free, self-localised excitons coexistence *(Russian)* 8-31231
$BaCl_2$:Pb, absorption and emission spectra *(Russian)* 8-23527
BaF_2:Gd^{3+} film, Gd^{3+} luminesc. spectrum and kinetics 8-6763
Bi^{3+}, in soln., luminesc., halide ion effects 8-35187
BiI_3, doped, IR photolum. and EPR spectra 8-19558
$Bi_{12}SiO_{20}$:Nd, single cryst., photoluminesc. meas. *(Russian)* 8-23519
CaF_2:Eu^{2+}, circular polarisation in luminesc. and optical orientation 8-6740
CaF_2:Gd^{3+} film, Gd^{3+} luminesc. spectrum and kinetics 8-6763
CaF_2:Mn^{2+},Yb^{3+}, efficient luminesc. energy transfer from Mn^{2+} to Yb^{3+} 8-19536
CaF_2:Mn^{2+},Yb^{3+}, luminescent energy transfer efficiency obs. 8-6777
CaF_2-YF_3:Nd^{3+}, selective excitation of activator centres, time resolved luminesc. 8-15223
$CaLaGaO_4$:Eu^{3+},Bi^{3+}, luminesc. influenced by struct. transition 8-6773
$CaMoO_4$, luminesc. efficiency, temp. and high-press. 8-23507
CaO, electron irradiated, photocond. and luminesc. meas., F-centre electronic struct. determ. 8-6409
$CaWO_4$, luminesc. efficiency, temp. and high-press. 8-23507
$CdCl_2$:Cu, optical props. 8-43918
$CdCl_2$-$CdBr_2$, solid soln., luminesc., optical absorpt. 8-19538
$CdGeP_2$, direct gap crystal, polarisation of recombination radiation 8-19562
$CdGeP_2$:In, polarisation of recombination radiation 8-19562
CdI_2, layered cryst., photoluminesc., and reflection spectra obs. 8-6726
$(CdI_2)_x(PbI_2)_{1-x}$, layered cryst., photoluminesc., and reflection spectra obs. 8-6726
$CdIn_2S_4$, impurity centres, photoluminesc. and photocapacitance data on config.-coordinate diagrams 8-10938
$CdIn_2S_4$, photoluminesc., reson. Raman scatt. 8-48179
$CdIn_2S_4$, single cryst., oscill. behaviour of photocurrent and luminesc. 8-10501
$CdMoO_4$, luminesc. efficiency, temp. and high-press. 8-23507
CdP_2:Bi,Zn, photolum. and photocurrent stationary characts. 8-27317
CdS crystals, doped with groups III and VII elements, self-activated emission, modelling *(Japanese)* 8-31247
CdS, deform. effects on exciton excitation spectra 8-35191
CdS, electron-hole condensate, luminesc. obs. *(Russian)* 8-19552
CdS, free-exciton multiphonon luminesc. 8-6741
CdS, ion implantation effect on luminesc. and cryst. damage 8-6758
CdS, kinetics of recomb. radiation 8-31243
CdS, magnetoreflectance and magnetoluminesc. of A exciton 8-39597
CdS, nonequilibrium electron-hole plasma, optical orientation of carriers *(Russian)* 8-2904
CdS, single cryst., laser emission following single-photon excitation *(Russian)* 8-37889
CdS, single cryst., surface treatment effects on photoluminesc., struct. and optical props. *(Russian)* 8-15224
CdS single crystal growth by sublimation *(Japanese)* 8-11093
CdS single crystal laser screen, photolum., determ. of layer depth disturbed by polishing 8-17977
CdS sintered film, photolum. and recomb. photocurrent noise spectra 8-6743
CdS, streamer luminescence 8-6762
CdS:N, P, As, Sb, Bi photoluminescence obs. 8-10965
CdS-based phosphor, microstruct. and luminesc. efficiency 8-10959
CdS-Co^{2+}, IR spectrum, 4.2K, electron-phonon interaction effect on emission spectrum 8-27270
CdS(Se), magnetooptic study of P line at high excitations, biexciton binding energy values 8-48220
$CdS_{1-x}Se_x$ single crysts., photocond. and excitonic luminesc. under high laser excitation 8-23127
CdS_xTe_{1-x}, low temp. photoluminesc. *(Russian)* 8-43931
CdSe, free-exciton multiphonon luminesc. 8-6741
CdSe, highly photo-excited, time-resolved luminesc. spectra, 1.8K 8-35197
CdSe, kinetics of recomb. radiation 8-31243
CdSe, low resist., mech. for nonradiative recombination of carriers, photoluminesc. and photocurrent characts. 8-19092
CdSe, magnetoreflectance and magnetoluminesc. of A exciton 8-39597
CdSe, pico-second time depend. of luminesc. line due to exciton-exciton collision 8-39587
CdSe, plastically deformed, luminescence line 0.96 eV 8-10950
CdSe, pure and In-doped epitaxial growth on ZnTe (111), and characterisation 8-14631
$CdSnP_2$, luminescent props. *(Russian)* 8-35201
CdTe, high-resistivity, irradiation effects on carrier transport and trapping process 8-2164
$CdWO_4$, luminesc. efficiency, temp. and high-press. 8-23507
$Ce_xLn_{1-x}P_5O_{14}$, UV luminescence lifetimes obs. 8-6775
CsBr, luminesc. polarisation for free and bound excitons 8-10942
CsBr:Cu, polarisation study of tetragonal Cu^{2+} aggregate centres 8-39590
CsBr:Pr, absorpt. and fluoresc. spectra, crystal field 8-2885
CsI, F- and F_h-centres, luminesc. meas. 8-10397
$Cs_2NaTbCl_6$, emission spectra, mag. dipole transitions assignments 8-23505
Cs_2NaYCl_6:Tb^{3+}, emission spectra, mag. dipole transitions assignments 8-23505
Cs_2TiF_6:$MnF_6{}^{2-}$, ${}^4A_2 \rightleftarrows {}^2E_g$ transition of Mn^{4+}, absorpt., emission, linear and MCD, MCE 8-10929
CuCl, decay time mas. of biexcitonic photoluminesc. 8-10935
CuCl, polariton effects in resonant Raman scatt. 8-10881
CuCl, relaxation of excitonic molecules generated by two-photon excitation, forward Raman scatt. 8-2838
$CuGaS_2$, crystal growth and luminesc. *(Japanese)* 8-23515
Cu_2O, evidence of competitive phenomenon between 0.72 μm and 0.93 μm luminesc. 8-27310
Eu^{2+} activated phosphors, luminesc. efficiency, temp. and high pressure 8-23508
EuO, anti-Stokes luminesc., magnon assisted 8-31252

photoluminescence continued
Eu_2O_3-Y_2O_3-Ta_2O_5, struct., phase form., luminesc. and X-ray diffr., obs. *(Russian)* 8-6765
GaAS, semiinsulating, heat treatment effects 8-6382
$Ga_{1-x}Al_xAs$, hot electron distrib. meas. and calc. 8-27318
$Ga_{1-x}Al_xAs$:Si p-n junction, reemission effects 8-15230
GaAs, degraded layer form. by annealing, photolum. obs. of defects 8-10968
GaAs, donor and acceptor concs. determ. by optical method 8-19525
GaAs epilayers, high-quality, sharp-line transitions due to donor-acceptor recomb. 8-6768
GaAs, epitaxial layers, high density electron-hole plasma luminesc. 8-19537
GaAs, hot electrons and exciton-electron collision under external elec. field 8-43928
GaAs, hot photoluminescence spectrum, polarisation depend. 8-31254
n-GaAs, intrinsic emission intensity, role of local centres in determ. of conc. depend. 8-39599
n-GaAs, intrinsic luminescence intensity, effect of 0.94, 1.0, 1.2 and 1.3 eV radiative centres 8-23517
GaAs, photocarrier thermalisation by laser excitation spectroscopy 8-31250
GaAs, photoexcitation phenomena, low density 8-27319
GaAs, photolum. intensity degradation caused by excitation-enhanced oxidation 8-15205
GaAs, photoluminescence and resonant Raman spectra, press. depend. 8-31251
GaAs, photoluminescence intensity rel. to heat treatment in S vapour *(Russian)* 8-48216
GaAs, semi-insulating, thermal conversion, Hall effect and luminesc. meas. 8-6405
GaAs, two-photon 1.06 μm absorption coeff., absolute meas. 8-19527
GaAs, two-photon absorpt. spectrum, band gap luminesc. 8-10888
GaAs:Be, ion-implanted, photolum. spectra, effects of implantant depth distrib. 8-27293
GaAs:Cr, exptl. verification of Cr^{2+} models of photoluminescent transitions 8-27320
GaAs:Cr photoluminesc. meas. 8-6761
GaAs:Cr semi-insulating substrate, photoluminescence obs. of surface degradation during LPE growth 8-6865
GaAs:Mg(Be)(Cd)(Zn), implanted, low temp. photolum. spectra 8-39583
GaAs:Mn, LPE layer, near band edge photoluminescence, 2K, low excitation intensities 8-48218
GaAs:Sn, 1.39 eV luminescence, injection level depend., freq. response and thermal quenching 8-19529
GaAs-disperse metal film, photoluminesc. at interface 8-26953
GaAs-$Ga_xAl_{1-x}As$ heterostructure, depend. of efficiency of radiative transitions on composition 8-2909
GaAs-GaAlAs DH lasers, optical studies of defects and degradation 8-18654
$GaAs_{1-x}P_x$, hot photoluminescence spectrum, polarisation depend. 8-31254
$GaAs_{1-x}P_x$ epitaxial layers, prep. *(Czech)* 8-48233
$GaAs_{1-x}P_x$:N, doping using inonised beam in MBE, photolum. meas. 8-47400
$GaAs_{1-x}P_x$:N, Koster-Slater model and N-states 8-47732
$GaAs_{1-x}P_x$:N, N isoelectronic trap, model calc. of N_Γ and N_x electronic states 8-10398
$Ga_xIn_{1-x}As_yP_{1-y}$, LPE layers, growth and characterisation 8-38983
GaN, pure and Zn-doped epitaxial layers 8-10955
GaP, growth and props. of LPE layers on Si substrates 8-6864
GaP, LPE layer for LED, photoluminesc. distrib. meas. *(Czech)* 8-48209
GaP:N, Cd(Zn),(C), interimpurity recomb., acceptor binding energies 8-34796
GaP:N, radiative recomb. from electron-hole drops, impurity induced transition 8-19547
GaP:N, temp.-modulated photoluminesc., phonon assisted tunnelling process 8-23511
GaP:Ni, VPE GaP, Ni detection 8-15212
GaSb high-purity and doped layers grown by LPE and VPE methods 8-6863
GaSe, 4.2 to 40K 8-10974
GaSe, polarized exciton luminesc. 8-6734
GaSe, radiative decay of direct and indirect excitons 8-10975
$GdNbTiO_6$:Eu^{3+} emission under UV excitation 8-6770
Gd_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8-6797
Ge, amorphous, elec. and opt. props., review 8-23094
Ge, electron-hole drop emission kinetics, effect of nonequilib. phonons, 4.2K 8-14674
Ge, electron-hole droplets in high stress limit 8-10369
Ge, electron-hole drops, photoluminesc. kinetics 8-23524
Ge, electron-hole gas and liq. coexistence 8-14668
Ge, electron-hole liquid, strain-confined 8-10355
Ge, exciton gas, entropy ionisation, luminesc. meas. 8-35196
Ge, heavily doped and compensated, photoluminesc. exam. 8-2902
Ge, plasma excitation, ultrafast optical props. 8-31248
Ge, pure, magnetic phase transition between electron-hole drops and free-excitons 8-6278
Ge, uniaxially deform., electron-hole drop flight, photolum. max. press. depend. 8-10977
Ge_2S_3-Ge_2Se_3, glass, photoluminesc. spectra, solid soln. form. *(Russian)* 8-23525
HgI_2, phonon-assisted recomb. of free electron-hole pair 8-23521
$HgMoO_4$, luminesc. efficiency, temp. and high-press. 8-23507
$In_{1-x}Ga_xAs$, LPE layer on InP substrate, phys., elec. and optical props. 8-39235
$In_{1-x}Ga_xP$, LPE, on $GaAs_{1-y}P_y$, photo- and cathodolum. 8-19559
$In_{1-x}Ga_xP$, solid soln. film, photoluminesc. meas. 8-27321
$In_{1-x}Ga_xP$, temp. depend. of forbidden band width, photoluminesc. meas. 8-19556
$In_{1-x}Ga_xP$:N(Te), composition depend. of bound state luminesc. transitions 8-39595
InSb, absorpt. saturation by nonequilib. electron-hole plasma, luminesc. 8-9418
InSe luminescent film, production and characterisation *(Russian)* 8-39581
K halide, Yb^{2+} activated, X-ray and intracentre luminesc. 8-6737
$K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8-2901

photoluminescence continued
KBr, F-centre luminesc., MCD effects 8−39598
KBr:Ag, mag. field effect on luminesc. of paired Ag^- ions 8−27313
KCN, F-centres, optical props. 8−2892
KCl, F_3-centre quartet state, IR emission spectra 8−43930
KCl, F-centre luminesc., MCD effects 8−39598
KCl, luminesc. excitation spectra of F-aggregate centres, 400-900 nm. *(Russian)* 8−10980
KCl:Ag, hole capture radius, scintillation luminesc. obs. *(Russian)* 8−39582
KCl:Ag(Cu), strong IR luminescence obs. of Ag^0 centres 8−6736
KCl:Pb^{2+}, decay of luminescence emission 8−39593
KCl(Br)(I):Tl, emission spectra, press. effects 8−23509
KI, F-centre luminesc., MCD effects 8−39598
KI, intrinsic luminesc. quenching, by X-ray induced coloration 8−19539
KI, luminesc. polarisation for free and bound excitons 8−10942
KI:Pb^{2+}, absorpt., excitation and luminesc. spectra 8−19519
KI:Se_2^-, reson. secondary emission, total spectrum *(Russian)* 8−19551
KI:T1, activated crystal, induced recombination emission *(Russian)* 8−48214
KI:Tl^+ type phosphor, press. effects on triplet relaxed excited states, quadratic Jahn-Teller interaction 8−23510
K_2O-B_2O_3 glass, PbO-activated, luminesc. and excitation spectra *(Russian)* 8−10979
$K_5(UO_2)F_9$, optical spectra, vibr. freqs. calcs. *(Russian)* 8−31205
$LaCl_3$:Nd^{3+} radiation upconversion, 1.06 to 0.873 μm 8−19530
La_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
La_2O_2S:Yb^{3+},Er^{3+}, IR excited visible luminesc. of Er^{3+} 8−2910
$LiCdVO_4$, luminesc. spectra in visible region, vanadate group 8−43921
$LiMgP_{1-x}V_xO_4$; luminesc. spectra in visible region, vanadate group 8−43921
$LiMgVO_4$, luminesc. spectra in visible region, vanadate group 8−43921
$LiZnVO_4$, luminesc. spectra in visible region, vanadate group, and high-press. phase 8−43921
$MgAl_2O_4$:Cr^{3+}, N-lines and Cr^{3+} pairs 8−2896
MgO:Cr^{3+}, $^4T_{2g}$ excited level of Cr^{3+} 8−43920
MgO:Cr^{3+}, broad band luminesc., relaxed level and emission processes 8−31234
$Mg_3(VO_4)_2$, luminesc. spectra in visible region, vanadate group 8−43921
$MgWO_4$, luminesc. efficiency, temp. and high-press. 8−23507
$MnCl_2$-lutidine HCl complex, photoexcitation, photoluminesc. 8−27301
MnF_2, two-exciton light absorption, with four-photon excitation *(Russian)* 8−35186
N_2, solid, vacuum UV luminesc., 8K 8−10958
NaBr:Tl^+, emission spectra, excitation in A-band 8−15218
$NaCaVO_4$, luminesc. spectra in visible region, vanadate group 8−43921
NaCl, F_3-centre quartet state, IR emission spectra 8−43930
NaCl:Pb^{2+}, decay of luminescence emission 8−39593
NaCl(Br):Tl, emission spectra, press. effects 8−23509
$NaGdO_2$:Tb^{3+}, obs. of efficient luminesc., UV excitation 8−43922
NaI, exciton-phonon polarisation interaction *(Russian)* 8−35195
NaI, luminesc. polarisation for free and bound excitons 8−10942
$NaLaO_2$:Pr^{3+}, obs. of efficient luminesc., UV excitation 8−43922
$NaNO_2$, hot luminesc. 8−6722
$NaNO_2$, hot luminescence 8−10976
Na_2S:Mn^{2+}, polycrystalline, EPR and luminesc. of Mn^{2+} 8−27082
Nd^{3+} in $Nd(NO_3)_3$(tributylphosphate-$d_{27})_3$, soln. luminesc., stimulated emission *(Russian)* 8−33734
Nd:glass, luminesc. quantum yield meas., relative method *(Russian)* 8−35203
$Nd_xLa_{1-x}P_5O_{14}$, Nd^{3+} stoichiometric materials, luminesc., conc. quenching 8−27315
O_2, liq., photoluminesc., dimer effects 8−31233
Pb^{2+}, in soln., luminesc., halide ion effects 8−35187
$PbCl_2$, blue emission 8−23518
PbI_2 (2H), photolum. spectrum, in strong photoexciton mixing region 8−48223
PbI_2, cryst., photochem. phenomena investig. *(Russian)* 8−35204
PbI_2, layered cryst., photoluminesc., and reflection spectra obs. 8−6726
PbI_2, photolum. and reflectivity temp. depend., cryst. anisotropy effect on electron-phonon interaction *(Russian)* 8−15225
$PbMg_{1/3}Nb_{2/3}O_3$, carrier mobility and photoluminesc. near ferroelec. transition *(Russian)* 8−2813
$Pb_{1-x}Sn_xSe(Te)$ epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
RbBr-Ag, mag. field effect on luminesc. of paired Ag^- ions 8−27313
RbCl:Ag(Cu), strong IR luminesc. obs. of Ag^0 centres 8−6736
RbI, intrinsic luminesc. quenching, by X-ray induced coloration 8−19539
RbI:Pb^{2+}, luminescence under B-band excitation 8−35192
Si, amorphous, elec. and opt. props., review 8−23094
Si, amorphous, hydrogenated, heating effects 8−15204
Si, amorphous, phonon interaction in luminescence 8−43927
Si, biexcitons, photoluminesc. spectrum exam. 8−47705
Si, bound exciton-dopant Auger lifetimes 8−18970
Si, correl. between photolum. spectra and impurity conc. 8−23513
Si, dislocation luminesc. obs. 8−15217
Si, electron-hole drop luminescence, hysteresis effect and surface energy 8−2907
Si, electron-hole drops, nucleation, time resolved luminesc. spectroscopy 8−6280
Si, electron-hole liquid, spatial condensation of strain-confined excitons and excitonic mols. 8−39592
Si, H_2^+ irrad., annihilation of free excitons, inelastic scatt. by SiH_4 mols., photolum. obs. 8−19561
Si, shallow impurities, photolum. anal. 8−23512
Si, uniaxial stress effects and excited states for multiple bound excitons 8−6281
Si:B recombination emission polarisation of bonded multiple-exciton complexes in mag. field *(Russian)* 8−2905
Si:In, capture cross section of excitons on neutral In impurities, photoluminesc. decay 8−6760
Si:P, exciton two-electron luminesc., temp. and impurity-conc. depend. 8−39585
Si:P, heavily doped, IR bound-exciton luminesc. spectra 8−15211

photoluminescence continued
Si:P(B), multiple-particle exciton-impurity complex form. *(Russian)* 8−43925
α-SiC, 6H, excited states, photoluminesc. efficiency 8−39604
SiC, cubic, electron-hole liq., luminesc. obs. 8−31239
Si_3N_4, encapsulant for annealing of GaAs, photolum. and AES evaluation 8−27657
Si_3N_4-GaAs structure, photoluminesc. and collective effects 8−6727
SiO_2, amorphous, optical and elec. props., comparison with chalcogenide semiconds. 8−6721
SiO_2, encapsulant for annealing of GaAs, photolum. and AES evaluation 8−27657
SiO_2, vitreous, photoelectric and photoluminescent props. in fundamental absorpt. region 8−39596
SiO_2:Ag, crystalline, fused, colour centres 8−10954
SnI_2, layered cryst., photoluminesc., and reflection spectra obs. 8−6726
SrF_2:Eu^{2+}, circular polarisation in luminesc. and optical orientation 8−6740
SrF_2:Eu^{2+}, phonon spectroscopy, phonon pulse spatial, spectral and temporal evolution 8−34580
SrF_2:Gd^{3+} film, Gd^{3+} luminesc. spectrum and kinetics 8−6763
Tb^{3+} in rare earth ion cryst. field in YF_3 struct., spectra 8−19563
Tl^+, in soln., luminesc., halide ion effects 8−35187
$TlR(MO_4)_2$, R=Eu, Dy, Er; M=Mo, W, luminesc. *(Russian)* 8−48229
UO_2^{2+} in aq. solns., luminescence quenching by metal ions 8−39588
UO_2^{2+} in aq. solns., luminescence quenching by H_2O mols. 8−39589
V (d^3) in II-VI semiconductors, absorption and luminesc. spectra 8−15203
WO_6^{6-}, in lattice electronic struct., luminesc. ab initio calcs. 8−6337
Xe, crystalline, photoluminesc. lifetime meas. 8−19548
Xe, solid, synchrotron irradiation pulse excitation photoluminesc. decay, exciton generation 8−6746
YAG:Nd^{3+}, Ce^{2+}, sensitisation, luminesc., absorpt. and emission spectra *(Russian)* 8−10982
YAG:R^{3+}, CRT and X-ray phosphor lattice-activator energy transfer model 8−6792
$YNbTiO_6$:Eu^{3+} emission under UV excitation 8−6770
Y_2O_3, electron and hole migration distances determ. 8−19526
YOCl:Yb,Er, anti-Stokes luminesc., temp. depend. *(Russian)* 8−6764
Y_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
$YP_{0.99}V_{0.01}O_4$, luminesc. spectra in visible region, vanadate group 8−43921
YVO_4, luminesc. spectra in visible region, vanadate group 8−43921
$Y_2[Pt(CN)_4]_3.21H_2O$, first order phase transform., spectroscopic and thermodynamic anal. 8−38829
Yb^{3+}, in dessicated (nondessicated) and protonated (deuterated) solvents, photoluminesc. energy degredation 8−19544
$ZnAl_2O_4$:Cr^{3+}, N-lines and Cr^{3+} pairs 8−2896
$Zn_xCd_{1-x}S$ epitaxial layers, elec. resist. and luminescence obs. 8−19540
$Zn_xCd_{1-x}S$, forbidden band width, exciton refl. and luminesc. meas. 8−10947
$Zn_xCd_{1-x}S$:Cl, $Cu^+(Ag^+)$, high pressure luminesc. 8−19533
$Zn_xCd_{1-x}Te$, absorpt. edge luminesc. on high-intensity excitation 8−6745
$ZnGeP_2$, pseudodirect gap crystal, polarisation of recombination radiation 8−19562
$ZnIn_2S_4$, photoluminesc., reson. Raman scatt. 8−48179
ZnO, ion implantation effect on luminesc. and cryst. damage 8−6758
ZnO:Er(Ag), photoluminescence and electroluminescence 8−27327
ZnO:Li, luminesc. donor-acceptor pairs, exchange broadened optically detected EPR spectra 8−23373
ZnS crystals, luminescence kinetics, centre discrimination exam. 8−15215
ZnS, high temp. annealing effects on photoluminescence 8−19564
ZnS, interimpurity high press. luminesc. 8−19532
ZnS, self-activated, IR sensitivity 8−6742
ZnS:Ag,Sm, recomb. centre interaction, luminesc. quenching 8−10946
ZnS:Cu,Al phosphor, shallow hole traps 8−31237
ZnS:Cu phosphor, electric field quenching of photoluminesc. and flash-like rise in luminesc. 8−2911
ZnS:Pb^{2+}(Mn^{2+}), high press. luminesc., localised excitations 8−19534
ZnS:TbF_3, photoelectroluminescence, effect of electron-hole pairs 8−27328
ZnS-based phosphor, microstruct. and luminesc. efficiency 8−10959
ZnS-CdS:Tm,Ni, recomb. centre interaction, luminesc. quenching 8−10946
ZnSe, hot-pressed powder LED fabrication and characts. 8−23639
ZnSe, low resist. single crysts., radiative recomb. mechanism, photolum. and electrolum. 8−6744
ZnSe:Al(Ga)(In), single cryst., doping, blue luminesc. 8−39584
ZnSe:Co, optical props. in near IR 8−43924
ZnSe:Cu, Cl, high press. luminesc. 8−19532
ZnSe:Cu, luminescence and diffusion behaviour of Cu impurities 8−35188
ZnSe:N, ion implanted cond. type conversion on annealing *(Korean)* 8−18668
ZnSe:Na, characterisation of edge emission 8−27312
$(ZnSe)_x(CdTe)_{1-x}$, low temp. photoluminesc. *(Russian)* 8−43931
p-$ZnSnP_2$, photolum. anisotropy, 77K 8−19557
ZnTe, relax. processes at high excitation levels, Bose-Einstein condensation of excitons 8−48219
ZnTe, temp. depend. of Raman scatt. and exciton luminesc. spectra 8−39586
ZnTe:Li(Cl)(Al)(In), ion implanted and annealed, photoluminesc. meas. 8−15208
ZnTe:Li(Na)(K)(Cs), fluorescence spectra meas. 8−10949
ZnTe:P, excitations spectra of donor-acceptor pair photoluminesc. 8−23522
$Zn_3(VO_4)_2$, luminesc. spectra in visible region, vanadate group 8−43921

photolysis
see also photodissociation
acetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
alkyl bromides, and perfluorinated mols., Br branching ratios, broad-band flash photolysis 8−27787
azo dyes, cis-trans photochem. isomerisation 8−27785

photolysis continued
bacteriorhodopsin photocycle hydration effects, in thin purple membrane layers 8−7320
bacteriorhodopsin phototransients, circular dichroism meas., comment 8−21954
carbocyanine dyes, sterically hindered short-lived isomers, laser photolysis study 8−40063
chlorotrifluoromethane, photolysis, transient species, matrix isolation spectra 8−48635
cyclododecanone, photolytic biradical anomalous CIDNP enhancement, pulse spin echo NMR obs. 8−46369
data acquisition, Biomation 8100 recorder interfaced to remote computer 8−21107
diazo compounds, continuous tone diazotype imaging films, model 8−32911
dibromofluoromethane, photolysis, IR matrix isolation spectra of CF_2Br free radical 8−27788
6,6′-diethoxy-thioindigo, cis$\rightleftharpoons$trans isomerisation, nanosecond flash photolysis and steady state methods, triplet state 8−35648
dimethylaminophenyl-(methylene)$_n$-(1-pyrenyl), intramolecular charge transfer, heteroexcimer formation processes 8−27783
2-(2′,4′-dinitrobenzyl)-pyridine, photochromism, ns laser absorption spectra 8−48138
dipeptides, aliphatic, EPR studies of direct photolysis 8−48678
DNA bromodeoxyuridine substituted, photolysis using UV light source 8−22185
field ion (emission) microscope tip prep. from sheet and block metal 8−7155
flash photolysis, appl. to biological systems, review 8−11530
flash photolysis, optical grating method 8−27785
formaldehyde(-d_2), photolysis quantum yields, radical production, NO reactions, freq. depend. 8−44387
fumaronitrile exciplexes, photoisomeris. and photoionis, dissolved O_2 effect 8−27789
glyoxal, selected state photodissoc., vibronic effects, CO quantum yield, 1-10 torr 8−37691
lanthanide mixtures in aq. solns., photochemical separation of Eu 8−31660
methanol, photolysis, IR multiphoton decomposition processes 8−3358
monomer gas photopolymerisation, polymer film form. on semicond. 8−10561
myoglobin+CO, recombination after flash photolysis, kinetics meas. using minicomputer 8−7200
perfluoroalkyl halides, at. I form., quantum yields 8−3355
phenol derivatives, neutral aq. solns., flash photolysis, N_2O and alcohol effects 8−40065
photoelectrolysis, semiconductor electrodes properties influence 8−14816
photoelectrolysis irreversibilities 8−23161
photoelectrolysis of water with semicond. surface, review *(Japanese)* 8−6440
propyl compounds, photolysis, photofragment free radicals, mass spectra *(Japanese)* 8−7220
pyrene-N,N-dimethylaniline heteroexcimer systems, micellar solns., fluoresc., photoinduced electron transfer 8−25590
pyrimidines, substituted, UV irrad. in aq. solns., EPR of free radicals 8−40115
radicals prod. by flash photolysis, CIDEP 8−13535
11-cis-retinal, donor energy effects on triplet-sensitized isomerization 8−3353
rhodamine 6G in ethanol, photobleaching mechanism *(Russian)* 8−48680
rhodopsin, transient light-induced conform. changes 8−15774
temperature jump and photochem. studies, fast flashlight appl. 8−22588
thioindigo, cis$\rightleftharpoons$trans isomerisation, nanosecond flash photolysis and steady state methods, triplet state 8−35648
thiophene, flash photolysis, new transient absorption spectrum, C_4H_3 radical, assignments 8−46354
transient species, form., quantitative anal. by extrapolation method 8−15685
transition metal complex anions, ligand-bridged, binucl., reson. Raman spectra 8−42067
trichlorofluoromethane, IR multiple-photon laser-induced decomposition, Cl and Cl_2 form. 8−40066
1,1,1-trifluoroacetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
trimethylgallium-AsH_3-H_2, GaAs VPE UV stimulated 8−35313
water, photoassisted electrolysis, Fe_xO_y electrode prep. and characts. 8−15683
water, photoelectrolysis in sunlight, using sensitised TiO_2 electrodes 8−19143
water, photooxidation at α-Fe_2O_3:TiO_2 electrodes 8−15684
xanthione, solns., triplet state quenching by ground state xanthione 8−42180
Ag halide, absorpt. and vac. photolysis 8−8458
Ag halide photochromic glass:Cu^{2+}, characterisation of Cu ions 8−5530
Ag halide photochromic glass, darkening mechanisms under pulsed laser excitation 8−25938
AgCl, defects induced by energetic ion implantation 8−17518
AlH_3, photo-and thermochem. reactions, 200-350K, UV Induced local states 8−31667
CO, ^{13}C isotope enrichment by 123.58 nm Kr reson. radiation photolysis 8−33624
CO_2, photolysis, 1470 and 1302-1306 Å, absolute O atom yield 8−48681
CdS, aq. dispersion, O_2^- generation by photolysis, spin trapping detect. 8−11538
$ClONO_2$, gaseous, UV photolysis mechanism at 302.5 nm, stratosphere appls. 8−20031
$F+O_2+M \rightarrow FO_2+M$, flash photolysis IR chemiluminesc., rate const. 8−3311
HCN(DCN), photodissoc. dynamics, rot. (vibr.) energy disposal 8−48672
H_2O photoelectrolysis at high current density, using TiO_2 and $SrTiO_3$ photoanodes 8−15679
H_2O photoelectrolysis with semicond. materials 8−2562
H_2O, photolysis with n-TiO_2 anode 8−2563
H_2SO_4:Fe^{2+}, frozen aq. soln., photolysis, H form., distrib. and diffusion 8−20044

photolysis continued
n-InP photoelectrode, stabilisation to photoanodic dissolution, in aqueous solutions of Te^{2-}/Te_2^{2-} 8−14814
n-InP photoelectrode, stabilisation to photoanodic dissolution in solns. containing Te^{2-} and Te_2^{2-} 8−19144
KrF* radiative lifetime, pulsed photolysis obs. 8−29819
NH_3, (A^1A_2'') predissoc., vac. UV photolysis, NH_2 form. 8−13547
O_3, laser flash photolysis, $O(^1D)$ quantum yield 8−20033
O_3, photolysis, near UV, temp. depend. of $O(^1D)$ formation 8−15689
OCSe, flash photolysis, $Se(4^1D_2)$ direct obs. 8−25461
OH+n-propyl acetate (sec-butyl acetate) (tetrahydrofuran) (peroxyacetyl nitrate), raction rate consts., in irrad. NO_x mixture 8−7171
$O(^3P)$+vinyl halides, reaction rate consts. 298-442K flash photolysis obs. 8−7195
PH_3, vac. UV photolysis, emission spectra 8−46357
PbI_2 film, photolyzed, refr. index change 8−11010
SF_5X, (X=Cl, Br, Sf_5), VUV photolysis, SF_5 radical form. in Ar matrix, IR spectrum 8−981
SiH_4 purification by selective photolysis using UV laser 8−31657
V_2O_5-water, EPR of VO_{aq}^{2+} formed by solar light photoreduction, electrolysis appl. 8−11540
WO_3 electrodes, electrochem. and photoelectrochem. behaviour 8−26949
XeF, B-X transition vibr. anal., flash photolysis UV absorpt. spectroscopy 8−42088
XeF_2, lifetime and collisional quenching meas. of XeF*(B) 8−33545
ZnO electrode, in aq. soln., phototransition at 380 nm, anodic photocurrent obs. 8−19145

photomagnetic effect
ferrites, EM wave effects on mag. and optical props., lecture 8−27031
$CaSO_4$:Dy phosphors, photomag. susceptibility 8−2724
$Y_3Fe_{5-x}Si_xO_{12}$, charact. of photoinduced mag. effects in weak magnetising field 8−27071
YIG ceramic, transient flash effect on permeability 8−27024
YIG:Si, photo-induced low freq. mag. permeab. *(Russian)* 8−39368
YIG:$Si^{4+}(Ti^{4+})(Zr^{4+})$, X-ray induced change in initial permeability 8−19280

photometers
see also photometry; spectrophotometers
annular scanning photometer, detect. of optical halo around spiral galaxy (NGC 4565) 8−12364
astronomical, URSULA, twin-beam multiband computer-controlled photometer 8−49334
astronomical IR instrumentation on NASA airborne observatories 8−45224
astronomical photometer, using Si diodes as light detectors 8−20651
detector type, commercial devices survey and classification 8−16830
exposure meters for colour positive process, review 8−12781
granularity measuring system 8−21200
high-resolution photometer, for upper atmosphere daytime Li releases obs. 8−45023
hygrometer, automatic IR, humidity determ. by water vapour absorpt. 8−12707
illuminance at reflex-reflector, photometer for performance meas. 8−45668
integrating, spherical, optimum screen determination *(Polish)* 8−37043
IR and mm wave techniques, for Cosmic Background Explorer Satellite 8−49344
IR and sub-MM spectroscopy, conf., Bonn, Germany (Mar. 1977) 8−12778
IR instrumentation of Calar Alto telescopes 8−16295
light meters and their appl. *(German)* 8−8434
MEX2, concentration and turbidity meas. *(Dutch)* 8−21203
mirror reflection coefficient meas. instrument 8−18036
photoelectric, high speed, computerised, for 60 cm astronomical reflector *(Japanese)* 8−32345
photoelectric photometer for point spread function energy conc. meas. 8−30099
photoelectronic precision logarithmic light meter, cct. details, theory and performance 8−32844
photometer-bichromator, elec. ratio system with phase separation of signals 8−270
photon counting photometer with 60 cm reflector, at Kagoshima rocket launching centre *(Japanese)* 8−32344
photosensor time characts. meas. meter 8−283
polarising No photometer, for meas. of airglow NO 2150 Å (1,0) γ-band intensity 8−45076
reading error anal. 8−12742
scanning microphotometer with on-line reduction of Schmidt plate data 8−7884
space telescope, design features 8−45229
sub-mm, for astronomical obs., optical components 8−16297
sub-mm, for ESO 3.6 m telescope 8−16296
toxic gas microconcentration determ. by automatic belt photometer *(Russian)* 8−28347
TTL spot exposure meter for colour photography, with three light sensitive elements 8−12782
two channel rocket photometer, for O I 5577 Å nightglow meas. 8−45078
UV radiation, semiconductor ratemeter 8−285
X-ray, proportional counter design and characts. *(Polish)* 8−41388
Se photocell, high-gain amplifier cct. 8−4679

photometric light sources
optical parametric amplifier as absolute radiometer 8−13759
D_2 lamp, spectral irradiance standard for UV, calibration 8−42397

photometry
see also brightness; colorimetry; densitometry; spectrophotometry; stellar photometry
asteroid 52 Europa, photometry and rot. period 8−12133
asteroids, photometric obs. and physical props. *(Polish)* 8−16330
autoradiography in radioisotope work, appl. to metabolic studies 8−3576
B2 1652+39, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
balloon-borne IR telescope for absolute surface photometry of night sky 8−36453
bipolar nebulae, photometry and spectra rel. to evolutionary status 8−41026
BL Lacertae-type objects, variable, IR and visible polarimetry and photometry 8−16528

photometry continued
  bright galaxies, UBVRI photoelectric photometry 8−32578
  3C 279, variable quasi-stellar source, IR and visible polarimetry and photometry 8−16528
  3C 295 galaxy cluster, two-colour ISIT photometry rel. to galaxies evolution 8−24557
  3C 371, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
  3C 66 A, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
  CA 0340-538 (3U 0328−52?), southern cluster of galaxies, photometry and spectra 8−36705
  Candela, radiometric definition appraisal *(German)* 8−32845
  cell image analysis on PDP-12, software system for information from scanning microphotometer *(German)* 8−20333
  circumferential field, spectrum characts. *(Polish)* 8−29136
  Cl 0024, galaxy cluster, two-colour ISIT photometry rel. to galaxies evolution 8−24557
  Coma Cluster galaxies, photometry 8−12381
  composite stellar systems, CO and JHK obs. of E and S0 galaxies 8−36684
  cylindrical volumes, calibrated piston source and light path computation techniques 8−4676
  D and cD galaxies in poor clusters, struct. and photometry 8−32580
  digital integrator for chemiluminesc. light flux meas. 8−21196
  distant cluster of galaxies, photometry and red shift 8−12377
  elliptical galaxies, isophotes struct. 8−41058
  Enceladus, IR photometry rel. to presence of water frost 8−12146
  ESO 113-IG45, galaxy and/or quasar, spectrum, photometry and struct. 8−28782
  fluorophotometric measurement, supplementary unit for hand ophthalmoscope 8−48907
  galaxies, interacting, with compact components, UBV photometry 8−20888
  galaxies, multiply observed, revised standard total magnitudes and colours catalogue 8−8116
  galaxies, surface photometry, computerized analysis method 8−12100
  galaxy NGC 3379, surface photometry, computerised analysis 8−12101
  glass filter, simulating CIE spectral tristimulus value $\bar{z}(\lambda)$ 8−30037
  globular clusters in Virgo cluster of galaxies, photometry, and luminosity distrib. 8−12308
  HPLC detection systems, review 8−48733
  integrating photometric rotating analyser ellipsometer, precision estimation 8−12744
  integrating spheres for absolute refl. meas., goniophotometric corrections 8−21202
  intensity probability density determ., from photoelectron statistical distrib. 8−24840
  interference coating deposition by Balzers BA-710 vac. system, photometric monitoring 8−46850
  BL Lacertae, optical monitoring by three-colour photographic photometry 8−16525
  BL Lacertae, photoelectric intraday photometric obs. 8−36681
  light meters and their appl. *(German)* 8−8434
  lock-in amplifier, for measurements when signal-to-noise ratio is less than unity 8−29134
  low-alloy steel, photometric anal. by time resolution of radiation *(Russian)* 8−23995
  in M31, colour excesses rel. to galaxy gas-to-dust, ratio 8−8120
  M87, evidence for supermassive object in galaxy nucleus from SIT and CCD area photometry 8−49528
  Markarian galaxies, nature from photometry and classification 8−28781
  Mars, phase function, July to November 1976, Viking orbiter photometric obs. 8−20677
  Mercury, optical photometry interpretation rel. to surface material props. 8−12130
  Merope nebula, uvby photometry and dust grains phase function in UV 8−32553
  Michelson interferometer, double-passed, influence of surface roughness on photometric setting-accuracy 8−12746
  mine large particle size photometric sorting machine, DATAC system 8−32853
  Moon, optical photometry interpretation rel. to surface material props. 8−12130
  Neptune, effective temp. from IR photometry 8−32394
  NGC 2768, galaxy, optical and IR photometric study 8−36683
  NGC 3115, galaxy, optical and IR photometric study 8−36683
  NGC 7000/IC 5070 (North American/Pelican) nebular complex, photometry rel. to obscuration and excitation 8−36667
  panoramic photometry reduction, search algorithms 8−32354
  peculiar extragalactic sources, multiaperture UBV photometry 8−28772
  photon irradiance sensor, Si PIN photodiode and rhodamine B dye quantum counter, construction and expt. tests 8−32843
  planetary nebulae in M31 (Andromeda galaxy), identifications and photometry 8−28737
  planetary satellites of outer solar system, IR photometry and identification of new class 8−12146
  polarised light definitions and nomenclature 8−29897
  ps light pulse length determ. by parametric amplification in nonlinear crysts. 8−1306
  radiation energy units reproduction, error anal. 8−45670
  reflectance measurement at diffuse incidence *(German)* 8−21201
  retrorefelctance measurement of photometric standards and coatings 8−25940
  RMB 56 (1216+141), compact blueshifted galaxy, photometry and spectrum 8−16527
  Saturn, atmosphere upper layers props. from polarimetry photometry and spectrophotometry *(Russian)* 8−40867
  signal processing unit based on hybrid fast instrumentation amplifier 8−41342
  solar energy meas., photometric and bolometric methods 8−12470
  surface roughness meas. appl. 8−4682
  terminology of transmission, refl., scatt., and emission 8−37044
  Tololo emission-line galaxies, nature from photometric and spectroscopic obs. 8−49531
  TTL spot exposure meter, applications, for incident and reflected light measurement 8−12782
  vacuum UV, detect. efficiency of ceramic channel electron multiplier 8−12759

photometry continued
  value definitions and commentary *(French)* 8−268
  B determination in nuclear power station waters, flame photometer method 8−45672
  BaSO$_4$, pressed powder Eastman White reflectance standard, absolute refl. meas. 8−25939
  BaSO$_4$ white reflectance standard, Kubelka-Munk optical props. 8−4675

photomultiplier tubes *see photomultipliers*

photomultipliers
  Anger scintillation cameras, state-of-the-art in suitable photomultiplier tubes 8−40304
  binary encoded position-sensitive scintillation hodoscope with reduced photomultiplier, pion detection 8−17506
  Cherenkov counter appl. of photomultiplier and small size phototube performance 8−37511
  Cherenkov counter photomultiplier, sensitivity to gamma quanta 8−9032
  Cherenkov counter spectrometric channels, optimum supply conditions of 58AVP photomultipliers 8−9031
  control unit construction for high-performance dichrograph 8−21122
  curved microchannel plate photomultipliers, impulse response 8−12743
  environmental γ flux meas. method using NaI(Tl) scintillation counter and photomultiplier 8−21786
  focon raster lightguide for transmission onto photomultiplier photocathode, optimisation 8−13805
  high resolution imaging X-ray detector, for astronomical meas. 8−49333
  ionisation coefficient of gases, meas. using photomultiplier 8−1786
  light pipes with smooth and mosaic ends for photomultiplier 8−1328
  microchannel plate, improved perform. with resistive anode encoder 8−5104
  microchannel plate photomultiplier, appl. to subnanosec. lifetime meas. 8−37520
  photon counting, vacuum UV region, 120-200 nm, detection limit of apparatus *(German)* 8−45691
  photon counting appl., system components evaluation 8−21215
  quantum receiver appl. peculiarities *(Bulgarian)* 8−45704
  radiometer/photometer appl., commercial devices survey and classification 8−16830
  scintillation spectrometer, photomultiplier gain stabilization, computer control software 8−13369
  spectral sensitivity of RCA 4522 photomultiplier tube 8−21818
  spectrometer light detector, cooling system 8−45718
  stability behaviour of photomultiplier using Pb glass channel type secondary electron multiplier *(German)* 8−852
  threshold optical radiation flux meas. errors 8−12760
  time resolution capabilities of microchannel plate and static crossed field photomultipliers 8−37061
  voltage-frequency convertor for astronomical photometry with photomultipliers 8−45233
  weak light flow, analysis of measurement methods *(Russian)* 8−45694

photon counting
  60 cm reflector, at Kagoshima rocket launching centre *(Japanese)* 8−32344
  book, photoelectron statistics 8−25842
  Brownian motion, photon correlation study 8−25798
  ceramic channel electron multiplier, detect. efficiency in vacuum UV 8−12759
  fluorescence, subns., decays, meas. by sampled single-photon detect. 8−21219
  inert gas photoelectron counter, XUV intensity meas. 8−32842
  intensity fluctuation spectrum, theory of registration *(Russian)* 8−1199
  irradiance sensor, consisting of Si PIN photodiode and rhodamine B dye quantum counter, construction and expts. tests 8−32843
  lecture on introduction to quantum optics 8−25843
  microchannel plate, improved performance with resistive anode encoder 8−5104
  multidetector photon statistics 8−32873
  noiselike optical signals, photoelectron counting statistics and error rate characteristics 8−1178
  nonlinear detector effects on statistics of fluctuating signal 8−24735
  observatory scanning spectrophotometer *(French)* 8−20638
  optimum photon detection with simple counting processor 8−27956
  parametric generation, from quantum noise effect of photon statistics 8−25921
  photoelectric counting as test of existence of photon 8−5440
  photometer, high-speed, computerised, for 60 cm astronomical reflector *(Japanese)* 8−32345
  photomulitplier meas. of threshold optical radiation fluxes, errors 8−12760
  photon bunching in thermal radiation, temp. depend., photodetector thermal fluctuation 8−24748
  pulse delay estimation, nonregularity 8−29157
  Rayleigh spectrometer, minicomputer system using autocorrelation or FFT 8−41351
  SEM measurements of minority carrier lifetimes at dislocations in GaP, employing photon counting 8−23109
  subnanosecond time-correlated photon counting with tunable lasers 8−45701
  system components evaluation 8−21215
  vacuum UV region, 120-200 nm, detection limit of apparatus *(German)* 8−45691
  weak light flow, analysis of measurement methods *(Russian)* 8−45694
  Na vapour, quantum counter, IR detection 8−30016

photon-deuteron interactions
  see also photon-deuteron scattering
  $\delta d \to \pi^+ nn$, final state interaction effects *(Russian)* 8−41558
  $\gamma d \to \rho d$, double scatt. at high energy, unstable particle scatt. amplitude 8−45929

photon-deuteron scattering
  see also photon-deuteron interactions
  No entries

photon echo
  anomalous time shape, induced by two successive light pulses 8−18021
  coherent optical spectroscopy 8−1112
  fluoromethane, rotary photon echoes 8−25929
  molecules, large optical free induction decay, photon echoes 8−37945
  naphthalene, in durene and perdeutero-naphthalene mixed crystals, photon-echo decay 8−42388

photon echo continued
ruby, modulation in μs pulse separation regime 8−30029
ruby, Stark induced optical transients, photon echo 8−33785
tri-level echo, multilevel systems inhomogeneously Doppler broadened 8−17774
two-level degenerate system, superradiance 8−46553
wavefront correction 8−9417
Cs, $6S_{1/2}$-$7P_{1/2}$ transition, photon echo polarisation rotation in mag. field 8−22180
Cu_2O, self-induced transmission and radiation echo for intraseries and interseries exciton transitions 8−5528
Na, excited state photon echo relax. 8−37606
Rb_2, vapour, laser radiation absorpt. superradiance 8−46553

photon-hadron interactions
see also photon-hadron scattering; photon-nucleon interactions
pulsars, hadronic photoabsorpt. and pair production 8−12261

photon-hadron scattering
see also photon-hadron interactions
No entries

photon interactions *see photon-deuteron interactions; photon-hadron interactions; photon-lepton interactions; photon-nucleus reactions; photon-photon interactions*

photon-lepton interactions
see also photon-lepton scattering
$\gamma e^- \rightarrow e^- \nu\bar{\nu}$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
e^-e^+ pair photoproduction in crystals by circularly polarised γ-quanta 8−17005

photon-lepton scattering
see also photon-lepton interactions
No entries

photon-nucleon interactions
see also photon-nucleon scattering; photon-proton interactions
lepton pair photoproduction in thick target, Monte Carlo simulation 8−21432
neutral current effects in Berthe-Heitler pair prod. 8−33022
$\gamma+d \rightarrow p+n+\pi^0$, interactions of nucleons in final state 8−37220
$\gamma N \rightarrow DC_1$, charm particle photoproduction near threshold *(Russian)* 8−8675
$\gamma N \rightarrow e^+e^-$, total cross-section near threshold determ. *(French)* 8−455
$\gamma N \rightarrow$lepton pairs, weak neutral currents anal. 8−8670
$\gamma n \rightarrow \pi^- p$, 850 MeV, target asymmetry meas. 8−21438
$\gamma n \rightarrow \pi^- p$, proton polarisation in $^2H(\gamma,np)$ *(Russian)* 8−41700
$\gamma N \rightarrow \pi\Delta$, Δ-isobar density matrix *(Russian)* 8−45932
$\gamma_\nu N \rightarrow \pi^\pm X$, current fragmentation region, quark cascade model of deep inelastic lepton-nucleon scatt. 8−25052
ω, inelastic photoprod., 7.5-10.5 GeV, with $\Delta(1236)$ and higher masses 8−45930
$\rho^\pm$ inelastic photoprod., 7.5-10.5 GeV, with $\Delta(1236)$ and higher masses 8−45930
$\gamma N \rightarrow \eta\pi^\pm$, 9.7 GeV, one-pion-exchange model 8−25054

photon-nucleon scattering
see also photon-nucleon interactions; photon-proton scattering
No entries

photon-nucleus reactions
for inelastic photon-nucleus scattering, see "photon-nucleus scattering"
see also photodisintegration; photon-deuteron interactions; photon-nucleon interactions
bremsstrahlung-induced reactions in nuclei with A=27-238, 450 MeV to 2.2 GeV *(German)* 8−33164
continuum shell model calcs. of particle emission threshold effects, cross section, line shape of resonances 8−46014
Coulomb correction to electron pair prod. by intermediate energy photons 8−13060
cross-sections, 5 to 500 MeV and nuclear research bibliography 8−29338
differential polarisation coeffs. 8−4926
dipole sum rule, relation to photoabsorption of nuclei 8−17111
giant dipole resonance, role of compound nucleus levels *(Russian)* 8−25164
giant multipole reson. fragmentation over two-phonon states in spherical nuclei 8−575
Jastrow correlations and nuclear photoeffect 8−4927
mass yield formula for intermediate energy photospallation of medium weight nuclei 8−29445
photo-nucleon spectra, shell and pre-equilibrium decay model of giant reson. decay *(Russian)* 8−579
pion production thresholds, pseudoscalar and pseudovector Lagrangian densities 8−29449
pre-equilibrium particle decay in photonuclear reactions 8−25173
e^+e^- production, intermediate energy, Coulomb correction to total cross section 8−21540
(γ,π^0), near threshold photoprod. on ^1H and ^2H, cross section calcs. 8−25174
(γ,π^-p), detector system and ccts. 8−877
Au, photonuclear cross-sections in giant reson. region 8−17178
$^{11}B(\gamma,p)^{10}Be$, 18 to 31 MeV, photoproton spectra and ang. distrib., excited state transitions 8−13056
$Be(\gamma,p)$, intermediate energy bremsstrahlung, cross sections 8−13061
$^{209}Bi(\gamma,xn)$, x=2,3 or 4, cross sections at intermediate energies 8−8793
C, photonuclear cross sections in giant reson. region 8−17178
$^{12}C(\gamma,P)$, up to 4.5 GeV, ang. depend. of normalised invariant cross section parameters *(Russian)* 8−17180
$^{12}C(\gamma,\gamma)$ scatt. study of electron prod. high energy synchrotron radiation spectrum struct. 8−13062
$^{12}C(\gamma,p)$, p-shell nucleon momentum distrib. determ. 8−17182
$^{12}C(\gamma,p)^{11}B$, threshold to 120 MeV, cross section meas. *(Russian)* 8−41699
$^{13}C(\gamma,n_{0,1})^{12}C$, 98° diffr. cross-sections, reson. due to ^{13}C level struct. 8−586
^{40}Ca photonuclear reactions, differential cross section calcs., direct-semi-direct model 8−33166
$^{59}Co(\gamma,xn)$ reactions in complex nuclei, cross sections at intermediate energies 8−8793
^{52}Cr, total photoneutron cross section, high resolution meas., isospin effects 8−8792
$^{63}Cu(\gamma,p)$, up to 4.5 GeV, ang. depend. of normalised invariant cross section parameters *(Russian)* 8−17180

photon-nucleus reactions continued
Fe, photonuclear cross sections in giant reson. region 8−17178
$^{58}Fe(\gamma,n)$, near threshold, cross sections 8−13055
^2H, photonuclear sum rules and interaction effects, integrated cross-section determ. from double commutator 8−21542
$^2H(\gamma,\pi^0)$, 300 to 700 MeV, differential cross sections, partial wave analysis *(Japanese)* 8−17177
$^2H(\gamma,\pi^+)$, 1-4 MeV, cross-section meas. 8−21544
^3H, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^3He, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^4He harmonic oscillator sum rules for photonuclear reactions, shell model, perturbative corrections 8−41692
^4He, π^0 coherent photoprod., screening corrections and rescatt. *(Russian)* 8−41697
$^4He(\gamma,\pi^0)$, impulse approx. for differential cross sections in resonance region *(Russian)* 8−41698
$^4He(\gamma,\pi^0)$, reaction cross section meas. equipment 8−29694
In, photonuclear cross sections in giant reson. region 8−17178
$^6Li(\gamma,\pi^+)$, cross-section calc. 8−17248
$^7Li(\gamma, n)^6Li^*$ (3.56 MeV), integral reaction cross section *(Russian)* 8−46048
Mn photonuclear cross sections in giant reson. region 8−17178
^{52}Mn, 2-5 GeV photospallation, ratios of isomeric yields *(Russian)* 8−46047
$^{100}Mo(\gamma,n)^{99}Mo^{m1,m2,g}$, isomeric cross section ratios 8−29448
^{15}N, photoabsorption, shell-model anal. of giant dipole state 8−29447
$^{24}Na(\gamma,n)$, 42 MeV, photoneutron flux determ. from induced activity meas. in water 8−20112
$^{16}O(\gamma,n)^{15}O$, ang. distrib. asymmetry anal. 8−25172
$Os(\gamma,xn)$, photoneutron cross section, bremsstrahlung yield curves 8−17176
$^{31}P(\gamma,x)$, (x=2p,2pn,3p,3pn), 75 to 640 MeV, yields and cross sections 8−37328
$^{208}Pb(\gamma,\gamma)$, 6.92, 7.12 MeV, reson. fluoresc. meas. 8−8797
$^{208}Pb(\gamma,n)$, 8 to 13 MeV, total cross section, resonance struct. 8−4928
$^{208}Pb(\gamma,p)$, up to 4.5 GeV, ang. depend. of normalised invariant cross section parameters *(Russian)* 8−17180
$^{102}Ru(\gamma,p)^{101}Tc^{m,g}$, isomeric cross section ratios 8−29448
^{44}Sc, 2-5 GeV photospallation, ratios of isomeric yields *(Russian)* 8−46047
$^{30}Si(\gamma,2p)$, 75 to 640 MeV, yields and cross sections 8−37328
Sn, photoactivation by 42 MeV bremsstrahlung, gamma transition energies and line intensities 8−13057
$^{118}Sn(\gamma,p)^{117}In$, 150 to 750 MeV, reaction cross section 8−37329
$^{238}U(\gamma,2n)$, ^{236}U fission isomer, cross section, half life 8−46045
$^{51}V(\gamma,3n)$, cross sections at intermediate energies 8−8793
$^{64}Zn(\gamma, n)^{63}Zn$, giant dipole reson. isospin splitting, reaction cross section *(Russian)* 8−46040

photon-nucleus scattering
see also photon-deuteron scattering; photon-nucleon scattering
Compton scattering, diffractive behaviour, meson exchange effects 8−33165
Delbruck scattering, elastic scatt. of photons by Coulomb field 8−21541
(γ,γ') scattering at 7.28, 7.63 MeV on Cd, Cd, Ba, ^{239}La, ^{141}Pr, ^{209}Bi, levels of La, Bi anal. 8−13058
^{13}C, giant reson. isospin splitting, photonuclear and e-scatt. cross-sections 8−577
$^{40}Ca(\gamma,\gamma)$, 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8−13059
^{57}Fe, 14 keV state excitation by synchrotron radiation 8−25147
$^{115}In(\gamma,\gamma')^{115m}In$, appearance energies of In complex cpds. determ. 8−8794
$^{175}Lu(\gamma,\gamma')$, elastic and Raman scatt. at 8.5-11.4 MeV, GDR parameters 8−587
$^{55}Mn(\gamma,\gamma)$, 5.5-11.4 MeV, interference between reson. and Thomson scatt. 8−33167
$^{16}O(\gamma,\gamma)$, 6.95, 7.12 MeV, strengths of isospin forbidden E1 transitions 8−13059
^{17}O, giant reson. isospin splitting, photonuclear cross-sections 8−577
$^{208}Pb(\gamma,\gamma)$, mean polarisation meas. of 4843 keV 8−29446
$^{181}Ta(\gamma,\gamma')^{181}Ta$, elastic and Raman scatt. at 8.5-11.4 MeV, GDR parameters 8−587
$U(\gamma,\gamma)$, 2.75 MeV, Delbruck theory, multiphoton exchange 8−8796
^{91}Zr, nuclear reson. fluoresc., γ-ray spectra 8−588

photon-phonon excitations *see polaritons*

photon-photon interactions
see also photon-photon scattering
Regge poles, fixed and moving, $\gamma\gamma$ scatt. 8−21406
$\gamma\gamma \rightarrow$hadrons, sum rules and non-Regge terms 8−25093
$\gamma\gamma \rightarrow \nu\bar{\nu}$, nonzero neutrino mass, early Universe process 8−21483
$\gamma p \rightarrow \pi\Delta(1236)$, 744 to 1044 MeV, momentum spectra, differential cross sections *(Japanese)* 8−17032

photon-photon scattering
see also photon-photon interactions
pair creation in strong mag. field 8−4816
supergravity, SO(3) and SO(4), finiteness and renormalisability of scalar multiplet coupling 8−4821
μ, anomalous mag. moment, sixth order, photon-photon contrib. 8−16958

photon polarisation
circularly polarised EM evanescent wave, helicity, reversion by Lorentz transform 8−32696
double helix struct., 2 intertwined neutrinos, polarisation, helicity props. of photon 8−37255
Einstein paradox, time symm., photon polarisation in cascade transitions 8−21008
muon capture, $^{12}C(\mu^-,\nu_\mu\gamma)^{12}B$, impulse approx. calc., photon polarisation 8−37315

photon-proton interactions
see also photon-proton scattering
charm particle prod. by photon-gluon fusion 8−45923
$\gamma p \rightarrow hX$, SU(3)×SU(3) invariant interaction of quarks, large p_t, gluon bremsstrahlung 8−33072
$\gamma p \rightarrow p+$vector meson, total cross section *(Russian)* 8−8674
$\gamma p \rightarrow p\omega$, backward prod., baryon exchange dip and parton effects 8−17030
$\gamma p \rightarrow \pi^0 p$, differential cross sections at large angles, 2-6 GeV 8−37214

photon-proton interactions continued
- $\gamma p \to \pi^+ n$, 850 MeV, target asymmetry meas. 8−21438
- $\gamma p \to \pi^+ n$ below 1.02 GeV, polarized target asymm. meas. 8−17029
- $\gamma p \to \pi^+ \pi^- p$, Lagrangian model, polarised and unpolarised photons 8−17028
- π^0 production in γp interactions, resonance region, asymm. *(Russian)* 8−17031

photon-proton scattering
- *see also photon-proton interactions*
- low energy, one-particle-exchange model 8−457
- γp, proton polarisability determ. 8−17025
- $\gamma p \to \gamma p$, differential cross sections at large angles, 2-6 GeV 8−37214
- γp low energy scatt., one particle exchange model 8−33070

photon scattering *see photon-deuteron scattering; photon-hadron scattering; photon-lepton scattering; photon-nucleus scattering; photon-photon scattering*

photon transport theory
- anisotropic dispersive media, generalisation of Planck's law 8−18153
- biological materials, extrapolation of linear attenuation coefficients from diagnostic energies to megavolt range 8−24145
- bunching in thermal radiation, temp. depend., photodetector thermal fluctuation 8−24748
- data covariance estimation methods for sensitivity-based data assessment 8−13400
- deep-penetration radiation transport, event and point value in Monte Carlo importance sampling 8−8869
- emission power spectra described by solns. of Kompanyets' kinetic eqn. *(Russian)* 8−152
- entropy estimation by weight functions 8−408
- gamma-ray intensity from an activated cylinder 8−16761
- gamma-ray natural flux spectral distribution, analytical approx. 8−815
- laser fusion blanket, neutronics and photonics 8−5025
- LMFBR, heterogeneous core design, neutron and γ-transport effects 8−8893
- matrix methods for radiation transport 8−13198
- Monte Carlo deep penetration calcs., appl. of fictitious scatt. transport model 8−29526
- Monte Carlo shielding calcs., biased selection of particle flight directions as variance resolution technique 8−29653
- multigroup Monte Carlo photon cross section technique 8−4570
- PWR, shielding against neutron and gamma streaming, computational methods 8−21783
- radiation field in flat parallelepiped, ideal photon gas eigenvalue spectrum 8−8344
- radiation shielding, cross section sensitivity analysis 8−21778
- radiation streaming, shield design problems 8−21780
- reactor shielding, current status and future prospects 8−25328
- reactor shielding methods, development in USA 8−21776
- reactor shielding methods, evolution, data 8−21775
- relativistic Maxwellian electrons, moment generated radiative transfer functions 8−24747
- scattering angles selection in MORSE, rejection technique 8−4571
- shielding, in 3-D direct-coupled-ray method 8−21785
- tissue, 4th order polynomial coeffs. for photon interaction data of 69 ICRP reference man tissues 8−28077
- Tokamak, expt. power reactor, neutronic and photonic calcs., blanket and shield design 8−29644
- unsteady γ-ray transport, small angle scatt. approx. 8−16760
- water/air mass stopping power ratios for megavolt. photon and electron beams 8−28082
- Z-depend. of gamma-ray elastic scatt., power law 8−45578

photons
- *see also cosmic ray photons; gamma-rays; light; photon transport theory; X-rays*
- double helix struct., 2 intertwined neutrinos, polarisation, helicity props. 8−37255
- mass of photon, fermion radiative decay 8−41456
- massive, and tachyon monopoles 8−20986
- matter formation, photon condensation, treatment using Bose-Einstein statistics 8−12435
- pair prod. in strong mag. field 8−407

photonuclear reactions *see photon-nucleus reactions*

photophoresis
- droplet motion in optical radiation field for small Knudsen number values 8−35730

photoplasticity
- polyester, stress-optic law, photoplasticity, RPE transition temp. 8−10120
- polyester model material, optical response and yield behaviour 8−31453
- review of photoplastic effects *(Japanese)* 8−6121

photorefractive effect
- ferroelectric, photoinduced changes in refractive index and spontaneous polarisation 8−43804
- hologram recording sensitivity in photorefractive medium 8−5438
- holographic grating recording, pyroelectric mechanism 8−42300
- $LiNbO_3$:Fe(Cu), photorefractive recording of volume holograms 8−37849
- PLZT, optically induced birefr. change 8−43832
- $Bi_{12}GeO_{20}$, holographic recording and photoinduced refractive index change exam. 8−37851
- $Bi_{12}GeO_{20}$, vol. hologram recording, charge transfer process 8−5437
- $Bi_{12}SiO_{20}$, holographic recording and photoinduced refractive index change exam. 8−37851
- $Bi_{12}SiO_{20}$, vol. hologram recording, charge transfer process 8−5437
- $KNbO_3$:Fe, photorefr. effects and photocurrents 8−43434
- $LiNbO_3$, acoustophotorefractive effect, appl. at acousto-optic memory correlator 8−15145
- $LiNbO_3$, imaging of photorefractive effects by double cryst. X-ray refl. topography 8−39521
- $LiNbO_3$, photorefractive, optical information storage 8−33708
- $LiNbO_3$, photorefractive effect sensitivity 8−43833
- $LiNbO_3$, pure, two-photon photorefractive recording 8−31220
- $LiNbO_3$, vol. hologram recording and reconstruction 8−9349
- $LiNbO_3$:Fe, dynamic optical storage 8−33706
- $LiNbO_3$:Fe, spontaneous polarisation reversal and photorefractive effect 8−31163
- $LiTaO_3$, characterisation as holographic storage materials 8−29909

photorefractive effect continued
- $PbMg_{1/3}Nb_{2/3}O_3$, photoinduced phenomena at diffuse phase transition 8−43814
- $Sr_{0.75}Ba_{0.25}O_6$, photorefractive effect, spectral characts. 8−43829

photoresistors
- IR detectors for optical investigation at high pressures 8−21217
- laser pulse detection using receivers with photoresistors 8−45705
- CdS_xSe_{1-x} thin-film position-sensitive photoresistor prod. and props. *(Russian)* 8−43503
- InSb, photoresistor in mag. field, increased responsivity 8−39162

photoresists
- *see also electron resists*
- biazide-polymer based photoresist. films, positive image production *(Russian)* 8−16887
- hologram recording, book contrib. 8−25837
- metal foil photoetching profile, quantitative obs. 8−39943
- microlens production for semiconductor lasers 8−9398
- negative, as phase profile material for near IR, IR spectrophotometric meas. 8−37953
- negative film, index and surface simultaneous modulation 8−37951
- negative photoresist behaviour, simple math. model 8−37952
- optical system MTF measurement using positive photoresists, cross sectional features 8−9337
- polymethacrylates degradation obs., for PMMA, PBMA, PMA and PMA AN 8−27795
- polyvinyl alcohol, dichromated, sensitisation to visible laser wavelengths 8−4716
- positive, simultaneous exposure and development model 8−4715
- stainless steel, photoetching, props. of liq. photoresists 8−39942
- AsGe amorphous semiconductor layers for recording information *(German)* 8−42395

photosphere
- abundances of elements Na to Ca 8−49411
- active regions, photosphere mag. field strength rel. to submillimetre emission 8−12177
- active regions gross energy balance 8−28633
- brightness field near disc centre, two dimens. spatial spectrum 8−7964
- cooling with increased sunspot activity 8−40896
- differential rotation of magnetic fields, solar cycle variations 8−20781
- electric currents, subphotospheric Joule dissipation rel. to quiescent prominences downward motion 8−20779
- electric fields generated by motion of mag. features 8−12194
- faculae, contrasts at solar disc centre using filigree pictures 8−12181
- faculae, effects on solar constant 8−4163
- faculae, line profile families rel. to total mag. flux 8−49408
- faculae, models, Ca II K line wings and magnetic fields 8−16392
- faculae and pores, line profiles 8−16391
- faculae excess brightness, wavelength depend., rel. to solar oblateness 8−7955
- flows in magnetic flux tubes 8−16393
- force-free magnetic field bifurcation 8−40901
- Fraunhofer line profiles interpretation 8−7976
- Fraunhofer lines asymmetry, centre-to-limb var. *(Russian)* 8−40892
- Fraunhofer lines asymmetry, rel. to photospheric macromotions 8−4175
- global magnetic field, changes rel. to equatorial K-corona temporal evolution 8−28618
- granular cells charact. scales and convection zone struct. 8−7981
- RMS granular contrast, new meas. of centre to limb var. 8−4176
- granulation, lifetime from balloon-borne imagery 8−28601
- granulation, one-dimensional speckle interferometry 8−45299
- granulation, photometric props. from balloon-borne imagery and digital image enhancement 8−7956
- granulation, wavelength depend. in 0.38-2.4 μm region 8−12188
- granule/intergranule brightness contrast, new determ. 8−20797
- hard X-rays backscatter, effects on anisotropy and polarisation 8−28594
- impulsive X-ray bursts, polarisation, directivity and spectrum of bremsstrahlung radiation 8−4160
- intense magnetic flux tube, vertical motions inside 8−40900
- large-scale magnetic field, Stanford obs. compared with Hα synoptic charts 8−28612
- limb darkening of quiet Sun in continuum 8−7975
- limb region, UV light polarisation 8−45302
- limiting optical depth for valid LTE conditions *(Russian)* 8−20785
- linear hydrodynamical equations coupling with radiative transfer in non-isothermal atmosphere, method 8−20794
- magnetic field patterns, evolution during Skylab 8−20798
- magnetic fields, rel. to quiescent prominences mag. field orientations and classification 8−45305
- magnetic fields and convection dynamic interaction 8−24458
- magnetic fields and motions, granulation and sunspots *(Russian)* 8−16376
- magnetic fields beneath large coronal holes, nature 8−28613
- magnetic fields hydraulic concentration, adiabatic cooling and conc. in downdraughts 8−45300
- magnetic flux element in horizontally stratified compressible plasma, stability 8−28610
- magnetic structures, correl. with radio noise storms 8−4185
- mean magnetic field, obs. at Stanford 8−20800
- micro-turbulence model test on flux spectrum 8−16365
- microturbulent and macroturbulent filter functions, improved values 8−20796
- nonthermal vels. in six giants and the Sun 8−4219
- north-south brightness asymmetry, obs. 8−45303
- open magnetic structures evolution, Skylab obs. 8−16362
- pores, line profile families rel. to total mag. flux 8−49408
- radiative equilibrium, rel. to upper bound on energy transport by solar global oscills. 8−32430
- small-scale photospheric magnetic fields 8−12196
- sunspot magnetic field and vel. quasiperiodic oscills. *(Russian)* 8−12186
- sunspots, darkening rel. to heat flow near obstacles in convection zone 8−28609
- sunspots, macroscopic motions rel. to origin of broad-band circular polarisation 8−45301
- sunspots, steady-force-free dynamos theory 8−20777
- sunspots, struct. and dynamic props. of large group of 1972 August 8−49409

photosphere continued
supergranulation, dynamics of gas and mag. field below photosphere 8−16366
total velocity field, determ. using weak absorpt. lines *(Russian)* 8−40894
velocity research, effects of apparent yearly precession of Sun 8−20809
C, N, O, abundances 8−24497
Fe-group elements, oscillator strengths for V I and Co I 8−40905
H_2, detect. in sunspots EUV spectra 8−12184
La, abundance, new lifetime meas. of La^+ 8−17618
Mg I 2852 Å line sensitivity to partial redistrib. effects 8−7951
Mn abundance, Mn^+ oscillator strengths 8−17619
Nd II, branching ratios and transition probabilities, photospheric abundance 8−9104
Ti I lines, rel. to photosphere vel. field, non-LTE effects and solar Ti abundance 8−45306

phototelegraphy *see facsimile*

photothermal conversion
see also solar absorber-convertors
No entries

phototransistors
camera shutter mechanism control, photography of transients on oscilloscope appl. *(Danish)* 8−234
GaAs-Al_xGa_{1-x}As heterojunction, avalanche phototransistors, detectivity and noise 8−2558

phototubes
see also photocathodes; photomultipliers
image tube lens, MTF 8−9428
Kron camera, single electron counting by self-scanning diode array 8−9429

photovoltaic cells
see also solar cells
logarithmic light meter using Si junction photovoltaic cells 8−32844
MIS, influence of interface states, efficiency improvements 8−39227
solar energy conversion, materials science aspects, lecture 8−25989
ternary semiconductors, use in thin film heterojunction and homojunction photovoltaic devices 8−39208
CdS photoanode appl., thin film, prep. and characts. 8−14818
CdS-Cu_2S photovoltaic cell, effects of O_2 on efficiency 8−14807
Cu_xS-CdS thin film solar cell using chem. sprayed CdS film 8−43465
In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8−15314
PbySn$_{1}$-$_{x}$Se epitaxial film narrow band photovoltaic detectors, detection at long wavelengths 8−8443
Se photocell, high-gain amplifier cct. 8−4679
Si ribbon solar cell, EFG, diffusion length enhancement under illum. 8−14756
Si Schottky barrier solar cell, V-I characts. and efficiency 8−14828

photovoltaic effects
see also Dember effect
cells, electrochemical, photovoltaic phenomena and mechanisms 8−8198
crystal without inversion centre, current quadratic in field and photogalvanic effect 8−10505
1,1′-diethyl-2,2′-quinocyanine-$[TCNQ]_2$ anion radical salt single crystals *(Japanese)* 8−2522
film, vacuum-deposited, struct. and props., basic relationship 8−6236
MIS, pulse effect 8−2577
MIS-Schottky barrier solar cells, photovoltaic props. anal. 8−6448
MIS-Schottky barriers, photovoltaic props. anal. 8−26966
MOS capacitor photovoltage characterisation 8−10573
polar crystal, bulk photovoltaic effect due to electron-phonon coupling 8−14757
polymalononitrile, plasma polymerized film, photoelec. props. 8−39158
polythiourea, plasma polymerized film, photoelec. props. 8−39158
semiconductor, surface properties, investigation by laser and photovoltages *(Russian)* 8−23130
semiconductor film, photovoltaic and photodiffusion mechanisms responsible for anomalously high photovoltages 8−26910
semiconductor with bipolar diffusion intervalley overpopulation *(Russian)* 8−23092
solid discs and flakes, photovoltaism meas. cells with variety of contacts 8−24816
ternary semiconductor device applications, review 8−39207
Al_xGa_{1-x}As variable gap junction, photosensitivity 8−39204
As_2Se_3, glassy, photostimulated changes in contact props. 8−19162
$AsSeI_{0.1}$, glassy, photostimulated changes in contact props. 8−19162
$Ba_{0.25}Sr_{0.75}Nb_2O_6$, photovoltaic current, temp. and spectral depend. 8−47828
(CdHg)Te, ion implanted graded gap photodiodes 8−39192
CdS, photon drag effects 8−23134
CdTe, surface photovoltage 8−2540
CdTe:As^{2+}, photovol. props. of p-n junction prod. by ion implantation 8−43038
$Cu_{2-x}S$-CdS heterojunction V-I characteristic and max. photovoltage, long-term changes *(Russian)* 8−43468
GaAs, photon drag effects 8−23134
n-GaAs-Al surface barrier diodes, influence of exciton effects on photo-EMF spectrum 8−10557
n-GaAs-GaAs:Cr, interface elec. props., substrate effects 8−6438
Ga_xSe_{1-x}-SnO_2 heterostruct., amorphous, photovoltaic effect 8−14803
Ge, p-n junction, hot photocarrier and hot electron effects 8−30980
p-Ge, photon-drag voltage nonlinearity at high laser intensity 8−19081
p-Ge, theory of photon-drag effect, parabolic and anisotropic band-struct. approx. 8−47825
Ge-Si n-n heterojunctions, response 8−14804
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunction, prep. and photovoltaic prop. *(Japanese)* 8−34889
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunctions, prep. and photovoltaic prop. 8−34892
HgI_2, excitons, spectral obs. 8−23492
HgI_2, photoelectronic props. 8−41897
$KNbO_3$, photovoltaic current, temp. and spectral depend. 8−47828
$LiNbO_3$, photovoltaic current, temp. and spectral depend. 8−47828
$LiTaO_3$, characterisation as holographic storage materials 8−29909
$PbSe_{1-x}Te_x$, p-n junction, inversion of conduction level 8−47856
$PbSe_{1-x}Te_x$, symmetry change in cond. levels, photovoltaic effect and reflectivity obs. 8−34766

photovoltaic effects continued
$Pb_{1-x}Sn_xSe(Te)$ epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
PbTe-$Pb_{0.82}Sn_{0.18}$Te, p-n heterojunctions, electrical and photoelectrical properties 8−39193
p-Si, photon drag detection 8−43440
Si, surface potential, influence of metal impurities, surface photo-EMF obs. 8−19122
α-SiC, short-wavelength photocond. and capacitance photo-EMF meas. 8−26906
ZnS, single cryst. plate, photovoltaic spectra, intensity depend. 8−14762
ZnS:S, photoconductivity and negative differential photo-effect 8−39156
ZnSe:N, ion implanted cond. type conversion on annealing *(Korean)* 8−18668

photovoltaic generators, solar *see solar cells*

phthalocyanines *see organic compounds*

physical chemistry
see also chemical analysis; chemical equilibrium; chemical reactions; chemical structure; crystal chemistry; electrochemistry; nuclear chemistry; pH; photochemistry; radiation chemistry; radiochemistry; solvated electrons; surface chemistry; thermochemistry
annual review, vol.28 (book) 8−40019
ion-ion, ion-dipole, and dipole-dipole interactions, teaching 8−10

physical data, collections of *see collections of physical data*

physical instrumentation control
astronomical telescopes, computer appls. 8−4111
automated calorimeter and scanning Doppler interferometer 8−45680
automatic internal friction and modulus apparatus, phase-locked loop control module 8−13981
automatic power-spectrum density meter for pulsed laser beam 8−45698
Bragg crystal spectrometer, on line, step scan control and data accumulation system *(Japanese)* 8−5088
calorimetric system, 3-300K, with on-line computer, adiabatic shield temp. control 8−4620
cation-exchange sorption microcalorimetry, automatic micro-injection system 8−24777
chemical laser flameout using fluidic switching 8−29943
Cherenkov counters, spectrometric channel control using blocks 8−866
computer controlled gain stabilizing system for scintillation spectrometer using LED, processor in feedback 8−17473
densitometer system for photographic spectral sensitivity meas. 8−29190
dichrograph, control unit construction 8−21122
dielectric properties of solid and liquid dielectrics meas., vs. temperature, automatic meas. set *(Polish)* 8−32836
double NMR spectrometer, wide line CW 8−45667
drawing instruments for surveying, appl. of electronic control *(German)* 8−20348
electrodic potentiometry system, automated, for chem. anal. 8−35735
electron microscope, UHV, const.-load tensile device and appls. to materials science 8−11462
electron microscope-microprobe systems, automated, for quantitative metallography 8−35631
electrostatic accelerator, foil strippers, remote control system 8−29670
emission current regulator for ion cyclotron resonance spectrometers using optical coupler 8−45749
EPMA, computer-controlled, CAMEBAX system, operating experience 8−35779
EPR spectrometer, simple temp. controller, 85-400K *(German)* 8−45663
Fabry-Perot etalon, piezoelectrically controlled, linear scanning cct. 8−4704
Fabry-Perot interferometer digital electronic system 8−12748
feedback controlled particle suspension system for laser initiated target expt. mag. mirror fusion facility 8−1864
FEM field emitter thermocopule temp. controller 8−24898
float glass, heat transfer and temp. control in annealing, computer appl. 8−27543
flux pump power supply using inductive current transfer, primary current waveform control 8−12704
gas chromatography, programmed temp., retention index calcs. by linear interpolation 8−27844
HEAO-B X-ray telescope, gas control system 8−40827
high-pressure laser system, electron beam control 8−5496
indicator-setting operator terminal 8−32804
interferometer superposition fringe pattern, automated central achromatic fringe setting 8−24852
internal friction apparatus for freqs. up to 200 Hz, automated control 8−22308
ionisation chamber, electrical sensitivity control 8−865
ISABELLE ISR, computer based control and monitoring system 8−46191
Langmuir probe, control system for maintaining prone at plasma potential 8−5943
large azimuthal telescope photoelectric automatic control system 8−16301
laser frequency stabiliser using electronic servocontrol system 8−1240
light beam control system, for ang. displacement control via fast error-signal transducer 8−186
liquid, self-diffusion meas., automated technique, using NMR spin echo 8−27114
mass spectrometer, digital recording system for automated isotopic analysis 8−12783
mass spectrometer, microcomputer-based controller for temp. programming direct inlet probe 8−16893
meter for photosensors time characts., using programmed strobing of anal. zone 8−283
microdensitometer with minicomputer connecting facilities 8−21198
microdensitometer with minicomputer for semiautomatic interpret. of spectral plates 8−21199
microprocessor-controlled gas chromatograph, low temp. range extension 8−3395
molecular beam epitaxy apparatus, controlled by quadrupole mass spectrometer *(French)* 8−15315
monochromator, minicomputer controlled, with repetitive optical scanner 8−27843
MP-Tandem at Munich, diagnostic and control system 8−29667

physical instrumentation control continued
nonlinear optics, digital data acquisition and on-line processing at Moscow State University 8–46709
NQR scanning spectrometer, improved super-regenerative oscillator and quench generator 8–8429
NQR spectrometer, digitally programmed bidirectional square-wave freq. mdoulation 8–21189
on-line display aid for bubble chamber film automatic meas. 8–5098
optical fibre automatic refr. index profiling 8–46836
potentiometric titrations with ion-selective electrodes, automated, equivalence pt. determ. method 8–3391
proton synchrotron, CERN, online function generation optimisation 8–834
proton synchrotron slow extraction beam parameter monitoring and control system in CAMAC standard online with ES 1010 computer 8–29674
sample heater, high vacuum, using Zener diode 8–12690
SEM, focusing and stigmating system using minicomputer 8–37113
SEM, on-line stereo processing technique using minicomputer 8–37114
SEM multisample stage, viewing via rotary control 8–4738
Soviet 6 metre reflecting telescope, position control via computer *(Norwegian)* 8–36456
spark source, electronically controlled, adjustable waveform, spectrometric obs. 8–45727
spark source, electronically controlled, for anal. emission spectroscopy 8–16857
stereo image processing, control system 8–4728
TEM, high resolution, electronic control systems 8–32939
temperature regulator for liquid ^{4}He bath near 4.2K 8–41319
thermogravimetric apparatus, automatic device with digital output 8–7281
time sharing method in high modulation NMR of fluids *(German)* 8–16822
torque magnetometer, automatic rotating-head, microcomputer control 8–21183
UK 3.8 m IR telescope electronic control mechanism and computer interfacing 8–16300
X-ray fluoresc. spectrometer system, automated, for chem. shift meas. 8–4750
X-ray fluorescence analyser, computer-controlled 8–23982
X-ray image processing with SEM, automated data acquisition *(French)* 8–41379
X-ray residual stress anal., computer controlled, software, precision 8–5712
X-ray spectrometer control, interactive program for data collection, manipulation chem. anal. appl. 8–7312

physical metallurgy *see metallurgy*

physical optics
Fresnel's classical papers, history and present appls. *(French)* 8–37800
information content of image, physical limitations 8–33697
radiation sources for USSR state standards, 0.4-10.6 μ range 8–46739

physics
see also physics computing
advanced placement examination, multiple choice component validity obs. 8–16596
engineering as source of scientific ideas 8–8213
research project methodology 8–12528
solid-state, conf., Munster, Germany (Mar. 1977) 8–2401

physics computing
see also computerised instrumentation; spectroscopy computing
absorptance, reflectance and transmittance of number of parallel surfaces 8–42273
achromatic metal-dielectric mirror coating, computer synthesis 8–46750
acoustic source holographic detection, computer reconstruction 8–38153
ADDES quasi dynamical code, comparison of many bodied and binary collision cascade models up to 1 keV 8–29051
alkali metal, bulk properties, computer simulation 8–30729
alloy, binary, conc., with short and long range order, computer simulation of diffusion 8–30778
alloy, binary, quenched, computer simulation of cluster dynamics of two dimensional model systems 8–31434
alloy, FCC, Monte Carlo simulation of surface segregation 8–31413
alloy, quenched, binary, time evolution, computer simulation of three-dimensional model system 8–31433
alloy phase stability, computer calc. using modified pair potentials 8–35352
alloy random, binary, diffusion correlation factors calc., comparison of matrix inversion, Monte Carlo and diffusion of probability techniques 8–30779
alumina reduction cells electrolytic, instabilities of metal surface, computer simulation 8–39720
ambient gas, computer expts. on ionic recombination, coeff., binary recombination 8–22028
amorphous structure, computer simulation 8–30541
anisotropic axisymmetric solids, asymmetric stress anal. 8–26033
anisotropic system, computer simulation, energy and specific heat temp. depend. 8–9947
atom, first-order wave functions, computer calcs. using Green's functions 8–41934
atomic scale computer simulation of lattice defects, stress tensor determ. 8–30602
atomic terms for equivalent electrons, combinatorial computation 8–17549
atomistic computer experiments of point and extended defects 8–30610
axisymmetric plasma, ideal MHD spectrum, finite hybrid elements method 8–42734
BCC metals, stressed, computer simulation of vacancy and divacancy migration 8–47573
BCC structures, simulation of vacancy-thermotransport 8–47570
beam vibration frequencies by Schelkunoff iteration with HP-65 calculator 8–1592
beams, finite element soln. using element averaging technique 8–26079
beams, nonlinear bending, finite element anal. 8–26068
bending, of plate, powerful finite element method for computing 8–1583

physics computing continued
Bernstein's polynomials, differentiation and integration 8–40
binary crystal growth, computer simulation 8–9979
black hole MHD 8–12281
Bonner sphere spectrometer, least-squares technique for extracting neutron spectra 8–33366
borides, lightweight ceramic armour appls., ballistic tests, computer simulation, book contrib. 8–48556
boundary layer turbulence, differential methods and finite-difference methods comparison 8–18279
brass, stress corrosion cracking constitution of Pourbaix diagrams for ternary systems by digital computer 8–35595
brittle fibre reinforced composite, failure, mathematical simulation 8–3221
bubble and spark chamber photographs analysis with PA-BESM-4 system, exchange apparatus 8–9045
BWR fuel assembly, radiant heat transfer 8–17287
CAMAC hodoscopic recording system, coding and reading data unit 8–13397
casting, continuous, heat transfer anal. by finite element anal. 8–30167
central pairwise potential alternative in computer simulation in materials science 8–30585
cold rolling, non-circular arc roll force model 8–48423
composite systems, cracked, finite element microscopic stress anal. 8–34083
compressed magnetic field power supplies, characts. of helically wound generators, using a 2-d MHD computational model 8–17838
compressible flow around an aerofoil or a cascade, up to shockfree transonic range 8–22365
compressible flow fields, two-dimensional, computation by modified local stability scheme 8–1681
compression struts, of nonlinear viscoelastic materal time dependent load bearing capability *(German)* 8–48474
computer aided indexing, of transmission electron diffr. patterns 8–38595
conductometric probe, field disturbances in conducting fluid modelling *(Russian)* 8–231
configuration interaction, perturbation theory, partial transformation 8–37562
conformal representation of arbitrary multiconnected airfoil sections 8–30308
contact stress anal. involving fretting fatigue loadings, computer soln. 8–34096
continuation method, adaptive step size selection 8–45476
Controlled Fusion Atomic Data Center 8–17432
convective heat transfer anal. by finite element method 8–18148
conversion from two to three functional modes of logical address space 8–36981
corner, three-dimens., Navier-Stokes eqn. soln., numerical code 8–30314
coupled large linear damped structures, eigenvalue anal. 8–1561
coupled multiconfiguration SCF perturbation theory, analytic techniques 8–17550
crack stress intensity factor calc. *(Japanese)* 8–9603
CRETA 74, improvement of PAL 11 A assembler for IML syntax implementation 8–33406
cross-spring hinge problem, 2-D, use of minimization methods in solving 8–18163
crystal atomic structure refinement, least squares programs 8–26375
crystal growth from vapour, simulation 8–31312
crystal structure, cavity location, computer program 8–18481
crystal vacancy migration induced by subthreshold collisions, computer simulation exam. 8–47365
crystal wave functions, symm. transformation, computer programs, symmetrisation procedure 8–10315
crystallite deformation in rolling, computer simulation *(French)* 8–31421
crystallography, coords. calc. from distance information 8–38581
crystallography, determ. of periodic bond chains *(French)* 8–26474
crystallography, electronic stationary picture method 8–38582
crystallography, linked-atom least-squares reciprocal-space refinement system, LALS, incorporating stereochemical restraints 8–26377
crystallography, modelling of FCC solid solutions 8–26475
crystallography, monoclinic substances, trial and error indexing program for powder patterns 8–34390
crystallography, phase relationships, appl. to complex struct., use of magic integers in phase determ. 8–26379
crystallography, phase relationships, appl. to complex struct., choice of reflexions 8–26380
crystallography, structural fragments located on basis of interatomic vector functions, automatic anal. 8–1947
crystallography, X-ray struct. amplitudes, data averaging 8–47211
CTR, model blanket expt., neutron spectra sensitivity analysis 8–29648
cubic harmonics computation, using point groups and an algorithm 8–20994
data processing of TSC/thermoluminescence ratio 8–10463
deconvolution of experimental spectra using moments method 8–29094
defect images produced by piezobirefringence, simulation 8–30521
deflection of cables, cylindrical suspended roofs with complex loading, incremental algorithm 8–9558
dendritic crystal growth computer simulation, impurity trapping 8–38992
diatomic gas, molecular dissociation, recombination reactions simulation 8–23934
dielectric multilayer systems for optical appls., computer program synthesis *(German)* 8–46788
dielectrics, thermally stimulated dipolar processes, simulation 8–35080
differential neutron spectra estimation using foil activation data and IUNFLD code 8–29690
diffraction, generation of ordered unique reflection sets 8–18485
diffraction data unique reflection sets generation, in FORTRAN IV 8–18501
diffusion, nonlinear problem, integral soln. 8–36945
diffusion time scale Tokamak code, G2M, two dimens. 8–42795
dilute linear Heisenberg chain, partition function and irreducible representation of permutation groups by HLISP 8–34945
directional integration method for 2-D fluid transients 8–683
dislocation, two-dimensional model system, computer calc. 8–30621

physics computing continued
dislocation array, equilibrium configuration by computer simulation 8−30616
dislocation array problems 8−30617
dislocation motion through random array of point obstacles, thermally activated, computer simulation 8−30636
dislocation motion through random array of short range barriers, digital simulation 8−30634
dislocation motion through random array of weak obstacles of finite width, digital computer simulation 8−30633
dispersion strengthening, dislocation interaction treatment, digital simulation models 8−31419
displacement spike annealing, Mont Carlo method computer expteriments 8−30672
divergent beam diffr. phenomena, computer generation of identification 8−30520
dosimetry, programs for internal absorbed dose determ. 8−15895
double cantilever beam, dynamic stress intensity factors computation and crack arrest stress intensity factors 8−34088
dynamic buckling of shells 8−18210
dynamic plasticity, implicit and explicit computational schemes 8−34038
dynamic stability of dislocation sub-boundaries during straining, computer simulation 8−30635
easy glide, computers modelling, range of permissible parameters *(Russian)* 8−47375
elastic crack problem, soln. by superposition of finite elements and singular fields 8−38249
elastic structures, computer automated synthesis for minimum struct. weight 8−34015
elastic-plastic incremental finite element anal. 8−34034
elastic-viscoplastic analysis of plates by finite element method 8−34031
elasto-plastic buckling of curved webs, Gauss-Seidel iterative procedure 8−34043
elasto-plastic material, crack tip stress and strain fields and fracture behaviour, work hardening 8−22304
elasto/visco-plastic finite element analysis, unconditionally stable algorithms 8−34030
electron accelerators, elimination of electron multipacting in supercond. structs. 8−9004
electron diffraction patterns, computer assisted indexing 8−9918
electron dosimetry in tissue equiv. phantoms 8−7454
electron micrograph, computer simulation for crystal defect identification 8−30525
electron microscope W support film, phase contrast simulation 8−334
electron microscopy, electron object interaction, multislice approach 8−26394
electron microscopy, high resolution, digital processing use for image assessment and restoration 8−37116
electron optics, mag. field with min. spherical aberration 8−9313
electrophysical information collection, recording and processing system 8−8388
ellipsometer, polarisation-modulation, Fortran simulation program ELLIPS 8−271
EM particle simulation codes, initial noise, quiet start 8−1883
EM wave scattering, by complex shaped bodies, effective scattering area *(Russian)* 8−13647
Evaluated Nuclear Structure Data File for basic and applied research 8−17544
exponential integrals, general method for accurate numerical evaluation 8−36
fast ion Fokker-Planck code FIFPC 8−34342
fast neutron spectrum unfolding code MATXUF 8−5091
FASTBUS, high speed nucl. data acquisition 8−46251
fatigue crack, computer simulation of propag., model based on Elber's eqn. *(Japanese)* 8−7030
fatigue crack, dynamic treatment of growth *(Japanese)* 8−34084
fatigue cracks, computer simulation of propag. based on BCS model *(Japanese)* 8−7029
FBR safety related slowing down problems 8−678
FCC lattice, computer simulation of low energy displacement cascade 8−47367
ferromagnetic linear chains of spin 1/2 particles, one-magnon states 8−14946
film, amorphous, of hard spheres, computer simulation 8−22984
finite element anal., data struct. 8−16633
finite element analysis of elastodynamic fields near running cracks 8−34066
finite element determ., operational stress-state of field ion microscope specimen 8−32933
finite element stiffness matrices, incompletely integrated shape functions, numerical stability 8−1567
fission products, neutron cross-sections data for ENDF/B-IV library 8−25290
fission reactor, ^{235}U, Pu fission fragment conc., fragment capture cross section, heat production 8−17296
fission-gas-induced swelling in UC, porosity effects study by UCSWELL code 8−8959
flames, ignition and propagation, self-consistent 2-dimens. hydrocode 8−47066
flow, boundary-layer, laminar to turbulent transitions, numerical simulation 8−38286
flow meas., thin orifice plate, turbulent flow numerical modelling 8−34229
flow prediction, Monte Carlo and Bayesian probability techniques 8−30256
flowmeters, variable area, calculator algorithm *(German)* 8−30377
fluid wave theories, Stokes, cnoidal, higher order solns. *(Japanese)* 8−42625
fluid-struct. interaction, added mass computation by boundary integral method 8−38228
flutter eqn., continuation and direct soln. 8−34047
Fourier transform holography system, lensless, at 14 and 34 kHz *(Japanese)* 8−30133
Fourier-transformed neutron slowing-down kernel moments, MAGGIE code 8−29540
fracture initiation site prediction, idealized polycrystalline materials, stress and strain fields 8−34092
full unsymmetric matrices, out of core eqn. solver 8−45477

physics computing continued
fusion reactor radioactivity calc. code and decay chain data library, DKR 8−786
gas, Lennard-Jones mols., self-diffusion coeffs. at moderate densities, mol. dynamic simulation 8−38440
gas (mixture), compressibility, virial coeffs., Burnett data reduction, fast least-squares method 8−47082
gas dynamics, partial ionis. computation method 8−38447
GCFR, Pu fuelled, fission products and secondary gamma-ray spectra 8−676
general inverse problem, appl. of dynamic programming 8−45475
general-purpose molecular mechanics program construction principles 8−13411
generalised routine for defect image simulation in TEM obs. 8−29220
grain boundaries, molecular dynamics studies, use of coincidence lattice theoretical model 8−30645
grain boundary entropy computation in computer simulation 8−30647
graphite, interaction with Cs, study of surface diffusion, computer simulation 8−30837
gravitation, gauge theory, vacuum field eqn. generation by MACSYMA system 8−36919
Hartree-Fock wave functions, convergence in Roothaan's SCF eqns., 'level-shifting' method 8−41920
heat treatment, prediction of large component response 8−31435
heavy lepton pairs produced in e^+e^- annihilation leptonic decay, computer calcs. 8−21409
heavy water production, Girdler-sulphide process phys. props., computer program 8−25300
Hertz indentation test and Auerbach's law, computer simulation 8−19967
heterogeneous plasma discharge, spatial information modelling and processing algorithms 8−14229
hologram, computer generated, as space-variant optical elements 8−37856
hologram, computer-generated, displayed by line printer, phase coding effects 8−25819
hologram spatial filter, computer-generated, for large object formats, interpolation 8−22099
homogeneous nucleation and growth processes, computer simulation 8−30764
HTGR fuel particle, computer code for anal. of transient behaviour 8−8964
HWAGR, 1800 MWt, cylindrical geometry, CECAS modeling code 8−41811
HWR, multidimens. space time kinetics studies 8−29547
hydraulic fracturing operations, material and structural simulations 8−31540
hydrocarbon crystal, calc. of internal friction resulting from molecular defects 8−31448
hydrocarbon crystal structure calc. by molecular packing analysis 8−14303
hydrocode convergence 8−36834
hypersonic gas flow past thin triangular wings, difference method anal. *(Ukrainian)* 8−1686
ice, dislocation form. kinetics, computer simulation 8−30622
ice, hexagonal, lattice struct., computer simulation 8−14324
ideal strength of solids, computer calc. 8−30697
image reconstruction, projection completions methods, computational examples 8−46524
image speckle patterns rel. to object surface profile, computer simulation 8−13660
immiscible liquids, separation kinetics in low gravity environment, computer simulation study 8−34629
incompatible quadrilateral basis functions 8−41146
indicial tensor manipulation on MACSYMA 8−12547
inelastic structural behaviour, finite element computational aspects 8−42546
infrasound signals, dynamic spectral anal. by FFT *(Chinese)* 8−1453
initially stressed Mindlin plates, finite strip method, buckling anal. 8−26067
interactive computer terminal as 'lab. assistant' in introductory physics expt. 8−36761
intermittent gaseous release from nuclear plant, probability distrib. of atm. dispersion factor 8−11994
intramolecular potentials, quantum chemical calc. 8−13436
inviscid fluid conservation law eqns., coeff. matrices for implicit finite difference soln. 8−42580
ion autoresonant acceleration, numerical simulation 8−21789
ion-lattice interactions, modelling displacement correls. in computer simulations 8−2179
ion-surface impact, interatomic pot. screening function correction factor for computer simulation 8−23574
ionic crystal, stacking fault computer simulation 8−30652
ionic motion, 3-D quadrupole electric field, charge exchange collisions 8−9315
ionospheric ray-tracing calc. through Bradley/Dudeney ionospheric model 8−7826
IR reflection spectra computed for inhomogeneously doped semiconds. 8−27205
isochoric const. strain finite elements, modification of TRIM 3, TET 4, and TRIAX 3 elements 8−41144
effective neutron isolation thickness values from reflector savings data 8−669
isoparametric finite elements 8−45479
isoparametric surfaces contouring 8−20948
isotope separation, nonstationary processes in multistage cascades 8−5370
JET, CODAS, control and data acquisition 8−36982
jet noise, geometric acoustics model, computer prediction program 8−34118
Kramers-Kronig transforms, Fourier method numerical soln. by computer 8−2825
Lagrangian hydrodynamics meshes, discrete rezoning algorithm, hot interacting bubbles calcs. 8−42628
laminate, time and temp. effects, mech. response, computer simulation 8−35466
laminated anisotropic shells, transverse shear stiffness calc. 8−42526
large real symmetric matrices, generalised eigenvalue problem, group coord. relax. method 8−16622
Lennard-Jones 12-6 system, triple pt. props., mol. dynamics simulation 8−2231

physics computing continued
light, polarized, radiative transfer eqns., adjoint Monte Carlo treatment 8−37799
linear accelerator cavity code, based on finite element method 8−33307
linear elliptic and parabolic partial differential eqns. with boundary singularities, numerical soln. 8−41142
liquid crystal, X-ray structural analysis, computer program for analysing expt. data 8−1956
liquid flow in tube with frozen layer, crust profile method 8−30359
liquid mixture, excess thermodynamic function prediction, program description 8−27818
LMFBR, intermediate Na activation, Monte Carlo anal. 8−4997
LMFBR, unified model for fission gas release and Na boiling in reactor coolant channel 8−8921
LMFBR coupled fluid-struct. problems, advanced Eulerian method 8−682
LMFBR subassembly, central blockage wake anal. 8−29556
locally modified structs., derivatives of eigenvectors 8−5651
long rod penetration of targets at hypervelocity impact, HELP computer code 8−26061
Lorentz gas, two-dimens., collision-induced absorption, simulation 8−46424
LWR, ENDF/B-IV eigenvalue calcs. for UO_2 and mixed oxide critical lattice expts. 8−25272
LWR anal., CASMO fast transport theory assembly depletion code 8−25278
macromolecular dynamics, constraint dynamics, computer simulation 8−9932
macromolecules, computer simulation techniques for mol. theory verification 8−13633
Madelung constants, first derivatives with respect to cell lengths, calc. 8−34459
magnetosonic wave propag., computer simulation and theoretical anal. 8−5861
magnetostatic problems, two-dimens., numerical soln. by augmented Lagrangian methods 8−1119
matrix eqn. soln. 8−45478
mechanics conservation law derivation using digital computers 8−12552
medical X-ray diagnostics, NDT impetus, novel techniques *(German)* 8−7146
melt flow during Czochralski growth, computational simulation 8−48306
melting curve maximum phenomenon, computer simulation using two species soft core model 8−6146
metal, BCC, computer simulation of stacking faults 8−30653
metal, BCC, computer simulation of twin boundary and twinning dislocation struct. 8−30644
metal, BCC, struct. of twinning dislocations, computer simulation 8−2140
metal, FCC, structure and dynamics of multiple interstitials 8−47330
metal, plastic flow, during extrusion, computer simulation 8−31491
metal, plastic flow, finite element approach to axisymmetric problems, METFLO 8−31490
metal surface, self consistent electronic struct. effect on atomic positions, computer simulation 8−30969
MHD convertor, U-25, diagnostics system data processing 8−26339
microcut, stable, in hexagonal 2-dimens. cryst., computer modelling 8−18704
microscopic depletion in UO_2 and mixed oxide fuel rods, MICBURN code 8−25276
microtron, cathode focusing and drift apertures, hybrid computer calc. 8−21796
minicomputer appl. to electron diffr. study of indexing patterns of single crystals unknown lattices *(Chinese)* 8−14249
minicomputer open ended configuration interaction program, BERKELEY 8−37563
molecular dynamics computer simulation, multiple time-step methods 8−47220
molecular dynamics simulation of dense gases, test particle motion 8−9930
molecular inelastic collision cross-sections, exponential distorted wave and effective Hamiltonian 8−37709
molecular internal energy levels, exact counting, backtracking algorithm 8−25407
molecular mechanics computer program MOLMEC, design and performance 8−13410
Monte Carlo anal. of multiple scatt. in fast neutron polarisation expts. 8−13052
Monte Carlo shielding calcs., biased selection of particle flight directions as variance resolution technique 8−29653
Monte Carlo simulation diffusion and evaporation on (100) surface of FCC crystal 8−30836
MTF calculation, modified FORTRAN program 8−25807
multigroup time-dependent delayed γ-spectra from fission and activation of U and Pu 8−13184
multilayer stack reflectance derivatives, fast computation method 8−46508
multiplicity measurements, statistical algorithm 8−29721
MWPC positron camera, 3-D iterative reconstruction method 8−40302
n-space dimensions, approx. integration formulae 8−16659
Navier Stokes eqns., block iterative finite element algorithms 8−20971
Navier-Stokes eqns., central difference algorithm for high mesh Reynolds nos. 8−46920
Navier-Stokes equations, laminar flow through cylinder array, finite difference method 8−42585
neutron diffraction, multiple scatt. correction, Monte Carlo simulation 8−9913
neutron diffraction, pulsed source expts., optimized Monte Carlo simulation 8−9914
neutron diffractometer, 4-circle, intensities meas. method and computer program for use with twinned and clustered crysts. 8−14247
neutron field charact. calc., beyond Fe barrier, effect of scatt. indicatrix approx. and consts. representation 8−17272
neutron information at National Neutron Cross-Section Center 8−13403
neutron Monte Carlo elastic angular data, equal probability steps 8−668
neutron TOF expts., control and data processing system 8−25385

physics computing continued
neutron transport, multi-group two-dimensional eqn., cylindrical geometry, finite element method appl. 8−29522
neutron transport in non-multiplying homogeneous slab assembly, time depend. multigroup P1 eqn. soln. 8−17267
nonuniform neutron transport problems, perturbations estimate, Monte Carlo method 8−17271
neutron transport problems, toroidal geometry 8−22538
neutron two-group diffusion calc. by spatial synthesis algorithm 8−13200
non-ferrous, recycling, system study, computer simulation 8−35278
nonlinear elastic half-space, dynamic contact stresses due to axisymmetrical projectile impact 8−42573
nonlinear material and structural behaviors, soln. procedure, theoretical basis for program composite−III 8−30204
nonlinear optics, digital data acquisition and on-line processing at Moscow State University 8−46709
nonlinear shell analysis via mixed isoparametric elements 8−1566
nonlinear wave-particle interaction in magnetosonic mode, pure sinusoidal wave model 8−26320
nonrelativistic φ^3 field theory in two spatial dimens., automation, FORTRAN system 8−8502
nozzle flow, steady state arcs 8−32664
nuclear fuel sheath deform. following fuel power transients, simulation 8−33258
nuclear physics experiments, displays for data output 8−9046
nuclear reactor, transient overpower, comparison of EPIC and PLUTO fuel-coolant interaction codes 8−8920
nuclear reactor kinetics eqns., piecewise polynomial approx. 8−4981
nuclear structure calcs., convergent algorithm, gradient method appl. 8−12987
numerical modelling of fatigue, crack, creep and corrosion test results, review 8−30243
open flow cross sections, local velocity variations *(Bulgarian)* 8−18268
optical dielectric perturbed waveguide approximate analysis *(Japanese)* 8−42423
optimal design of dynamically loaded continuous structs. 8−38185
oxides, fluorite and ReO_3, n-beam struct. images, expt. observations and computer calc. 8−38593
oxides, spinel struct., impurity ion pairs, local struct. characts. 8−2146
p-convergent finite element approx. in fracture mechanics 8−38252
partial-wave Schrodinger differential and integral eqns., comparison of numerical solns. 8−16671
particle profile charact. rel. to profile Fourier coeff. 8−11142
particle simulation models, three dimens., for cylindrical and toroidal plasmas 8−1884
particle solids, computer generation 8−26026
Patterson maxima shape calc., program in AKIT 8−5987
PBLG solns., dielec. meas., using pseudorandom noise dielectric spectrometer 8−15084
phase diagrams and synthesis of soln. thermodynamics, computer anal. 8−30739
phase space integral, n-particle, relativistic, Monte Carlo integration program 8−33001
phosphor, rare earth activators, sensitized luminesc., computer simulation 8−6723
photon scattering angles selection in MORSE, rejection technique 8−4571
planar positron cameras, 3-D reconstruction using Fourier deconvolution of generalised tomograms 8−40295
plasma confinement, boundary condition for computational MHD 8−1811
plasma microinstabilities, low frequency, simulation model 8−38525
plasma mirror machines, computer simulation of field reversal 8−26316
plasma simulation, magnetostatic code, current penetration and microinstabilities 8−38526
plastic instability during tensile deform., numerical calc. 8−30203
plastic zone ahead of crack, development under creep conditions, computer simulation 8−34091
plates on elastic foundation, simplified finite element soln. 8−26041
point defect, elastic strain energy, stable configuration determ., computer calc. 8−30663
Poisson's eqn. in 3-d, direct solns. using algorithms 8−20954
Poisson's equation for isolated source distribs., computer soln. using finite mesh, Green's function 8−35
polycrystal cold neutron incoherent inelastic scatt., computation of phonon spectrum 8−34572
polyethylene crystal, computer simulation of {110} twin boundary 8−30646
polymer impregnated concrete, computer simulation 8−31375
positron lifetime spectra, anal. using DBLCON version of POSITRONFIT with nonGaussian prompt 8−33359
potential flow about bodies of revolution, general analytic method 8−1629
powder, fine particle shape characterisation by decision matrix design and cybernetic mode operation 8−11143
power plant effluents, gaseous, AEOLUS code for dispersion during normal, sea-breeze, and accident conditions 8−11993
press. by Monte Carlo computer simulation 8−4564
Preston-Prausnitz method and program for solubility calc. of solidified hydrocarbons in liq. N_2 8−26686
protein molecule, simulation of single mol. images combining computer and electron micrograph analysis 8−37781
proton beam, intense, space charge neutral, trapping in mag. mirror, simulation 8−9825
proton recoil data, frequency filtering 8−46240
proton rings, mag. compression, computer simulation 8−22548
pulsed neutron source on multiplying media, anal. and interpretation of experimental data *(Rumanian)* 8−46203
PVC, creep meas., use of computer in rational determination of material values *(German)* 8−31474
pyridine, proton-coupled ^{13}C J NMR, strong coupling 8−17691
quadrilateral shell element utilising isoparametric principles 8−34012
quantum measurements, interactive computer program, for teaching 8−41113
quartz filter resonators with energy trapping, optimum design 8−32663
radiation damage computer simulation system, WINERY 8−30675
radiation induced solute segregation, kinetic model, GEAR package of subroutines 8−30673
radiation shielding, in 3-D direct-coupled-ray method 8−21785

physics computing continued
radiation spectra unfolding code COOLC 8−5090
radiation transport, ang. biasing of collision process in multigroup calcs. using Monte Carlo method 8−4975
radioactive atoms, counting small samples 8−17535
reactor core design, utility use and requirements 8−17299
reactor fuel pin imagery, computer enhancement and mensuration 8−37395
rectangular orthotropic plates with nonlinear stress-strain relns., large deflections 8−26040
recurrence formulas for phases and amplitudes of free wave spherical functions 8−56
relaxation data anal., superimposed exponentially decaying signals, computer technique 8−23360
resonant particle effects in Langmuir and whistler waves, long-time-scale plasma simulation 8−42796
RFIT, data evaluation program, theoretical background 8−29562
rotating two-ring electrode, constant current effects, digital simulation *(French)* 8−7212
satellite photogrammetry, dynamical constraints 8−15943
scalar interactions, microscopic, histogram collection by FORTRAN program 8−34958
Schrodinger eqn., linear plus Coulomb pot., energy levels 8−4521
Schrodinger equation, two dimens., finite element package MANFEP 8−36870
self-diffusion, correlated, via randomly migrating vacancies, in cubic crysts., computer simulation 8−2283
self-diffusion in cubic crystals, random motion of vacancies, correl. factor and NMR diffusion parameters 8−2284
self-replicating macromolecules, Monte Carlo computer models 8−46473
semiconductor, deep-level centre discrimination from capacitance versus time transients 8−10395
semiconductor crystal growth, Czochralski bulk flow, digital simulation 8−31320
sensitivity analysis, nonlinear, of multiparameter model systems 8−28931
shells of arbitrary geometry, finite element anal. 8−34044
shock waves in bubbly liquids *(French)* 8−26183
Shubnikov-de Haas quasi-periodic oscill. curves, harmonic analysis, computer method *(Russian)* 8−39132
simulation appl. to materials, conf., Gaithersburg, USA (April 1976) 8−27387
simulation of dark field electron micrographs, of metal point defects 8−47219
simulation of dislocation glide through fields of point obstacles 8−34521
simulation of spherical powder sintering, by surface diffusion 8−48344
simulation of vacancy annealing kinetics, for deformed Au 8−47353
solid soln. strengthening, conc., computer simulation 8−31420
soliton inelastic interaction, examples and Boussinesq. eqn., computer investigation 8−51
space time curvature tensor, Newman Penrose formalism, CAMAL program calcs. 8−24701
stainless steel, type 316, neutron induced charged particle spectra 8−5024
static condensation stress recovery algorithms, cost comparison 8−41145
steel, stainless, stress distribution effect on chipping of blanking punch *(Japanese)* 8−31543
Stefan problem, two dimens., space-time finite element computation of free boundary 8−1556
Stefan problems, particle model 8−32779
stereoregular polymers, electronic density of states, new algorithm 8−18939
stereoviews and morphological data on microcrystals 8−18510
stiffened plates, constraint method anal. 8−26066
stress analysis, energy methods, book 8−1571
stress state and temperature distrib. in prismatic body for nonstationary thermal action *(Russian)* 8−13905
supersonic flow, finite difference method calcs. *(French)* 8−34157
surface acoustic wave modes in solids, computer program 8−2352
surface tension in molecular dynamics experiments 8−30815
suspension, random behaviour simulation, interval of quiescence method 8−31708
texture, calc., library program, in FORTRAN IV 8−22598
texture analysis, numerical calc. of generalised spherical harmonic function *(French)* 8−18484
thermal analysis, nonlinear temp.-time program *(German)* 8−8406
thermal pressure in solid and eqn. of state, computer simulation 8−34593
thermal stress simulation in continuous casting, finite element method 8−30170
thermally stimulated currents, computer simulation 8−39609
thermokinetics, linear system output deconvolution for detn. of input 8−12699
thermoluminescence, computer simulation 8−39609
thermonuclear react. rates, computation with STEEP code 8−18375
thermonuclear reaction wave in high density plasma, computer simulation 8−742
thermophysical properties, computer based determ. system *(German)* 8−18795
thin shells, algebraic constraints for weak C^1 continuity 8−4458
threshold foil meas. of reactor neutron spectra, radiation damage appl. 8−29691
Tokamak, 2-D neutronics model for major penetrations 8−5027
Tokamak fusion reactor, effects of blanket-shield penetration on performance 8−21765
Tokamak plasma, neutral atom transport by multigroup methods, time reduction techniques 8−18385
transient flow, split band Cholesky eqn., strategy for finite element anal. 8−46923
transonic airfoil problem, variational principles 8−42626
transonic flow around airfoil, finite-difference calc., computer code 8−26147
transonic potential floW, axisymmetric inlets and bodies at angle of attack 8−9648
trypsin inhibitor, mol. dynamics, computer simulation 8−9932
TSC data handling by on-line use of computers 8−10832
tubes flow with periodic step changes in diameter, numerical soln. 8−22423

physics computing continued
turbulence breakdown coefficient determ., influence of data treatment technique *(Russian)* 8−7690
turbulent diffusion, nonlinear integrodifferential eqn., numerical soln. 8−38306
turbulent flow fields, evaluation of stereoscopic trace particle records 8−1648
turbulent flow in pipes, numerical anal. by finite element method 8−18341
turbulent shear flows, pattern-recognised coherent structures, computer analysis 8−22334
two-phase flow through porous media, starting algorithm for numerical simulation 8−38388
two-phase fluid dynamics, semi-implicit differencing method calcs. 8−42649
two-phase nonstationary velocity tracking by adaptive cross-correl. algorithm 8−14074
unimolecular reactions, master eqn. for rate coeff. Nesbet's algorithm 8−48612
unsteady flow in radial channel, incident shock wave 8−1744
vapour pressure, constrained fitting of limited data 8−34615
Vavilov energy straggling calc., validity limits 8−33405
virtual crack extension method, nonlinear material behaviour 8−18230
viscous transonic cascade flows around airfoil, coord. system for numerical calcs. 8−42627
Vlasov equation, two dimens., numerical soln., multistep technique 8−1795
void size distribution during irradiation and annealing, time depend. computation 8−30674
waiting time calc. of dislocation motion for computer simulation 8−30638
wave equation, finite element Laplace transform. soln. 8−4488
wave functions, Serber-type spin-adapted, and time reversal 8−5117
waxicon design and fabrication, computer algorithm 8−5543
weldbonded joint deform., finite element simulation 8−35636
welding, thermal stresses and metal movement, computer simulation 8−34002
X-ray diffractometer data, automatic attachment for punching to tape 8−34385
X-ray diffractometry of single cryst., absorption corrections, cryst. shape and size determ. 8−1954
X-ray phase analysis data, algorithmic processing 8−1953
X-ray powder diffraction patterns of heterogeneous materials, program for separating high-symmetry component 8−1955
X-ray topographs of stacking faults 8−30513
π^-p inelastic interactions at 205 GeV/c, three-fireball model, computer simulation 8−474
Al, computer simulation of tilt grain boundaries 8−30642
Al, plane stress calc. with two dimensional elastic-plastic computer program 8−35465
Al-CuAl$_2$ lamellar eutectic, computer simulation of two dimensional Zn diffusion 8−30799
CoO, pressure sintering densification model, computer program 8−44040
^{59}Co+n, calc. using pre-equil. statistical model code GNASH 8−4946
Cu, continuum representation of computer simulated dislocations 8−30623
α-Fe, BCC metals, stressed, computer simulation of vacancy and divacancy migration 8−47573
Fe, cast, quantitative metallography, study by image anal. 8−31492
Fe, FCC, grain boundary struct. and energy, computer expt. 8−30643
Fe$_3$Al, computer simulation of energy dissipation from near threshold knock-ons 8−30666
Ge(Li) γ-ray spectra, effect of base line shape on peak unfolding 8−851
H+H$^+$, classical 3 body collision, cross section, energy transfer, computer calcs. 8−17783
H$_2$, vibr. relax. in H$_2$-Ar mixtures, mechanism, computer simulation 8−46434
HX, chemical laser performance isotope effects, computer simulation 8−29944
HfC-TiC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
I$_2$, (B$^3\pi_{0+u}$), dissoc. reaction, computer simulation 8−48639
KCN, liq., mol. dynamics computer simulation 8−38609
KCl, (100) face, mol. dynamics computer simulation of surface props. 8−18880
KNbO$_3$ powder synthesis, unit cell determ. 8−11168
N$_2$ high intensity arc anode region, temp., current density, flow field, numerical anal. 8−9827
α-N$_2$ simulation of dynamical props. of molecular solids 8−30710
Na, neutron cross sections, ENDF/B-IV assessment and evaluation 8−25291
Ni, pure, heavy ion irradiated, dendritic void growth 8−14386
O, isoelectronic sequences, energy spectra inc. relativistic corrections 8−924
^{239}Pu neutron data evaluation for ENDF/B-V 8−25288
^{222}Rn daughter conc., meas. sensitivity computer optimisation 8−49126
TiC-ZrC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
UO$_2$, computer model of Young's modulus 8−31450
^{238}U, evaluation for ENDF/B-V 8−25289
V, diffusion of O and N, least squares computer technique 8−38881
ZrC-HfC, pseudobinary systems, phase diagrams, computer calcs. 8−44092

physics fundamentals
see also classical field theory; complementarity; cosmology; elementary particles; fundamental law tests; mechanics; quantum field theory; quantum theory; relativity; thermodynamics; units (measurement)
causality, generalized integral condition for S-matrix, reln. to algebraic approach 8−37150
causality, problems in theory of tachyons 8−28945
causality violation region, positive- and negative-energy states 8−29024
causally connected events, obs., means of perception 8−28944
causation analysis refinements rel. to revolutions in modern physics 8−12522
Compton electron wavelength, determ. by cryogenic metrological technique 8−37165
high-energy physics, progress and prospects 8−45989

physics fundamentals continued
Minkowski space, causal logic 8−16739
Newton's first law of motion, formulation and interpretation in various languages *(Czech)* 8−45481
photon bunching in thermal radiation, temp. depend., photodetector thermal fluctuation 8−24748
Planck's constant determ., photoelectric experiment and apparatus design 8−41109
quantum field theory, microcausality, lack of consistency with exponential growth in momentum representation 8−16931
quantum mechanics and nonlocal models comparison 8−4510
quantum mechanics quantisation postulate 8−72
segmented structures, space-time point segment 8−32
superluminal and subluminal causal transformations through transformations of metrics 8−28943
time, the concept in physics 8−28946
time asymmetry for mixing system 8−12663
unified thoery of matter, derivation of fundamental physical law 8−20982
W ions, fractionally charged, search 8−29083

physiological models
see also brain models; neurophysiology; physiology
acoustic reflex adaptation to combined steady-state and repeated pulse stimuli 8−44555
aorta, stroke volume calc. from transthoracic impedance plethysmogram 8−7381
aortic coarctation distal flow profiles 8−44528
arterial dynamics in mammals, similarity principle 8−44532
arterial flow lipid transport model 8−44552
arterial impedance estimation, systemic, from cardiac catheterisation data 8−11691
arterial system characterisation in time domain 8−40213
arteries with nonlinear elastic modulus, press. pulse propag. 8−44550
articulation development, possible nonlinear time varying control in feedback path 8−35870
artificial head for head-related stereophonic recording, design *(German)* 8−40199
artificial ventricle, pneumatically driven, sac-type 8−15925
auditory neuron, characts. of digital model 8−3516
axon, squid giant, exponentiated exponential model g Na^+ and K^+ cond. changes 8−44493
axon membrane white noise, stimulation, strength-freq. relationship, squid 8−3466
basilar membrane electronic model for evaluation of speech disorders 8−40206
basilar membrane model, nonlinear, meas. apparatus and circuits *(Japanese)* 8−35868
binaural hearing digital model, stimulus-response characts. 8−20192
binaural signal analysis by cross correl. 8−27958
biological rhythm research, second-order correlation functions and bispectra 8−3441
blood flow in artery, math. model 8−31831
bone imaging radiopharmaceutical local accumulation model 8−24127
burnt skin heat and water losses, thermal modelling 8−31790
bursting pacemaker neurons, Ca^{2+} effects modelling 8−44484
carbohydrate and lipometabolism systems interaction, control appl. 8−31758
cardiac acoustic model for computer-aided surface acceleration mapping 8−35791
cardiac adaptation and hypertrophy, ventricle model *(Japanese)* 8−31828
cardiac arrhythmia simulation device 8−44636
cardiac conduction and propag., equiv. cct. 8−31791
cardiac muscle model activation parameter behaviour, numerical study 8−11686
carotid artery Na kinetics 3-compartment model, incorporation of diffusion effects 8−27996
chemotactic bacteria travelling bands 8−44516
cochlear hydrodynamics model, digital simulation 8−31821
cochlear LF variable geometry model for morphological disorder compensation 8−40182
cochlear micromechanics, mechanism for transforming mech. to neural tuning within cochlea 8−11666
cone cell of tiger salamander, hardware model 8−44505
cornea formation, human 8−35840
corneal hydration endothelial control theory 8−35841
coronary regional intravascular resist. determ. 8−31853
dialysis therapy, single compartment model appl. to urea and creatinine kinetics 8−48931
ECG, models solving direct and inverse problems, systems approach 8−28121
ECG activity models for computer simulation *(Spanish)* 8−11758
ECG digital simulator, for test appl. *(Spanish)* 8−40359
ECG theory computer application programs *(Spanish)* 8−20165
electroreceptor-electric organ system, electronic circuit simulation *(Japanese)* 8−40132
EMG rel. to muscle force 8−40231
epicardial excitation pattern spherical double layer model, using human multipole data 8−27928
erythrocytes, frozen human cells, conc. polarisation effect 8−3460
expiratory flow, expt. test of wave-speed theory of flow limitation in elastic tubes 8−27981
expiratory flow, wave-speed limitation model 8−27980
extraocular muscle system mechs. model for clinical ophthalmology 8−40155
eye movement, gaze-evoked nystagmus, analogue model 8−27938
eye non-ionising radiation absorption, hot spots study, stochastic model 8−35884
femur, three-dimensional finite element analysis 8−7379
flow in lung and vascular tree structs., optimisation of diameters and bifurcation angles 8−11683
frequency response charact. meas. using swept sine wave 8−28133
gallbladder epithelial cells, compartmental anal. of osmotically induced permeability changes 8−3455
haemoperfusion through fixed-bed adsorber 8−31976
hand prosthesis, electromyograph controlled aid development *(Spanish)* 8−15924
hearing model, cellular approach 8−44515
heart, long-term adaptation modelling, oscillatory phenomena *(Russian)* 8−40212

physiological models continued
heart congenital defect evaluation from dynamic tracer meas. 8−40378
heart ejection process, stroke volume calc. appl. *(German)* 8−3631
heart natural pacemaker, modelling as pulse-freq. modulator 8−40135
Hodgkin-Huxley equations for nerve membrane elec. activity, crit. topological test 8−35826
homologous displacement resulting from simultaneously applied rostral-caudal tactile stimuli, physiological mechanism 8−20198
hypertension in end-stage renal failure, math. model 8−31829
identification of biological systems, survey 8−31753
insulin secretion neural control, math. model 8−31796
intestinal modelling, spectral anal. of coupled non-linear oscillators under modulation conditions 8−44754
intra-aortic balloon pumping efficacy evaluated by nonlinear cardiovascular system model 8−44732
ischaemic and infarctive ECG simulation during ventricular activation and recovery 8−36018
kidney process modelling 8−44524
laryngeal control for pitch change in Japanese word accentuation, neuromuscular model *(Japanese)* 8−40205
left ventricle active model deform., nonlinear finite element anal. 8−35877
left ventricle model parameter estimation, global search algorithms *(French)* 8−3529
lower leg reflex asynchronous control via spinal motor neutron pool 8−27935
lung, analytic model, Green's function for convection-diffusion eqn. 8−11684
lung, apical and basal regions, asynchronism in non-sequential ventilation 8−48820
maternal-placental blood flow model with vel.-depend. permeability 8−40224
mechanoreception, Millipore-DOPH model membrane showing excitation with press. stimulus *(Japanese)* 8−3526
mesenteric artery Na distrib. in early salt-induced hypertension 8−27999
microcirculation autoregulation mechanistic theories, computer simulation 8−27995
micturition hydrodynamic model and test results *(Slovene)* 8−44520
middle ear systems simulation from physiological data 8−44514
motor control, muscle representation 8−24057
multiple indicator-dilution study of saturable uptake of metabolised substance in dispersing organ 8−27998
muscle, striated, mol. basis of force development 8−40126
muscle contraction cross-bridge model 8−44475
muscle contraction kinetics, 3-state model 8−48769
muslce mass potential, stochastic model, NMV activity *(Japanese)* 8−24056
myelinated axon impulse cond. simulation, sensitivity to nodal and internodal parameters 8−35831
myelinated nerve fibre steady-state/dynamic model, threshold comparison 8−27917
myocardial fibre shortening velocity dependence on inotropic and haemodynamic conditions 8−31833
myotonia and Ca permeab., math. model 8−11620
nerve, temporal stability of solitary impulse solns. of nerve eqn. 8−35830
nerve and muscle elliptical fibres, physico-math. anal. 8−11639
nerve axon, two-factor two-mode model, travelling waves *(Japanese)* 8−20173
nerve conduction in squid axon, Hodgkin-Huxley equations, large amplitude periodic solns. 8−20166
nerve conduction velocity distribution based on compound nerve action pot. 8−40138
neural membrane two-factor two-mode model 8−7330
neural modelling and identification, state variable approach 8−35825
neural net coherent electrochemical emission model *(Russian)* 8−27879
neural populations, simplified model eqns. and envelope eqns. 8−31798
neural transmitter kinetics model anal. 8−3465
neuron, digital model *(Russian)* 8−27924
neuron inhibition simulation in electrochemiluminescence cell *(Russian)* 8−27925
neuron model, response for density modulated Poisson pulse trains *(Japanese)* 8−35829
neuron model using stochastic syncoder 8−15822
neuronal interspike time histograms for random input model 8−40134
neurone susceptibility to changes in synaptic inflow, evaluation using stochastic model 8−24059
neurons, excitatory and inhibitory impulse sequence interactions in math. models *(Japanese)* 8−27919
olfactory pattern recognition modelling by adaptive spatial filter 8−24080
oscillatory biochemical model, spatial differentiation 8−44476
papillary muscle in rat, dynamic behaviour stochastic model 8−35821
perfusion pulse attenuation in dog autoregulation 8−44545
prosthesis simulator, use of electrohydraulic knee-torque controller 8−11779
prosthetic heart valve design flow evaluation using finite difference transforms 8−44733
pulmonary air emboli, effect of ventilation with different gas mixtures 8−27991
pulmonary and recirculation parameter identifiability following sequential bolus inputs of ^{133}Xe 8−44605
pulmonary arterial blood flow dynamics, nonlinear anal. 8−44527
pulmonary arterial compliance effect on pulmonary blood flow distrib., analogue simulation 8−44553
pulmonary oedema fluid transport, hybrid computer simulation 8−27915
random pulse generators 8−24189
renal counterflow systems differential equation, soln. by numerical method 8−24082
renal medulla, human, math. model 8−24081
respiration, density depend. of max. expiratory flow 8−27993
respiration, two-stage ladder network model for detect. of small airway disease 8−31846
respiratory resistance freq. depend. in normal dogs 8−44542
respiratory tract, heat exchange during inspiration analysis, under environmental conditions of deep diving 8−15856

- **physiological models** continued
  - respiratory tract, human, model, aerosol particle deposition meas. 8−24086
  - respiratory tract, human, polydisperse aerosol deposition models 8−24085
  - retinal single-photon impulse coding mechanisms *(Russian)* 8−27941
  - rod photoreceptor model sensitivity, depend. on level of background light intensity 8−20179
  - saccadic and vergence eye movements, reciprocal innervation model 8−31811
  - sekeletal muscle dynamics, isometric and isotonic contraction model 8−31807
  - sickle cell blood in capillaries, flow resistance, O_2 consumption effect model 8−48821
  - sinus node and AV junction, automaticity model based on weakly coupled relax. oscillators 8−24017
  - skeletal muscle O_2 and lactic acid transport, effet of reactive hyperaemia 8−35817
  - skeletal muscle rhythmic oscillation simulation and analysis 8−31806
  - skin of frog, radioactive Na washout rate anal., numerical simulation 8−3456
  - skin resistance during square-wave elec. pulses of 1 to 10 mA, rel. to nerve stimulation 8−31929
  - slow motor nerve cond. meas. by blocking technique, computer simulation 8−36027
  - spike transfer in statistical neuronal ensembles, neurone as nonlinear source of spikes 8−15819
  - stochastic automaton models for interaction of excitatory and inhibitory impulse sequences in neurons 8−20168
  - stochastic compartmental models, parameter estimation 8−40109
  - systemic vasculature, importance of non-linear contribs. 8−44549
  - temperature regulation in man, control theory model 8−35805
  - tendon mechanics, discrete nonlinear viscoelastic model *(German)* 8−44525
  - tissue microwave heating models, surface cooling and blood flow effects 8−7388
  - tissue spherical model near-zone microwave exposure 8−7387
  - transcapillary water movement resulting from non-oncotic osmotic forces 8−44548
  - 3,3′,5′-triiodothyronine plasma to tissue transport rate estimation from 3-compartment model 8−31792
  - veins, simulation of collapse 8−44535
  - ventilation-perfusion ratio intraregional maldistribution simulation 8−31834
  - ventricle, artificial sac-type, in mock circulation, digital simulation 8−11780
  - vestibular nuclei neurons in goldfish, model with ocular proprioception 8−40142
  - visceral function voluntary control, electrophysiological concept 8−35827
  - vision, horizontal cell response in carp to monochromatic light, dynamic model, pattern recognition appl. 8−44507
  - vision, lateral inhibition as mechanism of movement detect., forward inhibition 8−20176
  - vision, opponent-colour channel spectral sensitivity 8−7359
  - visual anal., Lie group representation, computational results 8−27939
  - visual nervous system, human, temporal props. 8−7353
  - visual path neuron simulation using analogue and digital electronic circuit *(Spanish)* 8−27942
  - visual system, nonlinear receptive field model 8−27951
  - visual-vestibular interactions, model of cerebellar influence 8−40156
  - water excretion control by antidiuretic hormone, modelling 8−31830
  - N_2 storage in man, dynamic model 8−27997
  - O_2 diffusion and reaction in biological tissue, Michaelis-Menten kinetic model 8−31793
  - O_2 mass transport and regulation, microelectrode and math. modelling study 8−44534
  - ^{133}Xe washout curve discriminant analysis for lower extremity vascular impairment 8−35949
- **physiological optics** *see vision*
- **physiology**
  - *see also blood; haemodynamics; hearing; neurophysiology; physiological models; speech; vision*
  - educational simulation involvement indices based on physiological responses 8−31760
  - leaf temp. meas., infrared thermometer method in connection with plant physiology *(Japanese)* 8−31993
  - lighting, physiology response of human eye *(German)* 8−8434
  - nuclear physics appl. to life sciences 8−15882
  - plant leaves, spectra of nonlinear optical effects *(Russian)* 8−48829
  - vocal-tract length, control during speech 8−11680
- **PI control** *see two-term control*
- **pi mesons** *see pions*
- **pick-up reactions**
  - (d,α) reactions, ang. momentum transfers, determ. using polarized beams 8−37354
  - (p,d) backward pick-up react. for inclusive deuteron spectra at 180° 8−17203
  - ^{27}Al(n,d), 56.3 MeV, spectroscopic factors, ^{26}Mg levels 8−4935
  - ^{36}Ar(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
  - ^{12}C(^{3}He,α)^{11}C, 11 MeV, multistep mechanism, CCBA calcs. 8−41734
  - ^{12}C(p,^{6}Li)^{7}Be, 51.9 MeV, direct ^{5}He pick-up process 8−46058
  - ^{12}C(p,d)^{11}C, 700 MeV, transitions confirm multistep processes 8−46110
  - ^{12}C(π^+,p)^{11}C, 49.3 MeV, transitions confirm multistep processes 8−46110
  - ^{35}Cl(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
  - ^{37}Cl(n,d), 14.1 MeV, absolute ang. distrib. meas. 8−595
  - (^{3}He,α), 217 (205) MeV, reaction mechanism *(French)* 8−41735
  - ^{58}Ni(d,$\alpha\gamma$), 7 MeV, mean lifetimes of ^{56}Co levels 8−4950
  - ^{61}Ni(d,^{3}He), ^{60}Co low lying states, DWBA anal. 8−29478
  - Pt(p,d)^{193,195,197}Pt, l-assignments, spectroscopic factors 8−8810
  - ^{45}Sc(d,t), (^{3}He,α), absolute normalisations from spin depend. sum rule anal. 8−8828
  - ^{150}Sm(^{12}C,^{14}C)^{148}Sm, 2_1^+ ang. distributions, shape difference between pickup and stripping reaction 8−33209
  - ^{150}Sm(^{16}O,^{18}O)^{148}Sm, 2_1^+ ang. distributions, shape difference between pickup and stripping reaction 8−33209
  - ^{51}V(p,d)^{50} V, 51.9 MeV, symm. pot. anal. 8−33182
- **pick-up tubes, television** *see television camera tubes*
- **pick-ups**
  - No entries
- **pickups** *see pick-ups*
- **pictorial bandwidth compression** *see bandwidth compression*
- **picture processing**
  - *see also computerised picture processing; pattern recognition*
  - annular coded-aperture images, decoding techniques 8−37818
  - back projection speed improvement for 3-D reconstruction, tomographic machines 8−4742
  - chest radiograph texture anal. model 8−40323
  - colour images, rate distortion coding simulation for colour images 8−7361
  - complex controllable nonholographic image filter production and implementation *(Russian)* 8−46516
  - digital colour recording system for digital-analogue hybrid image processing 8−16880
  - entropy expression for max. entropy image restoration 8−42283
  - gamma-ray camera using Compton effect 8−10087
  - human motion 3-dimens. monitoring by optoelectronic means, calibration and meas. 8−31913
  - hybrid image processing based on coherent/incoherent lights 8−33689
  - hybrid optical and electronic image processing 8−33690
  - image reconstruction from partial Fourier transform 8−33691
  - image registration, similarity measures and preprocessing techniques 8−32240
  - incoherent 8−46519
  - LANDSAT multispectral sensor image adaptive coding techniques 8−45060
  - left ventricular parameter meas., noninvasive radioisotope images with digital prefiltering and boundary detection 8−48887
  - medical radioisotope images, nonlinear digital filtering *(Japanese)* 8−35930
  - Meteosat image processing 8−36297
  - nonlinear image processing, binary pulse position encoding 8−29906
  - numerical holography application 8−33692
  - object reconstruction from projections, influence of detector arrays fixed errors 8−4743
  - optical image processing by spatial filtering, noise problems 8−37817
  - optical image subtraction, real time grid coding and interlacing 8−33694
  - perfect image correction by unsharp masking 8−33693
  - photogrammetric system ‘Zenit’, automatic image processing *(Russian)* 8−24466
  - pseudo colour equidensitometry, analogue optical method 8−32903
  - radiograph digital tomogrpahic restoration 8−40322
  - scanning acoustic microscope, image enhancement using analogue filters 8−18131
  - scintigraphy of human organs, digital image anal. 8−20251
  - sequential scene matching using edge features 8−32239
  - super-resolution derivation by analytical continuation methods 8−29915
  - temporal frequency spectrum, optical filtering 8−33695
  - thermographic meas., three-dimensional signal detection, expt. 8−3662
  - tomographic machines generalised $|\omega|$ filter for 3-D reconstruction 8−4741
  - ultrasound B-mode scans, speckle reduction 8−22233
  - weighted-filter imaging technique appl. to lunar surface chem. 8−12124
  - X-ray picture source coding for compact storage or fast transmission 8−40310
  - X-ray quantum statistics limited electrostatic imaging 8−7451
- **picture transmission** *see facsimile*
- **picture tubes, television** *see television picture tubes*
- **piecewise-linear techniques**
  - curvilinear multimode optical waveguide statistical tolerance calc. 8−1361
  - temperature meas. by compensated thermocouples *(German)* 8−41304
- **piezo-magneto-optical effects** *see magneto-optical effects; piezo-optical effects*
- **piezo-optical effects**
  - *see also piezoreflectance*
  - alkali halide crystals, deformation spectroscopy, dislocation interactions with electron and hole centres 8−10983
  - alkali halide phosphors, Tl$^+$ doped, uniaxial stress effects 8−48202
  - alkali halides, emission spectra of O_2^- and NO_2^- centres at high hydrostatic press. 8−10943
  - alkali halides, off to on centre defect transitions under hydrostatic press. 8−15199
  - anils, cryst., high-press. optical effects 8−31170
  - anils, polystyrene soln., high-press. optical effects 8−31171
  - diamond, refr. index, temp. and press. var. 8−27174
  - diethylammonium manganese tetrachloride, quasi two-dimensional antiferromag., magnon sideband in absorption spectra 8−43895
  - Jahn-Teller impurity centres, piezo-optics and magneto-optics 8−39579
  - nonlinear second-order crystal processes, electro-optic, piezo-optic tuning 8−46718
  - optical fibres, single mode, polarisation and magnetooptic props., expt. meas. 8−33830
  - oxide semiconductor crystals, with forbidden energy gap, review of spectroscopic props. 8−2876
  - PMMA, oriented by extrusion 8−47248
  - polydiacetylene-bis(toluenesulphonate), refl. spectra, 0-15 kbar, doublet press. shift 8−43891
  - polymer, amorphous, stress-optical investig. of short-range order 8−22672
  - polypropylene drawn film, rheo-optical studies 8−15440
  - α- quartz, Raman spectrum, piezospectroscopic behaviour 8−35138
  - rare earth formate, IR spectra and phase transitions, under pressure 8−31179
  - ruby, optical spectra freq. shifts press. depend., nonperturbative theory 8−23499
  - smectic liquid crystal, homeotropic to confocal texture transformation *(Russian)* 8−18548
  - Al_2O_3:Mn^{3+}, electronic and vibronic Raman scatt. 8−2839
  - α-Al_2O_3:V^{3+}, near IR spectra, line lifetime, 2, 10, 77K 8−10972
  - Ba hexafluorometallates, $BaMF_6$, (M=Si,Ge,Sn,Ti), Raman spectra at press. up to 25 kbar 8−6670

piezo-optical effects continued
CaF_2:Yb^{2+}, luminesc. polarisation, elastic uniaxial compression effect, radiative state model 8−6739
CaO, electron irradiated, symmetry assignment of new point defect 8−31261
CdS, deform. effects on exciton excitation spectra 8−35191
CsD_2AsO_4, SHG, electro-optic and piezo-optic tuning 8−46718
GaAs, photoluminescence and resonant Raman spectra, press. depend. 8−31251
GaS, optical absorption edge under hydrostatic press. 8−23487
GaSb crystals, uniaxial deform., effect on polarised luminesc. 8−10957
$Gd_2(MoO_4)_3$, spontaneous birefringence, pulsed field switching, compression effect, domain movement 8−27187
Ge, stressed, recombination luminescence from hot carriers in electron-hole droplets 8−6754
Ge, uniaxially deform., electron-hole drop flight, photolum. max. press. depend. 8−10977
Ge:As, uniaxially stressed, electronic Raman scatt. from valley-orbit transitions 8−15166
n-Ge:P,Ga, compensated, uniaxially compressed, anisotropy of mm. and submm. wave absorpt. 8−19074
GeS(Se), layer cpds., Raman spectra, press. coeffs. and mode Gruneisen parameters 8−10891
Hg_2Br_2, powder, Raman spectra, press. effects 8−2837
Hg_2Cl_2, powder, Raman spectra, press. effects 8−2837
KCl, photoelastic consts. at 10.6 μm, interferometric and polarimetric meas. 8−25934
KCl(Br)(I):Tl, emission spectra, press. effects 8−23509
KH_2PO_4, and isomorphs, IC spectra and phase transitions, under pressure 8−31180
KI:Tl^+ type phosphor, press. effects on triplet relaxed excited states, quadratic Jahn-Teller interaction 8−23510
LiH, optical parameters of localised centres at high hydrostatic press. 8−10943
MgO:Li, $[Li]^0$ defect, stress induced optical dichroism 8−35179
NaCN, Raman spectrum, hydrostatic press. effects 8−6663
NaCl:$^{63}Cu^+$, resonant bandmode, stress spectroscopy with far IR laser 8−2847
NaCl(Br):Tl, emission spectra, press. effects 8−23509
$RbCoF_3$, single oriented antiferromag. domain, polarised Raman scatt. under uniaxial stress 8−23463
S_4N_4, Raman scatt., press. and temp. depend., 0-10 kbar, 10-295K 8−15160
Si, dislocation luminesc. obs. 8−15217
Si exciton luminescence in mag. field or under uniaxial stress 8−27322
Si, film, amorphous, optical absorption at high press. 8−35216
Si, heavily disordered, fast neutron irrad., IR absorption following heat treatment 8−2448
n-Si, heavily doped, intraband Raman scatt. by free carriers 8−19483
Si, mass-anisotropy exciton splitting determ. 8−6685
Si, Raman spectrum, two-dimens. tensile stress effects 8−48173
Si, uniaxial stress effects and excited states for multiple bound excitons 8−6281
Si:P, acceptor bound multiexciton complex recomb., shell model, luminesc. line splitting 8−6275
Si:P, expt. evidence against shell model of bound multiexciton complexes 8−10368
Si:P bound multiexciton complexes, expt. evidence for shell model 8−39036
Si:P(B), multiple-particle exciton-impurity complex form. *(Russian)* 8−43925
TeO_2, paratellurite, stress induced changes in Raman spectrum 8−39540
$TlSbF_6$, Raman spectra at press. up to 25 kbar 8−6670
ZnS:Fe, piezospectroscopic effect on electron-vibr. lines of Fe^{2+} 8−27269

piezoelectric devices
see also crystal filters; crystal resonators; piezoelectric transducers
acoustic waveguide, Young sound wave propagation 8−38112
biodynamic subminiature piezoresistive accelerometer performance evaluation 8−20340
ceramic radiators, defects visualisation using holographic interferometry *(Russian)* 8−1530
dielectric/piezoelectric layered waveguide, surface acoustic wave amplification *(Russian)* 8−23138
drive, implantable, for left ventricular assist device, invertor improvement 8−15927
Fabry-Perot etalon, piezoelectrically controlled, linear scanning cct. 8−4704
Mossbauer spectrometer, piezoelec., with fast channel advance rates 8−24904
quartz thickness monitor, low temp. film thickness meas. 8−41275
SAW convolver, efficiency 8−18124
spherical mirror with piezoelectrically controlled curvature 8−33796
tensile device, const.-load, for UHV electron microscope, appls. to materials science 8−11462
$LiNbO_3$ TE-TEM light mode convertor using acousto-optic interaction, expt. 8−46794

piezoelectric effects *see piezoelectricity*

piezoelectric filters *see crystal filters*

piezoelectric materials
see also piezoelectric semiconductors; piezoelectric thin films; piezoelectricity
acoustic surface wave velocity measurement, pulse technique 8−5618
acousto-optical properties, light scatt. by thermal acoustic phonons 8−48144
ceramic, SAW nonsynchronous interaction *(Russian)* 8−26002
ceramic, statically compressed layer, electrical energy of instantaneous discharges *(Russian)* 8−39503
ceramic, TsTBS-3, mech. strength, effect of glass powder additions 8−31370
ceramics, electromechanical energy conversion in nonuniformly deformed bodies *(Russian)* 8−19418
glass, US detector applications 8−33974
hilgardite and parahilgardite, piezoelectric zeolite type structures and composition 8−16003
lithium ammonium tartrate, piezoelec., proper ferroelastic transition 8−2812
magnetoelastic/piezoelectric composite media, SH-type guided elastic waves, transmission line model 8−27069

piezoelectric materials continued
piezoceramic, polarisation method effect on mech. strength 8−39879
piezoceramic Poisson ratio rel. to electromech. coupling and energy trapping 8−43796
piezoceramic SAW propagation loss reduction by hot pressing 8−2356
polymers, and their applics. *(Japanese)* 8−19416
polyvinylidene fluoride, suitability as underwater transducer material 8−1531
polyvinylidene fluoride film, piezoelec., appl. in confocal pair of concave transducers 8−22241
quartz:Ge, optical and piezoelectric props., ang. distrib. *(Russian)* 8−23404
quartz, optical SHG with surface plasmons 8−18008
quartz, synthetic, precision meas. of elastic and piezoelectric characts. 8−6638
quartz crystal, influence of tabs thickness and resonating props. 8−18140
quartz crystal, new method of freq. spectrum determ. and appls. 8−23402
SAW device materials development 8−6636
US vibration visualization using IR telethermography 8−33966
$AlPO_4$, piezoelectric coupling of temp. compensated cuts, calc. 8−13869
$Ba_2Si_2TiO_8$, fresnoite, SAW props., expt. and calc. 8−43229
$BaTiO_3$, photoferroelec., lighting effect on deform. and stresses 8−43802
$Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8−3026
$Bi_{12}GeO_{20}$, and CdS, separated, coupling of propagating SAW 8−38929
$Bi_{12}GeO_{20}$, elastic wave leakage across gap between piezoelectrics 8−6204
$K_2Cd_2(SO_4)_3$, piezoelec. langbeinite-type, cryst. struct. and ferroelastic transform. 8−6036
$K_2Cd_2(SO_4)_3$, piezoelectric, cryst. struct., near ferroelastic transition 8−42984
KH_2PO_4, kinetics of growth from aqueous soln. 8−6838
$KTaO_3$, electromech. props. and electron tunnelling 8−23403
$LiClO_4.3H_2O$, absolute sign of piezoelec. d_{33} and pyroelectric p_3 coeffs. 8−43793
$Li_{1-x}H_xIO_3$, piezoelectric props., space charge effects 8−6637
α-$LiIO_3$, cryst. growth of high piezoelec. and optical quality 8−31313
$LiIO_3$, elastic wave leakage across gap between piezoelectrics 8−6204
$Li_{1-x}Na_xNbO_3$, LPE, growth and temp. coeff. of SAW velocity 8−43227
$LiNbO_3$ acoustic waveguide, nonlinear interaction of elastic waves with reson. *(Russian)* 8−6206
$LiNbO_3$, diffr. effects from very narrow surface wave transducers 8−22240
$LiNbO_3$ fibre, vibrations 8−31156
$LiNbO_3$, γ-irradiated and annealed, elastic and piezoelectric props. 8−2807
$LiNbO_3$, hypersonic wave attenuation, temp. depend. long wavelength phonons 8−18710
$LiNbO_3$, LPE on $LiTaO_3$ substrate, using Li_2O-V_2O_5 flux 8−44031
$LiNbO_3$, line acoustical waves anal. 8−34692
$LiNbO_3$, photocond. induced by N_2 laser, piezoelec. reson., acoustic wave rel. determ. *(Japanese)* 8−2521
$LiNbO_3$, shock loaded above Hugoniot elastic limit, elec. and mech. response 8−19411
$LiNbO_3$, wedge fabrication for line acoustic wave propag., using cleavage method 8−30818
$LiNbO_3$, Y-Z cut, surface to bulk mode wave conversion, at interfaces ang. spectrum meas. 8−47652
$LiNbO_3$:He^+, ion implanted SAW guides, air-gap Si convolver data 8−42500
$LiNbO_3$-CdS, layered structure, acoustoelectric surface current kinetics 8−43232
$(Na,Li)NbO_3$, ceramics, electrophys. and struct. props. near morphotropic transition 8−2816
$(Na,Li)NbO_3$ ceramic, optimum prep. conditions and characterisation 8−3079
$Pb(Fe_{1/2}Nb_{1/2})O_3$-$La_2O_3(CeO_2)$ ferroelec. ceramics, electrophysical props. 8−35099
$Pb_5(SiO_4)(VO_4)_2$ cryst. growth and elastic props., appl. in acousto-optical devices 8−19660
$Pb(Zr,Ti,Sn)O_3$ ceramics, ferroelec., doped with tri- and pentavalent oxides, piezoelectric props. 8−19413
$Pb(Zr,Ti)O_3$, piezoelec., compositional fluctuation and props. 8−18742
$Pb(Zr,Ti)O_3$, piezoelectric bimorph, quasistatic response exam. 8−43794

piezoelectric oscillations
antisymmetric vibrs. of plate, dispersion eqn. homogeneous solns. 8−10846
ceramic, statically compressed layer, electrical energy of instantaneous discharges *(Russian)* 8−39503
periodic coupling of piezoelec. and magnetoelastic surface waves 8−10269
piezoceramic disc resonators, dispersion of thickness vibrs. 8−22237
piezoelectrics, elastic wave leakage across gap 8−6204
quartz crystal, influence of tabs thickness and resonating props. 8−18140
quartz crystal, new method of freq. spectrum determ. and appls. 8−23402
surface waves in crystals, theory in symm. form 8−10848
thermopiezoelectric laminae, coated with electrodes, two dimens. vibr. theory 8−35092
unplated piezoceramic plate frequency response meas. 8−248
$BaTiO_3$ polydomain crystals, dielec. props. 8−43827
KH_2PO_4, KD_2 PO_4 crystals used for laser control, acoustic vibr. suppression 8−1363
$LiNbO_3$ fibre, vibrations 8−31156
$LiNbO_3$, photocond. induced by N_2 laser, piezoelec. reson., acoustic wave rel. determ. *(Japanese)* 8−2521
Si, mechanical Q meas., low temps. 8−48118

piezoelectric resonators *see crystal resonators*

piezoelectric semiconductor materials *see piezoelectric semiconductors*

piezoelectric semiconductors
circular cylinder, scatt. of plane axial-shear wave 8−2806
film, surface mode phonon amplification, theory 8−34691

piezoelectric semiconductors continued
  information storage in piezoelectric semiconducting single crystals 8-15101
  nonlinear acoustic noise amplification theory, phonon distrib. function basis 8-47837
  polarisation echo *(Russian)* 8-15099
  SAW convolver, efficiency 8-18124
  scattering anisotropy in longit. quantizing mag. fields 8-26890
  superlattice formation, periodic pot. 8-19142
  wurtzite structure, transport in longit. quantizing mag. field 8-26891
  CdS, acoustoelectric interaction at wave reflection points 8-2528
  CdS, and $Bi_{12}GeO_{20}$, separated, coupling of propagating SAW 8-38929
  CdS, obs. of forbidden Brillouin scatt. near exciton reson. 8-15180
  n-CdS, polaron effective mass, DC Hall effect meas. 8-39037
  CdS-Au structure, work function of {0001} faces of CdS, effect of piezoelec. props. 8-23164
  n-GaAs epitaxial film, surface mode phonon amplification, numerical analysis 8-34691
  Ge single cryst., radiation piezoelec. effect 8-19419
  ZnO film, longit. elastic wave attenuation, 9.4 GHz 8-18888
  ZnO film, sputtering using Zn target, technique and characterisation 8-3040
  ZnO piezoelec. film, fabrication and appl. *(Japanese)* 8-23616
  ZnO/SOS monolithic SAW amplifier 8-6205
  ZnO-Au-epoxy resin, and ZnO-Au-fused quartz transducers, λ/4-mode operation, theory *(Japanese)* 8-30145
  ZnS, surface acoustic wave modes 8-2352
piezoelectric thin films
  semiconductor, surface mode phonon amplification, theory 8-34691
  unidirectional SAW transducer and filter 8-46879
  n-GaAs epitaxial film, surface mode phonon amplification, numerical analysis 8-34691
  $Li_{1-x}Na_xNbO_3$, LPE, growth and temp. coeff. of SAW velocity 8-43227
  $LiNbO_3$, LPE on $LiTaO_3$ substrate, using Li_2O-V_2O_5 flux 8-44031
  ZnO film, longit. elastic wave attenuation, 9.4 GHz 8-18888
  ZnO-Si structure, MIS and SAW propag. characts. 8-30988
piezoelectric transducers
  amplitude-freq. and transient characts., when radiating US waves 8-36996
  automatic acoustic emission analysis system with programmed control *(Russian)* 8-46866
  broadband SAW delay lines using weakly piezoelectric substrates 8-22230
  component of acoustic microscope, for phase imaging in refl. 8-30136
  composite strip piezoceramic US receiving array 8-42511
  cylindrical transducer in near-critical flow, influence of acoustic surface vibrs. on drag. 8-5729
  dynamic lumped parameters of composite piezoelectric transducers 8-18142
  electron stream effects on material with semiconducting boundary layer 8-19414
  energy balance for impedance calc. 8-36993
  eye fine movement recording through closed eyelid 8-35988
  interdigital excitation of surface waves on basal plane of a semi-infinite hexagonal piezoelec. cryst. 8-22244
  interdigital transducer in layered anisotropic semiconducting struct., elec. input admittance matching 8-22238
  Mason's model for piezoelectric plate transducers 8-33979
  mechanical response in piezoelectric transducer with current in semiconducting boundary layer 8-18139
  microwave ultrasound in liquid generation, λ/4-mode operation, effective attenuation analysis *(Japanese)* 8-30145
  multilayered, amplitude-freq. characts. anal., to determine acoustic emission receiver configuration 8-42507
  NDT method, with computerised vibrational spectroscopy 8-29105
  operation, 40 kHz, Doppler alarm, leak detection appl. *(Italian)* 8-42508
  outdoor noise monitoring microphone installation and calibration *(Japanese)* 8-42504
  phonon beams, GHz range, excitation and detect. 8-43080
  piezoceramic benders, circular, bond stresses 8-21124
  piezoceramic tubes with capped or shielded ends, sensitivity above omnidirectional freq. range 8-1534
  polyvinylidene fluoride foil appls. *(German)* 8-22243
  pressure bar transducer, dynamic transmitting props. *(Chinese)* 8-4605
  response equalization using low-pass filter 8-30144
  SAW transducer analysis by equivalent parameter representations 8-1541
  SQUID coupled to piezoelectric transducer, detection of gravitational waves 8-21218
  tapered piezoelectric bar transducer with transverse polarisation of piezoceramic, acoustic props. 8-1537
  thin film unidirectional SAW transducer and filter 8-46879
  triaxial cell, for measuring occlusal force by human teeth *(German)* 8-20303
  triaxial vector accelerometry for quantifying tremor and ataxia 8-28116
  underwater transducers materials, suitability of polyvinylidene fluoride 8-1531
  US, design, US imaging equipment appl. 8-9525
  US biomedical low-loss wideband for noninvasive appls., characts. 8-48846
  US flowmeter output characteristic linearity 8-42685
  US inertial transducer, rotational perturbation detection appl. 8-9524
  vibration and pressure transducer design for nuclear reactor environment 8-823
  n-InSb, noise, round trip acousto-electronic amplification, anodic piezoelectric transducer *(Russian)* 8-23139
  $LiNbO_3$, very narrow surface wave transducer, acoustic diffr. effects 8-22240
  $Pb(Zr,Ti)O_3$:Mn, crystal struct. and electrophysical props., piezotransformer props. 8-43806
  Si, mechanical Q meas., low temps. 8-48118
piezoelectricity
  see also electrostriction; piezoelectric devices; piezoelectric materials; piezoelectric oscillations
  acoustic activity and other effects due to spatial dispersion in piezoelec. cryst. 8-2808
piezoelectricity continued
  acoustic activity in crystals which show piezoelec. effect 8-26631
  band structure, calc. using Euwema PWG method with X_α approx. 8-15106
  Bleustein-Gulyaev wave propag. characts. at surface imperfections 8-43226
  bone, distrib. of induced elec. activity in bent long bone 8-3541
  bone, stress generated potentials at osteon level 8-31837
  bone stress wave detection using piezoelec. effect, non-invasive technique 8-31948
  ceramic cylinders, LF voltage-press. sensitivity 8-2805
  ceramics, electromechanical energy conversion in nonuniformly deformed bodies *(Russian)* 8-19418
  cholesteric liquid crystals with vibration 8-6013
  coupled surface electroacoustic waves 8-2355
  cubic crystal, surface acoustic wave modes 8-2352
  elastic wave propag. and interaction with charge carriers, appl. of hardened elastic moduli *(Russian)* 8-35095
  electric polarisation effects on piezoelec. and photoelastic interactions *(German)* 8-35091
  electroacoustic echo, thermodynamic theory 8-19420
  electroacoustic echo at doubled freq. in piezoelectrics 8-15100
  electroacoustic echo effect, tensor description 8-19103
  electroacoustic echo form. in powders by FM mechanism 8-19421
  electron stream effects on material with semiconducting boundary layer 8-19414
  ferroelectric piezomaterials, pyrochlore struct. high sound-propagation velocity 8-43791
  line acoustical waves anal. 8-34692
  liquid crystals, piezoelectric effect 8-6635
  mechanical disturbances in piezoelectric slab from periodic elec. field, body force, const. heat flow 8-19412
  nematic liquid crystal, flexo-electric domains 8-43792
  osteon system piezoelec. polarisation model 8-3540
  piezoceramic plate, electroelastic equilibrium *(Russian)* 8-43795
  piezostimulated currents, new method for exam. of dielec. relax. 8-10847
  polymers, elec. props. and morphology, correl. review 8-43786
  polyvinylidene fluoride, amorphous, low temp. anomalies 8-30724
  polyvinylidene fluoride, suitability as underwater transducer material 8-1531
  quartz, synthetic, precision meas. of elastic and piezoelectric characts. 8-6638
  SAW propagating in two separated piezoelec. media, coupling 8-38929
  SAW propagation, temp. coeffs., piezoelectric coupling in quartz, $LiNbO_3$, $LiTaO_3$, Tl_3VS_4 *(French)* 8-35093
  semiconductor, absorpt. and amplification of US at moderate freq. 8-19102
  semiconductor-piezoelectric corrugated boundary, reflected acoustic wave amplification *(Russian)* 8-30819
  semiconductor-piezoelectric structure, SAW attenuation and transverse acoustoelec. field 8-10516
  shocked piezoelectric disc as Maxwell solid 8-15098
  sodium ammonium tartrate, improper ferroelec. transition anomalies 8-19430
  surface waves, perturbation anal. of attenuation and dispersion 8-47653
  TGS, electromech. coupling of surface acoustic waves near ferroelec. transition 8-19415
  thermopiezoelectric laminae, coated with electrodes, two dimens. vibr. theory 8-35092
  thin plate, electroelastic equilib. anal. *(Russian)* 8-19417
  transition radiation of Gulyaev-Bleustein SAW in piezocrystals 8-43231
  zincblende crystals, internal strain and piezoelectric coefficient 8-39505
  $BaTiO_3$, nonpiezoelec. dielec., light-sensitive Rayleigh wave generation by surface piezoelectricity 8-43228
  $BaTiO_3$ polydomain crystals, dielec. props. 8-43827
  $Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8-3026
  $Bi_{12}GeO_{20}$, elastic and piezoelectric consts., thermal expsn. 8-31157
  CdS-Au structure, work function of {0001} faces of CdS, effect of piezoelec. props. 8-23164
  $Cu_3B_7O_{13}Cl(Br)$, piezoelectric, elastic and electromechanical coefficients *(French)* 8-39504
  Ge single cryst., radiation piezoelec. effect 8-19419
  KCl, temp. depend. of dislocation charge, piezoelec. defect technique 8-22733
  $KH_{2(1-x)}D_{2x}PO_4$, photoelasticity and electrooptic effects at forbidden deform. *(Russian)* 8-35117
  $KTaO_3$, electromech. props. and electron tunnelling 8-23403
  $KTaO_3$, nonpiezoelec. dielec., light-sensitive Rayleigh wave generation by surface piezoelectricity 8-43228
  $LiClO_4.3H_2O$, pyroelec. and piezoelec. coeffs., struct. refinement 8-18602
  $Li_{1-x}H_xIO_3$, piezoelectric props., space charge effects 8-6637
  $Ni_3B_7O_{13}I$, shear modulus anomalous temp. depend. 8-43061
  $Pb(Zr,Ti,Sn)O_3$ ceramics, ferroelec., doped with tri- and pentavalent oxides, piezoelectric props. 8-19413
  $Pb(Zr,Ti)O_3$, piezoelectric bimorph, quasistatic response exam. 8-43794
  $RbH_3(SeO_3)_2$, piezoelectric effect, near nonintrinsic ferroelectric phase transition 8-2815
  TeO_2 piezoelec. powder, orientation depend. of memory echo 8-35094

piezoreflectance
  tetracene single crystals, Davydov splitting, press. depend., phase transition obs. 8-27250

piezoresistance
  diffused Si pressure transducer, stress conc. at transverse gauges 8-12711
  diffusion layers, piezoresist. coefficient determ. allowing for two-dimens. impurity distribution *(Russian)* 8-6374
  semiconductor, low-symmetry, modelling of elec. props. 8-19036
  n-SiC, 6H and 15R polytypes, (0001) plane, influence of uniaxial mechanical stress on resist. anomaly 8-10445
  n-$AgInSe_2$, press.-induced compensation, resist. expts. 8-30919
  B, β-rhombohedral, elec. cond. due to uniaxial press. pulse 8-39110

piezoresistance continued
$Cd_xHg_{1-x}Te$, uniaxially compressed, deform. effects, elec. resist. 8−39114
$CrAs_{0.42}Sb_{0.58}$, mag. and struct. transitions under press., elec. resist. meas. 8−27038
n-GaAs, transferred electron effects under hydrostatic press. 8−26871
GaP, influence of shear deform. on interband interaction 8−39116
n-Ge, modelling of elec. props. 8−19036
Ge, oscillistor effect in strong mag. fields, ambipolar drift and breakdown 8−2511
Ge, piezoresistance, energy and momentum relax. of charge carriers 8−47786
p-Ge, strong uniaxial deform. at low temps., piezoresist. 8−19038
Ge:Al(B), uniaxially stressed, photoionisation of acceptors, impurity photocond. meas. 8−10509
Ge:Ga, uniaxially stressed, far IR photocond. meas. 8−10496
$InAs_{1-x}P_x$, high field instabilities, press. and comp. depends. 8−26873
n-InP, high field props. under high press. 8−26872
n-InP, transferred electron effects under hydrostatic press. 8−26871
p-InSb, negative piezomagnetoresist. and Hall effect meas., antiferromag. order form. 8−19061
InSb:Ge, uniaxially compressed, anisotropy of elec. props. 8−19035
K-Rb, dil., calc. of press. depend. of low-temp. transport props. 8−30905
n-PbSe, pressure induced transition to gapless state 8−2533
$Pb_{1-x}Sn_xTe$ film n- and p-type 8−6465
$(SN)_x$, tensile and piezoresist. expts. 8−15447
Si, piezoresistance, energy and momentum relax. of charge carriers 8−47786
n-Si, quadratic piezoresistance, ang. depend. *(Russian)* 8−47782
p-Si:B, total piezoresist. tensor, 20 to 300K 8−19037
SiC (6H), space group determ. 8−2090
Ti_2O_3, semicond., effect of stress on elec. resist. 8−34832

piezoresistive devices *see piezoelectric devices*

piles (nuclear fission) *see fission reactors*

pinch effect
belt pinch, numerical computation, diffuse equilib. config. 8−30471
belt pinch, strongly elongated, free-boundary MHD equilib. 8−5912
double-theta pinch, numerical computation, diffuse equilib. config. 8−30471
Garching belt pinch MHD equilibria, cylindrical slab model 8−34353
laser irradiated plasma focus, neutron emission *(Japanese)* 8−38538
linear Z-pinch, outer 2s-shell electron excitation emission of C-, N-, and O-impurity ions 8−22113
plastic deform after pinch effect *(Russian)* 8−27563
polystyrene microspheres in theta-pinch, ablation rates 8−18436
relativistic electron beam collective ion acceleration, localised pinch model, simulation 8−9826
relativistic electron beam diode, annular cathode, pinching rot. and reflexing in axial mag. field 8−9860
reverse-field pinch, MHD simulation 8−5920
reversed field pinch, time evolution calcs. using 1-d MHD equilib. and diffusion code 8−30466
reversed-field pinch, numerical computation, diffuse equilib. config. 8−30471
screw pinch, force-free fields, numerical computation, diffuse equilib. config. 8−30471
simulation model 8−1884
superpinch implosion, isentropic compression of thermonuclear plasma 8−5032
theta pinch, closed, balanced by transverse current *(Russian)* 8−1879
theta pinch, reversed-field, formation and adiabatic compression in imploding liners 8−30465
theta pinch coil, quasi-static potential distributions *(Japanese)* 8−38523
theta pinch coil, quasistatic electric field reduction, using shell with slits *(Japanese)* 8−30474
theta-pinch, azimuthal mag. field, relativistic electron runaway, bremsstrahlung diagnostics *(Russian)* 8−9818
theta-pinch, bumpy, wall stabilisation 8−1875
theta-pinch, D_2 fill in Scylla IV-P, plasma parameters and end-loss 8−1880
theta-pinch, field-reversal, expts. 8−14196
theta-pinch, helical, with low compression ratio 8−26313
theta-pinch, Pharos device with end stoppering, homogeneity, stability 8−34360
theta-pinch, plasma rot. during implosion, directional probe obs., model 8−1877
theta-pinch, slit metal vessels for fast discharge, mag. bias fields 8−38520
theta-pinch coil Em field calc. *(Japanese)* 8−9817
theta-pinch linear, fusion reactor concept 8−5042
theta-pinch mag. piston-plasma interaction, pot. fine struct. *(Russian)* 8−9798
theta-pinches, linear, interconnected 8−47154
toroidal equilibrium of reversed field pinch 8−26318
toroidal magnetic field reversal in pinches 8−26319
toroidal pinch, radial oscills. damping 8−30476
toroidal pinch systems, numerical anal. using programs in FORTRAN-D *(Japanese)* 8−5910
toroidal reverse field pinch, fusion reactor concept 8−5042
two-stage ion heating obtained in rapid theta-compression expt. 8−22520
two-stage ion heating obtained in rapid theta-compression expt. 8−22521
Z-pinch, azimuthal mag. field meas. using Faraday rot. 8−9832
Z-pinch, constriction due to radiation losses *(Russian)* 8−30473
Z-pinch, high current discharge in Xe, heating efficiency 8−47152
Z-pinch, high density, Hβ line spectra 8−18445
z-pinch, high plasma density, conceptual fusion reactor 8−5015
Z-pinch, imploding Al liner, soft X-ray spectroscopy 8−14198
Z-pinch, plasma production, streak, X-ray and vis. photographic obs. 8−38522
Z-pinch in HBTX-1, large amplitude helical kink instability and field reversal 8−42783
Z-pinch plasma, heating by CO_2 laser beam 8−34348
Ar, Z-pinch determ. by intrinsic stimulated emission 8−26311
H Z-pinch plasma, strong optical attenuation, shadowgraph meas. 8−26294
He, ultradense reproducible Z-pinch, for laser-pellet interaction simulation, characterisation 8−30463
Zn, plastic deform after pinch effect *(Russian)* 8−27563

pincushion distortion *see aberrations*

Piobert lines *see Luder's bands*

pion-baryon interactions
see also pion-baryon scattering; pion-hyperon interactions; pion-nucleon interactions
$\Delta S=0$ baryon-π amplitudes, Melosh transformation 8−12857
$\pi\Sigma$ two channel system, Y_0^* (1405) couplings, K-matrix parametrizations 8−21452

pion-baryon scattering
see also pion-baryon interactions; pion-hyperon scattering; pion-nucleon scattering
pd forward elastic amplitude in non-overlapping potentials model 8−45943

pion decay
$\pi^0 \to e^+e^-$, branching ratio meas. 8−41538
$\pi^0 \to e^+e^-$, decay rate, comparison with unitarity calcs. 8−4853
$\pi^0 \to e^+e^-$, form factor slope meas. 8−41537
$\pi^0 \to e^+e^-$, neutral-current anal. 8−8658
$\pi^+ \to e^+\nu_e\gamma$, decay rate calc. in $SU(2)\times SU(2)$ sigma model 8−8659
$\pi^+ \to \mu^+\nu_\mu$, at rest, μ^+ momentum meas. 8−45911

pion-hyperon interactions
see also pion-hyperon scattering
No entries

pion-hyperon scattering
see also pion-baryon interactions
No entries

pion interactions *see lepton-hadron interactions; meson-meson interactions; photon-hadron interactions; pion-baryon interactions; pion-nucleus reactions; pion-pion interactions*

pion-nucleon interactions
see also pion-nucleon scattering; pion-proton interactions
$\pi N \to \rho X$, trajectory data, reson. and scatt. regions, compatibility *(Russian)* 8−8703
abnormal states of nuclear matter, instability rel. to pion condensation *(Russian)* 8−37302
deep inelstic pp, πN, eN scatt., lepton-hadron relation, multiparticle prod. phenomena, average multiplicities 8−37247
fibre bundles almost complex manifold approach, curvature form 8−12915
field theoretic treatment of pion-nucleus scatt. 8−29505
low energy scattering, one particle exchange model, spin 3/2 particle 8−4873
one nucleon absorption of slow pions, pion condensate effect *(Russian)* 8−8765
pseudoscalar and pseudovector coupling to bound Dirac nucleon 8−25073
scattering amplitude in nuclear medium at nuclear matter density 8−29500
π^-+C, 40 GeV/c, secondary particle multiplicity off several nucleons *(Russian)* 8−484
$\pi^-+C(Al)(Cu)(Pb)(H)$, 3.7 Gev/c, incoherent prod. of ρ^0 mesons *(Russian)* 8−33084
$\pi+d \to 2N$ in Δ-resonance region, 100-300 MeV *(Russian)* 8−33083
π^-+emulsion nuclei, 50 GeV/c multiplicities of secondary charged particles *(Russian)* 8−46116
πd, 15 GeV, separation of $\Delta\Delta$ and NN components of d 8−12933
$\pi d \to A_1 d$, double scatt. at high energy, unstable particle scatt. amplitude 8−45929
$\pi^- d$ high multiplicity interactions at 21 GeV/c 8−4879
πN, $\pi^+ d$, 100 GeV/c, charged-particle multiplicity distribs. 8−33101
$\pi N \to \gamma\pi N$, recoil corrections to static model, interaction current 8−25072
$\pi N \to J/\psi+X$, 27 and 40 GeV, total (J/ψ) production cross sections on Cu target *(Russian)* 8−25249
$\pi N \to l\bar{l}X$, quark structure functions for hadrons, Drell-Yan model anal. 8−21476
$\pi N \to \pi\pi\Delta$, S-wave prod. determ. 8−45972
πN scattering, chiral dynamics and asymptotical restrictions, sum rules *(Russian)* 8−17047
$\pi^- N$, 40 GeV/c, leading and conserved mesons *(Russian)* 8−45987
$\pi^- n$, diffr. dissoc. in $\pi\pi$ collisions *(Russian)* 8−29356
$\pi^- N \to D^{*-}+X$, 10.5 GeV/c, near threshold 8−37249
$\pi^- N \to J/\psi+X$, 43 GeV/c, cross-sections for W, Cu, Be targets 8−25089
$\pi^- N \to J(\psi)+X$, 27 and 40 GeV/c total cross-section for Cu nucleus 8−25088
$\pi^- N \to \mu^+\mu^-$+hadrons, 225 GeV, ψ and charm prod. 8−25092
$\pi^- n \to$ pions+X, 40 GeV/c, transverse pion momenta depend. on secondary particle multiplicity *(Russian)* 8−33103
$\pi^- n \to p\pi^-\pi^-\pi^0$ or $\rho^-\pi^- p$, 5, 9 GeV/c, model independ. anal. of final states 8−25071
$\pi^- p \to \pi^0 n$ reaction for large transmitted momenta, 40 GeV/sec *(Russian)* 8−12934
ρ trajectory intercept, energy depend. 8−45959
$C+\pi^-$, 40 GeV/c, two-particle correls., rapidities, ang. distribs. *(Russian)* 8−17251
$^{12}C+\pi^-$, 40 GeV/c, multiplicity distribs. of secondary charged particles, Glauber model calcs. *(Russian)* 8−17252

pion-nucleon scattering
see also pion-nucleon interactions; pion-proton scattering
$\pi N \to \rho X$, trajectory data, reson. and scatt. regions, compatibility *(Russian)* 8−8703
Chew-Low model, πN vertex function 8−8686
Deck model, rescattering effects for diffr. dissociation of hadrons 8−4844
diffractional approx., few-nucleon nuclei, nuclear structure *(Russian)* 8−650
field theoretic treatment of pion-nucleus scatt. 8−29505
form factor in Chew-Low theory 8−41574
high-energy, effect of anomalous mag. moments in quantum field theory 8−465
isovector exchange, $NN \to NN\pi$ comparison with πN elastic scatt. 8−37189
low energy, determ. of low eqn. 8−8688

pion-nucleon scattering continued
low energy, local and nonlocal pots., reaction matrix anal., inverse scatt. 8−8684
low-energy, nonlinear chiral dynamics description *(Russian)* 8−17043
spin flip dynamics and inclusive processes *(Russian)* 8−41589
π+light nuclei, high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
πd, relativistic effects in deuteron alignment 8−25068
πd backward scatt. and inelastic intermediate states, ω meson prod. *(Russian)* 8−41579
πd scatt., relativistic kinematic effects 8−8685
πd-scattering length calc., on basis of Faddeev's equations *(Russian)* 8−33082
πN backward scattering amplitudes, superconvergence and nonlinear dispersion relations 8−468
πN scatt. amplitudes used in ππ scatt. length calc. 8−45952
^{12}C, pion rescattering after ^{12}C(e,e′π^+)^{12}B, near threshold 8−13065

pion-nucleus reactions
for inelastic pion-nucleus scattering, see "pion-nucleus scattering"
see also pion-nucleon interactions
binding effects in optical pot. of pion in nucleus 8−41685
clusterisation and secondary particle correl. *(Russian)* 8−33133
deep inelastic reacts. in isobar model 8−41779
emulsion nuclei, 200 GeV/c inelast. interactions 8−8860
field theoretic treatment of pion-nucleus scatt. 8−29505
high-energy, correlation between fast target protons and hadron+nucleon collisions 8−41681
multiplicity of charged particles, 200 GeV/c *(Russian)* 8−29509
one nucleon absorption of slow pions, pion condensate effect *(Russian)* 8−8765
photoemulsion nuclei, π^+ absorption, up to 114 MeV, nuclear scaling *(Russian)* 8−25247
quark-parton model, relation between low mass dimuon and meson prods. 8−41477
review, medium energy pion-nucleus absorption and scattering, pion condensation 8−8858
secondary shower particles angular distribs., in 200 GeV reactions *(Russian)* 8−25252
total cross section, A-depend. shift of peak 8−33226
total inelastic cross sections, 2 to 6 GeV/c, various nuclei *(Russian)* 8−46113
two particle correlations at 200 GeV/c for secondary particles *(Russian)* 8−46112
^{12}C+π^-, 40 GeV/c, leading particle spectrum and bremsstrahlung model *(Russian)* 8−41781
(π^+,p) near (3,3) resonance region, isobar doorway model 8−41778
(π^+,π^-) reactions on light nuclei, micron spectrometer for meas. with energy resolution of 1 MeV for 400 MeV/c momentum 8−13368
(π^+, π^0) inclusive reacts., 100 MeV, π^0 detection from γ-ray spectra 8−33222
(π^+,π^0p), 170 MeV, light nuclei *(Russian)* 8−41782
(π,Xγ) reaction at 70 MeV on s-d shell nuclei 8−29504
π^- interactions in nucl. emulsions, 65 GeV/c, γ quanta production 8−13160
π^--emulsion interaction, 50 GeV/c , charge particle multiplicity 8−46109
π^+ interactions, 10-254 MeV, in emulsion stacks 8−13166
π^-+C, 40 GeV/c, secondary particle multiplicity off several nucleons *(Russian)* 8−484
π^-+^{12}C, 40 GeV/c, partial inelasticity factors determ. *(Russian)* 8−33227
π+d→2N in Δ-resonance region, 100-300 MeV *(Russian)* 8−33083
π^-+emulsion nuclei, 50 GeV/c multiplicities of secondary charged particles *(Russian)* 8−46116
π^-+nucleus→$(3\pi)^-$+nucleus, 15 GeV/c, diffractive dissociation *(Russian)* 8−25250
π^-A, 3.7 GeV, correlation parameter between π^- emitted backwards and forwards *(Russian)* 8−45984
πN scattering amplitude in nuclear medium at nuclear matter density 8−29500
π^-N, 50 GeV, inelasticity factors, energy separated particles *(Russian)* 8−25251
ψ meson prod. by π^--mesons with momentum 43 GeV/sec in Be, Cu and W nuclei *(Russian)* 8−8863
Al+π^-, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
^{27}Al, 355 MeV, ratio of π^+ and π^- cross sections from coincidence meas. 8−29501
^{27}Al(π^-,π^-n) and (π^-, π^-p+π^0n), knockout reactions, cross sections, nucleon charge exchange model 8−25246
^{27}Al($\pi^\pm$,p), ($\pi^\pm$,d), E=100, 220 MeV p and d spectra meas. 8−648
A(π^+,2p)B*, effect of nuclear form factors *(Russian)* 8−25248
^{10}B(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{10}B(π^-,2n), stopped pion absorption 8−25243
^{9}Be(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{9}Be(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{9}Be(π^-,2n), stopped pion absorption 8−25243
Be(π^-, Ψ), 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983
Bi, π^- absorption *(Russian)* 8−46115
C, absorpt. of stopped π^-, charged particle energy spectra meas. 8−33224
C+π, 40 GeV/c, π interference *(Russian)* 8−41784
C+π^-, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
C+π^-, 40 GeV/c, two-particle correls., rapidities, ang. distribs. *(Russian)* 8−17251
^{12}C, π^+ induced two nucleon removal 8−25242
^{12}C+π^-, 40 GeV/c, leading and conserved mesons *(Russian)* 8−45987
^{12}C+π^-, 40 GeV/c, multiplicity distribs. of secondary charged particles, Glauber model calcs. *(Russian)* 8−17252
^{12}C+$\pi^\pm$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{12}C(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{12}C(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
^{12}C(π^-,2n), stopped pion absorption 8−25243
^{12}C(π^-,nn) or ^{12}C(π^-,pn), rescatt. effects in stopped pion absorpt. 8−29498
^{12}C(π^+,d)^{10}C, transitions to low lying states in ^{10}C 8−46110

pion-nucleus reactions continued
^{12}C(π^+,p)^{11}C, 49.3 MeV, transitions confirm multistep processes 8−46110
^{12}C(π^+,p)^{11}C near (3,3) resonance region, appl. of isobar doorway model 8−41778
^{12}C(π^+,π^++p)^{11}B, 100 MeV, cross-section meas. 8−29510
^{12}C($\pi^\pm$,πN)^{12}C(4.44 and 15.11 MeV), test of outgoing nucleon analogue charge exchange 8−25238
^{13}C(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{13}C(π^+,π^0)^{13}N, 70-230 MeV, calc. of cross section, using multistep contributions within modified eikonal formalism 8−21609
^{13}C(π^+,π^0)^{13}N, DWIA, isovector correls. 8−29499
Cd(π^-, X), 0 MeV, A=111, 112, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
C(π^+,2p), 112 MeV, reaction mechanism *(Russian)* 8−29508
Cu+π^-, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
Cu+π^-, inclusive interaction, J(ψ) prod. cross sections at 27 and 40 GeV/c 8−25088
Cu+π^-→J/ψ+X *(Russian)* 8−25249
Cu(π^-, Ψ), 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983
^{19}F(π^-, π^-n) and (π^-, π^-p+π^0n) knockout reactions, cross sections, nucleon charge exchange model 8−25246
^{2}H+π, coupled channel theory 8−13157
^{2}H+π^+, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{2}H(π,2nγ), final state interactions, n+n scatt. parameters 8−25245
^{3}He(π^-,n)^{2}H, 100, 200 and 290 MeVs differential cross sections 8−33223
^{3}Heπ^-→nd, ^{3}Heπ^-→n+n+p, two nucleon absorpt. model 8−41776
^{4}He+$\pi^\pm$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{4}He(π^-,n)^{3}H, 100, 200 and 290 MeVs differential cross sections 8−33223
^{165}Ho, aligned, pion cross-section meas. in (3,3) reson. region 8−29507
^{165}Ho(π^-,X), 175 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{7}Li(π, πN), 60 and 300 MeV, γ-ray meas. 8−41780
^{7}Li(π^+,π^0), 90 to 210 MeV, ^{7}Be 429 keV $1/2^-$ excited state, cross section 8−647
^{7}Li(π^+,π^0)^{7}Be, DWIA isovector correls. 8−29499
^{175}Lu(π^-,X), 230 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
^{14}N(π^-,2n), neutron-pair emission characts., excitation energy spectra 8−13159
Ne+$\pi^\pm$, 10.5 GeV/c multiplicities and inclusive moment and rapidity spectra 8−8862
Ni+π, E_π=0, 45 MeV γ-ray spectra, prod. cross-section for residual nuclei meas. 8−649
^{60}Ni+π, 70 MeV, γ+charged particle coincidence spectroscopy, cross section, p multiplicity 8−46111
^{62}Ni+$\pi^\pm$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{62}Ni($\pi^\pm$,p),($\pi^\pm$,d), E=100, 220 MeV, p and d spectra meas. 8−648
N(π^+,2p), 112 MeV, reaction mechanism *(Russian)* 8−29508
^{16}O, π^+ induced four nucleon removal 8−25242
^{16}O(π^-, γ)^{16}N, capture rate, A=16 ground and excited states 8−17105
^{16}O(π^+,π^-), 140 MeV, nuclear structure effects on cross section 8−17246
^{18}O(π^+,π^-), 140 MeV, nuclear structure effects on cross section 8−17246
^{18}O(π^+,π^-)^{18}Na, nuclear struct. effects 8−37380
O(π^+,2p), 112 MeV, reaction mechanism *(Russian)* 8−29508
Pb, π^- absorption *(Russian)* 8−46115
Pb+π^-, 3.7 GeV/c, proton spectra *(Russian)* 8−41785
^{208}Pb, 355 MeV, ratio of π^+ and π^- cross sections from coincidence meas. 8−29501
^{181}Ta+$\pi^\pm$, proton spectra, cross section, π. absorpt. mechs. 8−25239
^{181}Ta($\pi^\pm$,p), ($\pi^\pm$,d), E=100, 220 MeV, p and d spectra meas. 8−648
Th+π^-, neutron multiplicity distrib. *(Russian)* 8−41783
Tl, π^- absorption *(Russian)* 8−46115
W(π^-, Ψ), 43 GeV, A dependence of inclusive distrib. *(Russian)* 8−45983

pion-nucleus scattering
see also pion-nucleon scattering
^{16}O(π^+,π^+), 50 MeV, Lorentz-Lorenz effect 8−17247
diffractional approx., few-nucleon nuclei, nuclear structure *(Russian)* 8−650
field theoretic treatment of pion-nucleus scatt. 8−29505
light nuclei, micron spectrometer for meas. with energy resolution of 1 MeV for 400 MeV/c momentum 8−13368
low energy scatt., second order density effect, Lorentz-Lorenz pot. 8−8861
off-shell ambiguities and phenomenological optical potentials 8−37379
review, medium energy pion-nucleus absorption and scattering, pion condensation 8−8858
scattering lengths in multiple scatt. theory, binding corrections 8−651
total cross-sections as test of pion condensate existence, ≈1.2 GeV 8−17249
(π,π), cross section calc., comparison of factorisation approx. taking account of nucleon Fermi motion 8−29497
π^-+^{12}C, 40 GeV/c, partial inelasticity factors determ. *(Russian)* 8−33227
^{12}C, penetration range, 200 MeV to 2 GeV *(French)* 8−4964
^{12}C+π^+, 50 MeV, off-shell ambiguities and phenomenological optical potentials 8−37379
^{12}C(π,π) cross section calc., comparison of factorisation approx. taking account of nucleon Fermi motion 8−29497
^{12}C(π^+, π^+), 28.4, 38.6, 48.9 MeV, ang. distribs. meas. 8−41775
^{12}C($\pi^\pm$, $\pi^\pm$), 162, 226 MeV, elastic cross sections around πN (3,3) resonance region 8−13164
^{40}Ca, penetration range, 200 MeV to 2 GeV *(French)* 8−4964
^{40}Ca(π,$\pi^{+\prime}$), 50 MeV, energy spectra and cross sections 8−25241
Ca($\pi^\pm$,$\pi^\pm$), 130 MeV, A=40,48, π^+, π^- cross sections, neutron radius 8−25240
^{2}H+π, coupled channel theory 8−13157
^{2}H+π, high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
^{2}H(π,π), elastic scatt., charge exchange, deuteron disintegration, three-particle rel. eqns. 8−37381
^{2}H(π,π), exchange of ρ-mesons 8−21610

pion-nucleus scattering continued
^{2}H(π,π), multiple scatt. calc. 8-29506
^{2}H(π,π), NΔ interaction anal., D* model 8-29503
^{2}H(π,π) 142 MeV, three-body calc. 8-37378
^{3}He(π^-,π^-), 68 MeV, differential cross section 8-33221
^{4}He+π, high energy cross section calc. complex ang. momentum theory *(Russian)* 8-46067
^{4}He(π,π), 60-260 MeV, energy-independ. phase shift anal. 8-41773
^{4}He(π,π), dispersion relations for forward scatt. logarithm 8-17243
^{4}He(π,π), exchange of ρ-mesons 8-21610
^{4}He(π^-,π^-), 51-260 MeV, dynamical and fixed scatterer approx. calcs. 8-25244
^{4}He($\pi^\pm,\pi^\pm$), differential cross section 8-33221
^{60}Ni($\pi^+\pi^{+\prime}$), 50 MeV, energy spectra and cross sections 8-25241
^{16}O(π,π)^{16}O, microscopic isobar-hole calc. doorway states 8-4965
^{16}O($\pi^+,\pi^{+\prime}$), 50 MeV, energy spectra and cross sections 8-25241
^{16}O(π^+,π^+), 80-340 MeV, ang. distribs. of cross-sections determ. 8-33225
^{16}O($\pi^\pm,\pi^\pm$), Coulomb-nuclear interference, new anal. method 8-21608
^{18}O(π,π′), 230 MeV, neutron deform. param. determ. 8-29502
^{208}Pb($\pi^+,\pi^{+\prime}$), 50 MeV, energy spectra and cross sections 8-25241
^{51}V(π,π′γ), 200 MeV, ^{51}V levels 8-21611

pion-pion interactions
see also pion-pion scattering
cluster transverse momenta, effect on short range two-particle correlations 8-37237
high energy two-particle interactions, scaling 8-4878
Pauli principle effect in nuclear matter, exchange of interacting two pions 8-12983
ππ, diffr. dissoc. *(Russian)* 8-29356
ππ→KK, dispersion model, matrix N/D method *(Russian)* 8-45954
$\pi^+\pi^-\to\pi^0\pi^0$, mass distribs. calc. 8-41586
$\pi^+\pi^-\to\pi^0\pi^0$ cross-section from $\pi^-p\to\pi^0\pi^0n$ at 2.01 GeV/c 8-21461
πππ system, relativistic dynamics in ω channel 8-21360

pion-pion scattering
see also pion-pion interactions
partial wave dispersion relation with inelastic cut, ππ scatt. in 1 GeV region 8-4877
phase shifts, nonlinear σ model Pade calcs. 8-8695
Roy eqns., multiple solns., N/D method on finite interval 8-16949
Roy eqns., regularisation with smooth cut off 8-29271
Roy eqns., S- and P-wave scatt., constraints and correl. 8-21460
ππ→ππ, dispersion model, matrix N/D method *(Russian)* 8-45954
ππ S-wave phase shift, lower bounds, ε^0 and ρ poles 8-45953
ππ scatt. length, interior dispersion relations 8-45952
$\pi^0\pi^0\to\pi^0\pi^0$, axiomatic bound, scatt. amplitude, optimality 8-41585
$\pi^+\pi^-$ scatt., 1.0-1.8 GeV, phase shift anal. 8-8694

pion production
cumulative production in hadron-nucleus collisions *(Russian)* 8-607
Drell-Yan trigger, hadronic prod. of dilepton pairs and muons 8-37182
dynamical model for multiplicity distribs. in πp and pp-collisions, pion prod. 8-21469
electroproduction, light cone dispersion sum rules, axial vector currents 8-41556
electroproduction, near threshold, inelastic response functions 8-33172
electroproduction inclusive particle ratios 8-37217
electroproduction of low energy π^+, from ^{3}He 8-21545
fireballs, quantum-statistical chain decay, pion clusters 8-430
hadron-nucleus collisions, backward particle emission, energy depend. 8-25236
heavy ion collisions, high energy, depend. of total pion prod. cross sections on eqn. of state 8-41772
inclusive electroproduction, quark-parton model comparison with expt. data 8-37218
mass quantisation, pion prod. in pp, np, πp *(French)* 8-25059
multiple-collision model for pion prod. in relativistic nucleus-nucleus collisions 8-37365
multiplicative processes, ρ^0 meson formation cross section, pion prod., multiperipheral cluster model *(Russian)* 8-17067
n-particle decay of dual resonance, decay width, multiplicity distrib., multipion channels 8-16997
photoproduction and electroproduction from nuclei, thresholds from pseudoscalar and pseudovector Lagrangian densities 8-29449
photoproduction in first resonance region, one particle exchange model 8-4864
pp→πX, large P_t π prod., QCD theory 8-45861
proton accelerator π factories, multidisciplinary role 8-21791
relativistic nucleon-nuclei collisions *(Russian)* 8-25201
sum rules for π inclusive reactions, π bremsstrahlung 8-45811
uncorrelated jet model, quantum statistical correls., Bose-Einstein statistics, pion prod. 8-16992
uncorrelated jet model at high energy, quantum statistics, soft pion prod. 8-16995
vertex function anal., prod. and absorpt. in nucl. reactions 8-12989
$D^0\to K^-\pi^+\pi^-$, obs. in 3.77 GeV e^+e^- annihilation 8-37206
δd→π^+nn, final state interaction effects *(Russian)* 8-41558
$e^-d\to e^-\pi^+nn$, $e^-d\to e^-\pi^-pp$, forward prod. of single pions in resonance region 8-37219
$e^+e^-\to p\pi^-\pi^+$, partial conservation of axial flow *(Russian)* 8-8681
$e^+e^-\to p\pi^0\pi^0$, partial conservation of axial flow *(Russian)* 8-8681
$e^+e^-\to\pi^+\pi^-$, 0.78 to 1.34 GeV, π form factor meas. 8-33076
$e^+e^-\to\pi^+\pi^-\pi^0$, φ meson mass meas., ωφ interference obs. *(Russian)* 8-45935
$e^+e^-\to\pi X$, soft π prod., PCAC hypothesis, current algebra commutator relations 8-33075
$e^+e^-\to x\pi$, even G parity hadronic cross section, ρ′(1600) 2π branching ratio 8-12921
eN, pion production, vector-like theories *(Russian)* 8-37221
$e^-N\to e^-N\pi$, electromag. and weak process from weak neutral current interaction *(Russian)* 8-45928
$e^-N\to e^-\pi X$, high Q^2 cross-section meas. 8-21439
(γ,π^0), near threshold photoprod. on ^{1}H and ^{2}H, cross section calcs. 8-25174
(γ,π^-p), detector system and ccts. 8-877
$\gamma+d\to p+n+\pi^0$, interactions of nucleons in final state 8-37220
$\gamma n\to\pi^-p$, 850 MeV, target asymmetry meas. 8-21438
$\gamma n\to\pi^-p$, proton polarisation in ^{2}H(γ,np) *(Russian)* 8-41700
γp, π^0 prod. in resonance region, asymm. *(Russian)* 8-17031

pion production continued
$\gamma p\to\pi^0p$, differential cross sections at large angles, 2-6 GeV 8-37214
$\gamma p\to\pi^+n$, 850 MeV, target asymmetry meas. 8-21438
$\gamma p\to\pi^+n$ below 1.02 GeV, polarized target asymm. meas. 8-17029
$\gamma p\to\pi^+\pi^-p$, Lagrangian model, polarised and unpolarised photons 8-17028
$K^+\to\pi^++\pi^0+\pi^0$, π^+ meson energy spectrum below 30 MeV 8-12906
$K_l^0\to\pi^+\pi^-\pi^0$, Dalitz plot 8-4859
$Kp\to\pi^-\Sigma^+$, exchange degeneracy in hypercharge exchange reacts. 8-41581
K^-p interaction at 32 GeV/c 8-482
$K^-p\to K^0\pi^-p$, 4.2 GeV/c, non-charge exchange $K^0\pi^-$ prod., spin-parity struct., mass 8-45949
$K^-p\to K^0\pi^+\pi^-n$, 10 GeV/c, partial wave anal. of ($K^0\pi^+\pi^-$) system 8-45969
$k^-p\to\pi^0\Lambda$ (1520), 1.71 to 2.17 GeV, partial wave analysis 8-29352
$K^-p\to\pi^0X$, 100, 200 GeV/c high transverse momentum π^0 prod., quark scatt. 8-45976
$K^+p\to K^0p\pi^+$, 3 to 16 GeV/c, resonance production, cross sections and density matrix elements 8-17048
$K^+p\to K^0p\pi^+$, resonance production at 5, 8.25, and 16 GeV/c 8-12931
$K^+p\to K^+p2\pi^+2\pi^-$, 16 GeV/c, azimuthal correls., Bose Einstein symmetrization effects 8-37239
$K^+p\to\pi^-X^{+++}$ inclusive double-charge-exchange π^- prod., 100 GeV/c 8-37250
$K^\pm p\to K^\pm\pi^+\pi^-p$, 13 GeV/c, mass depend. of $1^+K^*\pi$ and ρK partial waves 8-8705
(n,pπ^-), 100 to 300 GeV, coherent neutron dissociation on nuclei 8-29465
(n,pπ^-) reactions on nuclei, 8 to 24 GeV/c, coherent diffractive prod., cross sections 8-41711
$\bar{N}N$ annihilation to pions 8-25060
$\bar{N}N$ annihilations, statistical bootstrap model anal. 8-37224
$\bar{N}N$→pions, direct channel scheme based on statistical bootstrap, low-energy region 8-12924
$\bar{n}p$ reactions in Gargamelle, charged and neutral pion prod. 8-462
$\bar{\nu}N$, single π^0 or π^- prod., neutral current interactions 8-41527
$\bar{\nu}n\to\mu^+n\pi^-$, effects of second-class weak currents in Δ(1236) reson. region 8-8656
$\nu N\to\mu N\pi$, high energy behaviour, light cone commutators, PCAC calcs. 8-37199
$\nu p\to\mu^-p\pi^+$, effects of second-class weak currents in Δ(1236) reson. region 8-8656
p+nucleus collisions, cumulative pion production models, comparison 8-13092
pd interaction, single particle distribs. with large momentum transfer at 3.3 GeV/c *(Russian)* 8-41596
$pN\to pn\pi^+$ (and similar), Δ(1236) isobar prod. 8-21443
$\bar{p}p$, 2.32 GeV/c, cross-sections, C-invariance, π and ρ^0 multiplicities anal. 8-41569
pp, $\bar{p}p$, fireball mass and pion multiplicity 8-45974
$\bar{p}p$, soft-pion amplitude for π^0 emission 8-41570
$\bar{p}p$, three-body annihilations, rel. to quark rearrangement model 8-21444
$pp\to(p\pi^+)(p\pi^-)$, observation of charge exchange double dissociation 8-25079
$pp\to(p\pi^+\pi^-)(p\pi^+\pi^-)$, s-depend. of double diffraction dissociation 8-25084
$\bar{p}p$ annihilation, π^+, π^- and π^0 probability distrib. 8-41604
$\bar{p}p$ annihilation mechanisms, 2.5 to 9.1 GeV/c, pion prod., quasi two body process 8-17039
pp collisions, correl. of neutral and charged pions, multiparticle prod. mech. 8-8708
$pp\to d\pi^+$, differential cross-section and polarisation 8-8683
pp inclusive reacts., charged particle associated multiplicities at ISR energies 8-21473
pp inelastic collisions, ρ-dominance in collision model 8-37238
pp interactions, π^- multiplicity distribs. *(Russian)* 8-41742
pp→pions, 102, 400 GeV/c, transverse momentum props. 8-8713
$\bar{p}p$→pions, 1.6 GeV/c, branching ratio meas. 8-17038
$pp\to\pi^-X^{+++}$ inclusive double-charge-exchange π^- prod., 100 GeV/c 8-37250
$pp\to\pi^0X$, 100, 200 GeV/c high transverse momentum π^0 prod., quark scatt. 8-45976
$pp\to\pi^0X$, 100 and 200 GeV, ang. depend. of π^0 prod. 8-41603
$pp\to\pi^0X$, 53, 63 GeV, inclusive π^0 prod. at very large transverse momenta 8-45980
$pp\to\pi^0X$, parton model, polarised proton, large p_t π^0 prod. asymm. 8-12936
$pp\to\pi^\pm X$, charge ratio for cosmic pion spectrum in atmosphere 8-28463
pp reacts. at 205 GeV/c, one, two, and three particle distribs. 8-8716
π^0 coherent photoprod. on ^{4}He, screening corrections and rescatt. *(Russian)* 8-41697
π^0 electroproduction, test of quark parton model 8-8672
π^0 emission by protons with anomalous mag. moment in const. EM field, Furry formalism *(Russian)* 8-410
π^0 prod. in π^-p inclusive interaction, 5 GeV/c *(Russian)* 8-45946
π^0/η prod. ratio at high transverse momenta 8-41602
π^+ prod. on ^{27}Al and ^{51}V 8-21543
$\pi p\to\pi^0X$, 100 and 200 GeV, ang. depend. of π^0 prod. 8-41603
π^-p, 40 GeV/c, identical π interference *(Russian)* 8-472
$\pi^-p\to p\pi^+\pi^-\pi^-$, impact param. anal. at 9 and 12 GeV/c 8-8706
$\pi^-p\to\pi^-\pi^+n$, S-wave dipion production 8-25069
π^+p, 10.5 GeV/c, π^0 prod. anal. 8-41608
π^+p, inclusive yields, transverse spectra, of nonstrange mesons, direct π prod. 8-4886
π^+p interaction, pion prod., direct and by meson resonance decay 8-29365
$\pi^+p\to n\pi^+\pi^+\pi^+\pi^-$, reaction, extraction from background 8-880
$\pi^+p\to\pi^-X^{+++}$ inclusive double-charge-exchange π^- prod., 100 GeV/c 8-37250
$\pi^+p\to\pi^+\pi^-\Delta^{++}$, S-wave dipion production 8-25069
$\pi^\pm p$, 100 GeV/c, inclusive charged-pion prod. 8-33102
$\pi^\pm p$ interactions, π^0 multiplicities, 10.5, 15 MeV, differential cross sections 8-41597
$\pi^\pm p\to\pi^0X$, 100, 200 GeV/c high transverse momentum π^0 prod., quark scatt. 8-45976
ππ correlations in multiperipheral resonance prod. model 8-45891
$\pi^+\pi^-\to\pi^0\pi^0$ cross-section from $\pi^-p\to\pi^0\pi^0n$ at 2.01 GeV/c 8-21461

pion production continued
$\pi^{\pm}$single particle distribs. in pp, πp collisions, transverse momentum, rapidity depend. hard scatt. models 8−29361
^{107}Ag+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
Al+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
^{40}Ar+various nuclei, negative pion production, 0.4-2.1 GeV/nucleon 8−37364
^{79}Br+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
C+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
^{12}C+various nuclei, negative pion production, 0.4-2.1 GeV/nucleon 8−37364
$^{12}C(e,e'\pi^+)^{12}B$, near threshold, equivalent photon approx., Kroll-Ruderman term 8−13065
$^{12}C(p,\pi^+)^{13}C$, relativistic pion stripping formalism 8−41717
$^{40}Ca(p,\pi^+)^{41}Ca$, relativistic pion stripping formalism 8−41717
Cu+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
$D(p,\pi^+)T$, 410, 605, 809 MeV, pion angular distrib. 8−29466
$^2H(\gamma,\pi^0)$, 300 to 700 MeV, differential cross sections, partial wave analysis *(Japanese)* 8−17177
$^2H(\gamma,\pi^+)$, 1-4 MeV, cross-section meas. 8−21544
$^2H(p, d\pi^+)n$, 585 MeV, d momentum spectra 8−41718
$^4He(\gamma,\pi^0)$, impulse approx. for differential cross sections in resonance region *(Russian)* 8−41698
$^4He(\gamma,\pi^0)$, reaction cross section meas. equipment 8−29694
^{6}Li+α, 18 GeV/c, π^- multiplicity distribs. *(Russian)* 8−41742
$^6Li(\gamma,\pi^+)$, cross-section calc. 8−17248
Ne+$\pi^{\pm}$, 10.5 GeV/c multiplicities and inclusive moment and rapidity spectra 8−8862
^{20}Ne+α, 18 GeV/c, π^- multiplicity distribs. *(Russian)* 8−41742
^{20}Ne+emulsion nuclei, evidence against copious threshold pion prod. 8−37362
^{20}Ne+emulsion nuclei, Monte Carlo simulation pion and proton multiplicities 8−37363
^{16}O+emulsion nuclei, 75-200 MeV/nucleon, pion and proton multiplicities 8−37363
Pb+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
^{208}Pb+^{40}Ar, 1.8 GeV/nucleon, appl. of multiple-collision model for pion prod. 8−37365
^{208}Pb+Ar, 1.8 GeV/nucleon, fireball model calc. of π-multiplicity distribs. 8−37366
$^{208}Pb(p,\pi^+)^{209}Pb$, 160 MeV, ang. distributions 8−37345
$^{90}Zr(p,\pi^+)^{91}Zr$, 160 MeV, ang. distributions 8−37345

pion-proton inclusive interactions
beam fragmentation region, vector and tensor meson prod., Mueller-Regge formalism 8−17057
dynamical model for multiplicity distribs. in πp and pp-collisions, pion prod. 8−21469
Feynman-gas model for semi-inclusive processes, πp appl., multiperipheral model predictions *(Russian)* 8−435
large p_t hadron production, lowest subprocess model, two body reactions 8−4887
meson prod. with large transverse momentum, effective gluon model 8−8717
one-dimensional cascade model of interacting nuclei using Glauber theory 8−17233
η/π^0 prod. ratio at high transverse momenta 8−41602
π production, direct and by meson resonance decay in π^+p interactions 8−29365
π^-+emulsion nuclei, 50 GeV/c multiplicities of secondary charged particles *(Russian)* 8−46116
$\pi p\rightarrow\pi^0X$, 100 and 200 GeV, ang. depend. of π^0 prod. 8−41603
π^-p, 16 GeV/c, inclusive K^{*0} (890) inclusive prod. 8−8710
π^-p, 250 GeV/c, inclusive prod. of neutral strange particles, K^0_s, Λ, Λ 8−21479
π^-p, 40 GeV/c, dispersion of longit. rapidity distribs., multiperipheral cluster model anal. *(Russian)* 8−17063
π^-p, 40 GeV/c, leading and conserved mesons *(Russian)* 8−45987
π^-p, 40 GeV/c, particle prod. with large transversal momenta *(Russian)* 8−41609
π^-p, semi-inclusive distrib., 21 GeV/c, multiplicity and rapidity 8−21482
$\pi^-p\rightarrow\Delta^{++}(1232)$, 15 GeV/c, multiplicity distrib. determ. 8−45982
$\pi^-p\rightarrow\gamma+X$, 5 GeV/c, scaling obs. *(Russian)* 8−45986
π^-p inclusive interactions, ρ^0, ω, f-mesons prod. cross section *(Russian)* 8−33098
π^-p interactions, 15 GeV/c, vector meson prod., polarisation props. 8−37251
π^-p interactions, 15 GeV/c, K^0_s, Λ, Λ prod., Regge anal. 8−45981
$\pi^-p\rightarrow K^0+X$, 4.9-40 GeV/c inclusive and semi-inclusive distribs. *(Russian)* 8−41610
$\pi^-p\rightarrow\Lambda+X$, 4.9-40 GeV/c inclusive and semi-inclusive distribs. *(Russian)* 8−41610
$\pi^-p\rightarrow\pi^0X$, 5 GeV/c, inclusive distribs. *(Russian)* 8−45946
$\pi^-p\rightarrow\pi^0+X$, 5 GeV/c, scaling obs. *(Russian)* 8−45986
π^+p, 10.5 GeV/c, π^0 prod. anal. 8−41608
π^+p, inclusive yields, transverse spectra, of nonstrange mesons, quark model 8−4886
$\pi^+p\rightarrow\Delta^{++}(1236)$, Λ^0, 100 GeV/c, one-meson-exchange mechanism anal. 8−8712
$\pi^+p\rightarrow\pi^-X^{+++}$ inclusive double-charge-exchange π^- prod., 100 GeV/c 8−37250
$\pi^+p\rightarrow\Sigma^+(1385)+X$, 16 GeV/c, spin density matrix of $\Sigma^+(1385)$ by statistical tensor method 8−37235
$\pi^{\pm}$p, 100 GeV/c, inclusive charged-pion prod. 8−33102
$\pi^{\pm}$p, high energy, mean charged hadron multiplicity, modified Heisenberg approach 8−45988
$\pi^{\pm}$p and pp collisions, charged particle average multiplicities comparison, quark model *(Russian)* 8−17065
$\pi^{\pm}$p interactions, π^0 multiplicities, 10.5, 15 MeV, differential cross sections 8−41597
$\pi^{\pm}p\rightarrow\pi^0X$, 100, 200 GeV/c high transverse momentum π^0 prod., quark scatt. 8−45976

pion-proton inclusive interactions continued
$\pi^{\pm}$p reactions, μ prod., Drell Yan prod. of intermediate vector bosons 8−29364
$\pi^{\pm}$single particle distribs. in pp, πp collisions, transverse momentum, rapidity depend. hard scatt. models 8−29361

pion-proton interactions
see also pion-proton inclusive interactions; pion-proton scattering
charge exchange reactions, model of ρ Regge trajectory 8−37226
clusters, search using rapidity gap method *(Russian)* 8−41517
fragmentation model and minimal rule 8−25019
quark parton model, total cross sections 8−45859
soft-photon anal. of πp bremsstrahlung 8−25076
strong exchange degeneracy analysed in Kp and πp reactions, pomeron behaviour 8−41515
π prod. in pp, np, πp interactions, mass quantisation *(French)* 8−25059
πp, 16 GeV/c, diffr. dissoc. into $\bar{K}K^*$, $\bar{K}^*K$ 8−41594
πp, 16-GeV/c, dimuon production and obs. of low-mass continuum 8−37236
$\pi p\rightarrow(\pi\rho)p$, A_1 reson. diffr. prod., unitary coupled-channel anal. 8−8687
$\pi p\rightarrow A_2p$, diffractive process, possible one-photon exchange extraction *(Russian)* 8−444
$\pi p\rightarrow A_2p$, diffractive prod. and Reggeon-photon coupling analogy 8−45890
π^-p, 16 GeV/c, narrow width boson of mass 2.95 GeV obs. 8−17056
π^-p, 200 GeV, inclusive $\Delta^{++}(1232)$ prod. 8−21478
π^-p, 40 GeV/c, identical π interference *(Russian)* 8−472
$\pi^-p\rightarrow(\bar{p}n)p$, 12 GeV/c, peripheral $\bar{p}n$ prod. and decay ang. distribs. 8−33096
$\pi^-p\rightarrow\chi n$, 40 GeV/c, prod. of $\chi(2.85)$ particles *(Russian)* 8−45963
$\pi^-p\rightarrow\eta^0n$, 3.3 GeV/c, differential cross section, helicity-flip amplitude *(Russian)* 8−45945
$\pi^-p\rightarrow\eta\gamma n$, radiative decay widths for $\rho\rightarrow\eta\gamma$, $\omega\rightarrow\eta\gamma$ 8−467
$\pi^-p\rightarrow\eta n$, 40 GeV/c, large momentum transfer, differential cross-section meas. *(Russian)* 8−33094
$\pi^-p\rightarrow\eta n$, tensor-exchange amplitude and polarisation determ. 8−45962
π^-p inelastic diffractive scatt., 33 to 60 GeV/c *(Russian)* 8−41591
π^-p inelastic interactions at 205 GeV/c, three-fireball model, computer simulation 8−474
$\pi^-p\rightarrow K^0\Lambda$, threshold to 2350 MeV, partial wave analysis 8−29349
$\pi^-p\rightarrow K^+\Sigma^-$, 5 and 8 GeV, differential cross section 8−21456
$\pi^-p\rightarrow K^+\Sigma^-$, backward scatt. at 3.5 GeV/c, polarisation parameter meas., isospin anal. 8−41572
$\pi^-p\rightarrow\Lambda K^0(K^{*0})$, 3-6 GeV/c, Regge theory of baryon exchange 8−25074
$\pi^-p\rightarrow ne^+e^-$, virtual photon polarisation, PCAC anal. 8−12930
$\pi^-p\rightarrow\omega n$, Reggeon cuts and reaction description *(Russian)* 8−45947
$\pi^-p\rightarrow p\pi^+\pi^-\pi^-$, 9 and 12 GeV/c, backward enhancement in A_1 region and A_2 prod. 8−45970
$\pi^-p\rightarrow\bar{p}d$, 10 and 16 GeV/c, cross section meas. 8−21466
$\pi^-p\rightarrow$pions+X, 40 GeV/c, transverse pion momenta depend. on secondary particle multiplicity *(Russian)* 8−33103
$\pi^-p\rightarrow p\pi^-$, 6 GeV/c, differential cross sections, line reversal symmetry 8−41564
$\pi^-p\rightarrow p\pi^-\pi^0$, 9 and 12 GeV/c, backward e^- prod. 8−8704
$\pi^-p\rightarrow p\pi^+\pi^-\pi^-$, impact param. anal. at 9 and 12 GeV/c 8−8706
$\pi^-p\rightarrow p\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
$\pi^-p\rightarrow\varphi\varphi n$, 22.6 GeV/c, cross section meas. 8−37242
$\pi^-p\rightarrow\pi^-\pi^+n$, S-wave dipion production 8−25069
$\pi^-p\rightarrow\pi^0n$, 40 GeV/c, large momentum transfer, high statistics meas. 8−17053
$\pi^-p\rightarrow\pi^0n$, differential cross section and charge independence principle 8−17045
$\pi^-p\rightarrow\pi^0\pi^0n$, 10 GeV, $\pi^0\pi^0$ mass distribs. calc. 8−41586
$\pi^-p\rightarrow\pi^+\pi^-n$, 12, 15 GeV/c, $f^0(1270)$ prod. cross sections, decay density matrix elements 8−33095
$\pi^-p\rightarrow\pi^+\pi^-n$ (K^+K^-n), 1.98, 2.41 GeV/c, pole parameters determ. 8−25075
$\pi^-p\rightarrow\psi n$, 8.2-9.8 GeV/c, upper limit on prod. cross-section determ. 8−41578
$\pi^-p\rightarrow\rho^0n$, Reggeon cuts and reaction description *(Russian)* 8−45947
$\pi^-p\rightarrow\rho^0\pi^-p$, Reggeised Deck model, Steinmann relation 8−45973
$\pi^-p\rightarrow Xn$, 40 GeV/c, $X(2.85)\rightarrow2\gamma$ obs. 8−25047
$\pi^+p\rightarrow D^0C_1^{++}$, 4.5 GeV, prod. cross sections, decay branching ratios 8−41576
$\pi^+p\rightarrow K^+\Sigma^+$, 1.721 to 1.954 GeV c.m. energy, cross section, ang. distrib., polarisation 8−4872
$\pi^+p\rightarrow K^+\Sigma^+$, 7 and 11.6 GeV/c, Σ^+ polarisation meas. 8−41573
$\pi^+p\rightarrow K^+\Sigma^+$, exchange degeneracy in hypercharge exchange reacts. 8−41581
$\pi^+p\rightarrow K^+\Sigma^+(1385)$, 16 GeV/c, spin density matrix of $\Sigma^+(1385)$ by statistical tensor method 8−37235
$\pi^+p\rightarrow\Lambda K^+\pi^-$, 10.3 GeV/c, p diffractive dissociation into ΛK^+ and $(\Sigma K)^+$ 8−45966
$\pi^+p\rightarrow$meson resonances, 15 GeV/c, SLAC bubble-chamber expt. 8−41595
$\pi^+p\rightarrow n\pi^+\pi^+\pi^+\pi^-$, reaction, extraction from background 8−880
$\pi^+p\rightarrow\pi^0\Delta^{++}(1236)$, $\eta\Delta^{++}$, $\eta'\Delta^{++}$, 16 GeV/c, cross-sections, spin density matrix elements determ. 8−21467
$\pi^+p\rightarrow\pi^+pp\bar{p}$, 10.3 GeV/c, Δ^{++} prod. obs. 8−21453
$\pi^+p\rightarrow\pi^+p\pi^0$, p diffractive dissociation, ρ^+ prod., one-pion-exchange model 8−21451
$\pi^+p\rightarrow\pi^+\pi^-\Delta^{++}$, 7.1 GeV/c, model-independ. anal. 8−17044
$\pi^+p\rightarrow\pi^+\pi^-\Delta^{++}$, S-wave dipion production 8−25069
$\pi^+p\rightarrow\pi^+\pi^-\pi^0n$, 12 and 15 GeV, partial wave analysis, spin, parity production 8−29359
π^+p radiative scatt., bremsstrahlung peak in Δ^{++} resonance region, mag. moment from low energy theorem 8−45944
$\pi^{\pm}$p, 18 GeV/c, prod. limits on impaired electrons or positrons 8−45967
$\pi^{\pm}$p, A meson prod., Regge model, polarisation anal. 8−41577
$\pi^{\pm}p\rightarrow\pi^{\pm}(N\pi)^+$, 16 GeV/c, spin-parity anal. of diffractively prod. low-mass $N\pi$ 8−17055
$\pi^{\pm}$p reactions, 16 GeV/c, strange particle prod. in 3 and 4 body final states 8−475
$\pi^+\rho\rightarrow\Delta^{++}\pi^+\pi^-\pi^0$, 15 GeV/c, $\omega'(1675)$ prod. 8−37241

pion-proton scattering
see also pion-proton interactions
Chou-Yang model, π form factor 8−45960
cross sections, large angle, fluctuations, 2-9 GeV/c 8−37228
differential cross section energy dependence, large angles, 2-9.7 GeV/c 8−37227
diffractional approx., few-nucleon nuclei, nuclear structure *(Russian)* 8−650
high energy diffraction scatt., model with shielded pomeron, pp, πp, Kp investigation 8−17004
π^-p backward scatt., 1.28-3.0 GeV/c, cross-sections, ang. distrib. meas. 8−41575
$\pi^- p \to \pi^0 n$, pure $\rho+\rho'$ Regge-pole anal. for 20-200 GeV/c forward scatt. 8−8702
π^+p backward scatt., 1.25-2.0 GeV/c, differential cross section meas. 8−37229
π^+p scatt., 291.4 and 310.0 MeV, polarisation parameter 8−41571
$\pi^\pm$p, 40-45 GeV, Regge anal. differential cross sections *(Russian)* 8−25081
$\pi^\pm$p, peripheral reaction model, large angle behaviour 8−442
$\pi^\pm$p elastic scatt., charge exchange, partial wave anal., Δ mass splitting, P_{33} resonance 8−29348
$\pi^\pm$p elastic scattering, amplitude anal., σ trajectory 8−33081
$\pi^\pm$p forward scatt. amplitude real parts 8−41588
$\pi^\pm p \to \pi^\pm p \pi^+ \pi^-$, partial wave anal. of low-mass $p\pi^+\pi^-$ system 8−25070

pion scattering *see lepton-hadron scattering; meson-meson scattering; photon-hadron scattering; pion-baryon scattering; pion-nucleus scattering; pion-pion scattering*

pions
confinement scheme, gauge model 8−45841
dosimetry, charged particle emission from π^- capture 8−40337
EM form factor, asymptotic behaviour in scale-invariant quark model 8−37211
form factor, Roy's eqn., inelastic effects 8−8669
form factors in quantum chromodynamics, asymptotic form *(Russian)* 8−17021
inertial mass, quaternion field theory of matter 8−24702
magnetic polarisability using gauge and relativistic invariance 8−4861
mass shifts 8−45920
nonlinear chiral models for pion field, many dimensional solitons 8−4792
polarisability of pions 8−456
quark effective-bare mass distinction, pion peculiarity 8−12866
radiotherapy appls., review *(Japanese)* 8−40321
eπ inelastic scattering, asymptotic bounds on π form factor 8−12917
π^- EM form factor meas. 8−17020
π^- in heavy atomic nuclei *(Russian)* 8−25139

pipe diffusion *see diffusion in solids*

pitch detection *see acoustic variables measurement*

PIXE *see ion microprobe analysis*

plages *see Sun*

plane polarisation *see polarisation*

planet Mercury *see Mercury (planet)*

planetary atmospheres
circular polarization of sunlight reflected from planetary atmospheres 8−28558
cometary nuclei or asteroids interaction with planetary atms., rel. to 1908 Tunguska event 8−49378
Eddington approx. range of validity 8−12086
exploration methods appl. to Venus, Mars and giant planets *(Czech)* 8−32374
gravitational field of planet, kinetic eqn. soln. for gas 8−16322
ice clathrate as source of atmospheres on terrestrial planets 8−28557
investigation by mass spectrometer-molecular beam expt. 8−49327
Io, Na I D_2 emission line profiles, var. with orbital phase angle and mag. latit. 8−4139
ion-molecule reactions, review 8−33563
Jovian planets, ortho-para equilib. of H_2 8−28574
Jupiter, acetylene abundance 8−16337
Jupiter, atmospheric probe, mass loss, shape change, real-gas aerodynamic effects 8−4055
Jupiter, auroral hot spots obs. 8−16333
Jupiter, chemical structure of deep atmosphere 8−45270
Jupiter, CO abundance 8−49374
Jupiter, CO obs. at 5 μm, airborne spectroscopic obs. 8−36491
Jupiter, CO thermochemistry, implications for atm. convection 8−36500
Jupiter, D abundance 8−45265
Jupiter, D/H and C/H ratios from methane-d_1 spectrum 8−28572
Jupiter, effective transport coeffs. of plasma in LTE approx. 8−1801
Jupiter, evidence for telluric value of $^{12}C/^{13}C$ atmospheric ratio 8−20723
Jupiter, GeH_4, ν_3 and 2 ν_3 bands, high resolution IR spectra 8−37636
Jupiter, H_2 content from spectral line equivalent width *(Russian)* 8−12143
Jupiter, H_2 rotational quadrupole lines, theoretical brightness temps. 8−7917
Jupiter, inner magnetosphere, L dependence of protons radial diffusion coeff. 8−16339
Jupiter, ionosphere, hydrocarbons, semiempirical electron impact ionis. cross-sections 8−1089
Jupiter, IR spectral obs., 800-1000 cm^{-1} 8−16336
Jupiter, low order effect of cosmic ray albedo neutron decay (CRAND) input 8−45271
Jupiter, magnetosphere, stability of electron shell distrib. to parallel propag. plasma waves 8−4032
Jupiter, magnetosphere and nonthermal radio emission, exploration methods *(Czech)* 8−32374
Jupiter, methane emission at 76 GHz correl. with decameter activity 8−4140
Jupiter, NH_3 atmospheric abundance 8−12142
Jupiter, NH_3 column density from high resolution spectra around 80 μm 8−45267
Jupiter, NH_3 spectral line meas. using 10μm superheterodyne receiver 8−16335
Jupiter, particle trapping rel. to internal magnetic field geometry 8−28575

planetary atmospheres continued
Jupiter, Pioneer 10 imaging data for prominent belt and zone, haze particles 8−45269
Jupiter, production and interaction of solitary waves 8−36496
Jupiter, radioemission, short-duration bursts, magnetospheric EM cyclotron instability mechanism 8−7919
Jupiter, thermal structure from IR spectral meas., filtered iterative inversion method 8−7918
Jupiter, turbulent mixing coeff. and homopause height 8−49354
Jupiter, UV emission from excited atoms and molecules 8−40865
Jupiter atmospheric, review 8−32377
Jupiter ionosphere, electron accel. rel. to S-bursts obs. at 32 MHz 8−36498
Jupiter ionosphere, electron stream accel. in Io flux tube rel. to S-bursts 8−36499
Jupiter magnetopause motion, longitudinal control 8−49375
Jupiter magnetosphere, comparison of Earth-based and Pioneer results 8−12076
Jupiter magnetosphere, contrib. of water products from Galilean satellites 8−45268
Jupiter magnetosphere, diffusion coefficients determ. from Io observed effects 8−32388
Jupiter magnetosphere, radial diffusion eqn. for collision-affected plasma 8−49310
Jupiter surface, equatorial jet stream form. due to cylindrical shear layer 8−16340
magnetospheres of Jupiter, Saturn and Uranus, review 8−12145
major planets, Raman scatt. in atmospheres 8−28571
Mars, abundance of volatiles, comparison with Earth, rel. to meteoritic source 8−36482
Mars, aeolian activity rel. to variable surface features obs. during Viking mission 8−20678
Mars, atm. struct. and extinction from ε Geminorum occultation obs. 8−7898
Mars, atmospheric aerosol props. from Viking lander imaging data 8−20698
Mars, atmospheric expts. by Viking project 8−20611
Mars, atmospheric opacity during July-November 1976, Viking orbiter obs. 8−20676
Mars, atmospheric rare gases relative concs., effects on regolith adsorption 8−49358
Mars, atmospheric struct. Viking obs. 8−20691
Mars, climate, past, present and future 8−7900
Mars, cloud positions during 1907-73 period, topographic control 8−36479
Mars, comp. of surface layer 8−20706
Mars, dust clouds physical props., surface layer particles mean radius 8−45258
Mars, dust storms monitoring using atm. transparency meas. *(Russian)* 8−36481
Mars, dynamical phenomena during June-November 1976, Viking orbiter imaging results 8−20675
Mars, exploration by Viking orbiters 8−20612
Mars, global dust storms, exploration methods *(Czech)* 8−32374
Mars, impact ejecta trajectories, drag and gravity effects, analytic solns. 8−40854
Mars, large-scale dynamics, heat transfer by baroclinic eddies and topographically forced long waves 8−45255
Mars, O_3 layer and two aerosol layers detect. by Mars 5 spacecraft UV obs. 8−49357
Mars, phase function, July to November 1976, rel. to atmospheric condensate phenomena 8−20677
Mars, photochemistry and evolution, Viking obs. 8−20692
Mars, photodesorption from mineral surfaces and effects on atmospheric stability 8−7903
Mars, phys. parameters calc. *(French)* 8−7901
Mars, polar areas, volatiles behaviour, model 8−49363
Mars, possible surface reactions, Viking biology expts. simulation 8−7904
Mars, review of surface and atmosphere *(Russian)* 8−20667
Mars, role in shaping of planetary surface 8−7905
Mars, surface meteorological results, Viking 1 and 2 landers 8−20702
Mars, troposphere, radio beam curvature effect on phase meas. 8−49118
Mars, turbulent mixing coeff. and homopause height 8−49354
Mars, upper atmosphere composition and struct. from Viking neutral mass spectrometers 8−20689
Mars, Viking radio occultation meas. of atmosphere and topography 8−20687
Mars, water vapour obs. from Viking orbiters 8−20682
Mars atmospheric, review 8−32377
Mars ionosphere, Viking retarding potential analyzer obs. 8−20690
Mars magnetosphere, Mars 2 and 3 evidence 8−49361
Mars magnetosphere, Mars 3 evidence re-examined 8−49359
Mars magnetosphere, Mars 5 evidence re-examined 8−49360
Mars magnetotail direction, Mars 5 evidence 8−49362
Mars upper atmosphere, H Lyman α radiation meas. with absorpt. cell spectrophotometer 8−28519
Mercury, simple mols. prod. by solar wind irradiation 8−16324
Mercury, surface interaction with exospheric atmosphere 8−49351
Mercury magnetic field and magnetosphere, Mariner 10 obs. 8−12131
multiple scattering in atmosphere with rough surface, azimuth-independent case 8−12085
Neptune, 5-20 micron obs. rel. to upper atmosphere temp. inversion 8−32393
Neptune, atmospheric changes from IR photometry 8−40869
Neptune, effective temp. from IR photometry 8−32394
Neptune, ionosphere model, ionization 8−4142
Neptune, methane and ethane emission detect. rel. to warm thermal inversion layer 8−16344
outer planets, Voyager spacecraft mission 8−49289
probe flight characts., scale model expts., for Mars, Venus, Jupiter, Saturn 8−7854
probes for hostile atmospheres and surfaces 8−4065
radiative flux calcs. for asymm. phase functions, delta-M method 8−32338
radiative transfer, Markov chain formalism 8−36447
radiowave propag. under superrefraction, complex geometrical optics *(Russian)* 8−49353
Rossby solitary waves, theory 8−1678

planetary atmospheres continued
  Saturn, evidence for telluric value of $^{12}C/^{13}C$ atmospheric ratio 8−20723
  Saturn, far IR spectrum, PH_3 and NH_3 absorpt. lines 8−12147
  Saturn, H_2 content from spectral line equivalent width *(Russian)* 8−12143
  Saturn, inhomogeneous models 8−12149
  Saturn, ionosphere model, ionization 8−4142
  Saturn, latit. differences in cloud layer struct. 8−20725
  Saturn, Lyman α emission from disc and ring system 8−12150
  Saturn, physical props. of atmosphere upper layers *(Russian)* 8−40867
  Saturn, temp. inversion model 8−12148
  Saturn, thermal profile from IR meas. inversion 8−4144
  Saturn NH_3 atmospheric abundance 8−12142
  stellar occultation data, effects of photon noise and initial conditions 8−28530
  temperature perturbations, radiative damping 8−32163
  Titan, search for H_2 (3,0) S1 line in spectrum 8−4143
  two layer model, parameters determ. from obs. of absorpt. bands 8−24480
  Uranus, 5-20 micron obs. rel. to upper atmosphere temp. 8−32393
  Uranus, H_2 rotational quadrupole lines, theoretical brightness temps. 8−7917
  Uranus, ionosphere model, ionization 8−4142
  Uranus, methane absorpt. band in spectrum 8−45275
  Uranus, rotation periods rel. to methane band strength var. 8−49376
  Uranus, thermal structure from IR meas. 8−36509
  Uranus, unsuccessful search for ethane emission 8−16344
  Venus, cloud cover obs. and recording 8−49355
  Venus, CO_2 IR absorpt. bands, 3900-10000 cm^{-1}, assignment 8−7896
  Venus, CO_2 lines equivalent widths, multiple scatt. calcs. 8−4095
  Venus, daytime topside ionosphere, plasma transport 8−4131
  Venus, dynamical processes, three-dimens. model 8−32376
  Venus, H_2SO_4 aerosol cloud model implications 8−3312
  Venus, impact ejecta trajectories, drag and gravity effects, analytic solns. 8−40854
  Venus, interpretation of weak spectral absorpt. lines 8−24481
  Venus, IR emission spectrum, 17-38 μm, aqueous H_2SO_4 droplets in CO_2 atm. 8−40855
  Venus, Mariner 10 radio occultation obs., pressure-temp. profiles 8−28563
  Venus, nightside ionosphere, electron currents meas. in optical shadow by Venera satellites 8−4133
  Venus, thermal regime, exploration methods *(Czech)* 8−32374
  Venus, troposphere, chem. model, vertical zoning, comp., diurnal vars. 8−45251
  Venus, turbulent mixing coeff. and homopause height 8−49354
  Venus atmosphere, anal. by automatic interplanetary stations (Venera-4, 5, 6 and 8) 8−28520
  Venus atmospheric, review 8−32377
  Venus cloud layer, optical model from spectral photometric data from entry probes and orbiters 8−4130
  Venus clouds, UV absorbers identification 8−20665
  Venus daytime ionosphere, two freq. radioscopy results from Venera 9 and (Venera 10) 8−4129
  Venus ionosphere, struct. of solar wind interaction region from ion flux characts. meas. 8−4051
  Venus lower atmospheric layer, appl. of penetrative convection model *(Russian)* 8−24335
  vertical structure, general props. 8−4128
  Voyager imaging experiment 8−24427
  Voyager IR spectroscopy and radiometry experiments 8−24428
  Voyager low energy charged particle experiment 8−20618
  Voyager magnetic field experiment 8−24431
  Voyager mission objectives 8−24426
  Voyager photopolarimeter experiment 8−20616
  Voyager planetary radioastronomy experiment 8−24433
  Voyager plasma experiment 8−20617
  Voyager plasma wave system 8−24432
  Voyager radio science experiment 8−24430
  Voyager UV spectrometer experiment 8−24429

planetary nebulae
  A 21 (YM 29), planetary nebula model with strong stellar wind *(Russian)* 8−32559
  AFCRL 618, thermal radio emission from young planetary nebula 8−12343
  bibliographical index for period (1965 to 1976) 8−12106
  bipolar nebulae, study of general phenomenon 8−41026
  central stars, evolution 8−12325
  central stars, UV radiation meas. 8−28679
  central stars variability, UV obs. 8−36668
  chemical abundances, spectrophotometric results 8−36663
  control stars temperatures, determ. from forbidden O III lines 8−41015
  distance scale, rel. to white dwarf birth rate 8−20867
  ejection by stellar He shell flashes, theory rel. to planetary distance scale 8−24540
  electron temperatures, determ. from radio continuum obs. 8−41027
  ESO/Uppsala survey of ESO(B) Atlas of southern sky, fifth list containing 2395 objects 8−20653
  Fabry-Perot interferometry 8−4323
  formation, by thermonuclear explosion of stellar degenerate C core 8−36558
  Fornax dwarf galaxy, detection and props. of identified planetary 8−41005
  HBV 475 (V1329 Cygni), high-excitation emission lines obs. 8−40955
  IC 4997, [O III] 4363 Å line intensity in variable planetary nebula 8−8100
  IR emission lines in 12 faint objects *(French)* 8−12337
  K648, halo planetary nebula, spectrophotometry and element abundances 8−41011
  kinematics from radial velocities 8−45385
  M1-78, possible planetary nebula, struct. at 15.4 GHz 8−41025
  in M31 (Andromeda galaxy), identifications and photometry 8−28737
  Mz 3 (p-K 331−1°1), obs. of bipolar nebula, possible protoplanetary 8−45376
  new planetary nebulae discoveries with low surface brightness 8−16496
  NGC 3132, central star is visual binary 8−20859

planetary nebulae continued
  NGC 6210, 6543, 6572, spectroscopic obs. using multichannel analogue detector system 8−36461
  NGC 6543, struct. 8−20869
  NGC 6572, 6891, 7662, near IR spectrophotometry 8−8105
  NGC 6853 (Dumb-bell Nebula), complex motions of neutral and ionised gas 8−24539
  NGC 6853 (Dumbbell Nebula), ionization and abundances 8−45390
  NGC 7027, 4 to 8 micron spectrum 8−12333
  NGC 7027, ionization struct., charge transfer reactions 8−36671
  NGC 7027, ionization struct. and comp. 8−28745
  NGC 7027, IR emission lines from molecules in grain mantles 8−36670
  NGC 7293 (Helix Nebula), obs. of [O I] λ6300 vel. field 8−12340
  NGC 7662, rocket UV spectrum and models 8−28746
  O-type planetary nuclei, atmospheric props. 8−4206
  O-type planetary nuclei, spectral classification, magnitudes, distances 8−4203
  origin, red giant stellar wind/circumstellar nebula interaction model 8−36674
  origin from molecular envelopes of late-type giant stars 8−40940
  outer layers structural properties and dynamics 8−8104
  PN 108-76°1, halo planetary nebula, element abundances 8−41011
  PN 49+88°1, halo planetary nebula, spectrophotometry and element abundances 8−41011
  possible probable and true planetary nebulae detected since 1966 8−16495
  review 8−16510
  review of characts. and evolution 8−32560
  HM Sagittae, emission-line variable and radio source, as planetary nebula progenitor 8−28706
  HM Sagittae, eruptive BQ forbidden line star, evolution to planetary nebula 8−20835
  HM Sagittae, near emission-line object, optical and IR obs. and relation to planetary nebulae 8−36575
  FG Sagittae, photometric radius and pulsation mass 8−36576
  HM Sagittae, possible proto-planetary, emission line widths 8−45389
  FG Sagittae, spectrum of assoc. nebula 8−49498
  Simeiz 22, planetary nebula model with strong stellar wind *(Russian)* 8−32559
  spectrophotometry, emission line intensities, physical conditions 8−36651
  UV emission line spectra, excitation mechanisms *(Italian)* 8−32550
  ^{22}Ne neutron source effects on Mg and Ne abundances 8−49430
  Fe and C gas phase abundances 8−28744
  H Lyman α line formation, effects of nebula geometry 8−20871
  H_2 emission detect. from 5 objects 8−20879
  He, N, O abundances of planetary nebulae in Magellanic Clouds 8−4338
  He^+ radio recombination lines, stimulated emission 8−8092
  S abundances in 20 galactic planetaries from spectrophotometry 8−45375

planetary satellites
  see also Moon
  Amalthea (J V), UBV photoelectric photometry near greatest W. elongation 8−36493
  Callisto, diameter from lunar occultation meas. during 1977 January 1 disappearance event 8−45272
  Callisto, identification of water frost 8−4141
  celestial mechanics, modification of Szebehely eqn. 8−24447
  circumplanetary swarm accumulation model 8−28549
  Deimos, 37 positional photographic obs. during 1973 October at Pulkovo *(Russian)* 8−28568
  Enceladus, IR photometry rel. to presence of water frost 8−12146
  Europa, diameter from lunar occultation meas. during 1977 January 1 disappearance event 8−45272
  Galilean satellites, contrib. of water products to Jupiter magnetosphere 8−45268
  Galilean satellites, ephemeris using Samson's theory *(French)* 8−16334
  Galilean satellites, interior structure from possible flyby meas. 8−36495
  Galilean satellites of Jupiter, orbits long period behaviour 8−40864
  Ganymede, diameter from lunar occultation meas. during 1977 January 1 disappearance event 8−45272
  Hyperion, IR photometry rel. to membership of new class of satellites 8−12146
  Iapetus, eclipse by shadow of Saturn and rings (19-20 October 1977) 8−16342
  Iapetus, radius from 1974 March 30 lunar occultation 8−36505
  Iapetus, theory of motion, perturbations 8−28577
  Iapetus eclipses by Saturn's ring A, photometric confirmation of Encke division 8−45273
  internal satellite, in new kind of three-body problem 8−45210
  Io, correlation of posteclipse brightening with major solar flares 8−28573
  Io, influence on Jupiter S-bursts 8−36499
  Io, Na cloud, first photographs 8−32389
  Io, Na cloud distrib. and intensity 8−36494
  Io, Na I D_2 emission line profiles, var. with orbital phase angle and mag. latit. 8−4139
  Io, periodic variations obs. in Na and K clouds 8−4138
  Io, phase motion and Jovian decametric source locations 8−40866
  Io, phase profile for S-bursts in Jupiter decametric radio emission 8−20722
  Jupiter auroral hot spots at foot of Io-associated flux tube 8−16333
  Mercury, escape of natural satellite 8−16323
  Miranda, influence on struct. of Uranian ring system 8−4148
  motion in vicinity of triangular libration points 8−12488
  orbit-orbit resonances in satellite systems, varieties and similarities 8−4093
  orbiter probe mission, 1981, planning 8−4056
  outer planets, Voyager spacecraft mission 8−49289
  outer solar system satellites, identification of new class 8−12146
  Phobos, 20 positional photographic obs. during 1973 October at Pulkovo *(Russian)* 8−28568
  Phobos, composition, evidence for carbonaceous chondrite surface from spectral anal. 8−49365
  Phobos, evidence for carbonaceous chondritic composition from multicolour obs. with Viking lander cameras 8−49366

planetary satellites continued
Phobos, first encounter by Viking Orbiter-1, mass and density determ. 8−49364
Phobos, mass from Viking Orbiter radio tracking data, density estimate 8−32380
Phobos, mass from Viking Orbiter radio tracking data 8−32379
Phobos, props., comp. and origin *(Norwegian)* 8−36478
Phobos, scale model using Mariner 9 obs. and solar simulation technique 8−28566
Phobos and Deimos, preliminary results from Viking obs. 8−20681
Phobos and Deimos, Viking imaging, primary mission overview 8−20680
ring systems around giant planets, origin 8−32373
Saturn, astrometric results from 1974 lunar occultations of satellites 8−36506
Saturn, obs. of possible new satellite 8−7921
Saturn's rings, far IR spectral obs. 8−16341
Saturn A-ring, azimuthal brightness var. and particles size 8−32391
Saturn equatorial satellites motion, appl. of problem of four fixed centres 8−28493
Saturn ring system, statistical mechanics of Keplerian orbits 8−20625
Titan, NH_3 atmospheric abundance 8−12142
Titan, search for H_2 (3,0) S1 line in spectrum 8−4143
Titan, secular brightness increase, 1972-76 period 8−16346
Titan-Hyperion orbit-orbit resonance, appl. of spin-orbit theory 8−24451
Titania and Oberon, IR photometry rel. to membership of new class of satellites 8−12146
Triton, IR photometry rel. to membership of new class of satellites 8−12146
Uranus, ε-ring, variable width and ellipticity, orbital considerations 8−40870
Uranus ring system, quantitative anal. of Dermott-Gold theory 8−4147
Uranus ring system, statistical mechanics of Keplerian orbits 8−20625
Uranus rings, colours and magnitudes of stars occulted during (1977 to 1980) 8−16277
Uranus rings, geometric albedo upper limit 8−36510
Uranus rings, S/N ratios for stellar occultations, 1977-80 period 8−32392
Uranus satellite ring system, new features from Kavalur photoelectric record of SAO 158687 occultation 8−12152
Venus, escape of natural satellite 8−16323
Voyager imaging experiment 8−24427
Voyager IR spectroscopy and radiometry experiments 8−24428
Voyager magnetic field experiment 8−24431
Voyager mission objectives 8−24426
Voyager photopolarimeter experiment 8−20616
Voyager plasma experiment 8−20617
Voyager plasma wave system 8−24432
Voyager radio science experiment 8−24430
Voyager UV spectrometer experiment 8−24429

planetoids *see asteroids*

planets
see also asteroids; comets; Earth; Jupiter; Mars; Mercury (planet); Neptune; planetary satellites; Pluto; Saturn; Uranus; Venus
accretion model of planet formation rel. to minor planet size 8−12137
accuracy of Ptolemaic and Copernican theories using curve fitting techniques 8−32325
astrometry, daytime obs., anomalous refr. and personal errors meas. 8−24441
Bode's law of planetary magnetism, re-evaluation 8−40853
chemically peculiar (CP) stars formation, planetesimal impact hypothesis 8−20834
comets capture by planets, Laplace hypothesis 8−28592
composition, rel. to mass distrib. in solar nebula and planetary system 8−12109
conducting sphere rotating in time independ. homogeneous mag. field, unipolar induction *(German)* 8−17836
conjunctions and Maya chronology 8−36470
diameter meas. by occultation obs., teaching expt. 8−12457
differentially rotating models, gravit. field and figure 8−7893
dynamo theory for mag. field generation *(German)* 8−40852
electrically conducting fluid core location from external mag. obs. 8−32248
ephemerides, direct computation method *(French)* 8−7862
evolution, solar influence 8−49348
exploration, invited discourse before sixteenth general assembly of IAU 8−12076
exploration methods, appl. to planetary atmospheres and solar nebula theory *(Czech)* 8−32374
formation, mechanism of early growth 8−28547
general relativity test, planets observed by astrometric and radiometric methods 8−45552
giant planets, origin of ring systems 8−32373
impact craters, use of equivalency in estimation of historical size distrib. 8−45250
intenal structure, series soln. of Lane-Emden problem 8−36559
limb-darkening of planetary solids near opposition, laboratory study 8−36477
Love numbers of giant planets 8−16338
major planets, Raman scatt. in atmospheres 8−28571
meteorite impact ejecta, depend. of mass and energy lost on planetary escape vel. 8−45295
methane, 4350-10600 Å bands, intensity profile, vibr. assignments, rel. to major planets spectra 8−42084
Mie-Gruneisen equation of state, appl. to planetary interiors 8−29072
millimetre temps. of planets, galactic and extragalactic sources 8−28556
motion equations, integration, Taylor-Steffensen series appl. *(Russian)* 8−49352
orbital eccentricity, effects of encounters with preplanetary bodies 8−7894
orbits, perturbations by solar companion star 8−12198
origin, monograph 8−32625
outer planets, Voyager spacecraft mission 8−49289
perihelion shift, Lorentz-invariant theory of gravit. rel. to general relativity *(German)* 8−29030
planetary sciences, AAS meeting (Honolulu, 19-22 January 1977) 8−4127

planets continued
rigid bodies, translational-rotational motion eqns. in osculating elements 8−28495
satellites accumulation, circumplanetary swarm model 8−28549
solar nebula, charged dust accretion rel. to Fe, stone and planetesimal formation 8−28548
solar wind interaction with non-magnetic bodies 8−49270
structure, global seismic effects of basin-forming impacts 8−12122
surface material, high-energy particle interactions, gamma-ray production, simulation 8−16318
terrestrial planets, mag. fields 8−12125
terrestrial planets and meteorites C, N and noble gases, origin and abundances 8−28559
terrestrial planets gravitational potentials, convergence of expansion in spherical harmonics 8−24479
tides, mechanical interpretation of solar activity *(French)* 8−20787
Titius-Bode law, existence of space for more than ten planets 8−40851
unseen companions of Ci 182354 and Wolf 1062, astrometric anals. 8−16459
Voyagers 1 and 2, missions and prospects 8−7859
Fe-Ni-Si cores, form. 8−12112
H-He fluid planets, dynamics and He distrib. 8−28555
H-He fluid planets, phase diagram and transport props. 8−28554

planimeters *see area measurement*

plants (industrial) *see industrial plants*

plants (power) *see power plants*

plasma
see also electromagnetic wave propagation in plasma; plasma-beam interactions; plasma impurities; plasmons; relativistic plasmas; solid-state plasma
astronomical plasmas, MHD, monograph 8−40816
astrophysical, thermodynamic inconsistency of modified Saha eqn. at high press. 8−36450
astrophysical plasma, elec. field around rot. mag. dipole 8−45141
astrophysical plasmas radio emission, probability of occurrence of stable pulses 8−42737
Crab nebula, parametric plasma instabilities 8−45220
D-region plasma density measurement, rocket borne expt. 8−45126
degenerate stars, force-free mag. fields stability 8−49425
electric currents in cosmic plasmas 8−12094
equatorial electrojet, multifreq. HF radar studies of plasma instabilities in Africa 8−36370
extended extragalactic radio sources, relativistic parametric instabilities 8−24561
F-region, effects of E-region coupling on Perkins spread-F instability 8−40755
geophysical plasmas radio emission, probability of occurrence of stable pulses 8−42737
interplanetary, turbulent, Volterra integral eqns. for charged particle transport 8−8225
interplanetary plasma flow hydromagnetic struct. rel. to geomag. Pc 1 pulsations 8−45142
interplanetary plasma stream of August 4, 1972, hydromagnetic struct. 8−28475
ionosphere, effect of HF-induced plasma instabilities on electron temps. 8−40756
ionosphere, F-layer plasma tubes in polar region, model 8−28391
ionosphere, plasma meas. during Western European Winteranomaly Campaign 8−45125
ionosphere, small-scale irregularity structs. assoc. with subtrough density gradients, Ogo 6 obs. 8−40753
ionosphere above Arecibo, HF-enhanced plasma line height 8−28392
ionosphere multispecies flows, transport eqns. mathematical struct. 8−47084
ionosphere-protonosphere, plasma fluxes, ATS-6 obs. 8−28409
Jupiter magnetosphere, contrib. of water products from Galilean satellites 8−45268
magnetosphere, elec. field around rot. mag. dipole 8−45141
magnetosphere, electron accel. in array of auroral arcs 8−36357
magnetosphere, electrostatic instabilities 8−34286
magnetosphere, electrostatic shocks, double layers and anomalous resistivity 8−45152
magnetosphere, electrostatic shocks as source of discrete auroral arcs 8−45153
magnetosphere, low energy electrons and protons obs. 8−36407
magnetosphere, macroscopic elec. fields 8−49238
magnetosphere, mag. field-aligned pot. drops due to electrostatic ion cyclotron turbulence 8−45155
magnetosphere, mag. reconnection rel. to plasma accel., heating and shock form. 8−40773
magnetosphere, plasma diagnostics via trigger VLF emission 8−45149
magnetosphere, plasma sheet thinnings, plasma flow 8−28432
magnetosphere, polar, electrostatic H^+ cyclotron waves near one Earth radius altitude 8−45154
magnetosphere, role of hot plasma in convection 8−32297
magnetosphere, turbulent generation of electrostatic fields 8−28439
magnetosphere low-β plasma, evidence for two-dimensional inertial turbulence 8−36399
magnetospheric and space plasma physics (1966-76) *(Japanese)* 8−24410
magnetotail, hot tenuous plasmas, fireballs and boundary layers rel. to substorm processes 8−32300
magnetotail lobe plasma, double-peaked ion spectra as evidence for massive ions 8−32299
middle atmosphere, plasma densities and comp. during winter anomaly 8−45191
planetary magnetospheres, radial diffusion eqn. for collision-affected plasma 8−49310
plasmapause, 1-30 Hz waves generation by reson. electron instability 8−49235
plasmapause, ion cyclotron waves rel. to proton precip. and stable auroral red arc form. 8−49197
pulsar magnetosphere, behaviour of plasma and mag. lines of rot. system 8−20848
pulsars charge-separated magnetospheres, props. 8−40981
pulsars force-free wind zone, stability 8−49468
radio galaxies, radiation transfer, dynamics, stability and evolution of synchrotron plasmon, book 8−24564

plasma continued
Scorpius X-1, optically thick hot plasma model for X-ray, optical and radio emission 8−16576
solar atmosphere, nonrelativistic stream propag. rel. to type III radio bursts 8−28623
solar atmosphere, plasma motion accompanying force-free mag. fields evolution 8−12176
solar atmosphere, rope structure of rising mag. field *(Russian)* 8−40898
solar atmosphere, stability of mag. flux element in horizontally stratified compressible, plasma 8−28610
solar corona, Alfven and magnetoacoustic wave mode coupling, cold plasma approx. 8−12178
solar corona, double plasma reson. rel. to radio bursts of drifting pairs type 8−24502
solar corona, heating by ion acoustic waves 8−4181
solar flare plasma, evaporative cooling 8−40890
solar flare plasma, physical parameters and dynamics from X-ray and XUV emission 8−12175
solar flares, electrostatically unstable heat flow and its consequences 8−20804
solar flares, mag. field energy dissipation in neutral current sheets 8−26250
solar flares, mag. reconnection rel. to plasma accel., heating and shock form. 8−40773
solar wind, alignment of plasma anisotropies and mag. field direction 8−32311
solar wind, flow around magnetosphere rel. to magnetopause position 8−49236
solar wind, nature of small-scale inhomogeneities 8−45173
solar wind, passage of low-freq. wave packet across stand-off shock front 8−45138
solar wind, plasma motion through comet coma 8−49391
solar wind, second harmonic radiation and related nonlinear phenomena in type III bursts 8−7958
solar wind multispecies flows, mathematical struct. of transport equations 8−47084
space plasmas, electron beam-plasma discharge at low press. and mag. field strengths 8−42769
space plasmas, nonstationary processes study via incoherent response method, phase fluctuations effects 8−45184
H_2, UV spectral radiance calibration *(French)* 8−12774

plasma applications
see also plasma arc spraying; plasma devices
ashing technique for energy dispersive X-ray analysis of biological specimens in SEM 8−24199
borsic fibre reinforced Al, hot pressed forged, plasma sputtered *(Russian)* 8−35330
CVD, RF plasma activated, kinetic model 8−27416
etching, by gas discharge plasma containing halogen, model *(Russian)* 8−15552
expanding plasma, gain on transitions of hydrogenic ions 8−17918
film deposition from metal plasmas 8−6859
internal combustion engine, ignition by plasma jet 8−38555
low press. high frequency induction plasma, cleaning and polishing of glass and Pt-Ir substrates *(Russian)* 8−35578
melting furnace, for steel industry, development in GDR *(German)* 8−22522
metal, plasma-arc refining remelting calc. *(Russian)* 8−18463
metal refractory single crystal growth by plasma heating *(Russian)* 8−35292
microwave induced plasma discharge, emission source appls. 8−32880
plasma arc refining melting, allowing two phase region and plotting distrib. functions *(Russian)* 8−31358
plasma chemistry, conf., Rome, Italy (Sept. 1975) 8−3336
reduction technology, low temp., present state and future prospects *(Russian)* 8−18462
semiconductor fabrication, CVD technology trends 8−19670
sputtering, interaction of particles in liquid phase *(Russian)* 8−35306
thermal plasma engineering in metallurgy, inorganic materials technology 8−3070
underwater wet plasma wetting in pressurized water 8−7090
B fibre reinforced H, hot pressed forged, plasma sputtered *(Russian)* 8−35330
CoO, plasma reduction melting *(Russian)* 8−31359
NiO, plasma reduction melting *(Russian)* 8−31359
SiO_2, reduction by RF induction plasma torch., Si form. 8−11186
W, powder, produced by plasma regeneration *(Russian)* 8−31360
ZrN, plasma-formed, ESCA and supercond. transition temp. 8−19697

plasma arc sprayed coatings
aerospace appls. 8−44026
applications to design 8−35588
ferrite film, prop. by plasma jet spraying microstruct. and magnetic props. 8−6546
fused coating, strength of adhesion to base by gas flame soldering 8−23894
polymer, struct. investig. by multiple-external-refl. method 8−6235
steel, 30KhGSA, fatigue strength under fretting corrosion, effect of plasma-sprayed coatings *(Russian)* 8−11394
weakening effect in constructional materials *(Russian)* 8−31547
Al, steel substrate, microstructural investigation and oxidation effects 8−11426
Al_2O_3 based coating produced from separated flow vacuum arc plasma *(Russian)* 8−31548
Be, plasma spray/sinter technique, Ar, satellite support structures, appls. 8−7079
Co-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Cr, powder, plasma deposition for production of contact portions of cermet electric heating element 8−11364
Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
$SrZrO_3$ coatings, plasma-sprayed, spectral emittance *(French)* 8−26709
TaC-NiC, powder for plasma arc spray coating appl. 8−15591
WC, plasma sprayed coating 8−35592
WC-TiC, powder for plasma arc spray coating appl. 8−15591
WC-TiC-Co, powder for plasma arc sprayed coating 8−15591
WC-TiC-TaC, powder for plasma arc spray coating appl. 8−15591

plasma arc spraying
coatings and composite materials 8−3247

plasma arc spraying continued
production process equipment, present state and future prospects *(Russian)* 8−22518
thermal plasma transport phenomena, conf., Odeillo-Font-Romeu, France (Sept. 1975) 8−1798

plasma-beam interactions
see also electromagnetic wave propagation in plasma; plasma production and heating by laser beam
Alfven waves, ion beam effect on stability *(Russian)* 8−38468
beam instability, in weakly ionised high-density plasma, Langmuir oscill. interactions *(Russian)* 8−26271
beam-isotropic plasma system, quasi linear relaxation *(Russian)* 8−22515
charged particle transport, energy deposition, in hot plasma, moment method calc. 8−22458
contra-streaming electron beams, RF emission in beam-plasma and beam-beam interaction 8−45137
counter stream type beam-plasma interaction, quenching of plasma oscill. 8−5882
counter streaming electron beam instability, stabilisation 8−1849
counterstreaming ion beam plasma device, standing oscills., due to electron-ion instability 8−26305
cyclotron maser, high-current and plasma filled, theory 8−17890
discharge, near Zarnitsa-2 rocket, parameter estimation *(Russian)* 8−26357
discharge disruption by transverse electric field *(Russian)* 8−1846
E-layer formation by intense electron beam injection 8−34351
electron and ion beam instability in plasma-beam interaction 8−5888
electron beam, caviton interactions 8−22517
electron beam, coherently radiating, radiation press. at surface 8−9314
electron beam, effect on pump-driven quasi-modes 8−30450
electron beam, instabilities, orbit perturbation theory 8−5885
electron beam, instability *(Russian)* 8−1847
electron beam, intense rotating relativistic, pitch angle meas. 8−1902
electron beam, interaction with mag. mirror, ion heating and beam trapping 8−9795
electron beam, ion-sound turbulence driven by return current 8−34314
electron beam, ion-sound turbulence wave dynamics 8−38489
electron beam, modulated, stability *(Russian)* 8−38510
electron beam, nonlinear convective and oscill. instabilities, simulation models 8−34338
electron beam, nonlinear induced modulated transparency, mechanism 8−34341
electron beam, oblique wave excitation in semifinite magnetoactive plasma with metal screen 8−26306
electron beam, proton beam form. and plasma oscills. *(Russian)* 8−29207
electron beam, relativistic, energy distrib. 8−5883
electron beam, relativistic, magnetoplasma heating, anomalously fast electron-ion energy transfer 8−38515
electron beam, relativistic, rotating in background plasma, coherent radiation 8−42767
electron beam, supercritical vel. pot. wave amplification, organic plasma *(Russian)* 8−1851
electron beam, test particle diffusion and scatt. in turbulent collisionless plasma 8−38508
electron beam and partially ionised plasma, axial mag. field, bea m energy distrib. 8−47131
electron beam charge neutralization, hydrodynamic approx. 8−47132
electron beam confinement time enhancement of ions in laser-produced plasma 8−38518
electron beam in semirestricted magneto-active plasma, excitation of surface vibrations *(Bulgarian)* 8−34334
electron beam in Zn vapour, plasma prod. and beam interaction 8−47133
electron beam injection, ω_{ci} instability confined plasma 8−47114
electron beam injection, beam-plasma discharge at low press. and mag. field strengths 8−42769
electron beam nonlinear interaction, hot-cathode discharge double layer 8−34337
electron beam self-focusing decline by gas breakdown, avalanche and plasma cond. effects 8−18420
electron beam-sliding spark plasma device, physical props. 8−5974
electron beams, counter-streaming in stationary background, longitudinal mode instability 8−26273
electron cyclotron harmonic waves excited in helical electron beam-plasma system 8−1848
electron cyclotron instability, nonlinear development, lower hybrid oscill. effects 8−30437
electrostatic wave energy in beam-plasma system 8−18397
EM instabilities in plasma with anisotropic press. *(Russian)* 8−22503
EM modes excitation in waveguide 8−1844
equilibrium accessibility 8−26304
fast charged particle beam density effect on stopping in matter 8−14180
fast ion Fokker-Planck code FIFPC 8−34342
intense relativistic pulsed electron beam appls. in plasma phys. *(Dutch)* 8−30452
ion beam, cross-field injection, propag. and energy deposition, heating appl. 8−5881
ion beam, EM instability excitation 8−30451
ion beam, energetic, propag. through fusion target chamber, stability 8−26303
ion beam, fast, production technology, use in laboratory and space expts. 8−5889
ion beam, reactive medium instability of space charge wave 8−18421
ion beam, turbulent plasma, laboratory and space plasma comparison 8−5945
ion beam deceleration, mag. field form. *(Russian)* 8−38464
ion beam excitation of ion-cyclotron waves, ion heating 8−34335
ion beam excitation of ion-cyclotron waves, ion heating 8−34336
ion beam propagation, plasma oscill., effect on transverse phase vol. 8−38509
ion beam-plasma system, absolute instabilities of electrostatic ion cyclotron waves 8−9793
ion beam-plasma wave modes, ion beam deceleration by ion acoustic turbulence 8−42771
ion-beam perpendicular injection, anomalous slowing, quasilinear and trapping regimes 8−1850

plasma-beam interactions continued
ion-cyclotron instability, parametric depend., beam injection, Tokamak stability 8−47110
ionosphere, partially coherent radiation by charged particle beams 8−28407
ionosphere, VLF waves, natural and elecron-beam producted, rocket obs. 8−7829
ionospheric plasma, electron beam expansion and propag., space shuttle expt. 8−7830
linear effects of wave propag. in plasmas, review 8−14149
longitudinal waves in magnetoactive plasma, nonlinear scatt. probability 8−22471
lower hybrid wave excitation by electron beam, body waves 8−34287
lower hybrid wave excitation by electron beam, surface waves 8−34288
magnetic field reversal induced by intense rotating electron beam in initially neutral gas 8−42768
magnetised plasma, in open plane periodic waveguide, reson. emission 8−26299
magnetosphere, polar region, VLF noise generation by electron beams 8−4039
modulated electron beam in inhomogeneous isotropic plasma, nonlinear wave generation 8−1852
neutral beam-injected mirror-confined plasma transport 8−22461
nonlinear amplification of waves in beam-plasma system *(Russian)* 8−5886
nonlinear interaction, electron collisions effect 8−14181
nonlinear interaction of charged particle beam *(Russian)* 8−38507
nonlinear monochromatic wave, source of particles effect *(Russian)* 8−9779
nonlinear plasma, excitation of large amplitude regular oscills. by modulated electron beam *(Russian)* 8−5887
nonlinear wave particle interaction 8−34339
nonlinear waves in modulated electron beam-plasma system *(Russian)* 8−26264
nonlinearly stabilised beam propag., simulation 8−18422
PETULA device, electron beam interaction, UHF radiation *(Russian)* 8−38532
potential oscillations excitation with electron beams 8−30419
pulsar, radio emission mechanism model, by electron/positron-magnetosphere EM interaction 8−8036
quasi stationary waves exam. on periodic injection of electron bunches *(Russian)* 8−47134
relativisitc electron beam, reverse current damping *(Russian)* 8−1800
relativistic electron beam, heating, reverse current, persisting EM radiation obs. 8−9796
relativistic electron beam, in bounded anisotropic plasma, Cerenkov instabilities spectra *(Russian)* 8−38506
relativistic electron beam, propag. in inhomogeneous plasma, instability 8−9797
relativistic electron beam, reverse current amplification *(Russian)* 8−26302
relativistic electron beam, scattering by mag. field errors and beam-induced waves 8−38514
relativistic electron beam, short pulsewidth, plasma heating, microwave emission 8−5884
relativistic electron beam collective ion acceleration, localised pinch model, simulation 8−9826
relativistic electron beam in plasma-filled waveguide 8−5879
relativistic electron beam induced fusion *(Japanese)* 8−1859
relativistic electron beam injection into waveguide, charge and current neutralisation *(Russian)* 8−26301
relativistic electron beam interaction in bounded plasma *(Russian)* 8−26300
relativistic electron beam-plasma interaction, efficiency increase *(Russian)* 8−34340
relativistic electron beams, propag. in a transverse mag. field *(Russian)* 8−22516
relativistic electrons, bremsstrahlung instability *(Russian)* 8−47103
relativistic tangential electron beam-semirestricted plasma collision, dissipation instability *(Bulgarian)* 8−34333
single-stage accelerated ion beams from plasma, ion optics 8−1147
solar electrons-interplanetary plasma wave interaction, numerical anal. 8−7853
space and laboratory plasma charged particle-beam interactions workshop 8−7821
Thomson scatt. from thermal plasma, intensity depend. frequency shift 8−42770
Tokamak plasma, radial current distrib. meas. using neutral Li beam 8−30488
turbulence, wave power spectral distrib. 8−14163
ultrarelativistic electron beam in pulsar atmospheres, mechanism for radio emission 8−20847
VEGA device, electron beam interaction, UHF radiation *(Russian)* 8−38532
VLF hiss in plasma penetrated by electron beam 8−26293
Cu anode splitting by electron beam in X-ray regime of Z-pinch 8−5932
O_2 injection, TFR Tokamak current plateau, effect on Mo impurity 8−22565

plasma collision processes
see also plasma transport processes; plasma-wall interactions
acceleration statistics during successive charge interchanges *(Russian)* 8−1789
alkali metal plasma, effect of elastic electron scatt. by at. excited states on conductivity 8−42715
atomic elastic electron scatt. cross section, Glauber approx. modification 8−25700
beam-plasma system, nonlinear wave-particle interaction 8−34339
binary collision model for plasma simulations, Monte Carlo method particle code 8−9824
binary inelastic collisons, inverse bremsstrahlung absorpt. in large radiation field, Born approx. calcs. 8−42222
cold plasma, Alfven shock waves in presence of effective electron-ion collisions 8−26286
cold plasma, density short wave perturbation, elastic electron-atom collision 8−47119
complex form., electron-nearest ion interaction, effect on elec. cond. *(Russian)* 8−1788
conductivity, nonideal nondegenerate plasma, dynamic model 8−26238

plasma collision processes continued
DC current, collisionless limit, induced by travelling wave, collision term based calc. 8−1806
density-dependent ion lines, excited levels collision relaxation rates calcs. 8−18458
differential ion flux vector meas. technique 8−18459
dissipative trapped electron instability dispersion relation, ion-ion collisions in Tokamaks 8−34290
dissipative trapped ion instability and anomalous transport 8−22483
electrical discharge, deionisation, caused by internal surfaces, dispersion model anal. *(Russian)* 8−5961
electrical discharge, deionisation of low press. plasma in gas discharge gap, elec. strength *(Russian)* 8−1921
electron collision freq. diagnostics, by EM impulse reflection 8−42817
electron collision frequency in nonuniform column, RF coil probe determ. 8−18446
electron collisions effect on plasma-beam nonlinear interaction 8−14181
electron dissociative attachment of mol. plasma in crossed electric and mag. fields 8−5847
electron energy distrib., relax. in elec. field, at. excitation rate 8−34266
electron ensemble in variable electric field, vel. distrib. relax. 8−34259
electron velocity distrib., collisions *(Russian)* 8−1790
electron-ion anomalously fast energy transfer, relativistic electron beam magnetoplasma heating 8−38515
electron-ion pairs, correlated pairs, effect on conductivity 8−26249
electrons, fast, isotropisation distance for elastic scatt. 8−30407
electrons, transport laser fusion plasma, Fokker-Planck eqn. 8−22462
electrons interaction with Langmuir waves, Legendre expansion of quasilinear eqns. 8−30418
electrostatic wave, electron Landau damping and electron collisions, Fokker-Planck model 8−47111
EM pulse absorpt., collision process effects 8−9791
excitations of wave modes and energy loss by charged particle passing through plasma sheet 8−38473
high temperature plasma, impurity ionis. equilib., radiative cooling 8−42712
impurities in collision-dominated regime, transport props. 8−5850
impurity diffusion, in Tokamak in collision regime, neutral injection effects *(Russian)* 8−26247
impurity diffusion and heat transfer, in neoclassical regime, neutral injection effects *(Russian)* 8−26248
impurity diffusion eqn., with ionisation and recombination source terms 8−30409
inert gas DC discharge, ionis. wave wavelength, electron gas state depend. 8−1918
ionisation wave, kinetic theory 8−22454
ions, multicharged, cross sections for electron impact ionis. 8−37746
Langmuir turbulence, HF energy dissipation *(Russian)* 8−5873
Langmuir waves, collisional damping in collisionless limit 8−34295
laser beam filamentation in strongly ionised magnetoplasma 8−26291
Lyman-α transition, line broadening, ion dynamics effects 8−42801
magnetosheath, effective collision freq. in medium with MHD turbulence 8−28420
nonlinear Langmuir wave, collisional damping in rarefied plasma 8−22484
nonthermal plasma, H and H-like ion populations, collisional radiative recomb. and ionis. 8−38450
plasma lasers in molecular medium, thermal ionisation and recomb. *(Russian)* 8−22118
radial diffusion, eqn. for collision-affected plasma 8−49310
radiation coupling, kinetic model, collisions effect 8−34262
Rayleigh-Taylor instability, MHD flow of composite medium, variable viscosity 8−1813
relativistic two-stream instability, nonlinenr state electron ion collisions effect 8−26280
resistivity anomalous, generated by ion-acoustic turbulence, collision freq.-turbulence spectrum relation 8−14205
resonance interaction of particles trapped by a plasma wave *(Russian)* 8−26236
spherical Langmuir probe, appl. to collisional plasma, theory 8−18460
stratified partially ionised plasma, stability in mag. field, cond. and viscosity effects 8−26276
Tokamak, Pfirsch-Schluter friction on H^+ 8−34272
trapped electron instabilities, collisional effects 8−26279
turbulently heated plasma electron cyclotron radiation, spectral line width collisional broadening 8−34369
two-level atoms interacting with free electron gas, dynamics by 2-D model 8−26237
Al(XII) and (XIII) reson. line trapping in laser-heated plasma, source distrib. diagnostics 8−42730
Ar afterglow, spectra and microphotograms, dissociative recombinations 8−26365
Ar arc, non-LTE, electron balance, temp. and density *(French)* 8−1796
Ar discharge, recombination coefficient meas. under diffusion-recombination conditions of plasma decay *(Russian)* 8−26324
Ar plasma, collision-dominated electron relax., heating, at. transitions 8−18373
Ar plasma, inductively coupled, excitation transfer between plasma and impurities *(French)* 8−14211
Ar plasma, thermal equilibrium properties, estimation 8−1793
Ar plasma jet, surrounded by Ar, He, N_2, H_2 gases, recombinations in decaying jet 8−9753
Ce, arc, excitation and ionis. in nonequilib. plasma 8−18461
Cl III, Stark broadening of isolated lines by plasma 8−9116
Cs, electron-atom momentum transfer cross sections, from plasma electron thermal conductivity 8−42224
Cs plasma in vacuum diode, pre-discharge, electron impact excitation line emission polarisation 8−47170
Cs-He plasma, steady-state discharge, role of inelastic collisions, spectroscopic diagnostics 8−42709
F II, Stark broadening of isolated lines by plasma 8−9116
H, ion equilib. density, in low press. system 8−9752
H, Lyman-α Stark broadening, dynamic screening effects 8−18386
H, partly ionised plasma, ionised collisions effect on thermal cond. *(Russian)* 8−47093
He, afterglow of low-press. glow discharge, recombination processes 8−26366
He, afterglow of pulsed discharge, elec. and optical meas. 8−26329

plasma collision processes continued
- He-Cd plasma, in discharge tube, excitation mechanism obs. 8−30479
- He-Hg RF discharge, atomic ionis. and excitation, spectral line intensities 8−26334
- He-Ne, afterglow of low-press. glow discharge, recombination processes 8−26366
- Hg plasma, molecular dynamics model for atom-electron interactions 8−42708
- Hg positive column, high press., excimer densities and destruction mechanisms 8−5967
- KrF* excimer laser, discharge pumped, influence of electron-F_2 collisions 8−42326
- N_2 plasma, electron distrib. function, kinetic coeffs. *(Russian)* 8−38451
- N_2, translational energy transfer rate, after pulsed discharge, interferometric obs. *(Russian)* 8−26322
- N_2-Ar plasma, coupled thermal-chem. relax., thermodynamic nonequilib. 8−34265
- N_2-Ne, positive column, electron vel. distrib. function *(German)* 8−1885
- N_2-Ne glow discharge, energy balance, ionis. collisions *(German)* 8−34263
- N_2-Ne glow discharge, kinetic eqn., transport coeff., collision freq., mean energy *(German)* 8−34261
- Ne, luminesc. discharge, loss mechanisms *(French)* 8−9877
- Ne, temporal decay, electron distrib. function and macroscopic parameters relax. 8−18374
- Ne-Hg RF discharge, atomic ionis. and excitation, spectral line intensities 8−26334
- O^++H, cold dense H plasma, charge exchange, impurity losses, Monte Carlo simulation 8−34260

plasma confinement
- *see also magnetic traps; pinch effect; plasma focus; plasma impurities; plasma-wall interactions*
- anomalous trapped ion transport in Tokamaks, 2-dimens. fluid calcs. 8−30412
- axial heating of mag. confined plasma by CO_2 laser 8−14182
- bifurcated Tokamak equilibria, helical flux invariance, current shrinking and disruption 8−34359
- bipolar injection in spherical geometry, multiple pot. well struct. 8−26315
- boundary condition for computational MHD 8−1811
- boundary conditions for simulation plasma in mag. field 8−26321
- braided field, transport of density, current, electron heat, fluid and particle models 8−30410
- charged particle motion, near a neutral line, nonadiabatic effects 8−1878
- closed-line magnetic field approach to plasma confinement, in toroidal systems 8−42792
- CTR plasmas, review of parametric processes 8−30430
- cylindrical magnetic surface force free system for high-temp. plasma confinement *(Russian)* 8−42793
- drift cyclotron loss cone mode stabilisation, by l.f. density fluctuations 8−47116
- E-layer formation by intense electron beam injection 8−34351
- electrostatic ion stoppering in mag. mirror field 8−1871
- ELMO bumpy torus, transport and scaling simple neoclassical pt. model 8−22459
- equilibrium equation exact soln. for plasma ring *(French)* 8−26312
- EXTRAP, properties 8−18439
- field-shaping coil, double layer system 8−42785
- fusion plasma, confinement scalings determ. 8−17431
- gas blanket confinement in fusion reactor, drift mode instabilities 8−18403
- ion resonance instability, strong self-elec. field influence, nonneutral column 8−34301
- magnetic field aligned electric fields in adiabatic plasma 8−1873
- magnetic field line reconnection, expts. and anal. 8−1874
- magnetic flux diffusion in imploding liquid liners 8−34361
- magnetically confined plasmas, parametric instabilities in laser heating 8−18432
- Min-B, β-ratio low pressure plasma in linked magnetic wells 8−30468
- multichambered neutral beam line, self-consistent background gas density calc. 8−34352
- neoclassical transport theory, for toroidal axisymmetric plasma, moment eqn. calcs. 8−42724
- nonlinear ideal MHD equilib. in axisymmetric systems 8−1876
- nonthermal radiation emission, in Tokamak plasma, at plasma frequency 8−42732
- particle diffusion across mag. fields, stable profile for nonlinear diffusion eqns. 8−22456
- proton rings, mag. compression, computer simulation 8−22548
- Rayleigh-Taylor instability, in curved mag. field, excitation and control 8−47113
- relativistic charge particle confinement by EM wave 8−38524
- relativistic electron beam ring, facilities of Nagoya University Plasma Physics Institute 8−5919
- resistive plasma column, reconnecting mode, moment eqns. treatment 8−22493
- scaling laws 8−5915
- Scyllac, m=1 waves propag. 8−5865
- simulation models, three dimens., for cylindrical and toroidal plasmas 8−1884
- stellarator, current-carrying, kink and tearing mode MHD instability 8−22539
- stellarator, current-carrying, plasma energy content *(Russian)* 8−1870
- stellarator, high-β, finite gyroradius stabilisation of MHD modes 8−26314
- stellarator, mag. surface destruction due to finite press. plasma *(Russian)* 8−22545
- stellarator, mag. surfaces destruction near separatrix 8−30475
- stellarator, MHD instabilities 8−14154
- stellarator, non-circular cross section, MHD equilibria 8−5914
- stellarator, noncircular cross section, MHD equilib. 8−9820
- stellarator, Saturn, transient electric field effect on collisionless diffusion *(Russian)* 8−26245
- stellarator fields, review 8−30467
- theta-pinch, Pharos device with end stoppering, homogeneity, stability 8−34360

plasma confinement continued
- Tokamak, Alcator, high-density D_2 discharge parameters obs. 8−18438
- Tokamak, ATC, free expansion expt. 8−30469
- Tokamak, bundle divertor, charged-particle orbit and cross-field diffusion 8−42784
- Tokamak, DITE, high-density discharge regime, with Ti gettered walls 8−22544
- Tokamak, drift-wave turbulence effect on mag. struct. 8−22501
- Tokamak, electron energy confinement time, direct determ. 8−9834
- Tokamak, equilib. and radial stability 8−9819
- Tokamak, finite shear, ballooning modes 8−5918
- Tokamak, heavy-impurity re-cycling and power loss at limiter 8−22543
- Tokamak, helical, alpha particle absolute confinement condition 8−42782
- Tokamak, helical instability, mag. shaping effect 8−42781
- Tokamak, high beta, theory 8−25324
- Tokamak, hydromagnetic stability 8−30428
- Tokamak, ignited plasma, temp. control by toroidal field ripple 8−5033
- Tokamak, impurity radiation loss effects 8−22465
- Tokamak, internal disruptions, sawtooth oscills. 8−47147
- Tokamak, limiter-scrape-off layer, kinetic theory 8−14193
- Tokamak, magnetic extraction of runaway electrons 8−34362
- Tokamak, metal impurities due to arcing 8−42787
- Tokamak, MHD flow in Li blanket *(Russian)* 8−47146
- Tokamak, non-circ. cross section, Alfven instability stabilisation *(Russian)* 8−26260
- Tokamak, noncirc. cross-section, local, ideal and resistive stability 8−22540
- Tokamak, nonlinear ideal MHD equilib. 8−1876
- Tokamak, O trapping and removal, discharge cleaning 8−22541
- Tokamak, plasma compression, runaway electron behaviour, excitation, X-ray obs. *(Russian)* 8−38531
- Tokamak, plasma density anal., electron and ion density control methods 8−47145
- Tokamak, plasma equilib., ferromagnet-saturation effects, numerical simulation 8−18440
- Tokamak, poloidal field distrib. meas. by far IR polarimetry 8−42810
- Tokamak, sawtooth oscills. 8−47150
- Tokamak, scaling law, appl. to JIPP T-II device 8−47155
- Tokamak, simulation model 8−1884
- Tokamak, steady-state diffusion, particle loss 8−22457
- Tokamak, tearing mode coupling 8−14192
- Tokamak, tearing mode suppression by feedback system *(Russian)* 8−22535
- Tokamak, TFR, low-freq. oscill. struct. during current disruptive instability 8−22564
- Tokamak, Tuman-2, current channel mag. compression *(Russian)* 8−38455
- Tokamak apparatus, toroidal inhomogeneity of vertical field 8−9816
- Tokamak boundary in contact with limiter 8−5913
- Tokamak discharge, breakdown phase, ionis. time, mag. flux requirement *(German)* 8−34363
- Tokamak discharge, initial stage, theory *(Russian)* 8−38512
- Tokamak elliptic, neoclassical transport 8−14135
- Tokamak equilib., non-circ. cross section, current peaking effect 8−5916
- Tokamak internal disruption development mechanism, mag. island growth, simulation 8−26317
- Tokamak plasma, extreme UV impurity study, radiation power loss 8−42803
- Tokamak plasma, light-impurity-free plasma, Au-shell surface and Ti gettered burial chamber 8−42786
- Tokamak reactor with injection of deuterium and tritium ions, calc. of characts. 8−37447
- Tokamak T-4, poloidal field oscills., microwave noise *(Russian)* 8−22536
- Tokamak with destroyed mag. surfaces, electron thermal conductivity 8−30411
- toroid, ballooning mode topology 8−5917
- toroid, nonlinear axisymmetric equilibria in MHD approx. 8−18437
- toroid, with self-consistent electric field, equilib. plasma config. *(Russian)* 8−22537
- toroid with vanishing press. grad., MHD stability 8−14195
- toroidal devices, electron runaway prod., kinetic eqn. 8−47148
- toroidal diffuse equilib. config., pinches, Tokamak 8−30471
- toroidal magnetic system, impurities, cleaning methods 8−22546
- toroidal plasma, sharp boundary, wall stabilisation 8−42788
- toroidal plasma with applied electric fields, confinement optimisation 8−9821
- toroidal trap, MHD stability in near-axial region *(Russian)* 8−38521
- toroidally linked mirror system, ballooning instabilities 8−22542
- torus, drift wave eigenmodes, nonlocalisation by mag. shear 8−34302
- torus, self-consistent electrostatic field calc. 8−42789
- torus with three coil arrangements, simulation 8−18434
- D-T linear mag. fusion device, particle end loss reduction 8−33289

plasma containment *see plasma confinement*

plasma devices
- *see also magnetohydrodynamic convertors; plasma diodes; plasma focus; plasma guns; plasma probes; stellarators; Tokamak devices*
- accelerator, coaxial, multi-component plasma dynamics *(Russian)* 8−22576
- accelerator, coaxial *(Russian)* 8−26337
- accelerator, steady-state, intermediate power, I-V characts., discharge parameters 8−1913
- accelerators, current sheet dynamics, interferometry and probe meas. 8−26351
- arc furnace, ignition and stabilisation *(French)* 8−47187
- automatic feedback parameter analogue simulation 8−26336
- capacitor, coaxial and planar magnetoplasma, impedance characts. 8−42837
- centrifuge, rotating plasmas, balance and separation processes 8−1911
- chemical reactor, methane-H_2 system, exptl. and thermodynamic investig. *(French)* 8−15698
- closed-line magnetic field approach to plasma confinement, in toroidal systems 8−42792
- coaxial accelerator, current density distrib. 8−26352
- coaxial accelerator, propag. vel. and shape of luminous front 8−22578

plasma devices continued
  coaxial plasma accelerator, neutron yield meas. *(Russian)* 8−38551
  duopigatron plasma generator, emission aperture shape effect on ion optics 8−5956
  electron beam for vacuum metallurgy *(Japanese)* 8−18465
  electron gun, with plasma anode, high intensity microsecond electron beam *(Russian)* 8−21271
  EM shock tube for obtaining short pulses of visible radiation, plasma flow anal. 8−1909
  field-shaping coil, double layer system 8−42785
  furnace, smelting, burning arcs interaction 8−1944
  Garching belt pinch MHD equilibria, cylindrical slab model 8−34353
  gaseous core reactor, basis for direct nucl. pumped gas laser 8−33725
  gaseous core reactor, UF$_6$ technology 8−33254
  gaseous core reactor based on U plasma core, present research 8−33244
  gaseous core reactor with U-fuelling, preliminary expts. 8−33243
  generator, ignition conditions for power superposition between two generators *(French)* 8−9799
  graphic display, large-area, selection circuitry 8−38556
  Hall accelerator, direct flow, I-V characts. 8−26350
  Hall accelerator, point and jet ionis. modes 8−26349
  Heliotron-D, low freq. shear Alfven wave heating, diagnostics 8−1858
  heterogeneous plasma discharge, spatial information modelling and processing algorithms 8−14229
  high-current travelling wave plasma accelerator appl. to plasma-wall interactions 8−5954
  injector, plasma parameter determ. by laser light scatt. *(Russian)* 8−22573
  lens for ion-beam, focusing and form. of intensive beam *(Russian)* 8−21270
  linear plasma induction accelerator, high current ion beam source *(Russian)* 8−21272
  magnetocumulative generator, megampere pulse shaping, explosively compressed plasma column *(Russian)* 8−1912
  magnetoplasma compressor, cathode potential drop, plasma flow *(Russian)* 8−22577
  magnetron, with split electrodes, radial ion (electron) cluster rot., fusion appl. 8−17415
  mass separator, plasma-optical model, optical props. optimisation 8−16894
  mass separator, with 3-parameter focusing, plasma optical model 8−9855
  microwave plasma sources, F atom prod. for HF chem. laser 8−22140
  PARODIE device for construction of large size homogeneous stationary plasma *(French)* 8−14223
  plasmotron, DC, high-power, long-operating, coaxial elec. arc, principles 8−42832
  RF induction plasma torch, temp., elec. cond., efficiency values from mag. probe meas. 8−42836
  steady-state rotating plasma, for mass separation of elements *(Russian)* 8−25732
  thermonuclear target, transport of relativistic electron beam *(Russian)* 8−38552
  thin-film thermometer for meas. of transient plasma heat fluxes in divertor assembly 8−18447
  torch cutting-punch machine for steel panels 8−18466
  triode, reflex, anode design for ion beam impedance collapse 8−9862
  valve for high-power conversion/switching, liq. metal cathode, design features 8−9865
  CO$_2$ laser-plasma amplifier, 11-16 μm range 8−22173

plasma diagnostic techniques
  ALVAND 2 diagnostic Tokamak construction 8−14217
  arc discharge, cathode spot high current density meas., expt. 8−9879
  calorimeter for absorbed energy meas. in laser prod. plasma 8−5942
  data acquisition system for Texas Turbulent Torus 8−4601
  density measurements, via quadrature interferometer 8−1900
  differential ion flux vector meas. technique 8−18459
  DITE Tokamak re-cycling expts., interferometry, mass spectrometry and C thermal desorption probe 8−34356
  electrode method *(Russian)* 8−14200
  electron energy determ. using analogue computer and Langmuir probe 8−14212
  electrostatic energy analyser, data interpretation 8−42813
  electrostatic particle analyser, optimisation and performance 8−42815
  EM impulse reflection from cold mgnetoplasma, charact. parameters diagnostics 8−42817
  far IR 2-D plasma interferometry evaporographic and pyroelec. recording 8−5929
  far IR interferometry, for plasma density measurement 8−47183
  far IR lasers appl. and detection systems in controlled fusion research 8−47182
  far IR systems, for plasma studies 8−47185
  far IR technology and applications, conf., Reston, USA, (Apr. 1977) 8−45711
  Faraday cups for laser plasmas, evaluation 8−5941
  grazing incidence X-ray microscopy, of laser fusion targets 8−47178
  heat flow in plasma jet, calorimetric probe for *(Russian)* 8−12698
  heavy ion beam probe system 8−9850
  high resolution X-ray optics, for astronomical and laboratory sources 8−45766
  high temperature metrological cooperation between USSR and GDR *(German)* 8−4622
  high-press. discharge lamps, theory and diagnostics methods 8−9829
  image convertor camera, for laser and laser-plasma diagnostics 8−38550
  injection of small solid particles, giving local hot Tokamak plasma parameters *(Russian)* 8−30486
  interferometer for density meas., 10^{19}-10^{22} m^{-3}, and simple hydrocyanic acid 0.337 mm 8−5922
  interferometric measurement of cryogenic laser fusion target uniformity 8−47158
  ion detection by channel electron multiplier 8−5375
  ion detector, Daly-type, plasma ion energy meas. 8−22570
  laser fusion, image convertor camera optical measurement 8−38549
  laser fusion expts., calorimeters for meas. of ions, X-rays and scatt. radiation 8−16800
  laser radiation scatt. from CW Ar laser, low-temp. plasma diagnostics 8−38536

plasma diagnostic techniques continued
  laser-produced plasmas, spectra simplification by electro-optic gating of radiant emission 8−22561
  Lecher wire interferometer, 30 GHz, ion-acoustic wave meas. 8−5946
  Mach-Zender twin-wave laser interferometer for plasma diagnostics 8−4687
  magnetically shielded sampling technique, for plasma diagnostics in medium-press. magnetoplasma 8−22560
  mass spectrometer-probe diagnostics of non-thermal plasma wall ion energy distrib. 8−9846
  Michelson interferometer with CO$_2$ laser for density meas. *(Russian)* 8−38534
  microwave emission spectra of low temp. plasma, electron vel. distrib. determ. 8−47167
  multichannel HCN laser interferometer for Tokamak plasma diagnostics 8−5928
  multiframe ps holography appl. to high power laser effects in dielectrics 8−26328
  picosecond X-ray chronoscopy 8−38546
  picosecond X-ray spectral studies 8−38547
  pin diode detector array, obs. of X-rays 8−47174
  pitch angle meas. of intense rotating relativistic electron beam 8−1902
  plasma chemistry, diagnostic techniques 8−3338
  plasma column position detector, using segmented photodiode 8−1901
  polychromator based on MDR-2 monochromator 8−5924
  probe current modulation, electron distrib. determ., finite amplitude distortion, instrumental function 8−47168
  probe-tube microphone, press. fluctuation meas. in flowing combustion plasma 8−18443
  radial carrier density profiles, determ. using microwave resonators *(German)* 8−47160
  resonant optical schlieren system for plasma flow studies 8−5940
  RF coil probe, electron density and collision freq. determ. in nonuniform column 8−18446
  ring aperture antenna in plasma, input admittance anal. 8−38542
  rotation speed measurement, in external magnetic field *(German)* 8−42821
  secondary emission, absorber covered graphite Faraday cup, 1.5 MeV proton beam study 8−9864
  solar corona diagnostics with broad-band X-ray imaging systems, physical parameter method 8−49414
  subpicosecond X-ray streak camera, for laser-fusion diagnostics 8−42822
  temperature distributions of powder particles in plasma stream, method and apparatus 8−14210
  temperature structures of astrophysical plasmas, derivation from X-ray spectra, use of a priori information 8−20778
  Thomson 90° scatt. system 8−5947
  Thomson scatt. apparatus, using laser beam, to determine electron temp. and density in plasma 8−34367
  time-resolved X-ray pinhole photography, of compressed laser fusion targets 8−38548
  Tokamak plasma spectroscopy, optical filters appl. 8−26326
  toroidal mirror fabrication for soft X-ray imaging 8−41384
  transient plasma heat fluxes in divertor assembly, meas. by thin-film thermometer 8−18447
  X-ray coded imaging of relativistic electron beam targets 8−47179
  X-ray diagnostics for electron beam fusion programme 8−47181
  X-ray emission from laser produced plasma, diagnostic methods for spatio-temporal obs. *(French)* 8−14209
  X-ray images with submicron resolution, optical simulation of technique 8−34366
  X-ray imaging, conf., Reston, USA (Apr. 1977) 8−45762
  X-ray imaging, for laser fusion programme 8−47173
  X-ray imaging, MOS solid-state detector arrays 8−47180
  X-ray microscopy, coded imaging techniques, of laser fusion plasmas 8−47177
  X-ray pinhole imaging techniques for electron beam fusion 8−47176
  X-ray recording focusing spectrograph for laser plasma 8−1891
  X-ray streak camera, high time resolution, with X-ray microscope *(French)* 8−42823
  Al(XII) and (XIII) reson. line trapping in laser-heated plasma, source distrib. diagnostics 8−42730
  CO$_2$ 1KJ laser system for laser-plasma interaction expts. 8−5502
  H, UV light source, 121.5-121.6 nm *(Russian)* 8−25942
  Kr, UV light source, 121.5-121-6 nm *(Russian)* 8−25942

plasma diagnostics
  see also plasma diagnostic techniques; plasma diagnostics by laser beam; plasma probes
  air, high-current discharge, current-carrying zone investig., induction method *(Russian)* 8−26355
  air, shock heated plasma, nonequilib. submillimetre emission *(Russian)* 8−1869
  arc, DC, transferred, for refractory refining, initiation and performance characts. 8−9866
  arc, high-current, graphite cathode vaporisation, composition and temp. spectral determ. 8−14228
  arc appearance; metal vap. columnar arc instability in mag. fields up to 67 kA 8−9893
  arc discharges, periodic processes, spectral emission characts., vidicon system investig. *(Russian)* 8−9848
  arc roots, high current, vaporisation effect 8−30496
  cluster accelerated by plasma gun, decay 8−30489
  coaxial accelerator, current density distrib. 8−26352
  coaxial plasma source, optical meas. 8−1895
  collisional plasma rotating inside cylindrical annulus, anal. and diagnostics appls. 8−22466
  combustion products, noise temp. meas. using contactless capacitive convertor 8−9830
  combustion-driven implosion, spectroscopic study 8−14189
  conductivity and eqn. of state, exploding Cs wire plasma 8−26323
  conference, inertial confinement fusion, San Diego, USA, (Feb. 1978) 8−46171
  corona, laser-induced plasma, interferometric meas. *(Russian)* 8−1886
  current density in ionised gas in macroscopic field, direct meas. by Stark broadening of H lines *(French)* 8−9839
  current distrib. and voltage in vacuum arc 8−30508
  current sheet, mag. field struct. rearrangement, electron accel., X-ray probe obs. *(Russian)* 8−38530

plasma diagnostics continued
current sheet dynamics in accelerator, interferometry and probe meas. 8−26351
current sheets in staged focus 8−14225
current sheets in staged focus 8−14226
current source duration in laser-produced plasmas 8−1862
density measurement, for plasma in EM trap *(Russian)* 8−5944
density modification in 10^6 W cm^{-2} ablated microballoons, optical diagnostic technique 8−14206
density profile self-steepening in laser plasma, interferometry 8−5938
density-dependent ion lines, excited levels collision relaxation rates calcs. 8−18458
electric fields, in hot cathode discharge double layer, electron beam diagnostics 8−34337
electrical discharge in vacuum, ion emission, mass spectrometric obs. *(French)* 8−1919
electrode vapour conc. meas. from light scatt. in air arc plasma 8−30505
electron and ion energy distribs., laboratory and space plasma comparison 8−5945
electron and ion temps., Thomson scatt., and neutron emission obs., Tokamak discharge 8−18438
electron beam diagnostics by neutron radiation spectra, applied to accelerated electrons in Tokamaks *(Russian)* 8−22555
electron beam energy distrib. in plasma 8−5883
electron beam-plasma interaction, microwave obs. 8−9796
electron concentration, ion current, in relativistic electron beam oscill. diode 8−9861
electron cyclotron emission in ALCATOR Tokamak 8−5935
electron density, from multicharged He-like ion intercomb. lines, in laser plasma 8−9106
electron density, in reson. laser radiation absorption of lasers-generated plasma 8−9805
electron density, TFR Tokamak disruptive instability oscill. struct., mag. probe and X-ray diagnostics 8−22564
electron density and temp. meas. using spectral line density ratios 8−14203
electron density and temp. profiles, Langmuir probe meas. in sputtering DC discharge *(French)* 8−30482
electron energy, continuum X-ray emission obs. of laser beam-target energy deposition 8−22563
electron energy distrib., Druyvesteyn method 8−30481
electron energy spectrum, local meas., X-ray method 8−9842
electron pressure, geological materials in DC arc, determ. by spectrographic manometry 8−16796
electron temperature, O_2-injected TFR Tokamak current plateau, Thomson scatt. 8−22565
electron velocity distribution during Landau damping of slow electrostatic waves 8−9774
electrostatic fluctuation in stochastic ion heating, twin capacitative probes meas. 8−34347
emission from excited metal atoms in cathode region of discharge in air 8−1939
emission spectra, of Hg plasma near photorecomb. threshold, high press. effects *(Russian)* 8−38545
energy partitioning, in magnetoplasma, relativistic electron beam heating 8−38515
fission-fragment-generated plasma, theory of spectroscopic diagnostics 8−34374
fluctuation diagnostics, digital time series anal. techniques 8−5951
focus, collapse phase, luminous front time evolution, spectrosc. obs. 8−42816
focus, heating by TEA CO_2 laser, neutron enhancement *(Japanese)* 8−9808
focus, suprathermal microwave radiation, temporal, spectral and ang. distrib. 8−18450
focused relativistic electron beam discharge into thin target, EUV emission 8−47162
forbidden lines in dense plasma, detectability 8−5856
glow discharge, gas temp. meas. by fluoresc. spectroscopy 8−18467
harmonic generation in Nd:glass laser produced plasmas 8−30480
HF discharge in inert gas, optical diagnostics, bremsstrahlung 8−9871
homogeneity and stability, theta-pinch Pharos device, time-resolved photography 8−34360
impedance meas. at lower hybrid freq. 8−47165
inert gas discharge, spatial mass division in crossed elec.-mag. field *(Russian)* 8−5960
instability meas. by mm wave scatt. in turbulent plasma *(French)* 8−34373
intense relativistic pulsed electron beam appls. in plasma phys. *(Dutch)* 8−30452
ion acoustic test waves in magnetized plasma, meas. by 30 GHz Lecher wire interferometer 8−1903
ion beam, intense neutralised, ballistic focusing obs. 8−9859
ion component studies with monopole mass spectrometer 8−5926
ion confinement time, in pulsed laser-produced plasma 8−38518
ion diode, intense, mag. insulated, ion beam focusing, particle diagnostics 8−9858
ion temperature, spectroscopic meas. in plasma with RF and neutral beam heating 8−5934
ion-acoustic current driven wave in turbulently heated plasma, microwave meas. 8−5937
ion-acoustic dispersion relation, microwave scatt. meas. 8−14215
ion-acoustic instability, time- and freq.-resolved spectra 8−5948
ion-acoustic waves detection using 30 GHz Lecher wire interferometer 8−5946
jet, radiative parameters, temp., electron density *(Russian)* 8−38459
jet, supersonic, vel. meas. using Doppler shift *(French)* 8−14207
jet, thermal and electrical meas. 8−5931
Langmuir turbulence spectrum, optical polarisation meas. *(Russian)* 8−22572
laser energy deposition in planar target, expansion and X-ray emission obs. 8−9810
laser fusion ion temp. meas., neutron time of flight techniques 8−17413
laser irradiated plasma, electron energy profile steepening, polarimetry obs. 8−34349
laser irradiated plasma focus, neutron emission *(Japanese)* 8−38538
laser plasma, backscattered radiation, spectral-time meas. *(Russian)* 8−42812
laser plasma drop, $3\omega_0/2$ harmonic generation, plasma corona local diagnostics *(Russian)* 8−22567
laser plasma focus, interferometry and luminosity meas. 8−47161
laser plasmas, ultrahigh speed diagnosis of corona parameter *(Russian)* 8−1899
laser prod. plasma, emission and spectral absorpt. meas. *(French)* 8−9806
laser produced plasma, CO_2 TEA laser-solid interaction, spectral analysis of emission, charact. parameters determ. *(German)* 8−38516
laser produced plasma, radiation obs. 8−22562
laser produced plasma, radiation press. effects, interferometric diagnostics 8−38540
laser produced plasma from layered target 8−9812
laser radiation, anomalous transmission in overdense plasma 8−38499
laser spark produced shock wave, IR and microwave thermal radiation *(Russian)* 8−38533
laser target, spherical irradiation, expt. data anal. method 8−1904
laser target irradiation in high mag. fields 8−8989
laser-matter interactions, automatic treatment of data *(French)* 8−42830
laser-produced plasma, X-ray bremsstrahlung and fast ion meas. 8−5936
laser-produced plasmas, microwave diagnostics, electron density 8−9845
line-focus plasma, laser produced, coherent far IR radiation 8−42806
low-Z elements, satellite lines in laser produced plasma 8−42802
lower hybrid RF emission, meas. by antenna 8−9852
Lyman-α line broadening, of H and hydrogenic ions in dense plasmas 8−42811
Lyman-α transition, line broadening, ion dynamics effects 8−42801
magnetic field of longitudinal current, meas. using open microwave reson. 8−9844
magnetic flux conservation, test using radially resolving diamag. loop 8−12734
magnetically confined arc, axial density and temp. var. 8−5966
magnetoacoustic wave resonance, generation and detection by single antenna 8−5950
magnetoactive plasma, high-freq. electric effect on atomic spectra 8−9761
metal plasma prod. by exploding wire, X-ray diagnostics 8−5909
MHD convertor, U-25, diagnostics system data processing 8−26339
MHD modes in Tokamaks, X-ray techniques 8−47175
micro-Fresnel zone plates for coded X-ray imaging of laser produced plasmas 8−42814
microwave noise from poloidal field oscills. in Tokamak T-4 *(Russian)* 8−22536
molecular laser processes, mm. and submm. microwave spectroscopy 8−13685
multiply charged ions, X-ray spectra in laser plasmas, 1.5-15 Å 8−13462
Ne, in glass microbubble, laser-imploded, compression, X-ray emission 8−18454
neutral fraction of unmagnetized plasma, 6MKh1S mechanotron meas. of rotation field 8−5925
neutron yield, plasma temp., energy deposition of relativistic electron beam 8−5894
nonuniform column, electron density and collision freq. determ. by RF coil probe 8−18446
parameter determ. by two beams of submillimetre waves *(Russian)* 8−22556
parylene discs, 1.06 μm laser irrad., plasma prod. processes 8−18431
plasma focus, nonthermal processes, neutron spectra 8−42804
plasma focus discharge, elec. characts., rel. to hard radiation pulses, time correls. *(Russian)* 8−38528
plastic targets, anisotropic production of laser-plasma soft X-rays and fast electrons 8−38517
poloidal asymmetry obs., in impurity-ion UV emission, grad B drift 8−26331
polyethylene, laser irrad., mol. emission from unionised gas 8−42777
polyethylene fibre explosion, neutron and energetic ion emission 8−5927
potential perturbation due to grid or probe 8−47166
probe diagnostics of nonstationary plasma, anal. *(Russian)* 8−38535
probe measurements correction in RF plasma 8−26333
proton beam energy and current, collective acceleration in intense relativistic electron beams 8−9864
pulsed discharge plasma, quasistationary stage props., calc. method 8−38560
radial oscillation and electron temp. in toroidal pinch plasma 8−26272
radial oscillations damping in toroidal pinch 8−30476
reactive ion etching RF discharge plasma deceleration filter 8−41370
reflectance of laser-produced plasmas, angle and polarisation depend. 8−18452
refraction in randomly inhomogeneous plasma, diagnostics using geometric-optical approx. calcs. 8−9843
resistivity and heating, high drift vels., particle diagnostics 8−38541
RF discharge-plasma interaction, energy exchanges, magnetoacoustic wave generation 8−30485
RF induction plasma torch, temp., elec. cond., efficiency values from mag. probe meas. 8−42836
RF radiation emission from laser produced plasmas 8−42800
rotating plasma, heating and diagnostics by induced poloidal currents 8−18449
rotation, of theta pinch plasma column, directional probe obs. 8−1877
runaway electrons, X-ray obs. in Tuman-2 Tokamak *(Russian)* 8−38531
self-generated mag. fields in laser prod. plasma 8−34350
self-generated magnetic field in CO_2 laser produced CD_2 target plasma, press. depend. 8−26310
soft X-ray spectrum of hot optically thin plasma, interstellar medium appl. 8−34275
space potential, new method of determ., using electron density and mean electron energy *(Russian)* 8−22557
spatial distribution and species content of laser ablated polystyrene planar target 8−9811
spectral lines, complex level shift 8−26253
Stark effect and four-quantum transitions, very strong stochastic electric fields 8−9760
statistically inhomogeneous plasma, diagnostics by modulated EM wave *(Russian)* 8−38544

plasma diagnostics continued
student experiments on elec. cond. and similarity laws 8−24605
submillimetre background emission from Tokamaks 8−47102
superdense plasma, X-ray emission, plasma diagnosis *(Russian)* 8−30487
temperature distribution, vac. arc plasma, fault current limiter mode 8−9851
temperature fluctuations, turbulent, microwave blackbody spectrum obs. 8−1897
temperature meas. in cross-flow arcs 8−22559
temperature measurement, charge separation and target voltages in laser-produced plasmas 8−5896
Texas Turbulent Torus, energetic ion production, temporal and spatial evolution 8−1855
theta-pinch, azimuthal mag. field, relativistic electron runaway, bremsstrahlung diagnostics *(Russian)* 8−9818
theta-pinch, D_2 fill in Scylla IV-P, plasma parameters and end-loss 8−1880
Tokamak, poloidal field distrib. meas. by far IR polarimetry 8−42810
Tokamak diagnostics, review 8−47163
Tokamak microwave discharges, refraction losses, from measured plasma density profiles 8−22549
Tokamak plasma, direct determ. of electron energy confinement time 8−9834
Tokamak plasma, extreme UV impurity study, radiation power loss 8−42803
Tokamak plasma, radial current distrib. meas. using neutral Li beam 8−30488
Tokamak plasmas, cyclotron radiation, diagnostic tool *(Dutch)* 8−30472
transparency changes of plasma burst in intense optical radiation, direct meas. 8−9807
turbulently heated plasma electron cyclotron radiation, spectral line width collisional broadening 8−34369
UHF radiation from electro beam interaction in VEGA device *(Russian)* 8−38532
UHF radiation from electron beam interaction in PETULA device *(Russian)* 8−38532
vacuum spark, electron density, interferometric meas. 8−5962
Voyager plasma experiment 8−20617
Voyager plasma wave system 8−24432
water, vapour RF discharge, low press., afterglow, spherical plasmoid, optical diagnostics 8−38568
waves detection in turbulent plasma by satellites of forbidden He transitions *(Russian)* 8−18391
whistler wave damping, dipole antenna obs., large magnetoplasma 8−34327
X-ray and fast ion spectra from laser plasma, thermal conduction 8−5899
X-ray and neutron emission from staged plasma focus 8−14220
X-ray and particle energy meas. in laser-plasma interaction 8−42799
X-ray emission, soft, from laser produced plasma 8−14213
X-ray emission characteristics of CO_2 laser produced plasmas 8−9828
X-ray emission from laser compression expts. 8−5905
X-ray emission from plasma focus, anisotropic and collimated 8−26330
X-ray emission from plasma focus in puffed gas 8−14219
X-ray intensity from plasma focus, high energy electrons trajectory 8−42808
X-ray obs. by array of pin diode detectors 8−47174
X-ray output and operating characts. of plasma focus 8−14224
X-ray spectra from exploded-wire plasmas, spatial resolution techniques 8−14188
X-ray spectra of plasma produced by subns laser pulses *(Russian)* 8−9847
Z-pinch, azimuthal mag. field meas. using Faraday rot. 8−9832
Z-pinch, high density, Hβ line spectra 8−18445
Z-pinch, imploding Al liner, soft X-ray spectroscopy 8−14198
Z-pinch, plasma production, streak, X-ray and vis. photographic obs. 8−38522
Al, CO_2 laser produced plasma, fast particle emission 8−42805
Al discharge, hollow cathode with pulse feeding, spectroscopic study 8−34377
Al, evap. by long pulse Nd laser, spectroscopy 8−14201
Al, laser-produced plasma, population inversion between Al^{11+} levels, X-ray lines obs. 8−38539
Al plasma, laser produced, origin of K_α radiation 8−9833
Ar, afterflow stability boundaries, plasma oscillation modes in mag. field 8−38486
Ar afterglow, spectra and microphotograms, dissociative recombinations 8−26365
Ar, discharge, pulsed, neutron species spatial distrib., laser beam diagnostics 8−38543
Ar discharge, recombination coefficient meas. under diffusion-recombination conditions of plasma decay *(Russian)* 8−26324
Ar, in rot. steady state centrifuge, rot. rate and temp. diagnostics *(Russian)* 8−5923
Ar jet, under press., heavy particles temp. meas. *(French)* 8−9841
Ar, low press. discharge afterglow, dissoc. recombination, microwave diagnostics 8−9876
Ar magnetic helical arc electrode, for MHD generator, visible, RF and probe diagnostics 8−9867
Ar plasma, collision-dominated electron relax., heating, at. transitions 8−18373
Ar plasma, electron temp. meas., microwave technique 8−26325
Ar plasma, inductively coupled, excitation transfer between plasma and impurities *(French)* 8−14211
Ar plasma, interferometric study of density and electron conc. behind shock waves 8−1888
Ar plasma jet, emission of electron-neutral atom bremsstrahlung *(French)* 8−26332
Ar, Z-pinch determ. by intrinsic stimulated emission 8−26311
Ar:S, plasma, atomic S lines above first ionisation limit 8−25462
Ar-H_2, elec. breakdown, time and space resolved spectra 8−18470
Ar-He plasma, ion acoustic soliton form., mechanism 8−18457
Ar-N_2 mixtures, DC arc, energy balance of electrons 8−42797
As_2O_3, multiple reactions by single electron impact 8−22037
B III, IV, laser produced plasma, satellite spectra 8−5165
Be II, III, laser produced plasma, satellite spectra 8−5165
Be IV, line broadening and self-absorpt. in laser prod. plasma 8−17615

plasma diagnostics continued
C IV, V, laser produced plasma, satellite spectra 8−5165
C, laser plasma, time resolved electron temp. *(Russian)* 8−22566
C^{5+}, plasma expansion, Balmer spectrum intensity inversion, charge transfer pumping 8−34371
CO-He-O_2, species concentrations in glow discharge and afterglow, mass spectra, laser conditions 8−14241
CO_2 laser discharge, TEA, glow form. and glow-to-arc transitions, high speed camera obs. 8−25846
CO_2-He, species concentrations in glow discharge and afterglow, mass spectra, laser conditions 8−14241
Ce, arc, excitation and ionis. in nonequilib. plasma 8−18461
Cl I, wall-stabilised arc, absolute transition probabilities, 5300-6850 Å 8−9105
Cr, X-ray spectra in Tokamak-10 facility plasma *(Russian)* 8−9837
Cs, atomic excited states population in arc 8−26368
Cs plasma, elec. cond. and eqn. of state, behind reflected shock wave 8−42716
Cs plasma in vacuum diode, pre-discharge, electron impact excitation line emission polarisation 8−47170
Cs-He plasma, steady-state discharge, role of inelastic collisions, spectroscopic diagnostics 8−42709
Cu anode splitting by electron beam in X-ray regime of Z-pinch 8−5932
Cu discharge, hollow cathode in pulse mode, spectral lines and intensities 8−34376
Cu plasma, laser-produced high energy X-ray bremsstrahlung, evidence of reson. absorpt. 8−42776
D, high current pulse discharge investig. *(Russian)* 8−47171
D ion energy spectrum from plasma focus discharge 8−14218
D_2-^{3}He mixture plasma focus, ion temp. 8−5953
F spectral lines, neutral, in shock tube plasma, Stark widths and shifts 8−9117
Fe discharge, hollow cathode in pulse mode, spectral lines and intensities 8−34376
Fe, highly ionised laser prod. plasma, extreme UV line profiles of expansion velocities 8−14199
Fe, laser prod. plasma, study by UV spectroheliography 8−22529
Fe, X-ray spectra in Tokamak-10 facility plasma *(Russian)* 8−9837
H atom density, resonance fluorescence method *(Russian)* 8−9838
H flux to walls of fusion reactor, novel meas. technique 8−29640
H line shape, joint electron and ion influence *(Russian)* 8−9762
H, Lyman-α Stark broadening, dynamic screening effects 8−18386
H pellet-rotating plasma interaction, spectroscopic anal. 8−18455
H, Stark profiles, anisotropy of HF noise, turbulent plasma 8−1896
H Z-pinch plasma, strong optical attenuation, shadowgraph meas. 8−26294
H^- surface ion source, plasma parameters, diagnostics 8−9849
HCN laser processes, mm. and submm. microwave spectroscopy 8−13685
$H_2(D_2)$-Ne-He(Ar) plasma, combustion driven shock tube, H_β central struct., ion mass effect 8−26327
He, afterglow of pulsed discharge, elec. and optical meas. 8−26329
He, cryogenic discharge, interferometer meas. of neutral gas temp. 8−1924
He I neutral line broadening meas. 8−18448
He I satellite line shape, stochastic theory 8−38460
He, in rot. steady state centrifuge, rot. rate and temp. diagnostics *(Russian)* 8−5923
He, plasma, stationary recombining, population inversion inferred from intensity meas. 8−9836
He, quasicontinuous discharge, at high press., spectral obs. *(Russian)* 8−26356
He, ultradense reproducible Z-pinch, for laser-pellet interaction simulation, characterisation 8−30463
He-Cd plasma, in discharge tube, excitation mechanism obs. 8−30479
He-Hg afterglow plasma, time resolved double probe study 8−18444
He-Hg RF discharge, atomic ionis. and excitation, spectral line intensities 8−26334
He-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
He-Ne laser, transition probabilities of Ne spectral lines at 352, 363, 345 and 543 nm 8−25851
Hg positive column, high press., excimer densities and destruction mechanisms 8−5967
Kr I lines from wall-stabilised arc measurements, transition probabilities 8−22569
Li I (2p-4d, 4f, 4p) line broadening in electrolytic plasma *(French)* 8−1892
Li wire, optical meas. of laser detonated shock waves 8−42798
Mo impurity and injected O_2 distribs., TFR Tokamak current plateau, VUV obs. 8−22565
Mo XLI, Mo XL, X-ray emission from vacuum-spark plasma 8−41991
N V, ionis. rate meas. in theta-pinch plasma, VUV obs. 8−26254
N V, VI, laser produced plasma, satellite spectra 8−5165
N_2 discharge, non-Boltzmann vibr. level populations, CARS determ. 8−5968
N_2 discharge plasma, ionic comp., mass spectra meas. *(Russian)* 8−22571
N_2, glow discharge, DC, low-press., translational/rot. temps. relation 8−38454
N_2, microwave discharge at high press., vibr. excitation *(French)* 8−14239
N_2, plasma created by electron beam, spectral composition *(Russian)* 8−30453
N_2, streamer discharge, spatial and temporal spectroscopy 8−5971
N_2, translational energy transfer rate, after pulsed discharge, interferometric obs. *(Russian)* 8−26322
$N_2(N_2+Ar)$ pulse excited microwave discharge diagnostics at moderate press. 8−9873
N_2O-He, species concentrations in glow discharge and afterglow, mass spectra, laser conditions 8−14241
Ne, 4 MHz discharge, electron energy distrib., probe diagnostics 8−38566
Ne discharge, spectral line intensity radial distrib. 8−5930
Ne, glow discharge, ionisation waves, regular and irregular, correlation meas. 8−1917
Ne, low press. discharge afterglow, dissoc. recombination, microwave diagnostics 8−9876
Ne plasma, generated by 200 MeV protons, electron density and electron temp. 8−22568

plasma diagnostics continued
Ne, positive column, radial distrib. of excited atoms *(French)* 8−14237
Ne-Hg RF discharge, atomic ionis. and excitation, spectral line intensities 8−26334
Ne-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
O, impurity radiation, metastable transitions in Tokamak, modified coronal model 8−26255
O VI, ionis. rate meas. in theta-pinch plasma, VUV obs. 8−26254
O VII, laser produced plasma, satellite spectra 8−5165
OH radicals in glow discharge, rot. levels distrib., temp. meas. 8−47169
OH($^2\Pi$), rot and translational temps. in gas discharge 8−5243
Pb, mass ejection from shocked surface during fusion 8−47186
Si III, IV, Stark line broadening in pulsed arc, plasma diagnostics 8−944
Sn I, Sn II, wall-stabilised arc, absolute transition probabilities, 5300-6850 Å 8−9105
Sr, atoms and ions in discharge, temp. and conc. determ, by spectral line shapes *(Russian)* 8−14214
Ta XLVI(XLVII), 3d^k-3d^{k-1}npnf transitions in laser plasma 8−9108
Ti, laser prod. plasma, study by UV spectroheliography 8−22529
UF_6, plasma expts. related to plasma core reactors 8−8977
W radiation from Tokamak-produced plasmas 8−9835
W-glass discs, 1.06 μm laser irrad., plasma prod. processes 8−18431
Xe, ns. discharge, energy balance, optical meas. 8−1935
Xe, plasma, optical props., wall erosion products effects calcs. 8−47164
Xe, pulse gas discharge, high-intensity, energy storage and temp. in channel 8−1926

plasma diagnostics by laser beam
absorption coeff. spatial distrib., laser scanning method *(Russian)* 8−22551
anomalous transport in turbulent electron heating 8−14216
arc, density and temp. meas. 8−1937
chemically reacting non-LTE plasma, elementary reactions 8−3337
combustion product plasma, electron conc. and mobility determ. by HCN laser submillimetric interferometry 8−1889
current density, local, mag. probe and Thomson scatt. meas., using Spitzer-Harm distrib. 8−18451
current sheet formation, in Ar plasma, cineholographic obs. *(Russian)* 8−38529
density distribution meas., using Michelson interferometer *(Japanese)* 8−42820
density fluctuations meas., spatial distrib. 8−34372
electron and ion temps., Thomson scatt., and neutron emission obs., Tokamak discharge 8−18438
electron density, in O_2-injected TFR Tokamak current plateau interferometric diagnostics 8−22565
electron density distrib. meas. *(Russian)* 8−22550
electron density in hollow cathode discharge, laser heterodyne meas. 8−30483
electron temperature and density of laser prod. plasma 8−30458
electron temperature profile meas. by Thomson scatt. with single laser shot *(French)* 8−9840
electron vel. distrib. in reflex discharge, Thomson scatt. meas. 8−34368
energy partitioning, in magnetoplasma, relativistic electron beam heating 8−38515
enhanced laser-plasma backscatt. due to prepulse radiation 8−18428
far IR 2-D plasma interferometry evaporographic and pyroelec. recording 8−5929
far IR interferometry, for plasma density measurement 8−47183
far IR lasers appl. and detection systems in controlled fusion research 8−47182
far IR systems, for plasma studies 8−47185
Heliotron-D, low freq. shear Alfven wave heating, diagnostics 8−1858
HF discharge diagnostics with Fabry-Perot interferometer, apparatus function 8−9872
high energy CO_2-laser pulse, interaction with liquid and solid targets, optical investigations 8−42829
impurity concentration meas. from laser fluoresc. lines *(Russian)* 8−1887
injector, plasma parameter determ. by laser light scatt. *(Russian)* 8−22573
interferometer for density meas., 10^{19}-10^{22} m^{-3}, and simple hydrocyanic acid 0.337 mm 8−5922
ion acoustic wave-CO_2 light scatt. 8−34325
ion density fluctuations, CO_2 laser heated plasma, Thomson scatt. meas. 8−42807
ion-acoustic wave excitation and interference by laser beam 8−34326
laser fusion, shadowgraph and interferometry experiments, with ten-picosecond light source 8−42824
laser irradiated plasma, electron energy profile steepening, polarimetry obs. 8−34349
laser irradiated solid target, picosecond microphotography 8−42828
laser plasma, high speed multiframe interferometry 8−1905
laser plasma focus, interferometry and luminosity meas. 8−47161
laser produced plasma, ultraviolet probing with picosecond pulses 8−42827
laser radiation parametric decay into plasma waves, Thomson scatt. meas. 8−30484
laser scattering from large Tokamak plasmas, signal-to-noise scaling 8−42809
laser-produced plasma, application of synchronised ultrashort Nd:glass laser pulse 8−42825
Mach-Zender twin-wave laser interferometer for plasma diagnostics 8−4687
Michelson interferometer with CO_2 laser for density meas. *(Russian)* 8−38534
Michelson interferometry diagnostics 8−1890
miniature exploding foil, pulsed laser stereophotography 8−41364
multichannel HCN laser interferometer for Tokamak plasma diagnostics 8−5928
multiframe ps holography appl. to high power laser effects in dielectrics 8−26328
optically-pumped submillimetre oscillator, for plasma diagnostics 8−47184
particle density in high density pulsed plasmas, laser interferometric determ. *(German)* 8−18442

plasma diagnostics by laser beam continued
rapid events, photographic study by picosecond techniques 8−42826
reflection losses from plane target, optical calorimetry 8−9809
resonant optical schlieren system for plasma flow studies 8−5940
scattering of CW Ar laser, radiation, low-temp. plasma diagnostics 8−38536
solid target-intense CO_2 laser beam nonlinear interaction, radiation obs. 8−22562
stroboscopic method for picosecond diagnostics of rapid processes 8−47159
temperature and electron density, determ. by optical density comparisons, at two freq. *(Russian)* 8−22554
temperature meas. on laser heating of solid surface *(Russian)* 8−47172
thermal conductivity, laser-heated plasma, heat-flux limitation, laser-beam scatt. diagnostics 8−18453
theta-pinch, D_2 fill in Scylla IV-P, plasma parameters and end-loss 8−1880
Thomson 90° scatt. system 8−5947
Thomson scatt. apparatus, using laser beam, to determine electron temp. and density in plasma 8−34367
Tokamak magnetic field meas. using laser light scattering 8−34370
Tokomak plasmas, new developments in laser diagnostics 8−22558
Ar, discharge, pulsed, neutron species spatial distrib., laser beam diagnostics 8−38543
CO_2 1KJ laser system for laser-plasma interaction expts. 8−5502

plasma diodes
double cylindrical, production of radially convergent proton beam 8−9856
electric arc plasmatron for low-press. supersonic plasma jet prod. *(Russian)* 8−14221
electron accelerator, electron beam power increase by inductive accumulator 8−33339
electron flow stability *(Russian)* 8−1906
ion diode, intense, mag. insulated, design review 8−9857
ion diode, intense, mag. insulated, ion beam focusing, particle diagnostics 8−9858
Multiduoplasmatron, Multiduopigatron, ion *(French)* 8−26348
pinched electron beam diode, ballistic focusing of intense neutralised ion beam 8−9859
plasmatron, electric arc fluctuation with vortical arc stabilisation *(Russian)* 8−30493
plasmatron, industrial *(Russian)* 8−30492
plasmotron, thermal and elec. characts., depend. on channel radius and flow 8−1910
relativistic electron beam, kinetic energy conversion to EM energy 8−1915
relativistic electron beam diode, annular cathode, pinching rot. and reflexing in axial mag. field 8−9860
relativistic electron beam focusing using axial loads 8−18464
relativistic electron beam oscill. diode, ion beam production 8−9861
thermal plasma engineering in metallurgy, inorganic materials technology 8−3070
transformer plasmatron design *(Russian)* 8−14222
two-stream plasmatron for treating dispersed materials *(Russian)* 8−22575
Cs diode with W emitter, current oscills. at low emitter temp. *(Russian)* 8−5952
Cs plasma in vacuum diode, pre-discharge, electron impact excitation line emission polarisation 8−47170

plasma filled waveguides
beam-plasma system in waveguide, EM modes excitation 8−1844
Cerenkov instabilities spectra, of relativistic electron beam, in bounded anisotropic plasma *(Russian)* 8−38506
collision freq. effect on parallel plane waveguide 8−14176
cyclotron maser, high-current and plasma filled, theory 8−17890
ion acoustic wave, excited by EM rad. press. 8−26298
open plane periodic waveguide, reson. emission of magnetised plasma 8−26299
potential oscillations excitation with electron beams 8−30419
relativistic electron beam injection into waveguide, charge and current neutralisation *(Russian)* 8−26301
relativistic electron beam interaction 8−5879
relativistic electron beam interaction in bounded plasma *(Russian)* 8−26300

plasma flow
see also plasma focus; plasma magnetohydrodynamics
arc plasma flow-cold electrode gap, electric breakdown *(Russian)* 8−34280
Cerenkov instability of nonuniform flows *(Russian)* 8−26263
differential ion flux vector meas. technique 8−18459
discharge, flow patterns, rot. forces, numerical anal. 8−34380
electrostatic energy analyser, data interpretation 8−42813
electrostatic stagnation point probes in flowing plasma, Knudsen no. effect 8−1893
expansion of exploding plasmas, multiple-bounce and snowplough models 8−34281
focusing in axially symmetric mag. field *(Russian)* 8−1809
high current arc, turbulence 8−47197
ionosphere, simulation of satellite flight using synthesised plasmas *(French)* 8−16269
jet, supersonic, vel. meas. using Doppler shift *(French)* 8−14207
laser irradiated plasmas, flow effects on density profiles 8−18429
laser plasma, Langmuir probe meas. of parameters and expsn. 8−18456
laser plasma expansion and rethermalisation in uniform mag. field 8−30458
laser produced plasma, extreme UV line profiles of expansion profiles 8−14199
magnetic field formation, by hydrodynamic motion or ion beam deceleration *(Russian)* 8−38464
MHD conversion channel, anal. by finite difference method 8−22470
multi-component plasma dynamics in coaxial accelerator *(Russian)* 8−22576
multispecies flows, transport eqns. mathematical struct. 8−47084
nonneutral plasma expansion 8−9766
parametric instability stabilisation in nonstationary plasma *(Russian)* 8−1831
rarefied electron-ion plasma flow around point charge, particle distrib. function and density 8−26256

plasma flow continued
- relativistic streaming plasma, generalised Ohm's Law, pulsar magnetosphere relevance 8−9823
- resonant optical schlieren system for plasma flow studies 8−5940
- rotating plasma, spatial distrib. derivation, ionic components in reson. ionic cyclotron instability *(Russian)* 8−47117
- rotation, of theta pinch plasma column, directional probe obs. 8−1877
- rotation speed measurement, in external magnetic field *(German)* 8−42821
- self-excited cumulative flow, compression dynamics and heating *(Russian)* 8−22469
- self-gravitating rotating plasma, gyroviscosity effects 8−5860
- shear flow in mag. field, stability 8−26197
- solar atmosphere, plasma motion accompanying force-free mag. fields evolution 8−12176
- stability in axial mag. field *(Russian)* 8−26258
- steady-state conditions in transverse mag. field, shock waves *(Russian)* 8−9765
- subsonic flow in MHD channel, acoustic stability 8−9764
- subsonic flows, in closed field lines regions of coronal-interplanetary space 8−28624
- Ar boundary layer electrostatic probe meas. *(Japanese)* 8−5933
- Ar, laser-initiated plasma, gasdynamic instabilities and convective flow parameters 8−22525
- Ar-Cs plasma stream, electrodynamic braking with strong MHD interaction 8−9763
- He, gas discharge flow, contracted strata rel. to turbulence 8−1923
- N_2 high intensity arc anode region, temp., current density, flow field, numerical anal. 8−9827

plasma focus
- collapse phase, luminous front time evolution, spectrosc. obs. 8−42816
- compression phase focus current, mag. probe meas. 8−5939
- current sheets in staged focus 8−14225
- current sheets in staged focus 8−14226
- dense plasma focus devices matching with fission reactors 8−37436
- development, model, neutron radiation *(Russian)* 8−22519
- discharge, elec. characts., rel. to hard radiation pulses, time correls. *(Russian)* 8−38528
- filament formation, proposed mechanism 8−14227
- formation in axially symmetric mag. field *(Russian)* 8−1809
- heating by TEA CO_2 laser, neutron enhancement *(Japanese)* 8−9808
- laser plasma focus, interferometry and luminosity meas. 8−47161
- laser produced line-focus plasma, coherent far IR radiation 8−42806
- MHD 2D calcs. 8−9767
- MHD 2D calcs. 8−9768
- nonthermal processes, neutron spectra 8−42804
- plasma gun behaviour, contraction at electrode end, and neutron radiation 8−30490
- suprathermal microwave radiation, temporal, spectral and ang. distrib. 8−18450
- X-ray and neutron emission from staged plasma focus 8−14220
- X-ray emission from plasma focus, anisotropic and collimated 8−26330
- X-ray emission from plasma focus in puffed gas 8−14219
- X-ray intensity from plasma focus, high energy electrons trajectory 8−42808
- X-ray output, operating characts. 8−14224
- D ion energy spectrum from plasma focus discharge 8−14218
- D_2-^{3}He mixture, neutron yield ratios, ion temp. 8−5953

plasma generation *see plasma production*

plasma guns
- coaxial, accelerated plasma cluster decay 8−30489
- coaxial, critical ionis. vel., dynamics 8−30494
- plasma focusing, gun behaviour 8−30490

plasma heating
- *see also plasma focus; plasma production and heating by laser beam*
- air, shock heated plasma, nonequilib. submillimetre emission *(Russian)* 8−1869
- Alfven wave, shear, low freq., heating in Heliotron-D, diagnostics 8−1858
- Alfven wave heating, plasma resistive effects 8−1857
- Alfven wave heating in Proto-Cleo stellarator 8−9802
- beam-plasma interaction, high current electron beam trapping and ion heating 8−9795
- charged particle transport, energy deposition, in hot plasma, moment method calc. 8−22458
- cold electron plasma waves, finite extent, reson. decay, fusion appls. 8−38485
- cross-field heating of ions, mechanism 8−1856
- cyclotron heating in short adiabatic traps *(Russian)* 8−5890
- duopigatron ion source, extraction electrode, hole geometry optimisation 8−32921
- electron acceleration during reson. absorpt. 8−14184
- electron beam, relativistic, magnetoplasma heating, anomalously fast electron-ion energy transfer 8−38515
- electron beam interaction, dispersion characts. modification 8−30450
- electron cyclotron heating and wave trajectory in toroidal plasmas 8−47137
- electron Landau damping of lower hybrid waves 8−42741
- electron plasma waves, sum-freq. excitation, energy transfer efficiency 8−38496
- electron tubes, power capabilities *(French)* 8−9801
- electron wave coupling and propag. using phased waveguide arrays, heating appl. 8−5863
- electrostatic wave absorption by Landau damping at low power levels 8−9774
- EM field, electron energy spectrum control 8−47135
- EM wave heating at parametric cyclotron resonance 8−18425
- energy exchange anal., neutral beam injection, Ohmic heating, and turbulent plasma 8−5895
- explosion compression profiled via nonhomogeneous external layer 8−22534
- fast ion Fokker-Planck code FIFPC 8−34342
- focus, 2D MHD calcs. 8−9767
- fusion reactor lower hybrid heating, nonuniform density, particle simulation model 8−14185
- high density plasma, thermonuclear reaction wave, propag. stages, computer simulation 8−742
- impurity diffusion and heat transfer, in neoclassical regime, neutral injection effects *(Russian)* 8−26248

plasma heating continued
- intense relativistic pulsed electron beam appls. in plasma phys. *(Dutch)* 8−30452
- ion beam, cross-field injection, propag. and energy deposition, heating appl. 8−5881
- ion heating and fine struct. of potential accompanying magnetic piston-plasma interaction *(Russian)* 8−9798
- ion heating by injected ion beam 8−34335
- ion heating by injected ion beam 8−34336
- ion temperature, spectroscopic meas. in plasma with RF and neutral beam heating 8−5934
- ion-cyclotron and ion-ion hybrid reson. heating 8−22523
- Joule heating and Lorentz force effects in gravity waves generated from auroral electrojet 8−28393
- Joule heating effect on plasma heat transfer 8−38513
- linear wave props., parametric decay, heating 8−42758
- lower hybrid heating, nonlinear pump wave absorption, Tokamak appls. 8−34344
- lower hybrid heating of toroidally confined plasma, transport, theory 8−42723
- lower hybrid RF heating, parametric oscillations 8−30432
- magnetic reconnection, plasma accel., heating and shock form. 8−40773
- magnetosonic waves in presence of lower hybrid turbulence and heating 8−26281
- melting furnace, for steel industry, development in GDR *(German)* 8−22522
- microwave field power transfer efficiency under electron cyclotron reson. condition 8−9789
- microwave heating, toroidal mag. plasma, direct current generation 8−34271
- mirror trapped ions under instability around ion cyclotron frequency, enhanced heating 8−5892
- modulation instability in magnetised plasma waves nonlinear development during heating *(Russian)* 8−47118
- neutral beam system for Princeton Large Torus 8−9019
- non-stochastic heating by electrostatic waves 8−47136
- nonlinear conversion, EM radiation to ion-acoustic waves, near plasma reson. *(Russian)* 8−5859
- nonlinear dissipation, effect on heating under strong Langmuir turbulence conditions *(Russian)* 8−34346
- Ohmic, in stellarator fields, review 8−30467
- ohmic heating in magnetic bottle, mag. field aligned currents 8−18426
- ohmic heating to ignite fusion in stellarator 8−8978
- optical phonons heating, stimulated combinational scattering, nonlinear effects *(Russian)* 8−34343
- parametric instabilities, effect of finite-bandwidth pump 8−22495
- reflex discharge, device for generation, confinement and plasma heating *(Rumanian)* 8−47151
- relativistic electron beam, energy deposition in plane solid low Z target 8−5894
- relativistic electron beam, scattering by mag. field errors and beam-induced waves 8−38514
- relativistic electron beam, short pulsewidth, plasma heating, microwave emission 8−5884
- relativistic electron beam heating, secondary parametric instabilities 8−26307
- relativistic electron beam induced fusion *(Japanese)* 8−1859
- relativistic electron beam interaction, relevance to space shuttle expts. 8−9796
- RF discharge-plasma interaction, energy exchanges, magnetoacoustic wave generation 8−30485
- RF heated Tokamak plasma, waveguide array excited lower hybrid fields 8−42773
- RF heating, limitation of RF elec. field by partially ionised blanket 8−42774
- rotating plasma, heating and diagnostics by induced poloidal currents 8−18449
- self-excited cumulative flow, compression dynamics and heating *(Russian)* 8−22469
- stochastic ion heating, ion acoustic wave fluctuations obs., correlation time 8−34347
- strong Langmuir turbulence, soliton flash, turbulent ion heating and relax. oscills. 8−1834
- superdense plasma, X-ray emission, plasma diagnosis *(Russian)* 8−30487
- surface EM wave, propag. allowing for electron heating *(Russian)* 8−34321
- Texas Turbulent Torus, energetic ion production, temporal and spatial evolution 8−1855
- theta pinch, reversed-field, formation and adiabatic compression in imploding liners 8−30465
- theta-pinch, with fast rising mag. fields 8−5891
- Tokamak, ion heating by transit time mag-pumping, exptl. evidence 8−5893
- Tokamak apparatus for turbulent heating of plasma *(Japanese)* 8−1914
- turbulence, current-driven 8−9803
- turbulent, anomalous transport 8−14216
- turbulent, ion-acoustic dispersion relation meas. 8−14215
- turbulent, resistivity enhancement by LF self-modulation of electron plasma modes 8−9759
- turbulent resistivity, particle diagnostics 8−38541
- turbulently heated plasma, current driven ion-acoustic wave 8−5937
- turbulently heated plasma electron cyclotron radiation, spectral line width collisional broadening 8−34369
- two-stage ion heating obtained in rapid theta-compression expt. 8−22520
- two-stage ion heating obtained in rapid theta-compression expt. 8−22521
- Z-pinch, high current discharge in Xe, heating efficiency 8−47152
- Ar plasma, collision-dominated electron relax., heating, at. transitions 8−18373
- H_2, ohmic heating, ionization meas., axial discharge 8−38511

plasma impurities
- *see also plasma-wall interactions*
- collision-dominated regime, transport props. 8−5850
- combustion product plasma, electron conc. and mobility determ. by HCN laser submillimetric interferometry 8−1889
- concentration meas. from laser fluoresc. lines *(Russian)* 8−1887

plasma impurities continued
diffusion eqn., with ionisation and recombination source terms 8−30409
diffusion in Pfirsch-Schluter regime *(Russian)* 8−26246
discharge cathode sheath, weakly ionised impurities effect *(Russian)* 8−22582
electron dissociative attachment of mol. plasma in crossed electric and mag. fields 8−5847
fusion plasma, Lawson criterion for impurity losses, energy balance eq. *(Korean)* 8−17414
high temperature plasma, impurity ionis. equilib., radiative cooling 8−42712
laser plasma, two component impurities *(Russian)* 8−22527
powder particles in plasma stream, temp. distribs. meas. method and apparatus 8−14210
production during plasma-fusion reactor wall interaction *(Russian)* 8−25325
radiation from impurities in Tokamak or mag. mirror reactor plasmas 8−5857
surface contamination of EM trap, effect on plasma density 8−9822
Tokamak, heavy-impurity re-cycling and power loss at limiter 8−22543
Tokamak, metal impurities due to arcing 8−42787
Tokamak, Pfirsch-Schluter friction on H^+ 8−34272
Tokamak fusion reactors, model of impurity control techniques 8−17428
Tokamak plasma, extreme UV impurity study, radiation power loss 8−42803
Tokamak plasma, light-impurity-free plasma, Au-shell surface and Ti gettered burial chamber 8−42786
toroidal magnetic system, impurities, cleaning methods 8−22546
transport coeffs., neoclassical, for ion and impurity species 8−14137
UV emission poloidal asymmetry obs., grad B drift 8−26331
Ar plasma, inductively coupled, excitation transfer between plasma and impurities *(French)* 8−14211
Au, impurity radiation loss effects 8−22465
Cr, X-ray spectra in Tokamak-10 facility plasma *(Russian)* 8−9837
D plasma, high current pulse discharge investig. *(Russian)* 8−47171
Fe, impurity atoms in hot plasma, radiation energy loss 8−18441
Fe, impurity radiation loss effects 8−22465
Fe, X-ray spectra in Tokamak-10 facility plasma *(Russian)* 8−9837
Mo, effect of O_2 injection in TFR Tokamak current plateau 8−22565
Mo, impurity radiation loss effects 8−22465
N V, ionis. rate meas. in theta-pinch plasma, VUV obs. 8−26254
N_2-Cu thermal plasma, effect of Cs on intensity of spectral lines, quantitative spectral anal. appl. *(German)* 8−30417
O, impurity radiation, metastable transitions in Tokamak, modified coronal model 8−26255
O, impurity radiation loss effects 8−22465
O trapping and removal, Microtor Tokamak, low-temp. H plasma 8−22541
O VI, ionis. rate meas. in theta-pinch plasma, VUV obs. 8−26254
O^++H, cold dense H plasma, charge exchange, impurity losses, Monte Carlo simulation 8−34260
Pb particles, evaporation in arc plasma, integral eqn. method calcs. 8−1942
Si, impurity atoms in hot plasma, radiation energy loss 8−18441
W, impurity radiation loss effects 8−22465
W radiation from Tokamak-produced plasmas 8−9835

plasma in solids *see solid-state plasma*

plasma instability
see also plasma oscillations
ω_{ci} instability, suppression by electron beam injection in mirror confined plasma 8−47114
ablating fluid, model of Rayleigh-Taylor stability 8−34303
absorptive instabilities in parametric back-scatt. of light 8−22510
acoustic stability of subsonic flow in MHD channel 8−9764
air, non-self-sustaining discharge, ionisation instabilities *(Russian)* 8−26268
Alfven instability stabilisation in non-circ. cross section of Tokamak *(Russian)* 8−26260
Alfven waves, excitation of convective cells in plasma *(Russian)* 8−47097
Alfven waves, finite amplitude circularly polarised, instability 8−28502
Alfven waves, ion beam effect on stability *(Russian)* 8−38468
anomalous transport effects in magnetically confined plasma columns 8−42725
arc, cylindrically symmetric, atm. press., steady-state stability model 8−38561
ball lightning, quantum mech. theory *(German)* 8−16082
ballooning instabilities in toroidally linked mirror systems 8−22542
ballooning mode topology 8−5917
ballooning modes in Tokamak with finite shear 8−5918
beam propagation, turbulent nonlinear stabilisation, simulation 8−18422
beam-plasma system, electron cyclotron instability, nonlinear development, lower hybrid oscill. effects 8−30437
beam-plasma system, electrostatic wave energy, weakly explosive instability 8−18397
beam-plasma system, instability *(Russian)* 8−1847
beam-plasma system, reactive medium instability of space charge wave of ion beam 8−18421
bremsstrahlung instability of relativistic electrons *(Russian)* 8−47103
Cerenkov instabilities spectra, of relativistic electron beam, in bounded anisotropic plasma *(Russian)* 8−38506
Cerenkov instability of nonuniform flows *(Russian)* 8−26263
cold electron plasma waves, finite extent, reson. decay, fusion appls. 8−38485
cold plasma, density short wave perturbation, elastic electron-atom collision 8−47119
convective, electron waves nonlinear propag. 8−1825
counter streaming electron beam instability, stabilisation 8−1849
counter-streaming electron beams in stationary background, longitudinal mode instability 8−26273
coupled Langmuir and ion-acoustic solitary waves, theory of two-dimensional stability 8−38476
cross field instability in equatorial electrojet over Africa, multifreq. HF radar studies 8−36370
current interruption mechanism in collisionless plasma 8−42721

plasma instability continued
cyclotron, Alfven waves self-modulation in magnetosphere *(Russian)* 8−40765
cyclotron decay instability saturation 8−26278
cyclotron instability, rel. to magnetosphere VLF noise intensity modulation by MHD oscills. 8−45139
cyclotron instability in solar corona, rel. to radio bursts of drifting pairs type 8−24502
discharge, HF, stability under strong skin effect *(Russian)* 8−14242
discharge in crossed E and H fields, low-freq. instability 8−18475
discharge positive column, instability, of ionic component, amplification factor, dispersion eqn. 8−14232
disruptive, low freq. oscills. in TFR Tokamak 8−22564
dissipative parametric instabilities, in a strongly ionized plasma *(Russian)* 8−30422
dissipative trapped electron instability dispersion relation, ion-ion collisions in Tokamaks 8−34290
dissipative trapped ion instability and anomalous transport 8−22483
dissipative trapped particle instability, quasi-linear and nonlinear theory 8−26277
drift, collisional instability, mag. shear stabilisation 8−18412
drift, stabilisation by RF electric fields at lower hybrid freq. 8−9784
'drift' thermonuclear instabilities in Tokamak reactor *(Russian)* 8−25326
drift current-driven in self-induced and external mag. shear field 8−18411
drift cyclotron instability, nonlinear dynamics 8−30433
drift cyclotron loss cone instability, identification, suppression by RF field 8−18394
drift cyclotron loss cone mode stabilisation, by l.f. density fluctuations 8−47116
drift instabilities, collisionless, theory and numerical simulation 8−47106
drift mode instability, plasma-neutral gas interaction effects 8−18403
drift wave in sheared mag. field, stable eigenvalues 8−38484
drift wave plasma instability, rel. to small-scale ionospheric irregularities assoc. with subtrough density gradients 8−40753
drift waves in turbulent plasma 8−1830
drift-cyclotron instability, feedback stabilisation, appl. to polar cusp plasma 8−7838
E×B drift instability, in nonuniform elec. field, particle aspect anal. 8−18407
EBT, neoclassical operating points, stability anal., sign of self consistent radial ambipolar field 8−30425
electron and ion beam instability in plasma-beam interaction 8−5888
electron beam runaway instability in a Tokamak, kinetic theory 8−30427
electron beam-plasma instability, orbit perturbation theory 8−5885
electron beams, counterstreaming, self-consistent computation of explosive instability 8−22494
electron cyclotron harmonic waves excited in helical electron beam-plasma system 8−1848
electron dissociative attachment of mol. plasma in crossed electric and mag. fields 8−5847
electron plasma wave, finite amplitude, nonlinear behaviour, sideband instability, electron distrib. function 8−38480
electron tearing mode instability in collisional plasma *(Russian)* 8−22477
electron trapping by plasma waves *(Russian)* 8−22474
electron-ion instability, standing oscills. form. in counterstreaming ion beam plasma device 8−26305
electrostatic, in anti-loss-cone plasma 8−34286
electrostatic beam-plasma instability, axial wave electric field 8−5883
electrostatic flute mode instability in magnetosphere, rel. to turbulent generation of electrostatic fields 8−28439
electrostatic instabilities in magnetosphere, rel. to electron accel. in auroral arcs array 8−36357
electrostatic ion cyclotron wave, nonlinear propag. and modulational instability 8−1823
electrostatic ion-cyclotron instability, EM effects 8−22488
electrostatically unstable heat flow in solar flares, and its consequences 8−20804
EM cyclotron instability in hot plasma 8−34294
EM drift waves, nonlinear instability threshold amplitude 8−34305
EM instabilities, $k_\| B_0$, second order theory 8−38483
EM instabilities in plasma with anisotropic press. *(Russian)* 8−22503
EM instability excitation in beam-plasma system 8−30451
EM instability in counterstreaming plasmas in mag. field 8−22508
EM instability in substorm mode saturation by mag. trapping 8−24412
EM instability threshold for mag. neutral sheet 8−38500
EM instability threshold in mag. neutral sheet 8−14160
EM ion-cyclotron instability, EM particle simulation codes 8−1883
EM ion-cyclotron instability, nonlinear aspects 8−5870
EM ion-cyclotron instability vs. electrostatic ion-cyclotron instability 8−22486
EM wave decay instability in magnetoactive plasma *(Russian)* 8−14175
EM wave decay into two plasmons *(Russian)* 8−26290
exploding wire discharge, thermal instability of elec. cond. in metal vap. 8−1868
explosive electrostatic wave instability in nonlinear medium 8−42757
F-region, electron-ion collisions effects 8−45097
fast charged particle beam density effect on stopping in matter 8−14180
filamentation instability growth, EM wave propag. 8−1841
fire-hose, dynamic stabilisation by magneto-acoustic wave 8−42750
flame, plasma, with rectangular cross section, prod. by nozzle *(Japanese)* 8−47108
fluctuation diagnostics, digital time series anal. techniques 8−5951
focus, heating by TEA CO_2 laser, neutron enhancement *(Japanese)* 8−9808
focus, suprathermal microwave radiation, temporal, spectral and ang. distrib. 8−18450
force-free magnetic fields in degenerate stars, stability 8−49425
fusion systems, solenoidal, instability-driven anomalous transport, review 8−22460
glow discharge, sticking instability *(Russian)* 8−38559
gravitational, Larmor radius effects 8−1826
heat instability in mol. glow discharge, mol. relax. vel. const. determ. *(Russian)* 8−5959
helical instability in Tokamak, mag. shaping effect 8−42781

plasma instability continued
HF excited instabilities in ionosphere 8−45130
HF oscillations *(Russian)* 8−18410
HF-induced plasma instabilities in ionosphere, effect on electron temps. 8−40756
high frequency oscillations in bounded thermally produced plasma 8−38481
hydrodynamic, in laser-driven ablative implosion 8−5900
hydromagnetic stability of Tokamak plasma 8−30428
impurity drift instability of dissipative type 8−1822
inhomogeneous plasma, parametric trapping of EM waves *(Russian)* 8−9780
inhomogeneous plasma, relativistic electron beam propagation effects 8−9797
instability meas. by mm wave scatt. in turbulent plasma *(French)* 8−34373
ion acoustic instability in solar corona, nonlinear saturation rel. to coronal heating 8−4181
ion beam-plasma system, absolute instabilities of electrostatic ion cyclotron waves 8−9793
ion cyclotron waves, parametric excitation in plasma containing two types of ions 8−30440
ion resonance instability, nonneutral plasma column, finite ion Larmor radius effects 8−38482
ion resonance instability, strong self-elec. field influence, nonneutral column 8−34301
ion surface waves stimulated by vol. plasma waves, parametric interaction 8−42751
ion-acoustic, in presence of HF oscills. 8−18398
ion-acoustic, time- and freq.-resolved spectra 8−5948
ion-acoustic cross-field current-driven instability 8−14144
ion-acoustic standing wave instability, electron current driven 8−42742
ion-acoustic turbulence generated anomalous resistivity, collision freq.-turbulence spectrum relation 8−14205
ion-acoustic turbulence spectra 8−14145
ion-acoustic wave, modulational instability in turbulent phonon field 8−18395
ion-acoustic wave, parametric decay imstability caused by finiteness of pump wave amplitude 8−22482
ion-cyclotron instability, parametric depend., beam injection, Tokamak stability 8−47110
ion-ion two stream instability, quasi-neutral particle simulation model 8−47157
ionisational instabilities of EM wave in homogeneous high-freq. discharge *(Russian)* 8−34382
ionising instability of laser heating plasma *(Russian)* 8−1815
ionosphere, equatorial spread F, nonlinear theory of collisional Rayleigh-Taylor instability 8−32270
jet, hydromagnetic stability 8−1827
kink, current disruption *(Russian)* 8−1819
kink mode stability regime in toroidal plasma, wall stabilisation 8−42788
Langmuir oscillations, interactions in weakly ionised high-density plasma, beam instability *(Russian)* 8−26271
Langmuir turbulence, stationary 8−14164
Langmuir wave collapse in mag. field, instability-caused cavity *(Russian)* 8−1817
Langmuir waves, obliquely modulated, stability in collisional plasmas 8−22480
Langmuir-wave modulation instability in electron beam self-induced transparency 8−34341
laser imploded spherical targets, stability 8−5906
laser irradiated plasma focus, neutron emission *(Japanese)* 8−38538
laser plasma, critical surface filamentation and parametric instability 8−47140
laser-pellet irradiation, two-plasmon decay instability, soliton form. role 8−1842
linear effects of wave propag. in plasmas, review 8−14149
linear wave props., parametric decay, heating 8−42758
lower hybrid cones, nonlinear development 8−34306
lower hybrid drift instability, nonlinear stabilization by electron resonance broadening 8−34307
lower hybrid drift instability, Tormac sheath, inhomogeneity and mag. shear influences 8−34299
lower hybrid instability nonlinear injected ion beam anomalous slowing 8−1850
lower hybrid parametric instabilities, nonuniform pump waves, Tokamak appls. 8−34344
m=1 waves propagating in Scyllac 8−5865
magnetic bottle, ohmic heating, mag. field aligned currents 8−18426
magnetic flux element stability in horizontally stratified compressible plasma, solar atmosphere appls. 8−28610
magnetically confined plasmas, parametric instabilities in laser heating 8−18432
magnetosphere, plasma instability theory for anisotropic vel. distribs. *(Russian)* 8−12053
magnetosphere, plasma waves and instabilities in polar cusp 8−12058
metal vapour columnar arc instability, mag. fields effect, up to 67 kA 8−9893
MHD, in toroid with vanishing press. grad. 8−14195
MHD generator, channel, near electrode-free wall, plasma instability, flow inhomogeneity effect 8−26338
MHD instabilities in stellarator 8−14154
MHD stability in toroidal trap near-axial region *(Russian)* 8−38521
microinstabilities, Alfven-type drift oscills. 8−22496
microinstabilities, low frequency, simulation model 8−38525
microinstabilities in plasma slab, drift waves 8−14156
mirror plasma, hot electron ring, conducting wall stabilisation 8−1881
mirror trapped ions under instability around ion cyclotron frequency, enhanced heating 8−5892
mode crossing stability, Lagrangian nondegenerate fluid or Vlasov plasma 8−42735
modulation instability and nonlinear waves *(Russian)* 8−22476
modulation instability in magnetised plasma waves nonlinear development during heating *(Russian)* 8−47118
modulational instability growth, for randomised initial conditions 8−18406
modulational instability of elliptically polarised EM waves 8−14167
multiple-mirror confined plasma, interchange modes stabilisation 8−42790

plasma instability continued
negative-mass instability, relativistic nonneutral E-layer, axial energy spread effect 8−42745
nonequilibrium weakly ionised plasma, de-excitation and stability 8−38453
nonlinear, conversion of EM radiation to ion-acoustic waves near plasma reson. *(Russian)* 8−5859
nonlinear convective and oscill. instabilities, beam-plasma system, simulation models 8−34338
nonlinear helical MHD instability in toroidal plasma, stability criteria *(Russian)* 8−5862
nonlinear microinstabilities, review 8−14150
nonlinear mode coupling between stable and unstable waves, growth rate modulation 8−1829
nonlinear saturation of two unstable modes, survival competition 8−34298
nonlinear stability in nonuniform mag. field 8−38472
nonlinear two-stream, in high-field electron drift, particle diagnostics 8−38541
nonlinear unstable longitudinal oscillations, parametric excitation in magnetoactive plasma *(Russian)* 8−18390
overheating instability, HF EM field effect 8−9771
parametric, due to lower hybrid RF heating 8−30432
parametric, effect of particle drift motion 8−34293
parametric, laser prod. plasma at high laser intensity 8−5903
parametric, saturation by anomalous diffusion 8−14161
parametric, saturation by nonlinear four-Langmuir-wave coupling 8−42748
parametric, saturation in a strong electromagnetic field *(Russian)* 8−22475
parametric decay instabilities in magnetoplasma 8−9787
parametric decay instability near lower hybrid resonance 8−18399
parametric decay interaction, three-wave, threshold behaviour, bounded inhomogeneous plasma 8−42746
parametric excitation of longitudinal waves *(Russian)* 8−34282
parametric excitation of nonlinear oscillations by inhomogeneous electric field *(Russian)* 8−22478
parametric instabilities, effect of finite-bandwidth pump 8−22495
parametric instabilities, spectra and appl. to Crab nebula 8−45220
parametric instabilities, theory 8−14151
parametric instabilities excitation in HF discharge 8−34285
parametric instability, space-time random fluctuations 8−30431
parametric instability, two-plasmon, two-dimensional relax. 8−5866
parametric instability stabilisation in nonstationary plasma *(Russian)* 8−1831
parametric processes in CTR plasmas, review 8−30430
parametric reson. between EM waves and electron surface modes *(Russian)* 8−34320
parametric two-plasmon instability, Langmuir wave decay, numerical anal. 8−14152
parametrically excited instabilities, time evolution 8−9786
Perkins spread-F instability, effects of E-region coupling 8−40755
plasma, ion cyclotron beam-whistler mode instability in parallel shocks 8−14148
plasma bunch, stability, breaking 8−9785
plasma mirror machines, computer simulation of field reversal 8−26316
positive column, density oscills. due to negative ions, metastable atom model 8−1799
Rayleigh-Taylor instability, in curved mag. field, excitation and control 8−47113
Rayleigh-Taylor instability, MHD flow of composite medium, variable viscosity 8−1813
Rayleigh-Taylor instability in imploding foil plasma, two dimens. simulation 8−47156
relativistic electron beam in plasma, coherently radiating, radiation press. at surface 8−9314
relativistic parametric instabilities, in extended extragalactic radio sources 8−24561
relativistic tangential electron beam-semirestricted plasma collision, dissipation instability *(Bulgarian)* 8−34333
relativistic two-stream instability, nonlinear state electron ion collisions effect 8−26280
resistive tearing mode, influence of diffusion 8−34297
resonant electron instability near plasmapause, rel. to 1-30 Hz waves generation 8−49235
rotating plasma, spatial distrib. derivation, ionic components in reson. ionic cyclotron instability *(Russian)* 8−47117
runaway electrons, X-ray obs. in Tuman-2 Tokamak *(Russian)* 8−38531
runaway rates in plasmas, const. in Kruskal-Bernstein theory 8−9773
scattering decay of electron whistler-ion quasimode parametric coupling 8−18401
secondary parametric instabilities in relativistic electron beam heating 8−26307
self-gravitating rotating plasma, gyroviscosity effects 8−5860
shear flow in mag. field, stability 8−26197
spherical laser plasma, hydrodynamic instability and spontaneous mag. field generation *(Russian)* 8−38519
stabilisation of modulation instability, fast Langmuir solitons generation *(Russian)* 8−38470
stationary inhomogeneous electron temp. distrib. states and electrodynamic params. *(Russian)* 8−42749
stellarator, current-carrying, kink and tearing mode MHD instability 8−22539
stellarator, high-β, finite gyroradius stabilisation of MHD modes 8−26314
stratified partially ionised plasma, stability in mag. field, cond. and viscosity effects 8−26276
surface instability of bounded simulation plasma in mag. field 8−26321
tearing mode coupling in Tokamak 8−14192
tearing mode suppression by feedback system *(Russian)* 8−22535
thermal, time evolution, temp. profiles 8−14147
theta-pinch, bumpy, wall stabilisation 8−1875
threshold criteria for instabilities, caused by ion-acoustic waves and EM wave interactions *(Russian)* 8−22505
Tokamak, noncirc. cross-section, local, ideal and resistive stability 8−22540
Tokamak hydromagnetic stability, ideal and resistive, review 8−34358
Tokamak TO-1, stabilisation of helical instability by feedback *(Russian)* 8−30443

plasma instability continued
- transverse instability in plasma column 8−5869
- trapped electron instabilities, collisional effects 8−26279
- trapped ion mode excitation in Tokamak *(Russian)* 8−38467
- trapped-electron cyclotron instability, in Tokamak, 2-dimens. eigenvalue problem, analytic soln. 8−30434
- two stream instability in equatorial electrojet over Africa, multifreq. HF radar studies 8−36370
- two-component ionic fluids, temp. depend. of plasma freq. 8−47115
- two-fluid dissipative plasma, energy principle in Lagrangian form, tearing modes 8−42794
- two-stream instability, in force-free pulsar wind zone 8−49468
- two-stream instability, in neutralised electron ring 8−25357
- unstable oscillations, sheared toroidal mag. field procedure for reconciling oscillation characts. with periodicity 8−34309
- whistler instability in solar wind, rel. to nature of small-scale inhomogeneities 8−45173
- Z-pinch in HBTX-1, large amplitude helical kink instability and field reversal 8−42783
- Ar, dynamic stabilisation of dissipative drift modes by oscillating azimuthal mag. field 8−18396
- Ar, laser-initiated plasma, gasdynamic instabilities and convective flow parameters 8−22525
- H_2, plasma, thermally anisotropic, cyclotron instabilities 8−1814
- N_2, a.c. discharge, stability *(Russian)* 8−26358
- Na-Ne-Ar discharge low-press., instability 8−9868

plasma interactions *see plasma collision processes*

plasma jets
- arc furnace, ignition and stabilisation *(French)* 8−47187
- calorimetric probe for determ. of heat flow *(Russian)* 8−12698
- diagnostics, thermal and electrical meas. 8−5931
- heat exchange with obstacle 8−47130
- hydromagnetic stability 8−1827
- MHD, in welding arcs, gasdynamic characts. *(Russian)* 8−47191
- plasma spraying, coatings and composite materials 8−3247
- production in dielectric breakdown of solids *(Russian)* 8−22524
- radiative parameters, temp., electron density *(Russian)* 8−38459
- supersonic, prod. by electric arc plasmatron *(Russian)* 8−14221
- supersonic, vel. meas. using Doppler shift *(French)* 8−14207
- thermal plasma engineering in metallurgy, inorganic materials technology 8−3070
- underwater wet plasma wetting in pressurized water 8−7090
- Ar, emission of electron-neutral atom bremsstrahlung *(French)* 8−26332
- Ar jet-transferred DC arc for refractory refining, initiation and performance characts. 8−9866
- Ar, surrounded by Ar, He, N_2, H_2 gases, recombinations in decaying jet 8−9753
- Ar, under press., heavy particles temp. meas. *(French)* 8−9841

plasma magnetohydrodynamics
- Alfven shock evolution is classical MHD *(French)* 8−18352
- Alfven waves, finite amplitude circularly polarised, instability 8−28502
- axisymmetric plasma, ideal MHD spectrum, finite hybrid elements method 8−42734
- ballooning mode topology 8−5917
- ballooning modes in Tokamak with finite shear 8−5918
- belt pinch, strongly elongated, free-boundary MHD equilib. 8−5912
- boundary condition for computational MHD, plasma confinement 8−1811
- boundary layer on flat plate with aligned magnetic field *(French)* 8−1808
- coherent wave interaction with MHD turbulence *(Russian)* 8−1833
- collisional plasma rotating inside cylindrical annulus, two-species MHD anal. 8−22466
- combustion product plasma, discharge on cooled Cu electrodes, rel. to erosion damage in MHD channels 8−1925
- compression, using EM self drives for captive liners 8−9769
- conductivity rel. to boundary layer during internal cooling in MHD generator *(Russian)* 8−38557
- double-layer forward shocks, in MHD fluid, particle simulation code investig. 8−38491
- exploded wire plasma nonlinear evolution, numerical simulation 8−14197
- flow stability in axial mag. field *(Russian)* 8−26258
- Garching belt pinch MHD equilibria, cylindrical slab model 8−34353
- instabilities in stellarator 8−14154
- interplanetary medium, slow MHD shock waves 8−12068
- ionising MHD shock wave propag., in nonuniform medium 8−5874
- jet, hydromagnetic stability 8−1827
- jets, in welding arcs, gasdynamic characts. *(Russian)* 8−47191
- large aspect ratio expansion, toroidal magnetofluid equilibria, anisotropic pressure 8−26257
- laser plasmas, strong mag. field effects, review *(Russian)* 8−38462
- magnetic dipole radiation field, hot magnetoplasma *(Russian)* 8−30416
- magnetic field energy dissipation, in neutral current sheets 8−26250
- magnetic field line reconnection by resistivity, localised enhancement 8−22467
- magnetic flux element stability in horizontally stratified compressible plasma, solar atmosphere appls. 8−28610
- magnetic reconnection, plasma accel., heating and shock form. 8−40773
- magnetopause, MHD flow, elec. field generation 8−40760
- metal vapour columnar arc instability, mag. fields effect, up to 67 kA 8−9893
- MHD channel, frame-type, two-dimens. elec. effects, numerical parametric soln. 8−42834
- MHD combustion, operating mode aspects 8−18388
- MHD generator, channel, near electrode-free wall, plasma instability, flow inhomogeneity effect 8−26338
- mode crossing stability, Lagrangian nondegenerate fluid or Vlasov plasma 8−42735
- moving magnetic rotator radiating MHD waves, reaction force 8−34312
- nonlinear helical MHD instability in toroidal plasma, stability criteria *(Russian)* 8−5862
- nonlinear ideal MHD equilib. in axisymmetric systems 8−1876
- perturbations and completeness of solns. 8−1810
- plasma focus, 2D MHD calcs. 8−9767
- plasma focus, 2D MHD calcs. 8−9768

plasma magnetohydrodynamics continued
- pressure fluctuations in flowing combustion plasma, meas. by probe-tube microphone 8−18443
- pulsed isothermal plasma generator plant for study of MHD flows 8−1907
- radio galaxies, plasma hydromagnetics and hydromagnetic stability 8−24564
- Rayleigh-Taylor instability, MHD flow of composite medium, variable viscosity 8−1813
- relativistic MHD, shock waves 8−9770
- reverse-field pinch, MHD simulation 8−5920
- rotating plasmas, balance and separation processes 8−1911
- self-generated fields by currents driven by electron press. grad. 8−1794
- shear flow in mag. field, stability 8−26197
- shock wave-induced plasma current, transverse mag. field interaction, simulation 8−38463
- stability in toroid with vanishing press. grad. 8−14195
- stability in toroidal trap near-axial region *(Russian)* 8−38521
- stability of Tokamak plasma 8−30428
- stationary frozen-in coordinate system 8−40761
- stellarator, current-carrying, kink and tearing mode MHD instability 8−22539
- stellarator, high-β, finite gyroradius stabilisation of MHD modes 8−26314
- stellarator, non-circular cross section, MHD equilibria 8−5914
- stellarator, noncircular cross section, MHD equilib. 8−9820
- stratified partially ionised plasma, stability in mag. field, cond. and viscosity effects 8−26276
- subsonic flow in MHD channel, acoustic stability 8−9764
- surface wave propagation, on plasma column, mag. current excitation 8−1821
- Tokamak circuit, mag. interactions with plasma 8−22468
- Tokamak discharge, initial stage, theory *(Russian)* 8−38512
- Tokamak hydromagnetic stability, ideal and resistive, review 8−34358
- toroid, nonlinear axisymmetric equilibria in MHD approx. 8−18437
- transverse waves propag. along axisymm. mag. field in nonhomogeneous plasma, WKB kinetic theory 8−42740
- turbulence rel. to form. time of isotropic particle vel. distrib., magnetosheath appls. 8−28420
- twist transport in force-free mag. flux tubes, appl. to solar prominences 8−40813
- two-fluid dissipative plasma, energy principle in Lagrangian form, tearing modes 8−42794
- wall-stabilized arc, in transverse magnetic field, velocity and temperature field determination 8−38569
- Ar-Cs plasma stream, electrodynamic braking with strong MHD interaction 8−9763
- Li, blanket, for Tokamak thermonuclear reactor, MHD flow modelling *(Russian)* 8−47146

plasma measurement techniques *see plasma diagnostic techniques*

plasma oscillations
- *see also plasma waves*
- arc discharges, periodic processes, spectral emission characts., vidicon system investig. *(Russian)* 8−9848
- auroral electron beam, plasma oscill. reemission, radiowave generation mechanism *(Russian)* 8−40724
- beam-plasma system, electron cyclotron instability, nonlinear development, lower hybrid oscill. effects 8−30437
- beam-plasma system, instability *(Russian)* 8−1847
- beam-plasma system, nonlinear convective and oscill. instabilities, simulation models 8−34338
- cavitons, particle beam interactions 8−22517
- control by linear feedback system *(Russian)* 8−38469
- counter stream type beam-plasma interaction, quenching of plasma oscill. 8−5882
- counterstreaming ion beam plasma device, standing oscills., due to electron-ion instability 8−26305
- cyclotron heating in short adiabatic traps *(Russian)* 8−5890
- dissipative parametric instabilities, in a strongly ionized plasma *(Russian)* 8−30422
- drift cyclotron instability, nonlinear dynamics 8−30433
- electron, in relativistic plasma, dispersion relations in mag. field 8−34364
- electron beam produced, proton beam form. *(Russian)* 8−29207
- electron oscillations in static electric field 8−22487
- electron-eigen oscills. and ballistic modes 8−22472
- finite plasma cylinder oscillations in external mag. field 8−42738
- flute, suppression by regulator with cross feedback *(Russian)* 8−26262
- flute oscillation suppression by automatic EM control *(Russian)* 8−30464
- forced radial magnetoacoustic oscillations, of fully ionised plasma with partially ionised shell 8−18405
- HF, ion-acoustic instability 8−18398
- HF instability *(Russian)* 8−18410
- high frequency oscillations in bounded thermally produced plasma 8−38481
- higher surface modes near plane metal-vacuum interface, RPA calc. 8−42760
- ion beam propagation, plasma oscill., effect on transverse phase vol. 8−38509
- ion-acoustic oscillations, in inhomogeneous plasma layer, high freq. radiation excitation *(Russian)* 8−26270
- ionization-diffusion oscillations in glow discharge plasma, rel. to stepwise ionization 8−1927
- Langmuir electronic oscills., Vlasov kinetic eqn. 8−14133
- Langmuir oscillations, interactions in weakly ionised high-density plasma, beam instability *(Russian)* 8−26271
- Langmuir perturbation, emission of EM radiation, plasma freq. harmonics 8−34292
- linear electron plasma test wave, wavenumber oscills., standing wave effects 8−38478
- low frequency oscills. during disruptive instability in TFR Tokamak 8−22564
- magnetoacoustic oscillations in current-carrying plasma column 8−30438
- MHD generator, channel, near electrode-free wall, plasma instability, flow inhomogeneity effect 8−26338
- nonlinear dissipation, effect on heating under strong Langmuir turbulence conditions *(Russian)* 8−34346

plasma oscillations continued
- nonlinear longitudinal, parametric excitation of magnetoactive plasma *(Russian)* 8−18390
- nonlinear plasma, excitation of large amplitude regular oscills. by modulated electron beam *(Russian)* 8−5887
- normal mode analysis, eigenfunctions and adjoint functions 8−42744
- parametric excitation of nonlinear oscillations by inhomogeneous electric field *(Russian)* 8−22478
- parametric stimulation of longitudinal oscills. by transverse-longitudinal RF waves *(Russian)* 8−5876
- positive column, density oscills. due to negative ions, metastable atom model 8−1799
- potential oscillations excitation with electron beams 8−30419
- quasi-two-dimensional system, hydrodynamic theory 8−38477
- radial oscillations damping in toroidal pinch 8−30476
- relativistic plasma, oscillations, dispersion relations, electron fluid model approx. calcs. 8−1882
- relativistic tangential electron beam-semirestricted plasma collision, dissipation instability *(Bulgarian)* 8−34333
- resistive plasma column, reconnecting mode, moment eqns. treatment 8−22493
- resonant fields, in magnetoactive plasma *(Russian)* 8−18392
- sawtooth, in Tokamak 8−47147
- sawtooth, in Tokamak 8−47150
- strong Langmuir turbulence, soliton flash, turbulent ion heating and relax. oscills. 8−1834
- surface oscillations parametric excitation 8−30420
- surface vibration excitation, electron beam in semirestricted magnetoactive plasma *(Bulgarian)* 8−34334
- toroidal pinch plasma, damping of radial oscill. 8−26272
- transverse instability in plasma column 8−5869
- turbulence pulsations, quasilinear theory 8−26283
- turbulent plasma, plasmon gas oscillations *(Russian)* 8−47120
- unbiquitous mode, theory 8−5864
- unstable oscillations, sheared toroidal mag. field procedure for reconciling oscillation characts. with periodicity 8−34309
- Vlasov equation, two dimens., numerical soln., multistep technique 8−1795
- Vlasov linearised collisionless eqn. soln. 8−30423
- Al, plasma oscillations in oxide free Al clusters 8−2510
- Ar, afterflow stability boundaries, plasma oscillation modes in mag. field 8−38486
- Ar, laser-initiated plasma, gasdynamic instabilities and convective flow parameters 8−22525
- Hg discharge, radial distrib. of low-freq. oscills. *(Russian)* 8−1928

plasma probes
- *see also Langmuir probes*
- calormetric probe for determ. of heat flow *(Russian)* 8−12698
- charged particle density, mag. field effect *(Russian)* 8−22552
- conductivity meas. in flowing plasma, pulsed probe method 8−1894
- continuum theory for ionised gas interaction with emitting surface 8−14204
- current density, local, mag. probe and Thomson scatt. meas., using Spitzer-Harm distrib. 8−18451
- current-voltage characts., probe meas. correction in RF plasma 8−26333
- directional double probe, rot. obs. during implosion in theta-pinch column 8−1877
- electrostatic probe, electron temp. meas., surface pot. var. effect 8−14202
- electrostatic probe meas. in mag. field *(Russian)* 8−22553
- electrostatic stagnation point probes in flowing plasma, Knudsen no. effect 8−1893
- focus current, compression phase, mag. probe meas. 8−5939
- high-Q resonant probe for plasma wave diagnostics 8−9831
- hollow cathode, MPD arc config., 0.25-30 kA, current and pot. distribs. 8−9869
- hollow cathode arc, plasma column parameters *(French)* 8−9885
- ion sheath, convection sustained, struct., probe meas. 8−14179
- ion-acoustic wave meas. with probes, antenna characts. 8−5949
- ion-acoustic waves, probe excited in multidipole plasma device 8−42739
- large Debye length probe theory in continuum plasma, exptl. studies 8−38537
- magnetically shielded sampling probe, for plasma diagnostics in medium-press. magnetoplasma 8−22560
- positive column, axial elec. field and electron temp. in transverse mag. field 8−9880
- potential perturbation due to grid or probe 8−47166
- probe current modulation, electron distrib. determ., finite amplitude distortion, instrumental function 8−47168
- propane flame plasma, Langmuir probe teaching expt. 8−12456
- quadrupole and double sphere dipole probe meas. for electron density and temp. diagnostics *(French)* 8−14208
- resistivity anomalous, generated by ion-acoustic turbulence, collision freq.-turbulence spectrum relation 8−14205
- RF probe, ion sheath effects on impedance characts. 8−42818
- space plasma electron energy distrib. function meas. by probe *(Japanese)* 8−28474
- space potential, new method of determ., using electron density and mean electron energy *(Russian)* 8−22557
- spherical Langmuir probe, appl. to collisional plasma, theory 8−18460
- triple probe method for meas. plasma parameters in low-density flowing collisionless plasma 8−1898
- Ar plasma jet, surrounded by Ar, He, N_2, H_2 gases, recombinations in decaying jet 8−9753
- H, contracted low-press. arc, electron energy distrib. 8−18477
- N_2-Ne, positive column, electron vel. distrib. function *(German)* 8−1885
- Xe, pulsed high frequency discharge, energy spectrum and electron density meas. *(Russian)* 8−26354

plasma production
- *see also plasma production and heating by laser beam*
- arc production process equipment, present state and future prospects *(Russian)* 8−22518
- ball lightning, quantum mech. theory *(German)* 8−16082
- beam-plasma discharge, near Zarnitsa-2 rocket, parameter estimation *(Russian)* 8−26357
- combustion-driven implosion, spectroscopic study 8−14189

plasma production continued
- conical slow wave antenna, plasma source using electron cyclotron resonance heating 8−42775
- convergent neutral beam expts., particle distribs., ionisation 8−14183
- dense plasma source, with high-current discharge 8−9888
- duopigatron plasma generator, emission aperture shape effect on ion optics 8−5956
- electron beam fusion, X-ray pinhole imaging techniques 8−47176
- electron beam fusion programme, hard X-ray diagnostics 8−47181
- electron beam ignition of plasma discharge in high density gas *(Russian)* 8−1853
- electron beam in Zn vapour, plasma prod. and beam interaction 8−47133
- electron beam targets, thick-shell shock-focusing 8−30454
- electron-free plasma form. *(French)* 8−1854
- EM implosion of foil, SHIVA pulsed radn. source expt. 8−14190
- exploded wire plasma nonlinear evolution, numerical simulation 8−14197
- exploding wire, dense metal plasma, X-ray diagnostics 8−5909
- exploding wire discharge, thermal instability of elec. cond. in metal vap. 8−1868
- fission-fragment-generated plasma, theory of spectroscopic diagnostics 8−34374
- fission-fragment-generated plasma from interaction in neutral gas 8−34345
- flame, plasma, with rectangular cross section, prod. by nozzle *(Japanese)* 8−47108
- focused relativistic electron beam discharge into thin target, EUV emission 8−47162
- gas discharge ion source, high energy characts. 8−42772
- generator, ignition conditions for power superposition between two generators *(French)* 8−9799
- high current plasma source, multirod cathode design 8−26308
- hot dense plasma generation for fast wave propag. 8−14186
- layer produced by moving ionis. source, EM wave propag. *(Russian)* 8−1836
- magnetic field reversal induced by intense rotating electron beam in initially neutral gas 8−42768
- magnetic mirror reflex discharge, device for generation, confinement and heating of hot plasma *(Rumanian)* 8−47151
- microwave discharge technique, plasma prod. for ion source 8−327
- microwave field power transfer efficiency under electron cyclotron reson. condition 8−9789
- microwave plasma source, helical slow-down structs., electron density 8−18424
- Penning discharge plasma source, form. mechanism 8−18423
- plasmotron, DC, high-power, long-operating, coaxial elec. arc, principles 8−42832
- polyethylene fibre explosion, neutron and energetic ion emission 8−5927
- propane flame plasma, Langmuir probe teaching expt. 8−12456
- Rayleigh-Taylor instability in imploding foil plasma, two dimens. simulation 8−47156
- relativistic electron beam, energy deposition in plane solid low Z target 8−5894
- relativistic electron beam target design, jacket material and design, Monte Carlo method 8−17416
- source characteristics for chem. reactors *(French)* 8−11605
- spherical implosion, compression and self similar motion of coalesced shocks 8−9815
- steady-state rotating plasma, for mass separation of elements *(Russian)* 8−25732
- thermal plasma engineering in metallurgy, inorganic materials technology 8−3070
- thermonuclear combustion in plasma with electron thermal cond. *(Russian)* 8−13319
- Tokamak discharge, initial stage, theory *(Russian)* 8−38512
- Tokamak plasma, light-impurity-free plasma, Au-shell surface and Ti gettered burial chamber 8−42786
- Triplemafios multicharged heavy ion source *(French)* 8−9800
- X-ray coded imaging of relativistic electron beam targets 8−47179
- Z-pinch, plasma production, streak, X-ray and vis. photographic obs. 8−38522
- Cs plasma in vacuum diode, pre-discharge, electron impact excitation line emission polarisation 8−47170
- D-T compression, explosion-induced, thermonuclear avalanche reaction 8−47144
- $H_2(D_2)$-Ne-He(Ar) plasma, combustion driven shock tube, H_β central struct., ion mass effect 8−26327
- He, ultradense reproducible Z-pinch, for laser-pellet interaction simulation, characterisation 8−30463
- He-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
- N_2, plasma created by electron beam, spectral composition *(Russian)* 8−30453
- Ne plasma, generated by 200 MeV protons, electron density and electron temp. 8−22568
- Ne-N_2 mixture, plasma created by electron beam, spectral composition *(Russian)* 8−30453
- Pb, mass ejection from shocked surface during fusion 8−47186
- U plasma, present research status with appl. to gaseous core reactors 8−33244

plasma production and heating by laser beam
- ablating fluid, model of Rayleigh-Taylor stability 8−34303
- ablative implosion, hydrodynamic stability 8−5900
- absorption and reflection processes of laser irrad. pellets 8−30457
- air plasma, CO_2 laser interaction with plane target *(French)* 8−9806
- air-plasma interaction and surface shielding, evaporation wave and gas-dynamic effects *(Russian)* 8−22532
- alkali halide surface light emission, 10.6 μm laser pulse irradiation *(Russian)* 8−27352
- backscattered radiation, spectral-time meas. *(Russian)* 8−42812
- charge separation and target voltages in laser-produced plasmas 8−5896
- collisional absorption of two beams, inverse bremsstrahlung, heating 8−26292
- column development and heating, by intense CO_2 laser radiation *(French)* 8−47142
- compressed laser fusion targets, time resolved X-ray pinhole photography 8−38548

plasma production and heating by laser beam continued
- compression pulses for spherical laser targets 8−5904
- compressional density profiles, flow effects in laser irrad. plasmas 8−18429
- conference, inertial confinement fusion, San Diego, USA, (Feb. 1978) 8−46171
- corona, laser-induced plasma, interferometric meas. *(Russian)* 8−1886
- corona parameters, ultrahigh speed diagnosis *(Russian)* 8−1899
- critical surface filamentation and parametric instability 8−47140
- current source duration in laser-produced plasmas 8−1862
- D$_2$ target fabrication for laser fusion *(Japanese)* 8−8971
- density modification in 10^6 W cm^{-2} ablated microballoons, optical diagnostic technique 8−14206
- density profile self-steepening in laser plasma, interferometry 8−5938
- diagnostics by high speed multiframe interferometry 8−1905
- diagnostics via Faraday cups, evaluation 8−5941
- dielectric, multiframe ps holography 8−26328
- direct conversion of CO$_2$ laser energy to HV electrical energy using laser-produced plasma 8−18427
- electron distribs., resonantly heated, props. 8−30462
- electron energy profile steepening, polarimetry obs. 8−34349
- energy absorption, meas. via differential calorimeter 8−5942
- enhanced laser-plasma backscatt. due to prepulse radiation 8−18428
- expansion and rethermalisation in uniform mag. field 8−30458
- expansion stages, scatter of branches, ultimate ionisation *(Russian)* 8−22531
- far IR lasers appl. and detection systems in controlled fusion research 8−47182
- fast electron production, continuum X-ray emission diagnostics 8−22563
- fast expansion, fast ion ambipolar accel. 8−47141
- fast ion emission, reson. absorpt., laser generated plasma 8−42779
- fast ion production, simple model anal. 8−22530
- feedback controlled particle suspension system for laser initiated target expt. mag. mirror fusion facility 8−1864
- focus, heating by TEA CO$_2$ laser, neutron enhancement *(Japanese)* 8−9808
- fusion by laser, present state of research *(French)* 8−29645
- fusion control, future prospects in electrotechnology *(French)* 8−37446
- fusion ion temp. meas., neutron time of flight techniques 8−17413
- fusion pellet implosion dynamics, high compression, hinged ramp pulse 8−41859
- fusion plasma, non-stochastic heating by electrostatic waves 8−47136
- fusion target, energy transport 8−47143
- fusion target insertion system 8−46172
- fusion target uniformity, interferometric meas. 8−47158
- fusion technology 8−754
- fusion with 1000 times compression, and kiloJoule laser energy *(German)* 8−41858
- gas breakdown near solid targets, by pulsed CO$_2$ laser radiation *(Russian)* 8−26362
- gasdynamic pressure on target in CO$_2$ laser radiation 8−1867
- Gekko IV, four beam phosphate glass laser system for fusion expts. 8−46650
- glass laser high power system for thermonuclear fusion *(Japanese)* 8−8970
- glass microballoon target, D$_2$-filled, laser-driven shock wave 8−41856
- glass microshell, high-power glass laser interaction 8−9804
- glass microspheres, separation by diameters and wall thicknesses to obtain correct. laser-target shells 8−8969
- grazing incidence X-ray microscopy, of laser fusion targets 8−47178
- harmonic generation in Nd:glass laser produced plasmas 8−30480
- heat-flux limitation and ion-acoustic turbulence, optical diagnostics 8−18453
- heating and dispersion conditions, for laser plasma with two component impurities *(Russian)* 8−22527
- high energy CO$_2$-laser pulse, interaction with liquid and solid targets, optical investigations 8−42829
- imploded spherical targets, stability 8−5906
- intracavity laser breakdown plasma, laser short pulse generation 8−37924
- ion confinement in pulsed laser-produced plasma 8−38518
- ion density fluctuations, CO$_2$ laser heated plasma, Thomson scatt. meas. 8−42807
- ionising instability of laser heating plasma *(Russian)* 8−1815
- IRIS implosion experiment experience using four-beam system *(French)* 8−14187
- Langmuir probe meas. of parameters and expsn. 8−18456
- laser beam thermal coupling, edge effect due to plasma growth 8−9813
- laser compression expts., X-ray emission 8−5905
- laser driven implosion, anomalous interaction 8−8986
- laser fusion, image convertor camera optical measurement 8−38549
- laser fusion, shadowgraph and interferometry experiments, with ten-picosecond light source 8−42824
- laser fusion research, present (1977) status *(Japanese)* 8−37439
- laser irradiated solid target, picosecond microphotography 8−42828
- laser light resonant and collisional absorpt., heating, density profiles 8−38527
- laser plasmas, strong mag. field effects, review *(Russian)* 8−38462
- laser produced plasma, ultraviolet probing with picosecond pulses 8−42827
- laser spark produced shock wave, IR and microwave thermal radiation *(Russian)* 8−38533
- laser spatial intensity distrib. effect on ablated polystyrene target plasma characts. 8−9811
- laser target irradiation in high mag. fields 8−8989
- laser-fusion diagnostics, subpicosecond X-ray streak camera 8−42822
- laser-gas interaction, neutral atom inverse bremsstrahlung, laser induced electron avalanche *(French)* 8−26309
- laser-matter interactions, automatic treatment of data *(French)* 8−42830
- laser-pellet irradiation, two-plasmon decay instability, soliton form. role 8−1842
- laser-produced plasma, application of synchronised ultrashort Nd:glass laser pulse 8−42825
- layered target, 10 μm laser prod. plasma 8−9812
- line-focus plasma, laser produced, coherent far IR radiation 8−42806
- low-Z elements, satellite lines in laser produced plasma 8−42802
- magnetic radiative force in laser prod. plasma 8−5901
- magnetically confined plasma, axial heating by CO$_2$ lasers 8−14182

plasma production and heating by laser beam continued
- magnetically confined plasmas, parametric instabilities in laser heating 8−18432
- metal foil, laser pulse heating enhancement with pulsed air jet *(Russian)* 8−22533
- metallic target, self-generated mag. fields 8−34350
- micro-Fresnel zone plates for coded X-ray imaging of laser produced plasmas 8−42814
- microshell compression by fast ions generated by laser radiation 8−22526
- microshell laser implosion, critical density surface expsn. 8−5907
- microwave diagnostics of laser-produced plasmas, electron density 8−9845
- N- and S-modes of self-similar compression of finite mass of plasma 8−42778
- neutron emission from laser irrad. plasma focus *(Japanese)* 8−38538
- nonperturbative analytic approach, Pade approximants 8−20951
- Nova laser system design for fusion 8−46652
- nuclear fusion expts., calorimeters for meas. of ions, X-rays and scatt. radiation 8−16800
- OMEGA laser system, design parameters, performance 8−46655
- OMEGA laser system for fusion expts. 8−46649
- optical meas. of temp. on laser heating of solid surface *(Russian)* 8−47172
- parametric instabilities at high laser intensity 8−5903
- parametrically absorbing laser plasma during implosion *(Russian)* 8−1861
- parylene disc, Brillouin scattering reduction 1.06 μm beam at large focal spot 8−18430
- parylene disc, high-power glass laser interaction 8−9804
- parylene discs, 1.06 μm laser irrad., plasma prod. processes 8−18431
- pellet compression, X-ray images with submicron resolution 8−34366
- pellet implosion, scheme for stable implosio n, asymptotic theory derived 8−29649
- pellet implosions, laser coupling wavelength depend. 8−30459
- perturbations accompanying compression of shell target by laser radiation *(Russian)* 8−13321
- photon drag of electrons *(Russian)* 8−18433
- picosecond X-ray chronoscopy 8−38546
- picosecond X-ray spectral studies 8−38547
- plasma focus, interferometry and luminosity meas. 8−47161
- plastic targets, anisotropic production of laser-plasma soft X-rays and fast electrons 8−38517
- plexiglass compression by profiled opposite laser beams 8−47139
- polarisation and ang. of reson. absorption by planar targets 8−9810
- polyethylene, expanding plasma, high power CO$_2$ laser radiation interaction 8−47138
- polyethylene, laser irrad., mol. emission from unionised gas 8−42777
- polymer shells in laser fusion 8−8987
- polymeric laser fusion targets, cryogenic fuel config. 8−8988
- radiant emission, spectra simplification by electro-optic gating 8−22561
- radiation-pressure effects in laser-plasma interactions, interferometric diagnostics 8−38540
- rapid events, photographic study by picosecond techniques 8−42826
- reflectance of laser-produced plasmas, angle and polarisation depend. 8−18452
- reflection losses from plane target, optical calorimetry 8−9809
- resonance absorpt. and optimum focusing of axisymmetrically polarised laser beam, spherical plasma *(Russian)* 8−1863
- resonance laser radiation absorption, incidence ang. and polaris. depend. 8−9805
- retropulse isolation, laser-target using aperture in vacuum 8−9388
- RF radiation emission from laser produced plasmas 8−42800
- self-focusing generation of high laser flux densities in laser prod. plasma 8−18413
- shell target compression and heating, numerical modelling *(Russian)* 8−1860
- Shiva fusion laser, development of components and subsystems 8−5491
- solid target-intense CO$_2$ laser beam nonlinear interaction, radiation obs. 8−22562
- spectral analysis of emission of CO$_2$ TEA laser produced plasma, charact. parameters determ. *(German)* 8−38516
- spherical irradiation, expt. data anal. method 8−1904
- spherical laser plasma, hydrodynamic instability and spontaneous mag. field generation *(Russian)* 8−38519
- steady state ablation model of laser target slabs 8−9814
- stroboscopic method for pizosecond diagnostics of rapid processes 8−47159
- suprathermal electrons, self-generated mag. fields, laser plasma 8−5902
- thermal conduction, flux-limited, in laser prod. plasma 8−5899
- thermonuclear fusion by lasers, state-of-the-art review *(Japanese)* 8−21768
- Thomson scatt. from thermal plasma, intensity depend. frequency shift 8−42770
- transparency changes of plasma burst in intense optical radiation, direct meas. 8−9807
- transparent solid target, self-focusing effect on plasma generation 8−30460
- vacuum interface sheath struct. of laser prod. plasma 8−5908
- X-ray and particle energy meas. in laser-plasma interaction 8−42799
- X-ray bremsstrahlung, fast ion and suprathermal electron energies 8−5936
- X-ray emission, soft, from laser produced plasma 8−14213
- X-ray emission characteristics of CO$_2$ laser produced plasmas 8−9828
- X-ray emission from laser prod. plasma 8−42780
- X-ray emission from laser produced plasma, diagnostic methods for spatio-temporal obs. *(French)* 8−14209
- X-ray imaging, for laser fusion programme 8−47173
- X-ray imaging, MOS solid-state detector arrays 8−47180
- X-ray line profiles, Stark broadening 8−42733
- X-ray microscopy, coded imaging techniques, of laser fusion plasmas 8−47177
- X-ray spectra of plasma produced by subns laser pulses *(Russian)* 8−9847
- Z-pinch plasma, heating by CO$_2$ laser to temp. of 200 eV 8−34348
- Al, CO$_2$ laser produced plasma, fast particle emission 8−42805
- Al, evap. by long pulse Nd laser, spectroscopy 8−14201

plasma production and heating by laser beam continued
Al, expanding plasma, high power CO_2 laser radiation interaction 8−47138
Al, laser-produced plasma, population inversion between Al^{11+} levels, X-ray lines obs. 8−38539
Al microdisc targets for single beam laser expts., prod. method 8−1865
Al plasma, laser produced, origin of K_α radiation 8−9833
Al target, momentum transfer, cratering, and blow-off plasma ang. distrib. 8−5898
Ar, laser-initiated plasma, gasdynamic instabilities and convective flow parameters 8−22525
C, laser plasma, time resolved electron temp. *(Russian)* 8−22566
C target, CO_2 laser irrad. in strong mag. field, mass loss and plasma blow off 8−30455
CD_2, laser plasma, ion energy distrib. 8−30461
CD_2 target plasma, CO_2 laser produced, press. depend. of self-generated mag. field 8−26310
CH_2, laser plasma, ion energy distrib. 8−30461
CO_2 laser, Antares system, 100 kJ, for fusion expts. 8−46665
CO_2 laser Antares system, power amplifier module 8−46666
CO_2 laser Antares system, optical design and anal. 8−46667
CO_2 laser Antares system, energy extraction, pulse shaping 8−46668
CO_2 laser fusion effort at Los Alamos Scientific Lab. 8−33290
CO_2 laser fusion target alignment 8−46706
Cl VII, transitions in laser heated plasma, intensity anomalies obs. 58 to 78 Å 8−1214
Cu, high energy X-ray bremsstrahlung, evidence of reson. absorpt. in laser-produced plasma 8−42776
D-T microsphere, concentric cumulation of laser generated fast ions 8−30456
DT gas-filled shell, cryogenic, laser fusion 8−8985
Fe, highly ionised laser prod. plasma, extreme UV line profiles of expansion velocities 8−14199
Fe, laser prod. plasma, study by UV spectroheliography 8−22529
Fe XVII to Fe XXI spectra, 8 to 18 Å, emitted from plasma after laser heating 8−25464
H, laser breakdown and propag., 2D-simulation 8−5921
H_2 gas target, stimulated Brillouin scatt., press. depend. 8−42764
He, underdense gas breakdown by laser pulse, backscatt. and beam refr. 8−5897
KCl, cryst., plasma prod. by laser impact, effect on surface 8−1866
Li wire, optical meas. of laser detonated shock waves 8−42798
Mo ions, X-ray emission spectra, from laser produced plasma, line identification via HF calcs. 8−33459
NaCl, cryst., plasma prod. by laser impact, effect on surface 8−1866
Nd:BeF_2 glass lasers for fusion expts. 8−46661
Nd:glass, fluorophosphate glass for fusion lasers 8−46660
Nd:glass lasers, optimisation for 1-10 ns pulses operation 8−46651
Ne, in glass microbubble, compression, X-ray emission 8−18454
Ne-like multicharged ions, vacuum UV lasing action 8−1213
Pb, mass ejection from shocked surface during fusion 8−47186
Ta XLVI(XLVII), $3d^k$-$3d^{k-1}$npnf transitions in laser plasma 8−9108
Ti, laser prod. plasma, study by UV spectroheliography 8−22529
W-glass discs, 1.06 μm laser irrad., plasma prod. processes 8−18431
Xe, fast ionisation waves, supported by laser beam *(Russian)* 8−22528

plasma sheaths
see also plasma confinement
collisionless sheath eqns., neg./positive bias similarity transforms. *(Japanese)* 8−34332
convection sustained ion sheath, struct., probe meas. 8−14179
grid, electrostatic wave launching, nonlinear steady-state structs. 8−42766
ion sheath expansion into collision-dominated plasma 8−38505
ion-acoustic soliton, refl. from sheath around negatively biased grid 8−38479
laser produced plasma, vacuum interface sheath struct. 8−5908
lower hybrid drift instability, Tormac sheath, inhomogeneity and mag. shear influences 8−34299
probe, RF, ion sheath effects on impedance characts. 8−42818
shape in coaxial accelerator 8−22578
Z-pinch, high current discharge in Xe, heating efficiency 8−47152

plasma shock waves
air, shock heated plasma, nonequilib. submillimetre emission *(Russian)* 8−1869
Alfven shock evolution is classical MHD *(French)* 8−18352
collisionless, isomagnetic discontinuity form., dissipative mechanism *(Russian)* 8−38492
electrostatic shocks, double layers and anomalous resistivity in magnetosphere 8−45152
flow in transverse mag. field *(Russian)* 8−9765
high density plasma, thermonuclear reaction wave, propag. stages, computer simulation 8−742
high energy CO_2-laser pulse, interaction with liquid and solid targets, optical investigations 8−42829
hot gas plasma, building up compression rings by dielectric spark discharge in layers of liquid 8−38493
interplanetary medium, slow MHD shock waves 8−12068
ion cyclotron beam-whistler mode instability in parallel shocks 8−14148
ionising MHD shock wave propag., in nonuniform medium 8−5874
laser irradiated solid target, picosecond microphotography 8−42828
laser produced plasma, momentum transfer, cratering, and blow-off plasma ang. distrib. 8−5898
laser spark ignited near conducting target *(Russian)* 8−9884
laser spark produced shock wave, IR and microwave thermal radiation *(Russian)* 8−38533
MHD simulation, shock wave-induced plasma, transverse mag. field interaction 8−38463
multiframe ps holography appl. to high power laser effects in dielectrics 8−26328
particle simulation code investig. 8−38491
plexiglass compression by profiled opposite laser beams 8−47139
reflection by elliptic cylinder *(Russian)* 8−26287
relativistic, MHD 8−9770
retrograde ionizing waves in coaxial accelerator 8−42761
self-excited cumulative flow, compression dynamics and heating *(Russian)* 8−22469
slow mode shock layer, form. as result of mag. reconnection 8−40773

plasma shock waves continued
switch-on nonstationary, shock wave struct., dissipative electron transport influence 8−5875
Ar plasma, interferometric study of density and electron conc. behind shock waves 8−1888
Ar-Cs plasma stream, electrodynamic braking with strong MHD interaction 8−9763
CO_1, temp. and press. relax. behind shock wave, M=10-30 8−38490
Cs plasma, elec. cond. and eqn. of state, behind reflected shock wave 8−42716
$H_2(D_2)$-Ne-He(Ar) plasma, combustion driven shock tube, H_β central struct., ion mass effect 8−26327
Li wire, optical meas. of laser detonated shock waves 8−42798
Pb, mass ejection from shocked surface during fusion 8−47186

plasma simulation
axisymmetric plasma, ideal MHD spectrum, finite hybrid elements method 8−42734
beam propagation, turbulent nonlinear stabilisation, simulation 8−18422
beam-plasma system, nonlinear convective and oscill. instabilities, simulation models 8−34338
binary collision model for plasma simulations, Monte Carlo method particle code 8−9824
boundary conditions for simulation plasma in mag. field 8−26321
classical one-component plasma, screening pot., lattice model 8−22453
current penetration, magnetostatic code, anomalous heating, heat transport, microinstabilities 8−38526
diffusion time scale Tokamak code, G2M, two dimens. 8−42795
drift instabilities, collisionless, theory and numerical simulation 8−47106
EM particle simulation codes, initial noise, quiet start 8−1883
exploded wire plasma nonlinear evolution, numerical simulation 8−14197
fusion reactor lower hybrid heating, nonuniform density, particle simulation model 8−14185
fusion systems, solenoidal, instability-driven anomalous transport, review 8−22460
high density plasma, thermonuclear reaction wave, propag. stages, computer simulation 8−742
ion-acoustic wave packet propag., nonlinear, longer wavelength wave generation, simulation 8−14157
ion-acoustic waves, nonlinear self-modulation, expt. and simulation 8−42743
ion-acoustic waves, nonlinear self-modulation 8−14155
laser compression expts., X-ray emission 8−5905
laser heated electron distribs., props. 8−30462
laser heated plasma, heat-flux limitation and ion-acoustic turbulence 8−18453
laser light absorpt. due to self-generated mag. fields 8−14170
laser light resonant and collisional absorpt., heating, density profiles 8−38527
laser spatial intensity distrib. effect on ablated polystyrene target plasma characts. 8−9811
magnetosonic wave propag., computer simulation and theoretical anal. 8−5861
MHD shock waves, double layer upstream shocks, particle simulation code investig. 8−38491
microinstabilities, low frequency, simulation model 8−38525
mirror machines, computer simulation of field reversal 8−26316
nonlinear wave-particle interaction in magnetosonic mode, pure sinusoidal wave model 8−26320
proton beam, intense, space charge neutral, trapping in mag. mirror, simulation 8−9825
proton rings, mag. compression, computer simulation 8−22548
quasi-neutral particle simulation model for ion wave propag. and two-stream instability 8−47157
Rayleigh-Taylor instability in imploding foil plasma, two dimens. simulation 8−47156
relativistic electron beam collective ion acceleration, localised pinch model, simulation 8−9826
relativistic plasma, cyclotron radiation interaction computer model 8−30478
resonant particle effects in Langmuir and whistler waves, long-time-scale plasma simulation 8−42796
reverse-field pinch, MHD simulation 8−5920
self-focusing generation of high laser flux densities in laser prod. plasma 8−18413
shock wave-induced plasma current, transverse mag. field interaction, simulation 8−38463
solar wind, disturbances caused by charged Helios spacecraft 8−24416
thermal conduction, flux-limited, in laser prod. plasma 8−5899
three dimensional particle simulation models for cylindrical and toroidal plasmas 8−1884
Tokamak, plasma equilib., ferromagnet-saturation effects, numerical simulation 8−18440
Tokamak, TFR, current plateau, O_2 injection effect on Mo impurity 8−22565
Tokamak internal disruption development mechanism, mag. island growth, simulation 8−26317
Tokamak neutral low energy transport, multigroup discrete ordinate methods, ANISN simulation code 8−34269
Tokamak plasma, neutral atom transport by multigroup methods, time reduction techniques 8−18385
torus with three coil arrangements, simulation 8−18434
turbulent plasma, electron/ion energy distribs., laboratory and space plasma comparison 8−5945
Vlasov and water-bag models, self similar solns., simulation 8−26242
H, laser breakdown and propag., 2D-simulation 8−5921
He glow discharge, electron behaviour in cathode fall, Monte Carlo simulation 8−1941
He, ultradense reproducible Z-pinch, for laser-pellet interaction simulation, characterisation 8−30463
Hg plasma, molecular dynamics model for atom-electron interactions 8−42708
N_2 high intensity arc anode region, temp., current density, flow field, numerical anal. 8−9827

plasma theory
see also Debye-Huckel theory
alkali metal plasma, effect of elastic electron scatt. by at. excited states on conductivity 8−42715

plasma theory continued
arc, high-press. gas blast, local thermal recovery, current zero model calcs. 8−9892
atomic physics algorithm for transient ionis. and recombination 8−5846
autoionisation lines, attenuation, function of electron density 8−18387
ball lightning, plasma bunch description, stationary state, energy supply, occurrence 8−44969
ball lightning, quantum mech. theory *(German)* 8−16082
canonical ensemble partition function, incorporation of long range electrostatic effects 8−21065
charged particle, relativistic, polaris. loss in external HF elec. field *(Russian)* 8−26240
chemically reacting polyatomic plasma, kinetic model eqns. 8−26243
classical one-component plasma, melting parameter 8−47092
classical one-component plasma, screening pot., lattice model 8−22453
current-carrying plasma, discontinuous transitions 8−9754
dense electron gas response at any degeneracy, RPA calcs., plasma modes, screening 8−36930
dense plasma afterglow, theory 8−9882
dielectric response function, density fluctuations effects 8−30413
dispersed heterogeneous system, electron conc. calc. method 8−38452
Doppler profiles, optical escape factors, in spherical, cylindrical and plane parallel geometries 8−47101
electrical double layers, strong, exptl. obs. 8−30435
electrolyte pulsed discharge, radiation and equilib. composition 8−5975
electron density fluctuation spectrum 8−18377
electron distribution function in rapidly changing elec. field *(Russian)* 8−1792
electron energy distrib., relax. in elec. field, at. excitation rate 8−34266
electron plasma, pure, liquefaction and crystallisation 8−18376
electron runaway distrib. in Tokamaks, positive slope 8−5849
electron temperature and ion composition, allowance for excited states 8−30408
electron vel. distrib. in weakly ionised plasma 8−5848
electron velocity distrib., collisions *(Russian)* 8−1790
electron-ion pairs, correlated pairs, effect on conductivity 8−26249
electrostatic binding energy, relation to elementary consts. 8−47089
emission, appl. to solar radio bursts *(Russian)* 8−14139
energy transfer, macroscopic single-fluid plasma 8−42714
expanding plasma, gain on transitions of hydrogenic ions 8−17918
fluctuations, nonlinear EM, in nonequilib. plasma *(Russian)* 8−9756
focus, neutron radiation, model *(Russian)* 8−22519
forbidden lines in dense plasma, detectability 8−5856
free energy, exchange quantum correction, one-component plasma 8−47091
gas-blanketed plasma, boundary layer press. balance and diffusion 8−18380
generalised Rosenbluth pot., Balescu-Lenard eqn. friction and diffusion coeffs., wave effects 8−38457
high temperature plasma, impurity ionis. equilib., radiative cooling 8−42712
hydrogenic plasma, statistical mechs. of composite particles, projection technique 8−47090
impurity radiation from medium density plasmas in Tokamak or mag. mirror reactors 8−5857
impurity radiation loss effects on Tokamak expts. 8−22465
inert gas plasma, emission continua, photoionis. cross sections, absorption coeffs. 300-10000 Å 8−42731
ion acoustic waves, linear and nonlinear, cold electron density effects 8−30441
ion distribution function, ion drift rate *(Russian)* 8−1791
ionisation wave, kinetic theory 8−22454
ionised relaxation dissipation of waves in low-temp. plasma *(Russian)* 8−1816
isotropic plasma, reciprocity theorem 8−8254
kinetic eqn. for electron runaway prod. in toroids 8−47148
kinetic equation for two-dimens. guiding centre plasma 8−26241
Langmuir wave-particle interactions, microscopic Lagrangian description, warm plasma 8−42755
linear Z-pinch, outer 2s-shell electron excitation emission of C-, N-, and O-impurity ions 8−22113
local thermodynamic equilibrium 8−18379
long wavelength modes, space-time correlation functions 8−9772
magnetic dipole radiation field, hot magnetoplasma *(Russian)* 8−30416
many-electron atoms plasma, quantum statistical theory of recomb. continuum *(Russian)* 8−34279
Maxwell-Vlasov equations, in region exterior to perfectly cond. infinite cylindrical antenna 8−1843
modified Saha equation at high press. thermodynamic inconsistency 8−36450
multicomponent, modified Thomas-Fermi-Dirac statistical models 8−18378
neoclassical point model, stability analysis 8−30425
non-Debye plasma, single electron density of states 8−34264
nonequilibrium plasma, kinetic eqn. for waves and wave scatt. *(Russian)* 8−14174
nonequilibrium plasma, nonlinear wave interaction and stationary fluctuation spectrum *(Russian)* 8−14153
nonequilibrium weakly ionised plasma, de-excitation and stability 8−38453
nonthermal plasma, H and H-like ion populations, collisional radiative recomb. and ionis. 8−38450
nonthermal radiation emission, in Tokamak plasma, at plasma frequency 8−42732
one-component plasma, dipolar and ionic electrically neutral, correl. condits. 8−4573
one-component-plasma approx. scheme, quadratic compressibility sum rule 8−42713
oscillations, normal mode analysis, eigenfunctions and adjoint functions 8−42744
overheating instability, HF EM field effect 8−9771
partially ionised plasma, generalised Ohm's law *(Chinese)* 8−14131
photoionisation absorption spectra, photorecombination radiation, for dense nonideal plasma 8−26252
photon kinetic equation for Doppler line broadening, soln. 8−9751
ponderomotive force, nonreson. EM wave spatial effects, kinetic perturbation theory 8−18417

plasma theory continued
positive column, density oscills. due to negative ions, metastable atom model 8−1799
pycnonuclear reactions, and pair correl. function in dense plasma 8−32445
quantum two-component plasma third sum rule and local mean-field theory 8−5982
quasistationary distribution functions for kinetic eqns. 8−9755
radiation continuous spectrum from inert gas plasma 8−42729
radiation cooling of high-β plasma 8−1807
radiation coupling, kinetic model, collisions effect 8−34262
radiation emission from localised current source in magnetoplasma 8−34276
radiative processes in relativistic plasmas, appl. to kinetic theory of free-electron lasers 8−42316
recombination magnetic field effect 8−38449
relativistic Boltzmann theory, entropy production, reference frame 8−22547
relativistic Boltzmann theory, reciprocal relations, transport props. 8−30477
self-generated fields by currents driven by electron press. grad. 8−1794
self-localised EM fields in dense gas *(Russian)* 8−26239
soft X-ray spectrum of hot optically thin plasma, interstellar medium appl. 8−34275
soliton dynamics in nonintegrable systems, classical solns. 8−28996
spectral line contours, 'hollow' source functions 8−9554
spectral line profiles, plasma carrying sound waves 8−38461
spectroscopy, Abel integral eqn. soln. *(French)* 8−30415
Stark broadening of neutral lines 8−46299
stimulated transitions between highly excited levels, rel. to anomalous Balmer decrement 8−5176
submillimetre background emission from Tokamaks 8−47102
superthermal electrons, behaviour in scrape-off layer of DIVA 8−30495
synchrotron emissivity near electron cyclotron and upper hybrid freqs. 8−14140
synchrotron-transient radiation of charged particle in plasma with random inhomogeneities, spectrum 8−45213
temperature relaxation, in external mag. field 8−1797
thermionic-weakly ionised plasma, compact static isothermal, stationary transport process of charge carriers, continuum theory *(German)* 8−14138
thermonuclear react. rates, computation with STEEP code 8−18375
Thomson scattering, collision-dominated, negative ions effect 8−45118
transport coeffs., relativistic Boltzmann theory, variational method 8−47096
turbulent plasma, kinetic theory of binary correlations 8−26285
two component plasma cluster, scatt. *(Russian)* 8−47088
two-fluid dissipative plasma, energy principle in Lagrangian form, tearing modes 8−42794
vacuum polarisation, influence on radiation propagation in plasma *(Russian)* 8−47100
Vlasov and water-bag models, self similar solns., simulation 8−26242
wave interactions, nonlinear, microscopic Lagrangian description, warm magnetoplasma 8−42754
wave propagation, linear, dispersion relation, microscopic Lagrangian description, warm magnetoplasma 8−42753
X-ray emission from laser prod. plasma 8−42780
X-ray line profiles, Stark broadening in laser plasma 8−42733
Z-pinch, constriction due to radiation losses *(Russian)* 8−30473
Al(XII) and (XIII) reson. line trapping in laser-heated plasma, source distrib. diagnostics 8−42730
Ar arc, non-LTE, electron balance, temp. and density *(French)* 8−1796
Cl III, Stark broadening of isolated lines by plasma 8−9116
Cs plasma, elec. cond. and eqn. of state, behind reflected shock wave 8−42716
Cs, plasma, eqn. of state, 30-140 atm, 3000-4000K, by adiabatic compression 8−14132
Cs plasma, eqn. of state 8−42711
Cs, plasma, highly ionised, conductivity and eqn. of state 8−26323
Cs-He plasma, steady-state discharge, role of inelastic collisions, spectroscopic diagnostics 8−42709
F II, Stark broadening of isolated lines by plasma 8−9116
H, 2S level population calc. in turbulent plasma *(Russian)* 8−25451
H line shape, joint electron and ion influence *(Russian)* 8−9762
H lines in plasma, Stark broadening, review 8−42001
H, Lyman-α Stark broadening, dynamic screening effects 8−18386
H plasma hemispheric layer total radiation calc. *(Russian)* 8−34278
H, Stark broadened profiles, model electronic microfields 8−13468
H, Stark profile, ion motion, model microfields 8−13469
H-like ions, Lyman α self absorption, effect in quantum 2 and 3 states in recombining plasmas 8−37605
H-like ions, reson. doublet component intensities in optically thin laser plasma *(Russian)* 8−38458
He I satellite line shape, stochastic theory 8−38460
He plasma, Stark effect in 3-D stochastic elec. fields and static mag. field 8−5855
LiH plasma, phase transition 8−42710
N_2 plasma, electron distrib. function, kinetic coeffs. *(Russian)* 8−38451
N_2-Ar plasma, coupled thermal-chem. relax., thermodynamic nonequilib. 8−34265
N_2-Cu thermal plasma, effect of Cs on intensity of spectral lines, quantitative spectral anal. appl. *(German)* 8−30417
N_2-Ne glow discharge, energy balance, ionis. collisions *(German)* 8−34263
N_2-Ne glow discharge, kinetic eqn., transport coeff., collision freq., mean energy *(German)* 8−34261
Ne, electron energy distrib., relax. process 8−30507
O, impurity radiation, metastable transitions in Tokamak, modified coronal model 8−26255

plasma thermocouples *see plasma devices; thermocouples*

plasma torches *see plasma devices*

plasma transport processes
see also Vlasov equation
Alfven waves, excitation of convective cells in plasma *(Russian)* 8−47097

plasma transport processes continued
- alkali metal plasma, effect of elastic electron scatt. by at. excited states on conductivity 8-42715
- alpha particles anomalous interaction with dissipative trapped-ion mode 8-5851
- anomalous, due to EM drift wave fluctuations 8-26251
- anomalous resistivity in magnetosphere, rel. to electrostatic shocks and double layers 8-45152
- anomalous thermal transport in turbulent skin layer, ion-acoustic waves mechanism 8-5853
- anomalous transport effects in magnetically confined plasma columns 8-42725
- anomalous transport in turbulent electron heating 8-14216
- anomalous trapped ion transport in Tokamaks, 2-dimens. fluid calcs. 8-30412
- arc, tanh conductivity model, thermal and electrical characts. 8-42846
- arc, tank conductivity model, electrode geometry effects 8-42845
- beam-plasma interaction, test particle diffusion and scatt. in turbulent collisionless plasma 8-38508
- classical one-component plasma, transport coeffs. 8-9757
- combustion product plasma, electron conc. and mobility determ. by HCN laser submillimetric interferometry 8-1889
- conduction heat loss scaling in open field line geometries 8-14136
- conductivity, effect of correlated electron-ion pairs 8-26249
- conductivity, nonideal nondegenerate plasma, dynamic model 8-26238
- conductivity and viscosity, effect on stratified partially ionised plasma stability in mag. field 8-26276
- conductivity meas. in flowing plasma, pulsed probe method 8-1894
- conductivity of inhomogeneous plasma with nonlinear ionis. waves 8-42718
- current channel magnetic compression, in Tuman-2 Tokamak *(Russian)* 8-38455
- current density, local, mag. probe and Thomson scatt. meas., using Spitzer-Harm distrib. 8-18451
- current density and electric field fluctuations 8-38456
- current disruption accompanied by kink instability *(Russian)* 8-1819
- current generation, DC, during microwave toroidal mag. plasma heating 8-34271
- current interruption mechanism in collisionless plasma 8-42721
- current peaking effect on non-circ. Tokamak equilib. 8-5916
- current penetration, magnetostatic code, anomalous heating, heat transport, microinstabilities 8-38526
- current susta-ning by RF travelling field in collisional toroidal plasma 8-47094
- current sustaining by RF field 8-30414
- DC arc, for emission spectroanal., transport mechanism 8-22464
- DC current, collisionless limit, induced by travelling wave, collision term based calc. 8-1806
- dense plasma afterglow, theory 8-9882
- density, current, electron heat, through braided magnetic field, fluid and particle models 8-30410
- dielectric response function, density fluctuations effects 8-30413
- diffusion, anomalous, due to drift instabilities 8-47106
- diffusion, anomalous, parametric instability saturation 8-14161
- diffusion, collisionless, in Saturn stellarator, transient electric field effect *(Russian)* 8-26245
- diffusion, cross-field, in Tokamak with bundle divertor 8-42784
- diffusion, steady-sfate, boundary electron temp. and current density in Tokamak 8-22457
- diffusion, turbulent, in multicomponent plasma *(Russian)* 8-22455
- diffusion coeff. for turbulent plasma 8-5854
- diffusion cooling in afterglow, electron energy balance 8-5852
- diffusion of nonequilib. plasma in mag. field, boundary conditions 8-42722
- diffusion time scale Tokamak code, G2M, two dimens. 8-42795
- dissipative trapped ion instability and anomalous transport 8-22483
- drift-wave turbulence effect on mag. struct. and electron transport in Tokamak 8-22501
- early afterglow, higher diffusion modes 8-1802
- effective transport coeffs. of plasma in LTE approx. 8-1801
- electrical conductivity, Coulomb interactions effect 8-42719
- electrical conductivity, effect of electron-nearest ion collision complex form. *(Russian)* 8-1788
- electron acceleration, by mag. field energy dissipation in neutral current sheets 8-26250
- electron beam self-focusing decline by gas breakdown, avalanche and plasma cond. effects 8-18420
- electron heat transport in Tokamak with helical perturbations 8-47095
- electron plasma externally launched diocotron mode-induced transport across mag. field 8-9758
- electron thermal conductivity in Tokamak with destroyed mag. surfaces 8-30411
- electrons transport, in laser fusion plasma, Fokker-Planck eqn. 8-22462
- energetic charged particle transport, moment method 8-22458
- exploding wire discharge, thermal instability of elec. cond. in metal vap. 8-1868
- fluctuation diagnostics, digital time series anal. techniques 8-5951
- focus current, compression phase, mag. probe meas. 8-5939
- free-standing discharge, ATC Tokamak 8-30469
- fusion plasma rotation induced by 3.5 MeV alpha-particle losses 8-18384
- fusion plasma transport, unified slowing down theory 8-18383
- fusion systems, solenoidal, instability-driven anomalous transport, review 8-22460
- gas-blanketed plasma, boundary layer press. balance and diffusion 8-18380
- generalised Rosenbluth pot., Balescu-Lenard eqn. friction and diffusion coeffs., wave effects 8-38457
- heat transfer, 1976 literature review 8-5740
- heat transport on plasma with mega-Gauss magnetic fields, enhancement 8-34273
- heat waves, linear mag. fusion device, particle end loss reduction 8-33289
- high density plasma, thermonuclear reaction wave, propag. stages, computer simulation 8-742
- impurities in collision-dominated regime, transport props. 8-5850
- impurity diffusion, in Tokamak in collision regime, neutral injection effects *(Russian)* 8-26247

plasma transport processes continued
- impurity diffusion and heat transfer, in neoclassical regime, neutral injection effects *(Russian)* 8-26248
- impurity diffusion eqn., with ionisation and recombination source terms 8-30409
- impurity diffusion in Pfirsch-Schluter regime *(Russian)* 8-26246
- impurity ion UV emission poloidal asymmetry obs., grad B drift 8-26331
- inhomogeneous diffusion equations, analytic solutions, and diffusion coeffs. 8-34267
- inhomogeneous strongly magnetised plasma, quasilinear diffusion, particle transport and electrostatic oscillations 8-42723
- ion and impurity species, neoclassical transport coeffs. 8-14137
- ion sheath, convection sustained, struct., probe meas. 8-14179
- ion-beam perpendicular injection, anomalous slowing, quasilinear and trapping regimes 8-1850
- ion-sound turbulence, current-driven, from electron beam interaction, wave dynamics 8-38489
- ion-sound turbulence driven by return current from electron beam interaction 8-34314
- ionization-diffusion oscillations in glow discharge plasma, rel. to stepwise ionization 8-1927
- Langmuir waves, collisional damping in collisionless limit 8-34295
- laser beam filamentation in strongly ionised magnetoplasma 8-26291
- laser fusion target, energy transport 8-47143
- linear effects of wave propag. in plasmas, review 8-14149
- lower hybrid heating of toroidally confined plasma, transport, theory 8-42723
- magnetoacoustic oscillations in current-carrying plasma column 8-30438
- magnetoresistance, due to density or concentration inhomogeneities 8-47099
- metal plasma prod. by exploding wire, X-ray diagnostics 8-5909
- MHD boundary layer on flat plate with aligned magnetic field *(French)* 8-1808
- MHD combustion, operating mode aspects 8-18388
- multispecies flows, transport eqns. mathematical struct. 8-47084
- neoclassical coefficients, ELMO bumpy torus, one dimens. radial transport eqn. 8-42727
- neoclassical transport in elliptic Tokamak 8-14135
- neoclassical transport of multispecies plasma, mixed regime with several collisional species 8-34274
- neoclassical transport theory, for toroidal axisymmetric plasma, moment eqn. calcs. 8-42724
- neutral beam-injected mirror-confined plasma transport 8-22461
- neutral current layer dissociation, external plasma effect *(Russian)* 8-18409
- nonlinear diffusion in exploding wires 8-14191
- Ohm's law, electrical conductivity, turbulence effect 8-22463
- particle diffusion across mag. fields, stable profile for nonlinear diffusion eqns. 8-22456
- Pfirsch-Schluter transport modification by poloidally asymmetric sources 8-42726
- plasmotron, thermal and elec. characts., depend. on channel radius and flow 8-1910
- positive column constriction, cryogenic discharge, ambipolar wall diffusion 8-18468
- radial diffusion, eqn. for collision-affected plasma 8-49310
- relativistic Boltzmann theory, reciprocal relations, transport props. 8-30477
- relativistic Boltzmann theory, transport coeffs., variational method 8-47096
- relativistic Boltzmann theory, viscous phenomena 8-34365
- relativistic streaming plasma, generalised Ohm's Law, pulsar magnetosphere relevance 8-9823
- resistive effects in Alfven wave heating 8-1857
- resistive plasma, response to external current field 8-34268
- resistive tearing mode, influence of diffusion 8-34297
- resistivity, localised enhancement, mag. field-line reconnection 8-22467
- resistivity, turbulent, at high drift vels., particle diagnostics 8-38541
- resistrvity anomalous, generated by ion-acoustic turbulence, collision freq.-turbulence spectrum relation 8-14205
- resistivity enhancement by LF self-modulation of electron plasma modes 8-9759
- reverse current damping by relativistic electron beam *(Russian)* 8-1800
- RF induction plasma torch, temp., elec. cond., efficiency values from mag. probe meas. 8-42836
- rotating plasma, heating and diagnostics by induced poloidal currents 8-18449
- self-generated fields by currents driven by electron press. grad. 8-1794
- shock wave, collisionless, turbulent ion viscosity *(Russian)* 8-38492
- shock wave struct., dissipative electron transport influence 8-5875
- spatial diffusion coeff., unmag. collisional plasma, from ion-acoustic turbulence data 8-42728
- steady state transport and scaling in ELMO bumpy torus 8-22459
- student experiments on elec. cond. and similarity laws 8-24605
- surface impedance of plasma cylinder with anomalous skin effect, energy loss calc. 8-47098
- thermal conduction, flux-limited, in laser prod. plasma 8-5899
- thermal conductivity, laser-heated plasma, heat-flux limitation, laser-beam scatt. diagnostics 8-18453
- thermal plasma, heat and mass transfer 8-1805
- thermal plasma, heat transfer to neighbouring walls or electrodes 8-1804
- thermal plasma transport phenomena, conf., Odeillo-Font-Romeu, France (Sept. 1975) 8-1798
- thermionic-weakly ionised plasma, compact static isothermal, stationary transport process of charge carriers, continuum theory *(German)* 8-14138
- theta pinch, closed, balanced by transverse current *(Russian)* 8-1879
- Tokamak, fast electron intensive transverse migration *(Russian)* 8-18382
- Tokamak, Pfirsch-Schluter friction on H^+ 8-34272
- Tokamak internal disruption development mechanism, mag. island growth, simulation 8-26317
- Tokamak neutral low energy transport, multigroup discrete ordinate methods, ANISN simulation code 8-34269
- Tokamak plasma, heated turbulently, elec. cond. 8-42720

plasma transport processes continued
Tokamak plasma, neutral atom transport by multigroup methods, time reduction techniques 8−18385
Vlasov eqn. for vel. depend. interactions and pair-wise central pot. 8−34270
Vlasov equation, coherent state approach, quantum effects calcs. 8−1803
Ar arc, non-LTE, electron balance, temp. and density *(French)* 8−1796
Ar plasma, thermal equilibrium properties, estimation 8−1793
Ar two-temp. plasma, kinetic theory calcs. of transport props. 8−14134
BH plasma, hot, proton and deuteron transport calc., moment method 8−22458
Cs, electron-atom momentum transfer cross sections, from plasma electron thermal conductivity 8−42224
Cs plasma, elec. and radiative thermal conds., expt. data anal. method 8−42717
Cs plasma, elec. cond. and eqn. of state, behind reflected shock wave 8−42716
Cs, plasma, highly ionised, conductivity and eqn. of state 8−26323
H, partly ionised plasma, ionised collisions effect on thermal cond. *(Russian)* 8−47093
He collisional plasma, classical diffusion in large amplitude density fluctuations presence 8−18381
Hg plasma, molecular dynamics model for atom-electron interactions 8−42708
Mo impurity anomalous diffusion simulation, TFR Tokamak current plateau, O_2 injection effect 8−22565
N_2 plasma, electron distrib. function, kinetic coeffs. *(Russian)* 8−38451
N_2-Ne glow discharge, kinetic eqn., transport coeff., collision freq., mean energy *(German)* 8−34261

plasma turbulence
adiabatic modifications to turbulence theories 8−34315
anomalous thermal transport in turbulent skin layer, ion-acoustic waves mechanism 8−5853
astrophysical synchrotron reactor as RF source *(Russian)* 8−4098
beam propagation, turbulent nonlinear stabilisation, simulation 8−18422
beam-plasma system, nonlinear convective and oscill. instabilities, simulation models 8−34338
beam-plasma turbulence, wave power spectral distrib. 8−14163
coherent wave interaction with MHD turbulence *(Russian)* 8−1833
diffusion coeff. for turbulent plasma 8−5854
diffusion in multicomponent plasma *(Russian)* 8−22455
dissipative trapped ion instability and anomalous transport 8−22483
drift waves in turbulent plasma 8−1830
drift-wave turbulence effect on mag. struct. and electron transport in Tokamak 8−22501
E×B turbulence in magnetosphere, rel. to generation of electrostatic fields 8−28439
electron and ion energy distribs., laboratory and space plasma comparison 8−5945
electron beams, counterstreaming, self-consistent computation of explosive instability 8−22494
electron cyclotron radiation from turbulently heated plasma 8−34369
electron heating, anomalous transport 8−14216
electrostatic ion cyclotron turbulence in magnetosphere, rel. to mag. field-aligned pot. drops 8−45155
fluctuations, wave-number spectrum moments, correlation method for estimation 8−16732
heating, current driven ion-acoustic wave 8−5937
heating, Ohmic and neutral beam injection, energy exchange anal. 8−5895
heating by current-driven turbulence 8−9803
HF anisotropic noise, H Stark profiles 8−1896
high current arc, turbulence 8−47197
incoherent weak turbulence in solar wind, rel. to second harmonic radiation in type III bursts 8−7958
inhomogeneous strongly magnetised plasma, quasilinear diffusion, particle transport and electrostatic oscillations 8−42723
instability meas. by mm wave scatt. in turbulent plasma *(French)* 8−34373
ion beam-plasma wave modes, ion beam deceleration by ion acoustic turbulence 8−42771
ion turbulence in laser heated plasma 8−42807
ion-acoustic turbulence, rel. to mag. field energy dissipation in neutral current sheets 8- 26250
ion-acoustic turbulence and heat-flux limitation, in laser-heated plasma 8−18453
ion-acoustic turbulence generated anomalous resistivity, collision freq.-turbulence spectrum relation 8−14205
ion-acoustic turbulence spectra 8−14145
ion-acoustic wave, dispersion relation calc. 8−26284
ion-acoustic wave, modulational instability in turbulent phonon field 8−18395
ion-acoustic wave turbulence spectrum in large volume plasma 8−5871
ion-sound turbulence, current-driven, from electron beam interaction, wave dynamics 8−38489
ion-sound turbulence driven by return current from electron beam interaction 8−34314
ionosphere, diagnostics, by EM wave propag. obs. 8−45032
kinetic theory of binary correlations 8−26285
Kolmogorov turbulent spectrum, direct interaction model 8−18275
Langmuir turbulence, HF energy dissipation *(Russian)* 8−5873
Langmuir turbulence, stationary 8−14164
Langmuir turbulence spectrum, optical polarisation meas. *(Russian)* 8−22572
laser irradiated plasmas, flow effects on density profiles 8−18429
laser light absorpt., turbulence 8−47128
lower hybrid waves resonance interaction with turbulent plasma 8−30445
lower-hybrid turbulence filamentation by adiabatic perturbations 8−22500
magnetoacoustic turbulence, collision free mechanism *(Russian)* 8−22502
magnetosonic waves in presence of lower hybrid turbulence and heating 8−26281

plasma turbulence continued
magnetosphere, lower hybrid turbulence, nonlinear LF spectrum cutoff 8−4041
MHD turbulence rel. to form. time of isotropic particle vel. distrib., magnetosheath appls. 8−28420
nonequilibrium plasma, nonlinear wave interaction and stationary fluctuation spectrum *(Russian)* 8−14153
nonlinear dissipation, effect on heating under strong Langmuir turbulence conditions *(Russian)* 8−34346
Ohm's law, electrical conductivity, turbulence effect 8−22463
parametric, pumping wave harmonics generation *(Russian)* 8−26266
parametric instability, two-plasmon, two-dimensional relax. 8−5866
parametric phonon-turbulence from circ. polaris. UHF waves *(German)* 8−34316
PARODIE device for construction of large size homogeneous stationary plasma *(French)* 8−14223
perturbation of coherent wave-particle reson. 8−26274
plasmon gas oscillations *(Russian)* 8−47120
pseudo three dimens., magnetized nonuniform plasma comparison with ATC Tokamak 8−38488
pulsations, quasilinear theory 8−26283
reactor, power law distribs., cosmic ray source model *(Russian)* 8−26244
resistivity, turbulent, at high drift vels., particle diagnostics 8−38541
shock wave, collisionless, turbulent ion viscosity *(Russian)* 8−38492
solar corona, turbulence triggering during fast flux emergence 8−45304
solar flares nonrelativistic electrons accel. by strong plasma turbulence 8−7954
spatial diffusion coeff., unmag. collisional plasma, from ion-acoustic turbulence data 8−42728
stochastic ion heating, ion acoustic wave fluctuations obs., correlation time 8−34347
strong Langmuir turbulence, soliton flash, turbulent ion heating and relax. oscills. 8−1834
temperature fluctuations, turbulent, microwave blackbody spectrum obs. 8−1897
test charge moving in turbulent plasma, rate of energy loss 8−5872
Texas Turbulent Torus, energetic ion production, temporal and spatial evolution 8−1855
Tokamak apparatus for turbulent heating of plasma *(Japanese)* 8−1914
Tokamak plasma, heated turbulently, elec. cond. 8−42720
turbulence, nonlinear interaction of magneto-sound waves 8−45134
two-dimensional inertial turbulence, in cosmic-scale low-β magnetospheric plasma 8−36399
wave propag., nonlinear theory *(Russian)* 8−14165
waves detection in turbulent plasma by satellites of forbidden He transitions *(Russian)* 8−18391
He, gas discharge flow, contracted strata rel. to turbulence 8−1923
He I satellite line shape in plasma, stochastic theory 8−38460

plasma-wall interactions
see also plasma impurities
air, afterglow plasma, interaction with glass, Cu, steel walls, calorimetric method obs. 8−14177
combustion product plasma, discharge on cooled Cu electrodes, rel. to erosion damage in MHD channels 8−1925
CTR first-wall irradiation environment, appl. of dual-ion accelerator 8−13325
electrical discharge, deionisation, caused by internal surfaces, dispersion model anal. *(Russian)* 8−5961
electrical discharge, deionisation of low press. plasma in gas discharge gap, elec. strength *(Russian)* 8−1921
electron beam-sliding spark plasma device, X-ray microscopy appls. 8−5974
fusion reactor first-wall, struct. anal. for high temp. performance 8−13326
gas-discharge plasma, interaction with thin quartz glass layer *(Russian)* 8−14178
high-current travelling wave plasma accelerator appl. 8−5954
jet, heat exchange with obstacle 8−47130
laser impact, air-plasma layer interaction and surface screening *(Russian)* 8−22532
ORMAK, normal discharge energy loss to wall and limiter 8−34355
positive column constriction, cryogenic discharge, ambipolar wall diffusion 8−18468
thermal plasma, heat transfer to neighbouring walls or electrodes 8−1804
Tokamak, cold layer formation, wall protection 8−30470
Tokamak, heavy-impurity re-cycling and power loss at limiter 8−22543
Tokamak, metal impurities due to arcing 8−42787
Tokamak boundary in contact with limiter 8−5913
Tokamak first wall, fusion product bombardment 8−5019
Tokamak first-wall characterisation by in situ Auger electron spectroscopy 8−5022
Tokamak fusion reactors, model of impurity control techniques 8−17428
Tokamak reactor, first wall coating materials and techniques 8−8974
H flux to walls of fusion reactor, novel meas. technique 8−29640
He, afterglow plasma, interaction with glass, Cu, steel walls, calorimetric method obs. 8−14177
N_2, afterglow plasma, interaction with glass, Cu, steel walls, calorimetric method obs. 8−14177
Xe, plasma, optical props., wall erosion products effects calcs. 8−47164

plasma waves
see also magnetohydrodynamic waves; plasma oscillations
acoustic stability of subsonic flow in MHD channel 8−9764
Alfven wave, fast, inhomogeneous plasma, mode conversion and tunnelling 8−34300
Alfven wave damping in nonuniform plasma, continuous spectrum phase mixing 8−47112
anomalous transport effects in magnetically confined plasma columns 8−42725
antenna, oblate spheroidal, radiation and reception characts. for electron plasma waves 8−42765
auroral radio echo, ion-acoustic, short term characts. 8−45080
beam-plasma interaction, test particle diffusion and scatt. in turbulent collisionless plasma 8−38508

plasma waves continued
beam-plasma nonlinear interaction, electron collisions effect 8−14181
beam-plasma system, electrostatic wave energy, weakly explosive instability 8−18397
beam-plasma system, nonlinear amplification of waves *(Russian)* 8−5886
beam-plasma system, nonlinear wave-particle interaction 8−34339
beam-plasma turbulence, wave power spectral distrib. 8−14163
circular plate electron plasma wave antennas, exact directional patterns 8−30449
circularly polarised, in a weak stochastic mag. field, damping coeff. 8−34291
coherent nonlinear wave interaction, book 8−30444
coherent wave interaction with MHD turbulence *(Russian)* 8−1833
coherent waves interaction in stochastic mag. field 8−42752
cold electron plasma waves, finite extent, reson. decay, fusion appls. 8−38485
coupled Langmuir and ion-acoustic solitary waves, theory of two-dimensional stability 8−38476
coupling coefficients for circ. polarised wave in cold plasma 8−18400
detection in turbulent plasma by satellites of forbidden He transitions *(Russian)* 8−18391
discharge positive column, instability, of ionic component, amplification factor, dispersion eqn. 8−14232
drift, collisional instability, mag. shear stabilisation 8−18412
drift, dissipation by ionised relax. in low-temp. plasma *(Russian)* 8−1816
drift cyclotron instability, nonlinear dynamics 8−30433
drift mode instability, plasma-neutral gas interaction effects 8−18403
drift wave eigenmodes, in torus, nonlocalisation by mag. shear 8−34302
drift wave in sheared mag. field, stable eigenvalues 8−38484
drift waves, microinstabilities in plasma slab 8−14156
drift waves in turbulent plasma 8−1830
drift-wave turbulence effect on mag. struct. and electron transport in Tokamak 8−22501
drift-waves, collisionless, stable eigenmodes 8−34308
echo, nonlinear, time-depend., in strong HF elec. field *(Russian)* 8−1818
electric waves, linearly polarised, parametric instabilities rel. to Crab nebula 8−45220
electrical double layers, strong, exptl. obs. 8−30435
electroacoustic and cyclotron harmonic waves, effect on RF probe impedance characts. 8−42818
electron, relativistic effects 8−34310
electron concentration balance in wave field, profile stabilisation *(Russian)* 8−22497
electron cyclotron harmonic waves excited in helical electron beam-plasma system 8−1848
electron cyclotron resonance, power transfer efficiency from microwave field 8−9789
electron Landau damping of lower hybrid waves 8−42741
electron plasma wave, finite amplitude, nonlinear behaviour, sideband instability, electron distrib. function 8−38480
electron plasma waves, sum-freq. excitation, energy transfer efficiency 8−38496
electron trapping by plasma waves *(Russian)* 8−22474
electron wave coupling and propag. using phased waveguide arrays, heating appl. 8−5863
electron waves in magnetoplasma, angular dependence in Landau mode 8−22499
electron waves nonlinear propag., convective instability 8−1825
electron-acoustic mode, two-temp. electrons 8−14141
electrostatic, launched by grid, nonlinear steady state structs. 8−42766
electrostatic, non-stochastic heating 8−47136
electrostatic, slow,, Landau damping at low power levels 8−9774
electrostatic, turbulent perturbation of coherent wave-particle reson. 8−26274
electrostatic electron wave influence on radiation incoherent scatt. cross-section 8−34311
electrostatic H^+ cyclotron waves near one Earth radius altitude in polar magnetosphere 8−45154
electrostatic ion cyclotron wave, nonlinear propag. and modulational instability 8−1823
electrostatic ion-cyclotron wave spectrum, in neutral beam injection-stabilised mirror device 8−9775
electrostatic lower hybrid wave, nonlinear decay to whistler and Alfven wave pair 8−26275
electrostatic wave, electron Landau damping and electron collisions, Fokker-Planck model 8−47111
electrostatic wave propag. in toroidal geometry, ray tracing 8−9782
electrostatic wave reflection from sharp density gradient 8−42747
elliptically polarised waves interaction, parametrically excited precession freq. 8−18402
EM cyclotron wave, critical freq., effective anisotropy 8−34294
EM drift wave fluctuations, anomalous transport processes 8−26251
EM drift waves, nonlinear instability threshold amplitude 8−34305
envelope soliton of random phase waves 8−26282
excitations of wave modes and energy loss by charged particle passing through plasma sheet 8−38473
f_h resonance, ionospheric relax. sounding rocket expt. and interpretation 8−45129
fast wave propag. in hot dense plasma 8−14186
fluctuation diagnostics, digital time series anal. techniques 8−5951
four coupled plasma waves, interaction to second order 8−22491
fusion reactor lower hybrid heating, nonuniform density, particle simulation model 8−14185
generalised Rosenbluth pot., Balescu-Lenard eqn. friction and diffusion coeffs., wave effects 8−38457
gravitationally unstable mode, Larmor radius effects 8−1826
group velocity resonance cone, interference pattern 8−14142
HF induced waves in ionosphere, time vars. 8−45119
hot plasma, white noise excitation, sum of ion acoustic waves 8−42736
inert gas DC discharge, ionis. wave wavelength, electron gas state depend. 8−1918
inhomogeneous plasma, parametric trapping of EM waves *(Russian)* 8−9780
interplanetary plasma wave-solar electrons interaction, numerical anal. 8−7853
ion acoustic test waves in magnetized plasma, meas. by 30 GHz Lecher wire interferometer 8−1903

plasma waves continued
ion acoustic wave-electron plasma wave interaction 8−30439
ion acoustic waves, linear and nonlinear, cold electron density effects 8−30441
ion acoustic waves, rel. to solar coronal heating 8−4181
ion acoustic-soliton, interpretation of expt. 8−38474
ion beam-plasma system, absolute instabilities of electrostatic ion cyclotron waves 8−9793
ion beam-plasma wave modes, ion beam deceleration by ion acoustic turbulence 8−42771
ion bursts and free-streaming ion propagation, excited by grid 8−18393
ion cyclotron, stimulated backscatt. of EM waves 8−38495
ion cyclotron waves, parametric excitation in plasma containing two types of ions 8−30440
ion cyclotron waves at plasmapause rel. to stable auroral red arc form., proton obs. 8−49197
ion harmonic waves, plasma with arbitrary β, dispersion relation 8−34304
ion sound wave parametrically excited in T-D reson., azimuthal angle of T-D mode induced scatt. 8−9790
ion surface waves stimulated by vol. plasma waves, parametric interaction 8−42751
ion wave propag., quasi-neutral particle simulation model 8−47157
ion-acoustic, dispersion relation in turbulently heated plasma 8−14215
ion-acoustic, dissipation by ionised relax. in low-temp. plasma *(Russian)* 8−1816
ion-acoustic, harmonic generation 8−5867
ion-acoustic, in radio aurora, two-stream instability 8−36355
ion-acoustic, Korteweg-de Vries soliton, higher order terms in reductive perturbation theory 8−1824
ion-acoustic, near plasma reson., form. by EM radiation nonlinear conversion heating *(Russian)* 8−5859
ion-acoustic, nonlinear, propag. in collision dominated regime 8−34283
ion-acoustic, nonlinear self-modulation, expt. and simulation plasma simulation 8−42743
ion-acoustic, nonlinear self-modulation 8−14155
ion-acoustic, parametric decay instability caused by finiteness of pump wave amplitude 8−22482
ion-acoustic, refl. and absorpt. in density gradient 8−5868
ion-acoustic current driven wave in turbulently heated plasma, microwave meas. 8−5937
ion-acoustic in weekly ionised gas, single fluid model for dipersion and damping 8−30442
ion-acoustic inelastic soliton interaction 8−51
ion-acoustic large-amplitude solitons, nonstationary theory *(Russian)* 8−1820
ion-acoustic nonlinear waves, parametric excitation due to EM wave decomposition *(Russian)* 8−47104
ion-acoustic solitary wave excitation in collisionless plasma *(Russian)* 8−26267
ion-acoustic soliton, in nonuniform plasma, theory 8−30436
ion-acoustic soliton, refl. from sheath around negatively biased grid 8−38479
ion-acoustic solitons in electromagnetically irrad. magnetoplasma 8−22485
ion-acoustic wave, modulational instability in turbulent phonon field 8−18395
ion-acoustic wave excitation and interference by laser beam 8−34326
ion-acoustic wave expts., low freq., antenna characts. of Langmuir probes 8−42819
ion-acoustic wave fluctuations obs., in turbulent ion heating, correlation time 8−34347
ion-acoustic wave meas. with probes, antenna characts. 8−5949
ion-acoustic wave packet propag., nonlinear, longer wavelength wave generation, simulation 8−14157
ion-acoustic wave turbulence spectrum in large volume plasma 8−5871
ion-acoustic wave-CO_2 light coherent scatt. 8−34325
ion-acoustic waves, interaction with EM waves, plasma instability *(Russian)* 8−22505
ion-acoustic waves, probe excited in multidipole plasma device 8−42739
ion-acoustic waves detection using 30 GHz Lecher wire interferometer 8−5946
ion-acoustic waves in thin radially inhomogeneous plasma column 8−34289
ion-acoustic waves mechanism for anomalous thermal transport 8−5853
ion-Bernstein, parametric excitation by lower hybrid pump wave 8−14143
ion-Bernstein wave, inhomogeneous plasma, mode conversion and tunnelling 8−34300
ion-cyclotron, ion beam excitation 8−34335
ion-cyclotron, ion beam excitation 8−34336
ionisation, excitation in low-temperature plasma 8−1832
ionisation waves, electron energy distrib. function 8−30421
ionisation waves in axial mag. field, crit. current 8−42848
ionosphere, parallel propag. waves, stability of electron shell distrib. 8−4032
ionosphere, stimulated by RF topside sounders, review 8−45128
ionosphere, VLF waves, natural and elecron-beam producted, rocket obs. 8−7829
Korteweg de Vries soliton, in slowly varying medium, theory 8−30436
Landau damping, particle picture 8−38471
Landau damping, Schrondinger eqn. perturbation expn. appl. 8−47124
Landau damping 8−14162
Landau damping in interaction between regular wave and noise *(Russian)* 8−47121
Langmuir, acceleration of trapped particles 8−22490
Langmuir, electron interactions Legendre expansion of quasilinear eqns. 8−30418
Langmuir nonlinear standing waves 8−22481
Langmuir solitons, stabilisation of modulation instability *(Russian)* 8−38470
Langmuir solitons in magnetised collisionless plasma *(Russian)* 8−47122
Langmuir turbulence, stationary 8−14164
Langmuir wave collapse in mag. field, instability-caused cavity *(Russian)* 8−1817
Langmuir wave collapse in mag. field *(Russian)* 8−9776

plasma waves continued
Langmuir wave decay, two-plasmon parametric instability, numerical anal. 8−14152
Langmuir wave emission and absorpt. coeffs. due to anisotropic unmagnetized particles 8−16370
Langmuir wave-particle interactions, microscopic Lagrangian description, warm plasma 8−42755
Langmuir waves, collisional damping in collisionless limit 8−34295
Langmuir waves, obliquely modulated, stability in collisional plasmas 8−22480
Langmuir waves nonlinear coupling as saturation mechanism for parameter instabilities 8−42748
Langmuir-wave modulation instability in electron beam self-induced transparency 8−34341
laser-pellet irradiation, two-plasmon decay instability, soliton form. role 8−1842
linear effects of wave propag. in plasmas, review 8−14149
linear electron plasma test wave, wavenumber oscills., standing wave effects 8−38478
linear wave propagation, dispersion relation, microscopic Lagrangian description, warm magnetoplasma 8−42753
linear wave props., parametric decay, heating 8−42758
long wavelength modes, space-time correlation functions 8−9772
longitudinal modes, produced by counter-streaming electron beams in stationary background 8−26273
longitudinal to EM wave conversion, WKB approx. 8−18389
longitudinal waves in magnetoactive plasma, nonlinear scatt. probability 8−22471
low-hybrid wave propagation and attenuation, influence of quasilinear effects *(Russian)* 8−18408
lower hybrid, absorpt., mode conversion 8−9781
lower hybrid cones, filamentation, moving solitary envelope solutions 8−30426
lower hybrid cones, nonlinear development 8−34306
lower hybrid parametric instabilities, nonuniform pump waves, Tokamak appls. 8−34344
lower hybrid RF emission, meas. by antenna 8−9852
lower hybrid wave excitation by electron beam, body waves 8−34287
lower hybrid wave excitation by electron beam, surface waves 8−34288
lower hybrid wave propag., asymptotic soln. 8−47107
lower hybrid waves in Tokamak, finite-sized source focusing 8−9783
lower hybrid waves resonance interaction with turbulent plasma 8−30445
m=1 waves propagating in Scyllac 8−5865
magnetic field generation, laser light reson. absorpt., stress tensor anal. 8−18419
magnetically confined plasmas, parametric instabilities in laser heating 8−18432
magneto-acoustic, dynamic stabilisation of fire-hose instability 8−42750
magneto-acoustic, nonlinear, propag. in nonuniform plasma *(Russian)* 8−26261
magneto-acoustic, nonlinear interaction with whistler turbulence 8−45134
magneto-acoustic wave excitation by electron interaction with MHD waves *(Russian)* 8−22473
magnetoacoustic turbulence, collision free mechanism *(Russian)* 8−22502
magnetoacoustic wave resonance, generation and detection by single antenna 8−5950
magnetosonic, coupling to fast eigenmodes, dispersion relations 8−30429
magnetosonic wave parametric excitation, stimulated EM wave scatt. 8−34330
magnetosonic wave propag., computer simulation and theoretical anal. 8−5861
magnetosonic waves in presence of lower hybrid turbulence and heating 8−26281
magnetosphere, lower hybrid turbulence, nonlinear LF spectrum cutoff 8−4041
magnetosphere, plasma waves and instabilities in polar cusp 8−12058
magnetosphere, review 8−28451
MHD wave radiation reaction, of moving magnetic rotator 8−34312
microinstabilities, low frequency, simulation model 8−38525
modulated electron beam in inhomogeneous isotropic plasma, nonlinear wave generation 8−1852
modulation instability in magnetised plasma waves nonlinear development during heating *(Russian)* 8−47118
nonlinear, Landau damping *(Russian)* 8−22479
nonlinear, modulation instability *(Russian)* 8−22476
nonlinear, slowly varying in cold plasma 8−22489
nonlinear dispersive waves, Lagrangian method 8−1828
nonlinear electron density waves in plasma-filled waveguide *(Russian)* 8−26265
nonlinear electron waves, sawtooth shaped struct. 8−22492
nonlinear evolution eqn., bifurcation of solitary waves *(French)* 8−38465
nonlinear generation of higher harmonics, pumped by low hybrid freq. *(Russian)* 8−22498
nonlinear interactions, in semi-bounded plasma, kinetic theory *(Russian)* 8−34313
nonlinear ion acoustic wave, propag., with generation of long-wavelength waves 8−38475
nonlinear Langmuir wave, collisional damping in rarefied plasma 8−22484
nonlinear magnetoactive plasma, wave packet self-action *(Russian)* 8−38487
nonlinear microinstabilities, review 8−14150
nonlinear mode coupling between stable and unstable waves, growth rate modulation 8−1829
nonlinear monochromatic wave, source of particles effect *(Russian)* 8−9779
nonlinear propag. in complex mag. field geometry 8−14159
nonlinear propagation, lower hybrid waves, three dimensional effects 8−30424
nonlinear theory of propag. in turbulent plasma *(Russian)* 8−14165
nonlinear wave interaction and stationary fluctuation spectrum, nonequilib. plasma *(Russian)* 8−14153
nonlinear wave interactions, microscopic Lagrangian description, warm magnetoplasma 8−42754

plasma waves continued
nonlinear wave propag., solitons and envelope solitons 8−14158
nonlinear wave-particle interaction in magnetosonic mode, pure sinusoidal wave model 8−26320
nonlinear wave-wave interaction, harmonic generation coupling coeffs. 8−5867
nonlinear wave-wave interactions, symmetry and selection rules 8−42756
nonlinear wave-wave interactions without resonance conditions 8−42757
nonlinear waves in modulated electron beam-plasma system *(Russian)* 8−26264
oblique wave excitation in semifinite magnetoactive plasma with metal screen 8−26306
optical cavity plasma, stimulated Raman and Brillouin scatt., electrostatic and EM waves 8−34324
parametric excitation of longitudinal waves *(Russian)* 8−34282
parametric instability-induced, in relativistic electron beam heating 8−26307
parametrically driven waves, effect of particle drift motion 8−34293
plasma, ion-acoustic solitons, strongly non-linear 8−5858
plasma, transverse wave packets, momentum, mass and energy transport, solitons 8−1812
plasma waveguide, ion acoustic wave, excited by EM rad. press. 8−26298
plasmon prod. by laser light Raman conversion 8−47125
potential wave amplification by supercritical vel. electron beam in organic plasma *(Russian)* 8−1851
propagation in low-temp. plasma, ionised relax. dissipative effect *(Russian)* 8−1816
pumping wave harmonic generation, diagnostic of parametric turbulence *(Russian)* 8−26266
quasi stationary waves exam. on periodic injection of electron bunches *(Russian)* 8−47134
resonant particle effects in Langmuir and whistler waves, long-time-scale plasma simulation 8−42796
resonant wave interactions, inhomogeneous plasma 8−18404
RF discharge-plasma interaction, energy exchanges, magnetoacoustic wave generation 8−30485
RF heated Tokamak plasma, waveguide array excited lower hybrid fields 8−42773
Riemannian wave interaction in media without dispersion, quasi-elasticity *(Russian)* 8−9778
shock, rarefaction and heat waves, linear mag. fusion device, confinement 8−33289
solar corona, MHD wave mode coupling, stratified media 8−20775
solar corona, MHD waves, mode coupling, reduction of coupled eqns. 8−20776
solar flares, nonthermal plasma wave elec. fields meas. using Stark effect 8−12193
solar radio bursts type II and II theory *(Russian)* 8−16381
solar wind, ion acoustic waves, Imp 6 wavelength meas. 8−40787
solar wind, plasma waves rel. to second harmonic radiation in type III bursts 8−7958
solitary wave, radially symm., Korteweg-de Vries eqn., spike soln. 8−47109
soliton generation at resonance and density modification in laser irrad.-plasma 8−14172
soliton propagation, cloud generation, in nonlinear dispersive media with weak dissipation 8−47123
solitons, in dispersive media, nonlinear evolution eqns. soln., review 8−60
solitons, lecture 8−24690
solitons, one-dimens. coupled Langmuir-ion acoustic waves, dynamics and stability 8−34296
sound excitation long range effect in conducting plasma *(Russian)* 8−47105
sound waves, effect on spectral line profiles 8−38461
stationary space charge waves in bounded plasma 8−9777
surface wave, high freq., in current carrying hot plasma column, kinetic model 8−42759
surface wave propagation, on plasma column, mag. current excitation 8−1821
surface waves in collisional current carrying plasma column 8−34284
three-wave resonant eqns. with one heavily damped wave 8−14146
trajectory, mode conversion and electron cyclotron effects, in toroidal plasmas 8−47137
transverse, dispersion eqn., nonlinear effects *(Russian)* 8−38466
transverse waves propag. along axisymm. mag. field in nonhomogeneous plasma, WKB kinetic theory 8−42740
trapped particles, resonance interactions *(Russian)* 8−26236
travelling wave-induced DC current in collisionless limit, collision term based calc. 8−1806
turbulent plasma, ion-acoustic wave, dispersion relation calc. 8−26284
ULF, in magnetosphere, high latit. ground based obs. 8−49228
ultrarelativistic electron-positron plasma, wave prod., rel. to pulsar radiation 8−20629
Vlasov eqn. for vel. depend. interactions and pair-wise central pot. 8−34270
whistler, large-amplitude, parametric coupling with ion quasimodes, induced instability 8−18401
whistler wave damping, dipole antenna obs., large magnetoplasma 8−34327
Ar-He plasma, ion acoustic soliton form., mechanism 8−18457
H, Stark profiles, anisotropy of HF noise, turbulent plasma 8−1896
NaCl plasma, acoustic wave-coherent CO_2 light scatt. 8−34325
Ne, glow discharge, ionisation waves, regular and irregular, correlation meas. 8−1917

plasmatrons *see plasma diodes*

plasmoids *see plasma*

plasmons
see also phonon-plasmon interactions; solid-state plasma
adsorbed species, plasmon versus shake-up satellites in XPS 8−48286
alkali halide film, low energy electron scatt. 8−26928
alkali metal, plasmon line width variation due to interband transitions 8−47822
bound state of two plasmon excitations 8−39048
bound state of two plasmons, possible existence in metals and degenerate semiconductors 8−30882
dielectric, energy struct. determ. by electron absorpt. spectra 8−11040

plasmons continued

- dielectric function, inverse RPA calcs. at metal-vacuum interface 8−14789
- dimerized organic linear chain conductor, electron mol. vibr. coupling consts. 8−14686
- electron gas, mean free path of low energy electrons, influence of damping 8−10385
- electron-plasmon and electron-phonon interactions in bulk and near surface, Kikuchi patterns 8−26759
- excitation by large-angle scatt. electrons, density effect and plasmon bremsstrahlung 8−47718
- graphite intercalation compounds, KC_8 and CsC_8 polarised reflectance 8−31213
- insulators, theory of plasmon exciton coupling 8−23032
- ionic crystal-degenerate semiconductor interface, localised plasmon-optical phonon coupled modes 8−38930
- LEED Kikuchi pattern, contrast change due to plasmon excitation 8−34686
- metal, conduction band X-ray photoemission, intrinsic plasmons effects 8−39661
- metal, EM props., general lecture 8−26901
- metal, excitation of plasmons by ion bombardment 8−34793
- metal, periods IV, V, and VI, work function depend. on plasmon energy 8−18986
- metal, plasmon dispersion, effect of band struct., dielec. function calc. 8−26825
- metal, quasi one dimens., plasmon dispersion relations, RPA and HF calcs. 8−34789
- metal, wake potential for fast ion pairs, self consistent calc. 8−34792
- metal spheres, optical surface plasmon modes, theory 8−2539
- metal spheres, small, plasmon freqs., calc. by hydrodynamic theory 8−43319
- metal surface, light refl. from dye molecule monolayer 8−48246
- metal surface-void van der waals interaction energy 8−10036
- metal-metal contact, electron tunnelling stimulated by surface plasmons *(Russian)* 8−30974
- metallic film, steady-state Langmuir turbulence spectrum and turbulent energy absorption 8−26899
- metallic thin film, structure-related optical characteristics in visible and UV 8−35217
- metals, photoelectron spectroscopy of localised levels near surfaces, scatt. effects and relax. shifts 8−15291
- MIM tunnel junction, surface plasmon excitation 8−10578
- MOS inversion layers, acoustic plasmons 8−18983
- narrow gap semiconductor, electron-hole recomb. via plasmon emission 8−39046
- periodic crystals, general theory 8−26826
- piezoelectric crystal, optical SHG with surface plasmons 8−18008
- polar liquids, surface dipolar plasmons, nonradiative, dispersion relations 8−6308
- polar semiconductor, Raman spectra of coupled LO phonon-plasmon mode, de Haas-Shubnikov like quantum oscills. 8−43863
- polar semiconductor-polar semicond. interface, optic-phonon-magnetoplasmons 8−23146
- semiconductor, effect of free carriers on exciton luminescence 8−48226
- semiconductor, magnetoplasmon-polariton surface modes, Voigt geometry 8−43451
- semiconductor plasma, isotropic heated, temp. plasmon oscills. 8−26898
- semiconductors, free electron scattering and dynamical cond. 8−2476
- semimetal, acoustic plasma wave excitation 8−10520
- surface, density-density correlation function, exchange corrections 8−14786
- surface, momentum or energy fixed dispersion relations 8−14687
- surface dielectric sum rule for electron response function 8−39184
- surface polariton effects in spontaneous emission, effects of spatial dispersion 8−34879
- TCNQ-HMTSeF, polarised single cryst. reflectance obs. and one-dimens. behaviour interpret. 8−6690
- two-dimensional classical plasma, on dielectric film, collective excitations *(Russian)* 8−34788
- void lattice, plasma oscill. 8−10382
- water, surface dipolar plasmons, nonradiative, dispersion relations 8−6308
- X-ray and synchrotron radiation inelastic scattering in crystals, review 8−39625
- Ag, electrode pot. effects on surface plasmon excitation 8−15149
- Ag film, substrate surface structure effects on absorptance 8−19585
- Ag film on Cu(111), plasma reson. absorption in interfacial photoemission 8−15289
- Ag grating, surface plasmons rel. to diffr. order intensity profile, higher harmonics influence 8−25981
- Al (111), chemisorpt. of O 8−14593
- Al (111), LEED Kikuchi pattern, contrast change due to plasmon excitation 8−34686
- Al, adsorption of O_2, intrinsic and extrinsic plasmon coupling, XPS of adsorbed atoms core states 8−10278
- Al, ang. depend. of plasmon loss features in XPS 8−43987
- Al, exoelectron photoemission enhanced by slip steps, plasmon reson. theory 8−15300
- Al foil, straggling of relativistic electrons, 0-4000 eV 8−14393
- Al, plasma oscillations in oxide free Al clusters 8−2510
- Al, plasmon dispersion, effect of band struct., dielec. function calc. 8−26825
- Al, polycryst., anisotropy of plasmon dispersion, pseudopotential method 8−23039
- Al slab, fast electrons slowing down, Monte Carlo transport simulation *(French)* 8−26610
- Al, ultra soft X-ray photoelectron energy loss study, plasmon loss intensities 8−23582
- Al-Zn-Mg, grain boundary surfaces, plasmon loss satellites in Auger spectra 8−15261
- As, interband, magnetorefl. for circularly polarised radiation 8−2840
- Au, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
- Au, electrode pot. effects on surface plasmon excitation 8−15149
- Ba, ang. depend. of characteristic energy loss, surface plasmon excitation 8−2962
- Ba, plasmon excitation by oblique incidence of primary electron beam of medium energy 8−18987

plasmons continued

- Be, X-ray K emission spectrum, high energy double plasmon satellite intensity calcs. 8−2944
- Bi, and Bi_2O_3, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
- Ca, optical props., 2-11 eV 8−15191
- Ca, plasmon excitation by oblique incidence of primary electron beam of medium energy 8−18987
- $Fe(NH_4)_2.(SO_4)_2.6H_2O$, $K\beta'$ satellite of $K\beta_1$ X-ray emission line, plasmon oscill. theory 8−23556
- GaAs, acoustic plasmons in MOS inversion layers 8−18983
- Ge, optical pulse transmission, pulsewidth depend., phonons and plasmons role 8−31198
- GeS(Se), dielec. function, optical and electron energy loss spectroscopy 8−15189
- In, ultra soft X-ray photoelectron energy loss study, plasmon loss intensities 8−23582
- In_2O_3:Sn, film, optical modulation effects in electroreflectance spectra 8−6800
- KBr film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
- KCl film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
- Li, plasmon linewidth, k-dependent, anomalous behaviour explanation, interband transitions 8−47721
- Mg, ang. depend. of characteristic energy loss, surface plasmon excitation 8−2962
- Mg film, electrom energy loss spectrum in excitation of volume plasmons 8−11043
- Mg, $L_{23}VV$ Auger spectrum 8−39634
- MnO, $K_{\beta 5}$ X-ray emission spectrum, low energy plasmon satellite A 8−2945
- MnO, X-ray $K\beta$ emission spectra, unpaired electron and plasmon effects 8−19603
- MnO_2, X-ray $K\beta$ emission spectra, unpaired electron and plasmon effects 8−19603
- Mo, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
- NaCl, energy struct. determ. by electron absorpt. spectra 8−11040
- Nb alloys, optical props., 0.1-25 eV, band models 8−10892
- NiO (100) surface, electronic states, electronic energy loss spectroscopy 8−6426
- Pd-Cu-Si metallic glass, energy loss spectra and Auger spectra 8−23563
- Pd-Ni-P metallic glass, energy loss spectra and Auger spectra 8−23563
- PdH(D), energy loss spectra and Auger spectra 8−23563
- Sb, Sb_2O_3 and Sb_2S_3, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
- Sc, XPS, plasmon peaks 8−6828
- ScH_2, optical interband struct. and low energy plasmons 8−31200
- ScH_2, XPS, plasmon peaks 8−6828
- Sc_2O_3, XPS, plasmon peaks 8−6828
- Si (111), UHV cleaved, adsorbed O, electronic transitions 8−39183
- Si inversion layer, two-dimensional magnetoplasmon 8−2440
- Si, surface, Auger spectrum, high energy plasmon satellites 8−2955
- SnS(Se), dielec. function, optical and electron energy loss spectroscopy 8−15189
- Sr, plasmon excitation by oblique incidence of primary electron beam of medium energy 8−18987
- TiN, optical props. at 300K 8−19466
- ZnSe (111), low-energy electron loss spectra, bulk and surface transitions 8−11042
- ZrN, optical props. at 300K 8−19466

plastic after-flow *see recovery-creep*

plastic afterflow *see recovery-creep*

plastic crystals

- adamantane, order cubic F43m phase, X-ray diffuse scatt. 8−38684
- adamantane, Rayleigh scatt. of Mossbauer radiation 8−27125
- 2-azanoradamantane N-oxyl, crystal-plastic transition, plastic crystal struct. exam. 8−2100
- t-butyl chloride, solid phases, mol. motion, cold neutron scatt obs. 8−26460
- dl-2,3-camphanedione, elec. cond., brittle-to-plastic region, cond. jump 8−39169
- dl-camphor oxime, elec. cond., brittle-to-plastic region, cond. jump 8−39169
- d-camphor systems, mol. reorientation dynamics, Raman spectra 8−31178
- dl-camphoric anhydride, elec. cond., brittle-to-plastic region, cond. jump 8−39169
- carbon tetrachloride, liq. and plastic cryst. phases, thermodynamic props., light scatt., US propag. 8−2863
- cyclohexane, plastic-phase, NO-doped, heterogeneous solid soln., mag. reson. evidence 8−34449
- cyclohexane, thermal cond. and sp. ht. under press. 8−22906
- cyclohexanone, solid, phase behaviour, at press. up to 3 kbar, DTA 8−43108
- cyclopentanol, solid, phase behaviour, at press. up to 3 kbar, DTA 8−43108
- cyclopentanone, solid, phase behaviour, at press. up to 3 kbar, DTA 8−43108
- 1,2-dichloroethane, orientationally disordered crystal., mol. orientation 8−34448
- dipolar autocorrelation function, phonon contrib., IR absorption 8−42928
- hexachloroethane, surface roughening transition in vapour phase growth 8−2044
- hexamethyldisilane, plastic deform., and diffusion of hexamethylethane-^{14}C 8−14510
- linear diatomic rigid mol. chain, mol. dynamics, rot. phase transformation, struct. factors 8−26635
- methane solid, spin model for orientational phase transition 8−30735
- neopentane, Brillouin scatt. near liq.-plastic cryst. transition 8−19495
- neopentane, mol. motion in cryst., liq. and plastic phases, neutron scatt. obs. 8−6021
- nondecane, Rayleigh scatt. of Mossbauer radiation 8−27125
- n-paraffin, rotator phase transformation, lattice dynamics Helmholtz free energy 8−34585
- pivalic acid, orientationally disordered crystal., mol. orientation 8−34448

plastic crystals continued
- Rayleigh scattering of Mossbauer radiation 8−27125
- succinonitrile, orientationally disordered crystal., mol. orientation 8−34448
- succinonitrile, plastic phase, mol. reorientation and rotational isomerization, anal. of elastic incoherent struct. factor 8−22674
- thianaphthalene, Rayleigh scatt. of Mossbauer radiation 8−27125
- transition to crystal phase, mol. and lattice symm., Landau theory 8−42929
- translation and rot. dynamics, microscopic Hamiltonian anal., inelastic neutron scatt. elastic consts. 8−38632
- n-triacosane, chain axis cryst., quasi-elastic neutron scatt., plastic phase transform 8−6023
- trimethylphosphate, plastic and hard crysts., liq., nucl. spin-lattice relax. mol. motion 8−48065
- t-cyanobutane, solid, uniaxial molecular reorientation, quasielastic neutron scatt. 8−42927
- cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
- GeH$_4$, crystalline, determ. of mol. symm. from IR spectrum 8−9969
- NF$_3$, Raman spectra, Coriolis coupling and transition dipole 8−39533
- NH$_4$Cl, surface roughening transition in vapour phase growth 8−2044

plastic deformation
- *see also Bauschinger effect; buckling; creep; ductility; elastoplasticity; ferroelasticity; kink bands; Luder's bands; necking; plastic flow; serrated yielding; slip; superplasticity*
- acoustic emission in brittle materials, book contrib. 8−11484
- acoustic emission rel. to stacking fault energy 8−14365
- activation volume dependence on total deformation value 8−5671
- ageing alloys, single cryst., deform. and hardening 8−23716
- alkali feldspar, deformation, plastic defects, TEM investig. 8−32066
- alkali halide, doped single crystals, plastic anisotropy 8−26575
- alkali halide, X-ray induced strain effects rel. to time of irrad. 8−6120
- alkali halides, electrification by plastic deform., mechanism 8−26935
- alkali halides, exposed to US waves, dislocation multiplication in original stage 8−47383
- alloy, thermodynamic and structural changes in deform. twinning 8−2139
- alloys, Ll$_2$, superstructure, dislocation link strength and strain hardening at high degrees of deform. *(Russian)* 8−39792
- anisotropic body, slip planes 8−39874
- anisotropy theory based on yield function of fourth order 8−31457
- anthracene, triplet exciton trapping by dislocations 8−30871
- austenitic steel, mechanical properties, effect of high temp. thermomechanical treatment and post-deform. ageing *(Russian)* 8−39809
- axisymmetric solids with material and geometric nonlinearities, finite element anal. 8−34037
- ballistic impact on thin plates, membrane model 8−30193
- BCC metals, influence of screw dislocations on cryst. lattice rotations during deform. *(Russian)* 8−6966
- beam dynamic loading, large elastic-plastic deform., numerical anal., expt. meas. 8−1574
- bending plastic collapse, mm. cost in elastoplastic structs. 8−30197
- biological membranes and proteins, plastic deformation during freeze-cleavage, review 8−14400
- bone, compact, deform. and strength 8−24087
- bone, deform. and strength, change dynamics at early stages of form. 8−7383
- bone, deformation under unloading and repeated loading 8−3546
- boudinage structures, displacement and stress distrib., finite element method 8−32078
- α-brass, acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
- brass, deformation, tension, torsion compression test exam. *(Russian)* 8−31455
- brass single crystal, martensite form. and shape memory effect mech. 8−19744
- brittle materials, splitting of fracture toughness into two terms, elastic deform. and plastic deform. *(German)* 8−35468
- buckling of elastic-plastic cylindrical panel under axial compression 8−1584
- dl-camphene, self-diffusion, effect of impurities, radiotracer and plastic deform. study 8−43177
- cavitation erosion, observation of eroded surface by SEM 8−15536
- chamotte concrete, alumina-based cement, thermomech. props. 8−35455
- chrome yellow, crystal lattice deform. effect on colour *(Rumanian)* 8−23422
- circular plate resonse to central pulse loading 8−18187
- composite material, deformability surfaces 8−23792
- composite material, sintered, microstrained state, opt. polarisation investig. 8−11476
- composite materials loaded in, uniaxial tension under pressure, tensile strength eval. 8−19828
- composite ribbed cylindrical casings, stressed-deformed condition under external hydrostatic press. 8−6996
- compression struts, of nonlinear viscoelastic materal time dependent load bearing capability *(German)* 8−48474
- constructional materials, constructing relationship processes of loading and deform. 8−6998
- contact adhesion between solids in vacuum, deform. and interfacial energy 8−22306
- Cosserat theory of crystal plasticity, appl. to anal. of lattice rotations under constrained deform. *(Japanese)* 8−2189
- crack tip, moving, void growth, coalescence, finite element anal., plane strain conditions 8−1609
- cryolite, hydrothermal synthesis of large synthetic single crystal, props. 8−19654
- crystalline particles at sphere-plane contact, nondiffusional deform. under capillary forces 8−15329
- crystallite deformation in rolling, computer simulation *(French)* 8−31421
- crystals pulled from melt, thermal stresses and struct. defects 8−2041
- Cu-Al, FCC, study of dipoles using weak-beam electron microscopy 8−22724
- cubic crystals, active slip systems in plastic deform. process *(French)* 8−35431
- cubic crystals, dislocation theory, soln. of eqns. *(German)* 8−38701
- cubic crystals, elastic strip, moving stress sources, boundary-value problem soln. *(German)* 8−38702

plastic deformation continued
- cylinder penetration of thin obstacle, 1-D approx. anal. *(Russian)* 8−30246
- cylinders, thin necked, thermoplastic deformations, stability analysis *(German)* 8−22281
- delayed cracking by H$_2$ gathering simulations at plastically deformed notch, finite element anal. 8−31539
- diamond, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
- dielectric, pulsed RF radiation produced by scratching *(Russian)* 8−19607
- discontinuous deformation, statistical model 8−34566
- dislocation density, depend. on extent of plastic deform. and grain size *(Russian)* 8−22715
- dislocation dynamics during strain rate changes *(German)* 8−18655
- dislocation generation mechanism in shock wave deform. 8−43018
- dislocation mobility, description using diffusion eqns. 8−38697
- dislocation motion, Kê peak anal. by internal friction meas. during deform. 8−18705
- dislocation source activation by load impulses 8−14350
- dislocation subboundaries, collective effects accompanying migration *(Russian)* 8−14347
- dislocation transformations in theory of plastic deformation 8−38703
- dynamic plasticity, implicit and explicit computational schemes 8−34038
- elasto-plastic continua, quasi-bifurcation in dynamics 8−38223
- elastoplastic bodies, quasistatic deform., models, initial boundary value problems *(German)* 8−42549
- ELN-1 alloy, prestrain effects on strength *(Russian)* 8−11267
- enamel coating on metallic base standardization of estimation of impact strength 8−23768
- fault gouge, structural changes during stable sliding and stick-slip 8−32079
- FCC crystal, transient effects during tensile tests in model of correlated dislocation motion 8−38715
- ferromagnet, mech. behaviour in microplastic strain region *(Russian)* 8−39838
- fracture mechanics of yielding materials, review 8−31521
- frames and beams, arbitrary cross-section, deflections at shakedown 8−34028
- glass, industrial cylindrical tubular elements under internal and external press., deform. and failure resistance 8−35460
- glass fibre reinforced composite, fatigue failure, role of shear deform. 8−15494
- glass fibre reinforced plastic, deform. conc. around openings due to pulse loading 8−23799
- glass fibre reinforced polyester and epoxy resin, vacuum hardened shell, strength and deform. charact. eval. 8−48528
- glass fibre-reinforced polyester cross-ply laminates, effect of resin failure strain on tensile props. 8−3212
- grain boundary as dislocation source during high temp. deform. *(Russian)* 8−15453
- graphite, silicized, fracture analysis, deform. 8−15530
- graphite thermally stressed disc, nonlinear deformation 8−6964
- heat-resisting alloys, VM-1 and VX-4, thermal fatigue rel. to struct. changes *(Russian)* 8−11302
- heterogeneous materials, linear analysis 8−5664
- hexamethyldisilane, plastic deform., and diffusion of hexamethylethane-^{14}C 8−14510
- hybrid composite material beams, exam. of shear stress correction factors 8−46899
- hydrogen embrittlement due to H-inclusion interaction 8−30664
- impact testing machine operating over wide range of deform. rates 8−3271
- inelastic deformation, hardness law 8−46896
- inelastic material, effect of material struct. changes 8−12562
- inelastic material, ideal, theory of elastic and plastic distortions 8−12561
- inhomogeneous yielding, slip plane intersection with stress free boundary, mild steel appl. 8−5667
- instability during tensile deform., numerical calc. 8−30203
- internal friction, determ. from dynamic hysteresis loop area and specimen cross section in deform. 8−23897
- isotropic crystal temp. shear coeff. determ. 8−2190
- isotropic material, modified stress deviator for plastic compressibility *(German)* 8−13914
- laminate, deform. charact., pliability and rigidity 8−23798
- loading rate-temperature effects *(Russian)* 8−9570
- low temperature, heating of dislocation sources 8−18660
- material classification by brittleness and stress/deform. relationship 8−15528
- mathematical prgramming methods for deform. anal. at plastic collapse 8−1572
- mechanical props. determ. with conic plastometer, wide moisture content range 8−11270
- mechanism map, for high temp. creep 8−35439
- metal, axisymmetric drawing simulation, numerical method development 8−30206
- metal, bulk deform. process 8−31459
- metal, deform. resist. determ., plastometer 8−7121
- metal, deformed, dispersion-hardening, theory of strength *(Russian)* 8−35424
- metal, degree of deform. effect on thermophys. props. at high temps. 8−26694
- metal, ductility effects during plastic deform., rel. to struct. changes 8−23770
- metal, electron state effect on mech. props. and electroplasticity 8−14725
- metal, fatigue fracture-stacking fault energy correlation *(Russian)* 8−15499
- metal, grain size and microstrain meas. from X-ray diffr. data, moment method *(Czech)* 8−31593
- metal, pinch effect on plastic deform. *(Russian)* 8−35426
- metal, plastic, work hardening, sintered, porous, irreversible deform. 8−19849
- metal, porous, stresses in deform. region during cold rolling 8−11241
- metal, review *(Russian)* 8−19825
- metal, superconducting transition, effect of change of electrostatic interaction of defects 8−10610
- metal, work-hardening, plastic, sintered, porous, irreversible deform. 8−35459

plastic deformation continued
metal deformability, flow curves mathematical description, thermal dependence *(German)* 8−15484
metallic glass, shear deform., mechanism involving dislocation glide 8−15462
metals, cavitation erosion 8−48538
metals, constitutive relns. 8−42544
mould material deformation meas. at high temp., apparatus 8−3266
necking and tensile instability in material with strain hardening and strain-rate hardening 8−23717
nonisothermal elastic-plastic and elastic-viscoplastic deforms., stress/strain relations 8−22276
nonmetallic material, mech. props., testing installation, +600 to −190°C 8−15633
notched rectangular bars, notched bend test specimens, strain meas. *(German)* 8−11451
notched rectangular bars, stresses at plastic deflection *(German)* 8−34025
nuclear fuel sheath deform. following fuel power transients, simulation 8−33258
nuclear reactor structural mechanics, conf. 8−41874
nylon, steady-state deform. and its effect on struct. and morphology 8−15459
one-dimensional crystal, deform. and fracture simulation 8−47470
optical fibre stress-optical degradation obs. 8−1402
ordering alloy, $L1_2$ superstruct., superdislocation dissoc. *(Russian)* 8−48451
particle deformation during cold isostatic pressing 8−44052
PCTFE, work to produce environmental crazing at low temps. 8−15553
PET film, PET, transverse constriction and stresses accompanying uniaxial orientation 8−48475
phonon-phonon scattering, hydrostatic deformation effect 8−18721
plastic, deformation speed in static tensile tests, machine rigidity effects *(German)* 8−48473
plates, plastic dynamic flexure 8−30196
PMMA, molecular alignment 8−14299
PMMA, orientation by extrusion, stress-optical study 8−47248
PMMA, work to produce environmental crazing at low temps. 8−15553
polycarbonate, criterion for craze nucleation 8−19881
polycarbonate, glassy, temp. drop during deform. 8−15456
polycarbonate, notched specimens deform. and fracture 8−11293
polycrystalline material, plasticity analysis using stat. model *(Russian)* 8−26619
polycrystalline plasticity, based on dislocation processes, probabilistic approach 8−26621
polycrystalline plasticity, probabilistic approach, appl. 8−26622
polycrystals, deformed, particle sizes and mean square strains *(German)* 8−3284
polydiacetylene single crysts., twinning 8−23777
polyethylene, anisotropic surface stress 8−14562
polyethylene, cross-linked crysts., deform. mechanism 8−15469
polyethylene, dynamic mechanical behaviour during creep to failure in uniaxial extension 8−15455
polyethylene, high oriented, deformation mechanisms of constrained chains, geometrically induced correlations of tie molecules 8−19835
polyethylene, high-density, lamellar sep. during deform. 8−23775
polyethylene, high-density, oriented, deform. mechanisms 8−44171
polyethylene, high-density, semicryst., fold-surface morphology effect on deform. processes 8−34447
polyethylene, highly oriented by drawing, thermal cond. 8−47614
polyethylene, linear role of recovery forces in deformation 8−48459
polyethylene, observation of deformation process with X-ray TV system 8−15610
polyethylene, shish kebab structure, formation mechanism 8−14286
polyethylene, steady-state deform. and its effect on struct. and morphology 8−15459
polyethylene film, TSC, 20 to 60°C 8−10826
polymer, activation energies of fracture and deform., comparison *(Russian)* 8−11303
polymer, deformation, ultimate regimes for flexible chains 8−19844
polymer, deformation mechanisms of constrained chains, geometrically induced correlations of tie molecules 8−19835
polymer, deformation mechanisms of constrained chains deform. energetics of tie molecules 8−19836
polymer, physically nonlinear, stress relaxation during stretching 8−23754
polymer, solid, impact compression crushing at low temps. *(Japanese)* 8−7032
polymer foil, optical props. study by photoelasticity in const. and oscillating mech. fields *(German)* 8−31168
polymer processing technology, prod. of high chain extension 8−31378
polymers, construction of single relaxation time spectrum 8−44160
polymers, plastic deformation during freeze-cleavage, review 8−14400
polyoxymethylene, effects of hydrostatic press. on shear deform. 8−15457
polypropylene, effects of hydrostatic press. on shear deform. 8−15457
polypropylene, isotactic, shear induced β-form crystallisation 8−18555
polypropylene nonfilaments, highly drawn, plastic deform. 8−44174
polystyrene, molecular alignment 8−14299
polystyrene, stress birefringence under nonisothermal conditions 8−15468
power-law hardening material, small-scale yielding problem, soln. *(German)* 8−38210
prismatic bar, large deform. anal. for repeated axial loading 8−38207
PTFE, crystalline, subject to simple plane loading, limiting resistant, time and temp. factors 8−23794
PVC, hard, flow zone effect on degradation, rigidity, deformation, under fatigue *(German)* 8−15471
rate type plastic material, with kinematic work hardening 8−15450
rocks, fabric development simulation, appl. to quartzite 8−49015
rocks, rheology and growth of banded perturbation structures 8−36152
rocks, time-dependent deform. not purely elastic specimens 8−32075
rubberized cloth, service life determ. under cyclic load 8−31535
ruby, temp.-time dependence of yield point by compression and extension 8−6988
sapphire disc, dynamic deform. by projectile impact, back reference holography obs. *(French)* 8−42307
sea ice, viscous law as stochastic average of plasticity 8−16028

plastic deformation continued
servocontrolled hydraulic hot-torsion machine for hot working studies 8−27698
shell, dislocation differential geom. in 2D space 8−22719
sintered metal, cold forming with self aligning dies 8−11158
soil, sandy moist, compressibility and plasticity during repeated shock loading 8−11885
solid, creep cavitation by vacancy diffusion 8−48471
solid, finite strain and finite rotation 8−30192
solids, uniqueness and stability under config. depend. loading 8−30194
spherical material parts, defect coordinates, location via acoustic emission method 8−35626
stability concepts and conditions in tension 8−26046
statistical concepts, calc. of local peak stress effect 8−27584
stator end winding under short circuit, dynamic deform. and strength *(Japanese)* 8−11465
steady-state straining 8−5669
steel, 0Kh16N15M3B type, He ion irradiation effect on struct. and mech. props. 8−19848
steel, 4340, quenched, tempered, and austempered, effect of plastic strain followed by ageing on elastic limit 8−31446
steel, acoustic emission in deformation, at various strain rates and sign change 8−44188
steel, Al-killed rolled sheet, plastic anisotropy theory based on yield function of fourth order 8−31458
steel, alloy, Mn-Cr-Cu, exam. of ductility when deformed, alloying addition effects 8−44175
steel, alloy St. 3sp, weld, deformation criteria of low cycle failure 8−39875
steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
steel, austenitic, nitrided, creep, effect of N_2 and Ti and prior deform. 8−23789
steel, austenitic metastable, fatigue, effect of deformation-induced martensitic transformation *(Japanese)* 8−15514
steel, austenitic stainless, aged and deformed, growth and dissolution of NbC particles 8−39782
steel, austenitic stainless, deformation by hydroforming, heat treatment effects *(French)* 8−35450
steel, austenitic stainless, deformed plate, X-ray line profile anal. *(Japanese)* 8−7144
steel, austenitic stainless, grain boundary as dislocation source during high temp. deform. *(Russian)* 8−15453
steel, austenitic stainless, metastable, transform. depend. ductility, temp. and deform. effects 8−3185
steel, austenitic stainless, Mn-Cr, austenite decomposition by deform., rel. to mech. props. *(Russian)* 8−27515
steel, austenitic stainless, partial dislocation separatifn and dislocation substructure, effect of applied stress 8−22727
steel, austenitic type 110G13L, preliminary strengthening inheritance, exam. 8−44137
steel, C, 20 and 22K, ductility, effect of temp., deform. rate and stress state *(Russian)* 8−35428
steel, C, hypo-eutectoid naturally fibrous composites, strength analysis 8−3190
steel, C, predeformed, anisotropy temp. effect on yield point 8−39878
steel, C (0.1-1.15 wt.%), fatigue under reversed tension-compression stresses, photoelasticity investig. *(German)* 8−31493
steel, cast 20KhML, deform. resistance and low cycle fatigue in pure shear creep effect 8−3192
steel, Cr, phase transform., effect of high temp. plastic deform. *(Slovak)* 8−19837
steel, Cr-Mn, unstable austenite, martensitic transform., effect of alloying, heat treatment, and deform. 8−19751
steel, Cr-Mn, X-ray diffr. exam. of fine struct. during deform. *(Russian)* 8−38661
steel, creep resistant, AISI 304, residual lifetime assessment by low cycle fatigue testing *(German)* 8−15485
steel, deformation anisotropy in yield point, precompression effects *(Russian)* 8−11268
steel, ferrite-pearlite, ductile fracture, pearlite colony morphology and hydrostatic press. effect *(Japanese)* 8−15510
steel, ferritic martensitic, effect of ductility of second phase on ductile fracture 8−19847
steel, high strength, low alloy, response to cyclic plastic deform. 8−7035
steel, high strength and low C, deformation, tension, torsion compression test exam. *(Russian)* 8−31455
steel, high-speed, 30Kh2N2SMKt, deform. effects on physicomech. props. 8−23741
steel, HY140 and HY180, fatigue crack init. at notch tip, early stage propag. *(Japanese)* 8−7021
steel, laser erosion value depend. on metallic props. anisotropy during plastic deform. *(Russian)* 8−31452
steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
steel, low C, quenched, struct. and props. after plastic deform. and tempering 8−23734
steel, martensitic transformation, lattice deform. 8−27511
steel, medium C, difference between strain energy changes during repeated bending and rotatory bending fatigue tests *(Japanese)* 8−39894
steel, mild, tubes between rigid plates, lateral compression, strain hardening effect 8−48422
steel, Mo and MoCr, X-ray elastic consts. as function of plastic strain *(German)* 8−31436
steel, Ni-Cr, 36NKh, thermal expansion under stress at −253°C 8−22871
steel, non-alloy, work hardening due to shearing *(French)* 8−15423
steel, pearlitic, deform. microstruct. and cementite fracture, −196 to 700°C 8−27576
steel, pearlitic or spheroidal plastic deform. and fracture *(French)* 8−35448
steel, plasticity of grooved specimens at high temp., rel. to hot forming 8−23902
steel, powder, rotary forging, porosity and deform. 8−23646
steel, problems of X-ray determ. of dislocation density from one diffraction line *(German)* 8−2129
steel, quenched, martensite, tensile and compressive deform. resist. *(Russian)* 8−19819

plastic deformation continued
steel, ShKh15, carbide particle size and pearlite grain size changes *(Russian)* 8−6946
steel, soft, explosive deform. and destruction of tubes 8−6995
steel, stainless, 0Kh12G14N4Yu2, effect of plastic deform. on biphase struct. 8−44176
steel, stainless, α+γ phase, tensile deform. induced α' martensite, morphology 8−44122
steel, stainless, AISI 304, dislocation substruct. around fatigue cracks, SEM obs. 8−15516
steel, stainless, cold worked, pitting corrosion in NaCl soln. 8−44257
steel, stainless, Cr-Ni, for cryogenic engineering, mech. props. 8−11240
steel, stainless, deformation temp. determ. for high yield strength 8−44177
steel, stainless, ferritic, 18%Cr, stress/strain curve, H_2 charging influence, room temp. *(Japanese)* 8−39884
steel, stainless, fibre reinforced wustite, strength and toughness 8−27602
steel, stainless, martensite nucleation and growth, expt. study 8−3125
steel, stainless, metastable, determ. of strain-deform. martensite content 8−3282
steel, stainless, reversibility of plastic strain during fatigue with martensitic transform. 8−31526
steel, stainless, SUS 304, acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
steel, strengthened by surface plastic deform., tempering effect on physicomech. props. *(Russian)* 8−35409
steel, stress meas. device *(German)* 8−3261
steel, structural changes after deformation and annealing, Mossbauer spectroscopic exam. *(Russian)* 8−35446
steel, thermally and thermomechanically treated, struct. and decomposition of martensite 8−19784
steel, V strengthened dual phase, deform. and fracture props. 8−48467
steel, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
steel fibre reinforced epoxy composite, static tensile behaviour *(Japanese)* 8−15482
steel M16C, low C, natural discrete microlamellar composite *(Russian)* 8−39810
steel N22, crack movement rate during cyclic deform., internal microstress effects 8−3225
steel strips, elec., grain-oriented, effect on stress-relief annealing treatments on permeability and ageing 8−23832
steel structural bars, subjected to plastic bending, random fatigue analysis *(Japanese)* 8−27619
steel tearing rate determ. by elec. resist. meas. method *(German)* 8−15619
steel XC80 isothermal and pearlitic transform. mech. prop. meas. using dilatometer *(French)* 8−31598
strain and failure relationship of stressed solids 8−9574
strain/stress analysis, metalworking process appl. 8−27586
stress-deformation diagram for materials without significant elastic section *(Russian)* 8−13923
styrene-butadiene rubber, reinforcing effect of fillers, strain energy meas. *(Japanese)* 8−31468
surface deformation treatment, tool design for 8−13824
tensile device, const.-load, for UHV electron microscope, appls. to materials science 8−11462
tensile testing, low-temp., strain gauge for testpiece deform. meas. 8−7118
tension test with neck triaxiality reduction 8−7159
thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
thermoelastic wave propag., critical thermal load 8−30228
thermoplastic record development, behaviour of charge and deforming load *(Russian)* 8−38216
thick-walled cylinder subject to internal press. and bending, full plastic anal. at collapse stage 8−22275
transition metal, dislocation magnetism *(Russian)* 8−39379
transition metal diborides, C32-type, phys., chem. props., appls., review, book contrib. 8−47308
transtropic bodies, simplified method for plastic anisotropy determ. 8−3270
tubes between rigid plates, lateral compression, strain hardening effect 8−48422
uniaxial deformation of plastic body, model with account of microcrack form. and growth *(Russian)* 8−26051
wear, delamination theory, review 8−3229
Westerly granite, dry, deform. behaviour 8−36153
Woodroffe thrust, deform. and fold axes reorientation in ductile mylonite zone 8−32101
yield surface motion and loading surface 8−15449
Ag, FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Ag, fatigued single crystal, annealing of deform. struct. 8−3204
Ag-Cu, directionally solidified, obs. of cutting deform. zone *(Japanese)* 8−15422
AgCl, thermal fields generated during plastic deform. 8−35457
Al, acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
Al alloy, ductility effects during plastic deform., rel. to struct. changes and hot forming 8−23770
Al alloy, particle strengthened, yield drop and creep minimum *(German)* 8−39881
Al alloy 7075, acoustic emission sources during plastic deform. 8−27573
Al and Al-Mg (5.5 wt.%), instantaneous plastic strain associated with stress increments during steady state creep 8−48478
Al, bicrystal, ⟨100⟩ oriented, plastic deform. 8−19812
Al, defect structure after plastic deformation, X-ray investigation 8−31467
Al, deformed, nucleation and recrystallisation at second phase particles 8−6941
Al, dislocation struct. change during cyclic straining at high temps. 8−44218
Al, isoaxial bicrystal, deformation behaviour, study by photoelastic coating and moire methods *(Japanese)* 8−11294
Al, load relaxation, plastic deform. theory and plastic eqn. of state 8−27554
Al, non-elastic deformation, phenomenological model with solute strengthening effect incorporation 8−39832
Al, oxide covered, tensile deform. in high vac., particle and photon emission 8−39672
Al, plastic deform. and prominent cross slip ⟨100⟩ oriented single crystal 8−19851
Al, plastically deformed, spreading of extrinsic grain boundary dislocations 8−43023
Al, polycrystalline, deform. sub-struct., effect on tensile props. *(Japanese)* 8−11279
Al, wire, determ. of incomplete axial texture by X-ray diffr. 8−23720
Al, yield surface motion and loading surface 8−15449
Al, Young's modulus changes after plastic deforms. at room and cryogenic temps. 8−23747
Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
Al-Ag alloy precipitation and heat of evolution, microcalometric obs. *(Japanese)* 8−15406
Al-Al_3Ni, aligned, eutectic alloy, mech. behaviour at high strain rates 8−39855
Al-Al_3Ni, eutectic composite, directionally solidified, thermal cycling induced distortion 8−39899
Al-bronze, single crystal rod, energy dissipation, deformed by cyclic buckling in superelastic range 8−31479
Al-Mg, deformation, tension, torsion compression test exam. *(Russian)* 8−31455
Al-Mg alloy AMg6, deform. in plane stress at low temps. 8−39873
Al-Mg-Si, thermomechanically treated, age-hardening 8−11236
Al-Mg-Si rod, extruded and cold drawn, annealing *(German)* 8−39804
Al-Mg(Si), acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
Al-Zn (6.5 at.%), fatigue props., effect of ageing and thermomech. treatment 8−27620
Al_2O_3, creep and long term strength 8−23802
Al_2O_3, deform. curve and modulus-temp. relation *(Russian)* 8−35613
Au, pure, electromigration and deform. 8−2286
Au/Ag couple, diffusion induced stresses and plastic deform. 8−26736
Be crystal, failure on basal plane 8−15525
$CaCO_3$, plastic deformation in compression parallel to (111) 8−38709
CaO-MgO-Al_2O_3-SiO_2, glass-ceramic prep. by hot pressing and crystallisation of powder 8−11192
Cd, loading and annealing, dislocation struct. control *(Russian)* 8−3142
CdS, (1010) face, deformed zones around microimprints 8−23812
CdS, characts. of interaction of light with dislocations 8−2137
CdSe, plastically deformed, luminescence line 0.96 eV 8−10950
Co, anomalous plasticity near martensitic transform. temp. *(Russian)* 8−6971
Co, deformed and annealed, mechanism and kinetics of polymorphic transformations *(Russian)* 8−35381
Co, FCC, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
Co, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Co-Fe alloy, plastic deform. effects on phase comp. *(Russian)* 8−19743
CoO, polycrystalline, high temp. deform. 8−3174
CsI, crysts., microplasticity mechanism 8−30696
CsI, thermal fields generated during plastic deform. 8−35457
Cu, ⟨100⟩ oriented single crystal plastic deform. and prominent cross slip 8−19852
Cu, acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
Cu and Cu-Al (8 wt.%) single crystal, surface dissolution effect on fatigue damage and crack nucleation 8−39936
Cu and Cu-Si, deformation and fracture under dynamic loading 8−35442
Cu, anisothermal annealing, effect on props. of MOOB bands 8−23719
Cu, explosive loading, depend. of struct. on deform. *(Russian)* 8−3177
Cu FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Cu fatigued polycrystals, point defect cluster rel. with yield stress temp. depend. 8−6989
Cu, fragmentation and dynamic recrystallisation after heavy and very heavy deform. *(Russian)* 8−39793
Cu, friction and prow form. in scratch process by diamond cone 8−11349
Cu, plane strain deformed, electron microscope obs. of morphology 8−31424
Cu, plastically deformed, positron trapping rate temp. depend. 8−31276
Cu, polycryst., low temp., plastic deform., structural defects, elec. resist. meas. *(Russian)* 8−39844
Cu, shear mode of ductile fracture 8−31525
Cu single crystal, stored energy meas. by new deform. calorimetry method 8−39834
Cu, single crystals, absorbed H, strain anal., X-ray divergent beam method 8−15463
Cu, single crystals, amplitude and freq. response to 1-dimens., transient stress waves 8−14399
Cu, single crystals, dislocation breakaway, etch pit study 8−6064
Cu, strip, formed by high deform., mech. props. charact. *(Russian)* 8−27534
Cu, thermal conductivity, low temp., influence of plastic deform. 8−30899
Cu, whiskers, hardening during uniaxial extension, preliminary torsion deform. *(Russian)* 8−15420
Cu, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
Cu-AL(Zn), effect of original grain size on struct. and props., after deformation and annealing 8−44178
Cu-Al, single crystal, dislocation velocity meas. 8−3172
Cu-Al (15 at.%), single crystal, steady state deform. with ⟨001⟩ axis at high temp. *(Japanese)* 8−6980
Cu-Al (15 wt.%) single crystal, steady state deform. at high temps. *(Japanese)* 8−19833
Cu-Al (9 wt.%), deformed, fatigue crack propag. 8−27621
Cu-Al alloy, low temp. deform., heating of dislocation sources 8−18660

plastic deformation continued

- Cu-Al-Fe, strength increase from intermediate annealing determ. of annealing temp. by recrystallisation 8−44136
- Cu-Al-Ni, 2H to 6R lattice restructurization during deform., anomalous elasticity 8−19753
- Cu-Al-Ni alloys, deformed, fine struct. of martensite *(Russian)* 8−6923
- Cu-Ge (1 at.%), FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
- Cu-Ge (10-12 wt.%), intermediate ζ'-phase form. during deform. *(Russian)* 8−19747
- Cu-Ge (2 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
- Cu-H, rolled sheet, plastic anisotropy theory based on yield function of fourth order 8−31458
- Cu-Ni (10 at.%), struct. changes during deform. *(Russian)* 8−19818
- Cu-Sn solid soln. steady state deform. *(Japanese)* 8−19832
- Cu-Ti (3.5 wt.%), internal friction in dissociating alloy following deform. by US *(Russian)* 8−35419
- Cu-Ti(0.7 at.%), plastic deform. and precip. hardened, annealing time 8−48446
- Cu_2O, heterogeneous deform. during high temp. compression creep 8−48456
- α-Fe, acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
- Fe alloy MA-956E, oxide dispersion strengthened sheet, tensile and creep props. at 1365K 8−48470
- Fe, Armco, cold-rolling cavity formation, TEM study 8−6947
- Fe, cast, white, graphitisation, effect of hot impact deform. 8−19780
- α-Fe, cavitation and sliding distrib. changes during creep at 500°C 8−6991
- Fe, compressed, recrystallisation, transmission Kossel study of struct. 8−19776
- α-Fe, deformation induced intergranular creep cavitation 8−31473
- α-Fe, Frenkel defect recombination zone, effect of uniaxial compression 8−6987
- α-Fe, influence of C and ZrH_2 on static and cyclic creep behaviour 8−39856
- α-Fe, internal friction peaks from dislocation relax. in plastically deformed and/or neutron irrad. sample 8−48438
- Fe, plastically deformed, high field suscept. anisotropy and domain struct. 8−15002
- Fe, pure, tensile deform., sources of acoustic emission 8−19814
- Fe, single crystals, absorbed H, strain anal., X-ray divergent beam method 8−15463
- Fe, sintered, plastic deform., porosity effects 8−23801
- Fe/Fe-Cu composites, microplastic deformation development 8−39877
- Fe-Ag (50 vol.%), two-phase system, plastic deformation *(French)* 8−39831
- Fe-Cr-C alloy, bainitic struct. morphological changes, due to external stress, plastic deform. 8−44120
- Fe-Mn (32.5 and 38.3 wt.%), steel sheet, exam. of form limit diagrams and damage 8−48461
- Fe-Mn-Cr-C (20, 4, 0.5 wt.%), hyperquenched and predeformed, mech. props. *(French)* 8−23786
- Fe-Mo (3 wt.%), substitutional solid soln. with cubic faced symmetry, Portevin-Le Chatelier effect *(French)* 8−23785
- Fe-Ni alloy, solid solution, vibr. analogue of Bain deform. and morphology of martensite in 8−2224
- Fe-Ni-C, martensitic, mech. charact., effect of ageing and tempering *(Slovak)* 8−19791
- Fe-Ni-C, martensitic, mech. and fracture charact., effect of starting austenite heterogeneity *(Slovak)* 8−19792
- Fe-Ni-C (19.5, 0.73 wt.%), banded struct. formed by deform., TEM and optical obs. 8−39869
- Fe-Ni-C (21, 0.6 wt.%), stress assited and strain induced martensite morphologies 8−3187
- Fe-Ni-C (31, 0.1 wt.%), kinetics of deform. induced martensite, shock loading and grain refinement effects 8−15395
- Fe-Ni-C austenite, metastable, influence of prior deform. on yield stress 8−15461
- Fe-Si (3 wt.%), deform., effect of superimposed US oscillatory stress *(Japanese)* 8−31461
- Fe-Si (3 wt.%), recrystallisation along grain boundaries *(Russian)* 8−6942
- Fe-Si-MnS-Al, Al effect on hot rolling struct., recrystallization, texture magnetic props. *(Chinese)* 8−11237
- Fe_xO_y-Fe, oxide scale fracture on substrate deform. 8−11407
- GaSb crystals, uniaxial deform., effect on polarised luminesc. 8−10957
- Ge, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
- Ge, point defect creation by plastic deform., Hall const. electrical conductivity 8−6053
- n-Ge:Bi,O, plastically deformed, dislocation scatt. anisotropy, effect of state of O in Cottrell atm. 8−19028
- ^{4}He, HCP, free standing cryst., shear deform. 8−2333
- ^{4}He, solid BCC, plastic deform., stress-strain relations and US attenuation 8−38909
- InP, plastic deform. and scratch microhardness meas. 8−27583
- InSb, electrical effects of dislocation, galvanomag. props. 8−23119
- K, plastic deformation 8−30693
- $KCl:Sr^{2+}$, polarisation-plastic effect 8−2794
- LiF bicrystals, intergranular fracture due to single slip 8−34520
- LiF, deformed by conc. loading, X-ray beam scattering *(Russian)* 8−35430
- LiF, dislocation distrib., after deform. *(Russian)* 8−22732
- LiF, single cryst., impression creep 8−6986
- LiF, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
- Mg-Mn-Ce, structural changes and deformation during superplastic flow 8−15472
- $MgAl_2O_4$, spinel materials press forged, mech. props., IR appl. 8−39722
- MgO, local loss of stoichiometry caused by plastic deform., cathodoluminesc. spectra 8−35209
- MnZn ferrites, abrasive wear mechanism *(Japanese)* 8−39917
- Mo alloy TsMb, mech. props., effect of gaseous H_2 *(Russian)* 8−31508
- Mo alloys, fractography of deformed samples *(Russian)* 8−19889
- Mo dislocation a $\langle 100 \rangle$ stability, plastic deform. at high-press. 8−43030
- Mo, Fermi surface, homogeneous strain response 8−34753

plastic deformation continued

- Mo, mech. props., influence of temp. on singularities of deform. *(Russian)* 8−6970
- Mo, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
- Mo single crystal dislocation interactions during parallel shear in (011) plane *(French)* 8−43029
- Mo, strength, temp. depend. 8−3193
- Mo, structural singularities of plastic deform. at localised flow stage, TEM obs. *(Russian)* 8−6968
- Mo-Re, cold worked, strength 8−31426
- Mo-Re, solid soln., dislocation internal friction *(Russian)* 8−23748
- Mo-Zr-B-C, dil. alloy, struct. changes under prolonged high temp. annealing *(Russian)* 8−6944
- Na, plastic deformation 8−30693
- NaCl, deformed by conc. loading, X-ray beam scattering *(Russian)* 8−35430
- NaCl, dislocation microplasticity, internal friction expts. 8−47388
- NaCl, internal stresses and dislocation mobility 8−48440
- NaCl, thermal fields generated during plastic deform. 8−35457
- NaF, dislocation microplasticity, internal friction expts. 8−47388
- Nb and Nb alloys, cold plastic deform., oriented microdistortions *(Russian)* 8−39840
- Nb-Zr-N, deformed and annealed, internal friction, rel. to structural state *(Russian)* 8−6957
- Nb_xC powders, plastic deform. characts. on vibratory milling 8−11183
- Nb_3Sn, A15 compound, exam. of deformation processing, review 8−39864
- Ni, deformed, coercivity and remanence anisotropy 8−31093
- Ni, deformed, magnetic susceptibility anisotropic changes 8−27025
- Ni, grain boundary ledge density, effect on flow stress 8−48465
- Ni, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
- Ni, magnetised mono- and polycryst., activation vol. var. during low temp. deform. *(Russian)* 8−3178
- Ni monocrystals, struct., effect of stress applied during electrodeposition 8−26777
- Ni, oxide covered, tensile deform. in high vac., particle and photon emission 8−39672
- Ni, plastically deformed, dislocation struct., mag. small angle scatt. of neutrons *(German)* 8−22730
- Ni plated Fe single crystal, deformed at 77K, surface obs. 8−19916
- Ni, shock loaded, work softening 8−27537
- Ni, structural singularities of plastic deform. at localised flow stage, TEM obs. *(Russian)* 8−6968
- Ni, thermal softening, influence of alternating mag. field *(Russian)* 8−23312
- Ni, US deform., electron microscope exam. *(Russian)* 8−35447
- Ni/Ni_3Al-Ni_3Nb eutectic, directionally solidified, plastic deformation *(Russian)* 8−39843
- Ni-A-Ti (6,1 wt.%), γ' phase precip., deform. effects *(Russian)* 8−48404
- Ni-Co, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
- Ni-Cr (Mo), solid soln., US deform., electron microscope exam. *(Russian)* 8−35447
- Ni-Cr (33 at.%), US deform. effect on short range order form. *(Russian)* 8−39839
- Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8−35496
- $Ni-Cr-ThO_2$ (20, 2 wt.%), dispersion hardened, model for high temp. deform. based on struct. obs. 8−19809
- Ni-Ge (2 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
- Ni-Nb-Al (21,2.5 wt.%), eutectic aligned alloy, mech. behaviour at high strain rates 8−39855
- Ni-Ti (60 at.%) alloy, high stress effects on struct. and props. *(Russian)* 8−19838
- Ni_3Al, overshooting while testing in tension 8−44189
- NiO, polycrystalline, high temp. deform. 8−3174
- Ni_3V, deform. propag., electron microscopy obs. 8−6070
- Pb, plastic deform. rate rel. to supercond. transition, temp. depend. *(Russian)* 8−31015
- Pb, plastically deformed, annealed, positron trapping rate, 4-100K 8−31275
- Pb, sample length effect on plasticity 8−44179
- Pb-In, difference in stress for deform. between mixed and supercond. states 8−43514
- $PbMo_6S_6$, cold-worked core-wires, supercond. transition temp. and lattice instability 8−6469
- Pd, annealed, cold worked, H_2 diffusion effect on mech. props. *(Japanese)* 8−10222
- Pt, diffusion of Au at low temp., deform. effect on penetration curve 8−30789
- Pt, self diffusion of ^{197}Pt at low temp., deform. effect on penetration curve 8−30789
- Pt-W interface, contaminated, contact adhesion, deform. and interfacial energy 8−22306
- Re, plastic deform. rel. to low temp. sp. ht., supercond. *(Russian)* 8−31005
- Re-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
- $(SN)_x$, stress-induced phase change geometry 8−23776
- Si, compressed, polycrystalline, deform. and recrystallisation texture 8−27538
- Si, deformed, faulted dipole, TEM obs. 8−38712
- Si, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
- Si particle reinforced Al, internal stresses, X-ray diffr. meas. *(Russian)* 8−23765
- Si, plastic deformation, dislocation density in yield point area *(German)* 8−38720
- Si, two-step photoconductivity by dislocations 8−14761
- Si:B(Sb), deform. coeff. due to impurity diffusion 8−18671
- SiC containing material, deform. props. investigation by pure bending 8−19823
- SiF_4, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
- SiO_2 fibres, plastic deformation and Young's modulus *(French)* 8−23746
- $SiO_2-Al_2O_3$, refractory fibrous heat insulating material 8−6990
- Sn, single cryst., 1.6-300K, hardening curves *(Russian)* 8−3179

plastic deformation continued
steel, C, annealed S45C, multiple repeated low cycle torsion fatigue under controlled strain *(Japanese)* 8−27610
Ta-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
Ti alloy, VT22, thermomechanical treatment, effects on struct. and props. *(Russian)* 8−19785
Ti alloy VT20 and VT22, yield strength anisotropy and durability after cyclic loading *(Russian)* 8−27565
Ti alloy VT25, thermomechanical treatment effect on struct. and mech. props. 8−3152
α-Ti based alloys, deform. twinning effect on mech. props. at low temps. *(Japanese)* 8−6979
Ti, deform. and H_2 inclusion effect on annihilation γ-ray ang. correl. curve shape 8−31273
Ti, deformation, tension, torsion compression test exam. *(Russian)* 8−31455
Ti, industrial grade structural changes during polygonization *(Russian)* 8−19779
Ti, tensile properties and creep behaviour at high temp. 8−23773
Ti-Al-Mo-Zr alloy VT9, Cu-Cr(Ni) coated, plastic deform. and diffusion annealing effect on props. *(Russian)* 8−35425
Ti-Al-V (6, 4 wt.%), ring test, evaluation for strain rate sensitive materials 8−39991
Ti-alloy, VTZ-1 and VT8, decomposition of metastable phases, effect of plastic deform. *(Russian)* 8−39770
αTi-Fe, plastically deformed, α→ω transform. 8−3095
Ti-Mn (0.4 and 12 wt.%), bonding between α-β interfaces, subsequent deform. 8−14517
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8−39791
Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8−6975
Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8−3153
Ti_3Al, cyclic deform., dislocation struct. 8−7003
U-Mo (1.5 wt.%) metallurgical study of forging *(French)* 8−21737
V, dynamic deformation, influence of previous static loading *(Russian)* 8−6972
V, polycryst., struct. changes during deform. *(Russian)* 8−48447
V, radiation hardening and plastic instability *(Russian)* 8−39842
V, slip geometry and dislocation struct., rel. to degree and temp. of deform. *(Russian)* 8−38717
V-Zr-C, radiation hardening and plastic instability *(Russian)* 8−39842
V_3Ga, A15 compound, exam. of deformation processing, review 8−39864
V_3Si, A15 compound, exam. of deformation processing, review 8−39864
W, doped wire, textural aspects of recrystallization 8−11239
W fibre reinforced epoxy composite, static tensile behaviour *(Japanese)* 8−15482
W-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
WC, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-Co, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-Co-Ta(Ta-Ti-Nb), cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
Zn, compatible bicrystal, plastic deform. *(Japanese)* 8−31460
Zn, deforming stress under basal slip, contrib. of forest and primary dislocations 8−3186
Zn, incompatible bicrystals, effect of grain boundaries on mech. props. *(Japanese)* 8−39798
Zn, loading and annealing, dislocation struct. control *(Russian)* 8−3142
Zn, plastic deform after pinch effect *(Russian)* 8−27563
Zn, thermal recovery and stress-strain relations 8−11266
ZnS, plastic deform. induced luminesc., dislocations role *(Russian)* 8−10985
Zr-base alloy as reactor core material, microstruct., deform. and fracture 8−4988

plastic flow
see also ductility; Luder's bands; necking; rheology
Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
Bauschinger effect parameters and plastic flow rules 8−6984
α-brass, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
compression test, determ. of accurate flow props. 8−27718
cup ironing process, two-dimens. plastic flow prod. by temp. field *(Polish)* 8−26053
cylinder, plastic flow rules and Bauschinger effect parameters 8−6984
dislocation motion through random array of weak obstacles of finite width, digital computer simulation 8−30633
dispersion strengthening, dislocation interaction treatment, digital simulation models 8−31419
easy glide, computers modelling, range of permissible parameters *(Russian)* 8−47375
elastic-plastic circular plates, biaxially stretched, necking calcs. 8−5666
elastoplastic half-spaces interface, oblique refr. of plastic wave, self-similarity problem *(Russian)* 8−20974
extrusion and forming of solids, plastic deform., nonNewtonian flow, numerical solns. 8−19824
granular material, plane plastic flow, expt. test 8−34027
hardened irradiated metal, flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
hypoelastic compressible rate-sensitive material flow, integrable generalized wave eqns. 8−38213
isotropic material, modified stress deviator for plastic compressibility *(German)* 8−13914
limestone, finegrained, superplastic flow 8−20398
metal, flow during rolling *(Russian)* 8−27561
metal, fracture toughness and temp.-rate sensitivity of plastic flow stress 8−35501
metal, plastic flow, during extrusion, computer simulation 8−31491
metal, plastic flow, finite element approach to axisymmetric problems, METFLO 8−31490
metal deformability, flow curves mathematical description, thermal dependence *(German)* 8−15484
metastability effects on plastic flow 8−1579

plastic flow continued
olivine, plastic flow of oriented single crystals, dislocation struct. interpretation 8−36156
olivine, plastic flow of oriented single crystals, mech. data 8−36155
oriented transversely isotropic solid, yielding and failure 8−13915
orthotropic plate, plastic flow, effect of shear stress and geometrical changes *(Russian)* 8−13925
PVC, hard, flow zone effect on degradation, rigidity, deformation, under fatigue *(German)* 8−15471
rheological and metallurgical discussion of superplastic behaviour 8−30200
sheet metal forming, strain hardening and strain rate sensitivity 8−7000
sintering, initial phase kinetics, model with diffusion *(French)* 8−35328
steel, austenitic, phase transform to pearlite and martensite, kinetics, stresses due to quenching, anal. *(Japanese)* 8−27508
steel, austenitic stainless, 304, solution annealed, tensile flow behaviour after exposure to flowing Na, in temp. range 550 to 700°C 8−35463
steel, austenitic stainless, flow cavitation erosion, initial part of incubation period 8−44224
steel, Bauschinger effect minimization by dynamic strain ageing 8−48469
steel, data reduction for samples under high ambient press. and axial tension 8−3181
steel, Fe-Cr-Ni (17.20, 7.34 wt.%), transform.-induced plasticity 8−23774
steel, free cutting, with MnS inclusions, tensile flow and fracture 8−11290
steel, H_2 effect on yield 8−15474
steel, plastic flow area, determ. of relative elongation and rel. to yield point 8−23769
steel, stainless SUS 304, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
strain analysis in metalworking 8−27586
triaxial loading test, plastic flow and fracture 8−27701
viscoplastic, coupling of dissipative mechanisms 8−38206
viscoplastic flow, finite element method with added boundary terms 8−42543
yield, nonsteady-state mechanism 8−48481
Ag single crystal, dislocation dynamics during stress rate changes 8−19813
Ag-Al, plastic flow enhancement during massive transformations 8−48468
Al alloy sheet, anisotropic, yield strsses and plastic strain rates, directionality correl. 8−23760
Al, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
Al, prestrained, isotropic hardening rule, rel. to stress/strain curve 8−23772
Al, single cryst., latent hardening *(Japanese)* 8−44135
Al-Cu, flow stress, origin of high strain rate sensitivity 8−44186
Al-Zn (11 wt.%), stress depend. of strain rate at elev. temps. 8−23757
$Cd_xHg_{1-x}Te$, uniaxially compressed, deform. effects, elec. resist. 8−39114
Co based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
Cu, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
Cu, high purity, recrystallisation kinetics *(Russian)* 8−11238
Cu-Ga, plastic flow enhancement during massive transformations 8−48468
Cu-Ge(Zn), conc. single crystal, yield region investigation, flow stress and obstacle charact. 8−3173
FE, electrolytic, dissolved H precip., effect on flow stress *(Japanese)* 8−39848
Fe based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
Fe, H_2 effect on yield 8−15474
Fe-Cr (2 at.%), plastic flow enhancement during massive transformations 8−48468
$Fe_{40}Ni_{40}P_{14}B_6$, metallic glass, acoustic emission generated during viscous flow 8−39853
^4He, HCP, free standing cryst., shear deform. 8−2333
LiF, strained, mean mobile dislocation velocity 8−18657
Mg crystal basal slip, anal. of pairwise dislocation interactions and contrib. to flow stress 8−35440
Mg, pyramidal dislocation pair interactions contrib. to flow stress during slip 8−35441
Mg-alloy, superplastic deformation mechanism, deformation model 8−31477
Mo, strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
NaCl, strained in one glide system at 450°C, dislocation struct. 8−22728
NaCl:Ca, precipitate form., transform. after annealing, critical flow stress 8−38848
$(Ni,Co)_3Ge$, Co effect on temp. depend. of yield stress 8−31487
Ni, grain boundary ledge density, effect on flow stress 8−48465
Pb single crystal, normal-superconducting transition and plastic flow 8−3166
Pb-Sn, with brass insert, tensile flow and fracture 8−11290
Sn-Pb-(Bi)(Ag)(Sb) (Cu), microduplex eutectic, cavitation during superplastic flow 8−48457
V-Nb, mech. props., −196-1000°C, comp. depend. 8−39847
W, strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
W wire reinforced Cu, microfield, flow stress 8−27575
WC-Co alloy, short-time creep rupture strength, C content effect 400° to 900°C *(Japanese)* 8−48487

plastic strain *see plastic deformation*

plastic theory *see plasticity*

plasticity
see also elastoplasticity; photoplasticity; superplasticity
coating, free, of vert. surface, by viscoelastic (viscoplastic) fluid 8−42576
compaction and lime stabilization effect on pore size distrib. *(Japanese)* 8−31365
Cosserat theory of crystal plasticity, appl. to anal. of lattice rotations under constrained deform. *(Japanese)* 8−2189

plasticity continued
elastic-viscoplastic materials, hardening parameters 8−46895
fibre-reinforced rigid-plastic plates transverse impact anal. 8−38211
finite element anal. with nonconforming plane element 8−38209
flows in dissipative materials, a priori estimates 8−16643
fracture, plasticity model, dislocation based, geometrically consistent 8−30242
granular materials, invariants depend. models 8−34026
with hardening, mixed finite element method appl., error estimate 8−9577
hardness law for inelastic deformation, elastic-viscoplastic constitutive eqns. 8−46896
hexagonal polycrystals, creep and plasticity, rel. to single crystal slip 8−13920
incompressible anisotropic material, plastic material eqn. *(German)* 8−26057
inelastic structural behaviour, finite element computational aspects 8−42546
isotropic material, criterion of rupture and plasticity *(Russian)* 8−13973
metal, electroplastic deform. 8−3200
metal, surface layer dissolution, effect of rate on softening during plastic strain 8−39957
metallic glasses, structure and properties, review 8−47245
metallic system, thermodynamically unstable, produced by spark discharge *(Russian)* 8−19933
Muller's entropy principle restrictions on constitutive eqns. *(Japanese)* 8−9578
nonlinear stress wave propagation, in perfectly flexible string 8−5670
nuclear fuel compacts for HTR, irrad.-induced creep 8−44168
optimal plastic design, superposition principles and bounds on min. cost 8−42538
optimal plastic design of circular plates, linear programming appl. 8−42539
planar shear specimen with V-notch, anal. of stress and strain conc. factor using finite element method *(Japanese)* 8−38212
polycrystal, HCP, microstress and starting boundary of plasticity *(Russian)* 8−30695
polycrystalline, based on dislocation processes, probabilistic approach 8−26621
polycrystalline, probabilistic approach, appl. 8−26622
polyethylene, high density, lamellar struct. and plasticity micromechanism 8−23791
rate type materials with general work hardening 8−42548
rate-independ. theory for multimode plastic straining, unifying concepts 8−42545
shallow cylindrical shell, equiv. reinforcing of small circular opening *(Russian)* 8−13904
slip concept, statistical approach *(Russian)* 8−18196
smectic-A liquid crystal, layer rigidity, stress relax. 8−18545
soil model, viscoplastic, eqns. and expt. determ. *(Russian)* 8−7619
steel, AISI 4340, sulphide inclusion behaviour during thermomechanical treatment 8−3151
steel, Cr-Mn, annealing effect on mech. props. for cryogenic appl. *(Russian)* 8−19788
steel, high strength, press. depend. yield and plastic vol. change 8−19810
steel, low C, containing P, Mg effect on annealing texture, mech. props. and plastic anisotropy 8−27536
steel, low C, plasticity role during low temp. fracture 8−39905
steel, tubing, viscoplastic bending 8−35464
stress-strain stiffness matrix calc. in inelastic material 8−34032
stress/strain distrib. meas. inside plastic zone of notched sheet, fatigue crack propag. *(Japanese)* 8−6981
thermoplasticity using thermodynamics of materials with internal state variables 8−18189
thermoplastics as engineering materials 8−27581
transverse isotropic inelastic work hardening constitutive model, numerical implementation 8−42547
unified theory of elasticity and plasticity using rate theory type constitutive eqns. 8−9571
viscoplastic flow, finite element anal. *(Russian)* 8−18195
viscoplastic limit load problem, kinematic soln. method *(French)* 8−30195
$AgCl:Ba^{2+}$, plasticity, impurity hardening effect 8−47466
$AgCl:Li^+(Na^+)(K^+)(Rb^+)$, impurities effect on plasticity, brittleness 8−14398
Cr, and Cr alloys, cast, B additions effect on struct. and props. *(Russian)* 8−19891
Cu-Ni tubing, viscoplastic bending 8−35464
Fe, pure, mech. props. at low temps. 8−44219
Fe-Mn-C (11.5, 0.2 to 1.6 wt.%), water quenched, effect of C on phase composition, abrasion, plasticity *(Russian)* 8−35445
NaCl single crystal, plasticity, effect of alternating electric field 8−15481
NaCl, single crystal, temp. anisotropy of plasticity and brittleness 8−3198
Ni-base alloys, US vibration during crystallisation, effect on mech. props. *(Russian)* 8−19827
Si, failure in strong melt grown single crysts. 8−3205

plastics
see also glass fibre reinforced plastics; polymers
ABS-2 plastic, etching rate rel. to electroless Cu adhesion *(Russian)* 8−35542
arc resistance test *(Japanese)* 8−27697
building components, material testing, for use as building component *(German)* 8−39984
cellulose diacetate as solid state heavy ion track detector 8−17523
cellulose nitrate, etching behaviour, nuclear track detector 8−17485
cellulose nitrate, nuclear track detectors, etch induction time, particle identification parameter 8−17486
cellulose nitrate track detectors, detect. of efficiency and range meas. of alphas and protons 8−17524
Columbia Resin, CR-39, fracture mirrors, static and impact tests 8−27601
deformation speed in static tensile tests, machine rigidity effects *(German)* 8−48473
Dewar vessels for liq. N_2, foam plastic, manufacture, heat insulation test *(Japanese)* 8−37023
display plastic optical components and systems 8−25967

plastics continued
elasticity, hardness, creep, and relaxation meas. with Vickers indenter by electroacoustic method *(German)* 8−48584
epoxide resin, amine-cured, crack propag. 8−27596
epoxy resin DLS $351/BF_3400$, C-fibre reinforced, thermal expansion, 90-500K, fibre vol. fraction effects 8−26703
extrusion and heating of plastic layer under shock 8−34064
film, self-supporting beam splitter, for far IR interferometers 8−275
Homalite 100, stress intensity factor determ. from isochromatic fringe loops 8−34097
laminate removal from metal using laser beam 8−7061
lexan, stress wave propagation 8−46910
light guides development for high optical power transmission *(German)* 8−33913
lucite, adhesive bonds, US attenuation effects 8−7141
metal electroplated, durability and struct. 8−3242
micropore filters, preparation by bombarding lavsan film with Ar ions 8−3305
nuclear track detector, primary damage and secondary electron damage in heavy ion tracks 8−17514
optical constant determ. of filled and reinforced plastics 8−19472
Perspex, adhesion of silicone rubber, surface topography effects 8−15644
Perspex for astronomical telescope lens and mirror manufacture 8−36458
perspex spheres, internal fractures due to stress wave focusing 8−18239
phosphate bonded refractory plastics, hot modulus of rupture, 1500 to 2500°F 8−19855
plexiglas, shock compressed, vel. of sound meas. 8−10123
polyacetal, exam. of fatigue crack propag. 8−48497
polyamide thermoplastic, glass or C fibre reinforced, stiffness and strength 8−27600
polyurethane, void detection by neutron gauging 8−23910
reactor neutron detection, plastic with ^{65}Zn impurity used as nuclear track and activation detector 8−13346
sample containers, for trace element samples, selection, cleaning methods 8−35745
scintillation granules, efficiency of α radiation recording 8−9028
stress and deformation analysis, using pseudo-elastic method, validity in load-bearing appl. 8−39868
testing *(German)* 8−27716
testing methods *(Japanese)* 8−39974
thermoplastic moulding quality assurance using holography and speckle photography 8−27720
thermoplastic rubber morphologies and applications 8−26457
thermoplastic-photoconductor, holographic recording technique 8−9346
thermoplastic-photoconductor hologram recording media, frost suppression 8−17869
thermoplastics, internal stresses revealed by artefacts produced in SEM 8−35634
viscoelastic plastics, fatigue testing, using hollow cylindrical specimens *(German)* 8−44292
wear tests with plastic lubricants, friction machine attachment 8−3273

plates (anodes) *see anodes*

plating (electroplating) *see electroplating*

platinum
see also nuclei with ......
adsorbed cyanogen on (100) surface, electron energy loss spectrum 8−14592
adsorption, of H_2, electrolyte environment and crystallite size effects 8−27774
adsorption of CO, adsorption site investigation by IR reflection spectra 8−14565
adsorption of CO, O_2, H_2, thermal desorpt. spectra 8−14607
adsorption of CO, O_2, H_2, UV photoemission spectra 8−14608
adsorption of ethylene on (100) surface 8−18905
adsorption of O_2, surface struct. effects on rate, data assessment 8−43251
adsorption of S on Pt (100) 8−14606
aluminization 8−31583
atom, α-particle impact K-shell ionisation, 40 to 110 MeV 8−17752
automotive exhaust gas catalysts, radiometric determ. of Pt and Pd attrition 8−31740
band model, mag. susceptibility of exchange-enhanced paramagnet 8−2644
on C, crystallite behaviour on sintering 8−7235
catalyst, dispersed onto silica support, EXAFS meas. 8−48258
catalyst, MgO supported, H_2 adsorption, 300-873K *(French)* 8−38967
catalyst, surface reactions analysis by spectroscopy of surface vibrs. 8−15701
catalytic oxidation of CO, CO_2 product vel. and ang. distribs. 8−20065
chemisorbed CO on Pt {111} surface, IR spectra, evidence for strong absorbate coupling interactions 8−14604
chemisorption, of benzene, on (111) surface LEED and Auger spectroscopy obs. 8−30823
chemisorption, of NO, effect of particle size of Pt supported on inorganic oxide carriers *(French)* 8−11552
chemisorption, of substituted hydrocarbon monolayers, on (100) surface, AES quantitative anal., calibration 8−31724
chemisorption of CO, C-O bond lengths, electronic struct. 8−6210
chemisorption of CO, comparison with XPS and UPS results for Ir (111) 8−38942
chemisorption of CO on unreconstructed (100) surface 8−38962
chemisorption of cyclohexane, C-H stretch vibration, broadened and softened, dehydrogenation 8−47666
chemisorption of H and O, (001) surface, localised orbital approach 8−14587
chemisorption of O_2, adsorbate reaction with CO, transient kinetics obs. 8−7229
chemisorption of O_2, catalytic activity, SCF-Xα-SW calcs. 8−15711
Compton cross-sections due to K-shell electrons, ang. variation 8−21883
determination, by at. fluoresc. anal. with pulsed dye laser excitation *(Russian)* 8−35774
determination, in Italian chondritic meteorites, by destructive neutron activation anal. 8−12172
diffusion of ^{199}Au at low temp., 8−30789

platinum continued
  electrode, elec. props., impedance meas. and time-domain anal. 8−40360
  electrode, unroughened, I_2, I_3^- adsorbed from H_2SO_4-KI, Raman spectra 8−31689
  electrode O_2 reduction kinetics in conc. H_3PO_4, H_2SO_4 and $HClO_4$ 8−23952
  electrodeposition, from chloride-sulphate soln., galvanostatic transients *(Russian)* 8−31655
  Fermi surface 8−47693
  fibres crossed in air, mol. attraction meas. as function of dist. 8−13566
  film, catalytic activity on effect of Ag interdiffusion in Ag_2S film reduction 8−14519
  film, microporosity induced by nucleation and growth processes, TEM expts. 8−10303
  film, RF sputtered, thickness distribution function 8−11083
  film on W (110), field ion microscope exam. 8−34731
  Frenkel defect migration and reactions, by subthreshold recoil events, exam. 8−47364
  lattice dynamics, ang. forces and normal vibrs. 8−22810
  lattice dynamics, phonon dispersion curves, θ-T curves 8−26642
  liquid-forming agent in vapour-liq.-solid growth of Si 8−42935
  liquid-forming agent in vapour-liq.-solid growth of Si 8−42936
  magnetic field induced conduction electron polarisation, magnetisation density, and neutron mag. form factor 8−18945
  metallography 8−3289
  Mossbauer effect on ^{119}Sn and ^{197}Au meas. 8−15080
  oxidation, ZZ 8−14600
  oxidative vaporisation, thermochemical analysis 8−11447
  phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
  point defect properties, damage curve anal. 8−47359
  resistance standard low-temp. thermometer checking methods 8−37006
  s-electron densities at nucleus, meas. using internal conversion of 31 keV M1 transition in $^{195}Pt^m$ 8−27140
  self-diffusion of ^{197}Pt at low temp. 8−30789
  shadowing of freeze-fractured or freeze-etched specimens using electron beam gun 8−20329
  spin-orbit projected d density-of-states 8−38999
  spin-polarised LEED from low-index surfaces 8−14556
  stepped surface, adsorpt. and decomp. of NO and NH_3, LEED, AES, and thermal desorption expts. 8−38943
  stepped surface, edge atom dipole moments 8−14791
  surface, (111), 400 eV H^+ ion scatt. obs. of surface relax. 8−43972
  surface, (111), O_2, CO and C_2H_2 adsorption and cooxidation, AES *(German)* 8−14619
  surface, (III), electronic struct. of adsorbed Na 8−19117
  surface, adsorbed O_2, isotopic exchange and thermal desorption *(French)* 8−43249
  surface, adsorption of H_2, rel. to electrocatalysis 8−38935
  surface, anodically polarised, ^{147}Pm deposition 8−27424
  surface diffusion of single atoms of Pt, Ir and Au, FIM expts. and Morse potential calcs. 8−34717
  surface H-H interactions on Pt(111), heats of adsorption and desorption 8−18899
  thermal and fission neutron produced defect configuration 8−47432
  thermal expansion, 100-1000°C, as standard samples for dilatometry 8−26699
  wire, thermal cond., 900-1800K, elec. cond., 800-1800K 8−26845
  wire temperature sensor, temp. fluctuation meas. in turbulent airflow 8−21135
  Young's modulus and shear modulus, temp. depend. 8−27553
  CO oxidation, surface struct. effects on rate, data assessment 8−43251
  Ge-Au-Pt trilayer film, interdiffusion obs., on annealing 8−2308
  Ge-Au-Pt trilayered film, annealing, interdiffusion 8−22902
  H_2+D_2, exchange on Pt stepped surface mol. beam incidence angle depend. 8−31686
  Pt-electrolyte interface laser speckle movements related to electrode pot., H_2 adsorb. 8−40052
  Pt-Pt mechanical contact, FIM obs. of contact area 8−35527
  Pt-W interface, contaminated, contact adhesion, deform. and interfacial energy 8−22306
  Si:Pt, photoionisation cross-sections, photocurrent and photocapacitance meas. 8−10497
  Si-Pt Schottky diode, type II localised interface states, Si surface prep. effects 8−39210
  W-Pt mechanical contact, FIM obs. of contact area 8−35527
  ZnS:Cu,Pt phosphors, photoluminesc., thermoluminesc. 8−43915
  ZrB_2, etching method using H_3Pi_4 and H_2SO_4, effect of Pt 8−44339

platinum alloys
  see also platinum compounds
  Ag-Pt, dil., electric field gradient temp. depend., TDPAC meas. 8−39451
  Ag-Pt, dil., electric field gradient meas. by TDPAC method 8−39452
  Ag-Pt, dil., TDPAC exam. of radiation damage 8−39464
  $AmPt_5$, preparation and cryst. struct. *(French)* 8−42959
  Co-Cr-Al-Y coating, Pt-modified, oxidation and hot corrosion resist. 8−11437
  Cr-Pt alloy, mag. props., effect of atomic environment 8−23247
  Cu-Pt, surface segregation, comparison of low-energy ion-scatt. results with theory 8−38923
  Cu-Pt, temp.-press. phase diagram *(Russian)* 8−3100
  CuPt alloy, equiatomic, ordering processes, anisothermal annealing exam. *(Japanese)* 8−39765
  Fe-Ni-Pt system, ordered phase fields of equilibrium diagram 8−48373
  Fe-Pt, ordered single cryst., magnetisation in strong mag. field *(Russian)* 8−47954
  Fe-Pt-Ir, Mossbauer effect of ^{193}Ir and ^{57}Fe, hyperfine field, isomer shift 8−15072
  Fe_3Pt, interface struct. of martensite 8−48400
  Fe_3Pt, martensitic transform., change from nonthermoelastic to thermoelastic type 8−19755
  Nb-Pt, A15- and δ-phases, Knight shift of ^{195}Pt meas. 8−19350
  Nb-Pt alloy, superconducting parameters of A15- and σ-phases 8−39242
  Ni-Pt alloys, mag. props. under hydrostatic press. 8−6556
  $Ni_{1-x}Pt_x$, disordered phonon dispersion relations, neutron inelastic scatt. 8−43085
  PdAu wires, sorption of H_2 8−43239
  Pt/Au alloy surface chemistry, sample morphology effects 8−7233

platinum alloys continued
  Pt-Au, amorphous struct. produced by Au implantation, spinodal decomp. TEM obs. 8−31379
  Pt-Ba, elemental comp. and chem. state of surface during thermal activation, AES obs. 8−2345
  Pt-Ba cathode, vaporisation expts., heat of adsorpt. and migration of Ba on Pt 8−10272
  Pt-Cr, (13-18 at.% Cr) resistivity and AC susceptibility, temp. 1.4−300K 8−2461
  Pt-In, cryst. struct. determ. *(German)* 8−26494
  Pt-In, dil., damage induced quadrupole interactions, DPAC exam. 8−39465
  Pt-In, dil., radiation damage heating, TDPAC exam. 8−39466
  Pt-Ir, cleaning and polishing by low press. high frequency induction plasma *(Russian)* 8−35578
  Pt-Mn, dil. alloy spin glass, mag. sp. ht. 8−14966
  Pt-Mn dilute alloy, cubic foil, Mn spin behaviour, nuclear orientation technique 8−27044
  Pt-Mn dilute alloys, spin glass, low temp. resist. meas., cluster model explanation 8−26851
  Pt-Rh thermocouple, Ta-sheathed, Al_2O_3-insulated, large decalibrations above 1330°C 8−24790
  Pt-Rh-W alloy corrosion by radioisotopic power system insulating and thermoelec. materials 8−7094
  Pt-transition metal dil., mag. susceptibility and NMR meas. 8−39290
  Pt(Au), ion irradiated alloys, stage II recovery 8−47440
  PtCo, absolute thermopower meas., 4-300K 8−10421
  Pt_3Fe, collision cascades, neutron induced superparamagnetism *(Russian)* 8−2166
  PtMnSn(Sb), Cd impurities, hyperfine field meas. 8−15074
  $Pt_{45}Ni_{30}P_{25}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
  PtSi, Schottky barrier, resistivity, elec. characts., barrier heights, solar cell use 8−14825
  β_1-PtZn, defect struct., lattice parameter meas. 8−43009
  $SmPt_2$, hyperfine field exam. by NMR spin echo 8−23365
  $V_{1-x}Pt_x$, A-15 struct., Knight shift in normal state, upper crit. field curves *(French)* 8−43519

platinum compounds
  see also platinum alloys
  phthalocyanine single cryst., triplet state Zeeman effect, phosphoresc. 8−6747
  $Ba[Pt(CN)_4Br_2]4.5H_2O$, single crystal neutron diffr. struct. exam. 8−2082
  $KNa[Pt(CN)_4].3H_2O$, neutron diffr. cryst. struct. exam., refinement by least squares 8−2079
  $K_2Pt(CN)_4Br_{0.3}.3H_2O$, struct. rel. to quasi one-dimensional elec. props. 8−14716
  $K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, lattice dynamics, neutron scatt. expts. 8−14412
  $K_2Pt(CN)_4Br_{0.3}.xH_2O$, dynamical props. near Peierls instability, neutron scatt. 8−14436
  $K_2Pt(CN)_4Cl_{0.3}(Br_{0.3}).3H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
  $K_{1.75}Pt(CN)_4.1.5H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
  $K_{1.75}Pt(CN)_4.1.5H_2O$, Pt chain distortion, X-ray obs. 8−14322
  Pt complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
  Pt complex, $(C(NH_2)_3)_2Pt(CN)_4Br_{0.23}.H_2O$, pseudo-one-dimens. cpd., solitary wave excitations, and cryst. struct. 8−6307
  Pt complex, bis(1,2-benzoquinonedioximato)platinum(II), intrinsic elec. cond. 8−6377
  Pt complex, linear chain type, synthesis 8−6047
  Pt complex, $Mg_{0.82}Pt(C_2O_4)_2.xH_2O$, X-ray diffuse scatt., 1-D Peierls-Kohn anomaly and struct. transforms. 8−14680
  Pt complex, $PtCl_4^{2-}$, in chloride-sulphate soln., Pt electrodeposition, galvanostatic transients *(Russian)* 8−31655
  Pt complexes, X-ray absorpt. spectra, mol. orbital interpretation 8−42097
  PtAl, form. in hollow cathode discharge, emission spectrum obs. 8−27819
  $Pt(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
  $(PtCl_6)^{2-}$, quasi-relativistic SCF-MO-LCAO methods, CNDO and MWH appls. 8−41953
  PtD, form. in hollow cathode discharge, emission spectrum obs. 8−27819
  PtI_4, aerosol, X-ray fluoresc. anal., particle size correction method 8−48705
  $Pt_6(NH_3)_{10}Cl_{10}(HSO_4)_4$, chain struct. and elec. cond. 8−2469
  $Pt(NH_3)_4CuCl_4$, ferromag., antisymmetric and anisotropic exchange, EPR linewidth 8−10761
  PtO, existence 8−18923
  PtO, form. in hollow cathode discharge, emission spectrum obs. 8−27819
  PtO, ground state, matrix isolation spectra 8−46352
  PtO, ground state identification from 3800-7000 Å emission spectrum 8−21937
  $Pt_{0.97}S_2$, optical props. at absorption edge 8−35140
  PtSi, growth under protective layers on Pt covered Si substrates, X-ray diffr. and Rutherford backscattering anal. 8−22965
  PtX_4^{n-}, X=Cl, Br, n=1, 2, force consts., bond polarizability 8−5201
  $Y_2[Pt(CN)_4]_3.21H_2O$, first order phase transform., spectroscopic and thermodynamic anal. 8−38829

pleochroism
  see also dichroism
  p-$CdSnP_2$, photocond. meas., polarisation depend. 8−39157
  $HgGa_2Se_4$, anisotropic photocond., pleochroism, and band struct. 8−19094

plexiglas *see plastics*

plotters
  analytical, photogrammetric appl., development progress and advantages 8−40710
  analytical, photogrammetric appl., future prospects 8−40708
  analytical, props. and software aspects, photogrammetric appl. 8−40709
  analytical stereoplotter, OMI AP/C4, photogrammetric appl., features 8−40715
  analytical stereoplotter, TRASTER 77, photogrammetric appl., features 8−40712

plotters continued
analytical stereoplotting system, C-100 PLANICOMP, features 8–40711
universal stereoplotter, US-1, photogrammetric appl., features 8–40713
plugs (electric) *see electric connectors*
Pluto
No entries
plutonium
see also nuclei with ......
see also fission of plutonium
air concs. near Rocky Flats, $^{239+240}$Pu 8–16150
alpha-energy and mass analyses, using single sample mount 8–15744
atom, isotope shifts rel. to $|\psi(0)|^2$ 8–17580
diffusion in pyrocarbon in HTGR 8–29578
industrial effluent, behaviour and transport in Great Miami River, Ohio 8–16061
inventory verification at ANL, IAEA safeguards 8–821
nuclear reactor in the nineties, anal. *(German)* 8–8960
Purex process, concs. of U, Pu, HNO_3, fission products, in LMOM2 extractor, expt., graphical determ. 8–41843
reprocessing programme in W.Germany *(German)* 8–8954
separation, by column extraction chromatography 8–44421
separation, by MnO_2 coprecipitation from fresh and saline water 8–27814
soil distrib., Ohio, local and stratospheric sources 8–16015
X-ray emission, M-lines, for metallic state 8–15251
Pu-Am survey instrument, β-α-γ-X-ray scintillation detect. probe 8–33376
^{241}Pu bone distribution, high resolution autoradiography 8–7399
^{241}Pu concentrations in Swedish reindeer lichens, radiochem. anal. 8–15912
^{242}Pu preparation by EM isotope separation, for use as α-spectrometry and mass spectrometry tracer 8–9011
plutonium alloys
Fe-Pu, dil., effective mag. fields, temp. depend. *(Russian)* 8–43587
Ni-Pu, dil., effective mag. fields, temp. depend. *(Russian)* 8–43587
η-$Pu_{19}Os$, cryst. struct. 8–42954
plutonium compounds
see also plutonium alloys
oxides, matrix isolation studies with Fourier transform IR 8–45740
$(Pu,U)O_2$, criticality data generation using SU-HAMMER code 8–29581
Pu fuel research facility for advanced LMFBR fuel *(Japanese)* 8–29624
$PuCl_3$, vapour phase hydrolysis and ht. of formation of PuOCl 8–20062
$^{238}PuO_2$, high-fired particles, inhalation carcinogenesis in rats 8–28009
$^{239}PuO_2$, in vivo solubility in rat lung 8–28093
PuO_2-UO_2 critical clusters in D_2O perturbation anal. of buckling 8–29573
PuOCl, heat of formation from vapour phase hydrolysis of $PuCl_3$ 8–20062
(U,Pu)N, self-consistent normal fluid eqn. of state, press., density, and enthalpy of vaporisation calc. 8–8909
$(U,Pu)O_2$, build-up and decay of actinide nuclei in fuel cycle of BWR, PWR, HWR, HTGR and LMFBR 8–17314
$(U,Pu)O_2$, vapour press. eqn. of state, VENUS-II code studies 8–8908
$(U,Pu)O_{2-x}$, fuel, particle cavitation during reduction by H_2 8–8958
$(U,Pu)O_{2-x}$, O_2 thermomigration described by cluster model 8–22888
UO_2-PuO_2 fuel, O_2 diffusion at low temps. 8–8899
$(UPu)O_{2-x}$, thermal expansion as a function of deviation from stoichiometry *(French)* 8–21645
PMDR
anthraquinone, in Shpolskii matrices, triplet state spin-lattice relax. rates 8–21952
benzene-d_0,-d_6, phosphoresc., Boltzmann population and spin-lattice relax., decay processes 8–31230
naphthalene-d_8, metastable triplet states, spin-lattice relax. at high mag. fields, phosphoresc. meas. 8–15063
phenanthrene-d_{10}, oriented in biphenyl, triplet zero-field splittings, conc. depend. 8–2773
pyrazine, PMDR due to single defect species, vibronic structs. 8–19535
reaction yield detected mag. reson. spectra, evolution, degenerate energy levels, triplet excitons 8–19378
1,2,4,5-tetrachlorobenzene, in durene host, phosphoresc., cross-relax. between spin levels 8–9186
CaO, F_a(Mo) centre, spin coherence zero-field double reson. 8–43689
PMPS *see PMDR*
p.m.r. *see proton magnetic resonance*
pneumatic control equipment
blood pressure cuff control unit, automatic multi-function device 8–36013
testing device for plates under alternating flexure 8–7119
pneumatic logic *see fluidic logic*
PNO calculations
BO, spectroscopic properties, PNO-CI and CEPA calcs. 8–41961
HNB,(HNBH), spectroscopic properties, PNO-CI and CEPA calcs. 8–41961
HOB,(HBO), spectroscopic properties, PNO-CI and CEPA calcs. 8–41961
H′+BrH→H′Br+H, collinear reaction, barrier height, PNO-CEPA cals. 8–3328
Pockels effect
cell, large aperture, variable pulse width generation for CO_2 lasers 8–46691
uniaxial crystal, first-harmonic electromodulation 8–35116
CdS, transition metal centres, first-harmonic electromodulation spectra 8–35116
KD_2PO_4, cryst. high-freq. modulation in Pockels cell, acoustic phenomena 8–1336
KH_2PO_4, cryst. high-freq. modulation in Pockels cell, acoustic phenomena 8–1336
point contacts
metal whisker diode, thermal field emission, nonlinearity, response time and polarity reversal 8–2579
metal-metal, α^2F depend. of electrical impedance 8–47848
metal-metal, direct meas. of electron-phonon coupling 8–6433
point contacts continued
metallic, elec. cond., spectroscopy of phonons, impurities *(Russian)* 8–38797
metallic point contact diodes, tunnelling props., geometrical asymmetry effects 8–10576
n-n$^+$ point contacts, current-voltage characts. 8–26940
Cd point contacts, electron-phonon coupling, microcontact spectroscopy investig. *(Russian)* 8–38796
Cu, electron-phonon interaction anisotropy, microcontact spectroscopy *(Russian)* 8–43372
W-Ni point contact diode detectors at 10.6 μm, mech. and props. 8–24861
Zn, electron-phonon interaction anisotropy, microcontact spectroscopy *(Russian)* 8–43372
Zn point contacts, electron-phonon coupling, microcontact spectroscopy investig. *(Russian)* 8–38796
point defect scattering
used for carrier scattering by point defects
elastic wave interaction defects of finite vol. and defect mutual interactions 8–32676
metal thin wires, size effect correlation to longitudinal magnetoresistance 8–34824
metals, cubic, relationship between defect resist. and bulk resist. at melting temp. 8–6344
semiconductor, exact calc. of mobility due to point defect scatt. 8–19029
semiconductors, free electron scattering and dynamical cond. 8–2476
Au, quenched and annealed, conduction electron scattering 8–47774
Fe-Al alloy, B_2-type, electrical resist. meas. 8–30917
$RbMgF_3$, irradiated, thermal conductivity 8–22909
point defects
see also colour centres; interstitials; point defect scattering; vacancies (crystal)
alkali halide crystals, heat of form. for high-conc. substitutional defects, model 8–10048
alloys, irradiated, effect of defect trapping and solute segregation, on defect recombination rates and void swelling 8–47369
anelasticity, influence of anisotropic point defects 8–14403
book contribution 8–10044
chemisorption on defective surface, theory 8–2362
derivation and classification 8–2111
diffusion-controlled reactions, theory, rate equations 8–18677
dilatation energy of extended defects of arbitrary shape and size near solid surfaces 8–34508
elastic strain energy, stable configuration determ., computer calc. 8–30663
electron microscopy imaging, approx. for dynamical calcs. of microdiffr. patterns 8–26393
fast reactor materials, fast neutron damage 8–10093
ferroelectric, polarisation switching influence of mobile point defects 8–31165
impure solids, laser pulsed, mechanism for point defect generation 8–47368
interaction with inclusions near solid surface, energy *(Germany)* 8–38750
intrinsic properties, rel. to void growth 8–47315
ionic crystal. interaction energies between point defects and dislocations, shell-model calc. 8–22759
magnetic domain lattice motion in field of point defect *(Russian)* 8–39358
metal, anelastic study of intrinsic point defects, irradiation effects 8–47323
metal, creep, point defects 8–48462
metal, diffusion, radiation effects 8–47555
metal, interaction energies between point defects 8–47360
metal, point defect clusters, TEM obs., review 8–26564
metal, positron self-trapping conditions 8–47338
metal, superconducting transition, effect of change of electrostatic interaction of defects 8–10610
metal condensation on alkali halide, nucleus saturation density and epitaxy 8–18928
metal point defects, computer simulation of dark field electron micrographs 8–47219
metal surface, near point-defect, annealing, diffusion theory and Monte Carlo anal. 8–47646
metal swelling, max. point on temp. scale rel. to point defect generation *(Russian)* 8–38751
metal-ion point defects in solids, non-radiative relax. 8–6753
metals, influence of a surface coating, on void formation 8–47416
metals, point defect solute interactions 8–47410
migration energy in pure metals and dil. alloys 8–47572
minority carrier recombination at surfaces, dislocations and microdefects, luminesc. evaluation 8–6769
multiphonon effects on dispersion, Faraday rot., associated with point imperfections 8–43839
olivine, point-defect chemistry, effect of enstatite activity and O_2 partial pressure 8–40549
polymer, crystallising, defects and mech. relax. *(Russian)* 8–22789
positron trapping, lifetime calc. 8–48253
precipitation near grown-in dislocations during neutron irradiation 8–26600
quantum crystal, model of tunnelling point defect at finite temp. 8–38907
quantum crystal, one-dimensional, solitary defectons 8–2332
review, book contrib. 8–10043
semiconductor, quenching of luminesc. by charged defects 8–23531
silicate minerals, lattice imaging 8–30522
steel, stainless, neutron irrad., point defect cond. and void radius change, appl. of model for void growth 8–47436
steel, stainless, swelling, effect of free surface 8–10097
Ag-Zn (30 at.%), electron irrad. exam. of defect supersaturation by elasticity, and creep meas. 8–47366
Al, annealed and neutron irrad., exam. of positron lifetimes in voids and other defects 8–47426
Al, positron trapping, defect specific temp. depend. 8–47336
α-Al_2O_3:Ti, defect struct., electronic and ionic cond., optical absorption meas. 8–30603
Ba ferrites, lattice imaging 8–30522
Cd, recovery after 6.1 MeV α-particle irradiation at 4.2K 8–47441
Cd:^{116}Sn, quadrupole interaction, radiation damage effects 8–43752

- **point defects** continued
  - CsI, crysts., microplasticity mechanism 8−30696
  - Cu fatigued polycrystals, point defect cluster rel. with yield stress temp. depend. 8−6989
  - Cu, neutron irradiated, effect on internal friction 8−15445
  - Cu, polycryst., low temp., plastic deform., structural defects, elec. resist. meas. *(Russian)* 8−39844
  - Cu, positron trapping, defect specific temp. depend. 8−47336
  - Fe, radiation induced defects, annealing exam. using channelling tech. 8−47316
  - Fe:Xe(Te), interaction of impurities with point defects, Mossbauer spectroscopy exam. 8−47414
  - Fe-Co(Al), B_2 superlattices, point defect investigations 8−47357
  - GaAlAs-GaAs heterostructures, electronic excitation effects on mobility of point defects and dislocations 8−2561
  - GaAs, impurity-point defect complexes 8−6097
  - GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8−6067
  - n-GaP, LPE, non-radiative recombination 8−19565
  - GaSe, fine struct. of exciton spectrum 8−39567
  - Ge, point defect creation by plastic deform., Hall const. electrical conductivity 8−6053
  - LiF, electron irradiated, mech. characts. 8−26595
  - $Mn_{1-x}Fe_{2+x}O_{4+\delta}$, ferrites, homogeneity region, cluster component model 8−35367
  - Mo, annealing in stage I, dose depend. and radiation doping defects 8−47422
  - Nb_xO_y, lattice imaging 8−30522
  - Nb_3Sn, gap anisotropy, electron irrad. effect on transition temp. 8−10599
  - Ni, high purity, quenching expts. 8−48432
  - Ni, point defect-dislocation loop interaction, effect on dislocation loop growth kinetics 8−47415
  - Ni, positron trapping, defect specific temp. depend. 8−47336
  - Ni, self-ion irradiated, defect clusters, annealing 8−18687
  - Ni:^{235}U (0.1 at.%), exam. of saturation defect conc. and elec. resistivity meas., for neutron irrad. at 7K 8−47435
  - NiGa, point defects, lattice parameter determ. 8−38695
  - Pb-Au, dil., solute resist. meas., multiple point defect form. 8−10433
  - Pt, point defect properties, damage curve anal. 8−47359
  - Si, dislocation-free crystal point defect condensation 8−6026
  - Si, integrational etching composition and method 8−10055
  - SiTe-ATe, A=Ga, In, Tl, solid solns., mag. suscept. meas., defects 8−43552
  - V_3Si, phase transition and transition temp., chemical comp. effects, defect struct. exam. 8−18651
  - Zn, recovery after 6.1 MeV α-particle irradiation at 4.2K 8−47441
  - $Zr(HPO_4)_2H_2O$, ^{6}Li loaded, α-radiation damage, X-ray Guinier powder reflection study *(German)* 8−47437
- **point groups** *see crystal atomic structure*
- **point to point radio links** *see radio links*
- **Poiseuille flow**
  - ducted flow, velocity and temperature development behind shock wave 8−34161
  - elastic liquids, stability of plane Poiseuille flow 8−9662
  - energy stability limit for rot. modified flow 8−30268
  - finite amplitude stability, perturbative and iterative methods 8−38293
  - laminar to turbulent alternating transition, crit. Reynolds no. 8−46935
  - laminar to turbulent boundary layer shear flow, three-dimens., stability eqns. 8−38284
  - laminar to turbulent boundary layer transitions, numerical simulation 8−38286
  - laser speckle photography for fluid flow vel. meas. 8−14112
  - monodimensional Poiseuille and thermal creep flows, rigorous constructive soln. 8−30319
  - pipe flow, hydrodynamic stability *(French)* 8−18347
  - plane, instability caused by nonlinear, nonperiodic and three-dimensional disturbance 8−38291
  - plane Poiseuille flow in channel, stability, orthogonal expansion method *(Russian)* 8−5730
  - plane variable viscosity flow with unequal wall temps. 8−18344
  - rarefied flow, Poiseuille slip and thermal creep at boundary surface *(Russian)* 8−38371
  - stability, external forcing effect 8−22327
  - stability of flow in elliptic pipe with large aspect ratio 8−1745
  - sudden expansion, steady flow, mixed-interpolation finite elements comparison 8−45486
  - vertical porous stratum, natural convection, modified Poiseuille flow distrib. 8−5794
- **Poisson ratio**
  - fibrous composite materials, models for composites with different props. in tension and compression 8−35417
  - glass fibre reinforced epoxy composite, mech. and photoelastic props. at high temps. 8−19799
  - high-temperature US apparatus for elasticity characts. and thermal cond. meas. of materials 8−5705
  - piezoceramic Poisson ratio rel. to electromech. coupling and energy trapping 8−43796
  - polymer film, oriented, compliance constants meas. 8−38261
  - reinforced plastic, elastic orthotropic cylindrical shell, axisymmetric contact problems, shell interaction with tires 8−1569
  - steel, 300 grade maraging low temp. elastic props. 8−27555
  - steel, sheet, cold-rolled, US inspection for mech. prop. anisotropy 8−23750
  - transparent materials, low-modulus, mech. props. determ. method 8−5704
  - volume dependence, Debye theory 8−22785
  - C fibre reinforced plastic, laminate, non Hookean behaviour in fibre direction, effect of fibre waviness on tensile props. 8−19804
  - Co based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
  - Fe alloys, elastic props., texture correction formulae *(German)* 8−15439
  - Fe based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
  - Fe-Si, (3 wt.%), nonuniform elastic deform. in grains *(Russian)* 8−35415
  - Ge-As-Se glasses, US vel. and reson. freq. meas. 8−23756
- **polar cap absorption** *see ionospheric electromagnetic wave propagation*
- **polar cap flow** *see airglow*
- **polar plots (control systems)** *see Nyquist diagrams*
- **polar semiconductor materials** *see polar semiconductors*
- **polar semiconductors**
  - *see also ferroelectric semiconductors; piezoelectric semiconductors*
  - amorphous semiconductor, mobility gap temp. derivative calc., polar contrib. 8−26861
  - biexcitons, variational wave functions 8−23031
  - carrier, mobility in mag. field, extreme quantum limit, iterative technique 8−2498
  - chemical shift of Zeeman masses 8−10338
  - high field collision rates 8−30932
  - high field quantum magnetotransport theory 8−30941
  - light scattering, multiphonon cascade theory 8−19490
  - optic-phonon-magnetoplasmons at interface between two polar semiconds. 8−23146
  - optical phonon-magnetoplasmon interface oscills. 8−43467
  - Raman spectra of coupled LO phonon plasmon mode, de Haas-Shubnikov like quantum oscills. 8−43863
  - resonant secondary radiation 8−31242
  - secondary emission, multiphonon cascade process *(Russian)* 8−2850
  - Wannier excitons, effective Hamiltonians and binding energies 8−34777
  - CdS, spin flip Raman scatt. linear k term 8−19475
  - α-GaAs, amorphous, mobility gap temp. derivative calc., polar contrib. 8−26861
  - GaAs, optical cond. of free carriers 8−19436
  - n-GaAs, Raman spectra of coupled LO phonon-plasmon mode, de Haas-Shubnikov like quantum oscills. 8−43863
  - n-InSb, mobility in mag. field, extreme quantum limit, iterative technique 8−2498
  - InSb, warm electron coeff. 8−10452
  - SiC, cubic, electron-hole liq., luminesc. obs. 8−31239
  - ZnO surface, adsorption of O_2 and CO, electron energy loss spectra meas. 8−14601
- **polarimeters**
  - *see also polarimetry*
  - astronomical IR instrumentation on NASA airborne observatories 8−45224
  - digital lock-in technique using electro-optic cryst. 8−273
  - electro-optical effect meas., appl. to ferroelec. crysts. *(Japanese)* 8−37045
  - glass, thermal stresses, temporary and residual, monitoring by semiautomatic heating polariscope-polarimeter 8−16833
  - hadron polarisation meas. at high energies 8−884
  - oscillating compensator-analyser-polarimeter with AC optical rotators 8−29142
  - photoelectric polariscope quartet for induced birefringence meas. 8−21204
  - precision polarimeter, systematic errors, instrumental errors *(German)* 8−272
  - precision polarimeter, systematic errors, quartz plates standards *(German)* 8−16832
  - stress and strain measurement methods, monograph 8−19988
  - universal interference and polarisation apparatus 8−19986
  - Voyager photopolarimeter experiment 8−20616
- **polarimetry**
  - *see also ellipsometry; polarimeters*
  - birefringence modulator devices for sensitive polarisation determ. 8−8437
  - circular dichroism in presence of birefr. and linear dichroism, meas. method 8−27178
  - coherent light beam, azimuth of plane of polarisation determ. *(Russian)* 8−29143
  - fluorescence polarisation measurements, correction for finite apertures 8−21224
  - fluorosilicate, Mossbauer polarimetry, double motion drive and effective thickness meas. 8−23379
  - linear dichroism measurement, appl. of polarisation scrambling using photoelastic modulator 8−4683
  - optical phase difference meas., using polarisation technique 8−29141
  - Spacelab facility for X-ray source spectroscopy and polarimetry 8−32314
  - Stokes parameters meas. 8−32854
  - sugars, detect. in HPLC systems using polarimetry, refractometry and optical rot. 8−48734
  - sunlight polarisation by atmosphere measurement, ships compass adjustment appl. in fog 8−24831
  - KCl, photoelastic consts. at 10.6 μm, interferometric and polarimetric meas. 8−25934
- **polarisability**
  - *see also atomic polarisability; molecular polarisability*
  - aliphatic unsaturated normal hydrocarbons, positron annihilation time spectra, polarisability depend. 8−6806
  - alkaline earth chalcogenides, electronic polarizability of ions, effect of crystal potential 8−26490
  - crystal under hydrostatic press., electronic polarisability and ion size var. 8−26487
  - molecular crystal with impurity, polarisability in exciton transition region 8−27268
  - pion polarisability 8−456
  - solvated electrons, dipole polarisability, Compton profiles 8−27877
  - BaF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
  - CaF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
  - CuCl(Br)(I), electronic polarisability, strain derivative calc. 8−10868
  - $Gd_2(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
  - $Ho_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
  - Na_2SbF_5, linear and nonlinear optical props., hyperpolarisability 8−30010
  - $Nd_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
  - $Sm_{2x}Gd_{2(-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
  - SrF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
  - $Tb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164

polarisation
see also beta-ray polarisation; deuteron polarisation; dielectric polarisation; gamma-ray polarisation; light polarisation; neutron polarisation; nuclear polarisation; photon polarisation; polarisation in nuclear reactions and scattering; proton polarisation
30 GHz signals, thunderstorms 8-3854
alkali atom dimer polarisation transfer, atom-molecule-exchange reaction 8-13574
atomic fluorescence weak polarisation meas. using alternating magnetic field 8-1105
austenitic stainless steel weld metal defect detection, shear-wave polarisation effect 8-44337
3C 326, very large radio galaxy, linear polarisation multifreq. obs. 8-28810
Crab Nebula, polarimetry with OSO-8 X-ray polarimeter 8-12426
Cygnus X-1, polarimetry with OSO-8 X-ray polarimeter 8-12426
Cygnus X-1, search for X-ray polarisation 8-4406
Cygnus X-2, polarimetry with OSO-8 X-ray polarimeter 8-12426
differential attenuation and phase shift meas. for 36.5 GHz polarised waves rel. to raindrops 8-3856
Earth-space paths, rel. between rain depolarisation and attenuation 8-3858
electrochemical, applic. to solids to control deform. and fracture *(Russian)* 8-11356
EM wave, forward scatter and crosspolarisation from ice spheroids 8-3853
EM wave, homogeneous, energy flux under conical refraction and induced gyrotropy 8-17861
Jupiter, 11 cm radiation Stokes parameters meas. 8-12141
latticed polarizer for high-pressures 8-21206
M1-92, bipolar nebula, unpolarised OH emission obs. 8-41016
microscopic charge and current densities in terms of polarisation and magnetisation fields 8-8251
microwave satellite paths, crosspolarisation phase due to ice crysts. 8-7684
NGC 7822 (W 1), supernova remnant, search for linear polarisation at 2.8 and 6 cm 8-4383
photon propagation in mag. field, radiative correction to polarisation operator *(Russian)* 8-8567
pion magnetic polarisability using guage and relativistic invariance 8-4861
pseudo Brewster angle, vertical polarization reflection coeffs., between two media 8-5403
PSR 1133+16, polarisation of high freq. radio emission microstruct. 8-45348
pulsars, radio polarisation rel. to model of emission mechanism 8-12257
radial field polariser for magnetising a moving liquid 8-250
radio beacon signals from ATS-6 satellite, ground refl. effects on polarization 8-40612
radio polarization of quasars with optical absorption spectra 8-12405
radio sources, compact, linear polarisation rel. to physical conditions 8-4384
radiowave propagation, raindrop canting angle as function of wind velocity 8-3855
satellite link, lightning crosspolarisation model 8-11961
Scorpius X-1, linear X-ray polarisation upper limit 8-49557
seismic waves, ground displacement polarisation determ. rel. to three-component registrations interpretation *(German)* 8-32017
solar hard X-rays, backscatter, anisotropy and polarisation 8-28594
solar radio emission in inhomogeneous magnetic field of coronal plasma *(Russian)* 8-16385
solar type III radio bursts, fundamental and harmonic, circular polarisation, 24-220 MHz *(Russian)* 8-16384
type II radio burst, 1973, May 3, 74 MHz polarisation and spectral fine struct. 8-24501
vegetation reflectivity, effect on atmospheric radiance and polarisation 8-40650
Virgo A (M87), 1.3 cm polarisation obs. 8-49550
X-ray binaries and pulsars, effect of vacuum birefringence on polarisation 8-4408
$K^-p\to\Lambda X$, 4.2 GeV/c, polarisation and triple Regge framework 8-45948
LiF, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8-11356
SiF$_4$, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8-11356

polarisation in nuclear reactions and scattering
backward inclusive scattering of polarised protons from nuclei 8-17206
(d,τ) reactions, 52 MeV, analyzing powers, spins of proton hole states 8-25111
eikonal approx., electron-oriented nucleus scatt., polarisation of e^-, nuclei and emitted γ rays 8-37331
hadron-nucleus scatt., corrections to circular polarisation of γ quanta *(Russian)* 8-41683
heavy ion quasielastic reactions, polarizations 8-37368
heavy ion scattering, polarisation by Coulomb excitation in closed formalism, ^{184}W(^{18}O, ^{18}O) appl. 8-37376
heavy-ion induced reactions, dynamically deformed rot. nucleus calcs. of polarisation effects 8-25222
light and intermediate nuclei, proton induced reactions, polarisation phenomena interpret. 8-13051
longitudinal polarisation meas., β^+ decay 8-8781
multiple scatt. effects in fast neutron polarisation expts., Monte Carlo anal. 8-13052
N=50 isotones populated in heavy-ion beam reactions, mag. moments, proton core polarisation 8-21598
photonuclear reactions, differential polarisation coeffs. 8-4926
review of research at low energies *(Russian)* 8-33162
spin polarisation analysing power in nuclear reactions, extreme values 8-37326
spin-polarisation analysing powers in nuclear reactors, M-matrix conditions 8-8787
(d,α) reactions, ang. momentum transfers, determ. using polarized beams 8-37354
^{1}H(n,n)^{1}H at 16.9 MeV, analysing power meas. 8-4941
(n,γ), spin assignments using polarised neutrons and oriented target nuclei 8-29724
(p,p) 1 GeV, Glauber theory of spin-orbit interactions 8-37336

polarisation in nuclear reactions and scattering continued
(p,p) scatt., polarised proton, 30 MeV, optical model anal. 8-597
(p,p′) and (e,e′) scattering, core polarisation, microscopic models, transitions, cross sections, form factors 8-604
Ag+^{40}Ar deep inelastic reactions, γ-ray polarisation meas., neg. deflection angles 8-8845
^{11}B(α,n)^{14}N, n polarisation ang. distrib., R-matrix anal., ^{15}N excited states 8-4937
^{11}B(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8-13075
^{9}Be(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8-13075
^{9}Be(t,t)^{9}Be, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8-41730
^{12}C(^{3}He,^{3}He), 20.5-33.0 MeV, energy depend. of analysing power optical model 8-17226
^{12}C(^{6}Li,d), ^{12}C(^{6}Li,α), 20 MeV, analysing powers 8-46098
^{12}C(p,p′), spin flip excitation of 1^+ T=0 state 8-8817
^{12}C(p,p′)X, 316, 516 MeV, analysing powers at backward angles 8-46062
^{12}C(t,t)^{12}C, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8-41730
^{14}C(p,n)^{14}N, n polarisation ang. distrib., R-matrix anal., ^{15}N excited states 8-4937
^{40}Ca (p,p), elastic scatt., polarisation and spin-orbital amplitude parameters, 1 GeV *(Russian)* 8-17208
^{40}Ca(^{16}O,^{15}N)^{41}Sc, DWBA anal. including nuclear wave function polarisation 8-629
^{40}Ca(p,p), 1.04 GeV elastic scatt., polarisation 8-21549
^{48}Ca(d,t)^{47}Ca, 13.5 MeV, polarised deuterons, low-lying levels in ^{47}Ca 8-13114
^{59}Co+n, 8-31 MeV, spin-spin depend. of total cross section 8-17172
D(p,p), 630 MeV, asymmetry in scatt. polarised protons *(Russian)* 8-46064
^{57}Fe, γ-ray emission, test of time reversal invariance 8-29421
Fe(p,p′), A=54,6, E=17.2, 20.4, 24.6 MeV polarised protons, optical model, DWBA anal. 8-13094
^{70}Ge(d,t),(d,p), differential cross sections and vector analysing powers 8-17221
^{2}H(d,p)^{3}H, ^{2}H(d,n)^{3}H, analysing power meas. 8-25204
^{2}H(n,n)^{2}H, 12 MeV, polarised neutrons, analysing power meas. 8-33193
^{2}H(p,p), 10 MeV, differential cross section, p and d analysing powers 8-46063
^{3}H(^{3}He,^{3}He), 20-33 MeV, analysing power, differential cross section meas. 8-17227
^{3}H(p,p), 8 to 17.1 MeV, cf. neutron polarisation in ^{3}He(n,n) 8-25171
H(d,d), A=1, 2, E=52 MeV, polarised deuterons, vector analysing power 8-584
^{3}He(n,n), 8 to 17.1 MeV, cf. proton polarisation in ^{3}H(p,p) 8-25171
^{3}He(p(polarised),p)^{3}He, nuclear force and T-violation effects 8-4797
^{3}He(t,d)^{4}He, 9-17 MeV, polarised tritons, analysing-power ang. distrib. meas. 8-29481
^{4}He(^{3}He,^{3}He), 18-22 MeV, analysing power ang. distrib., differential cross sections, ^{7}Be excited state 8-46078
^{165}Ho, electron-oriented nucleus scatt., eikonal approx. calc. 8-37331
^{165}Ho+n, polarised projectile and target, spin depend. of total cross section *(Russian)* 8-17211
^{6}Li+n, spin depend. capture and scatt. of slow neutrons 8-46059
^{6}Li(^{3}He,p)^{8}Be, 14 MeV, p-^{8}Be optical model parameters 8-25208
^{6}Li(d,n_1)^{7}Be*, 0.6-1.0 MeV polarised deuterons, vector and tensor analysing powers 8-4925
^{6}Li(d,p_0)^{7}Li, 0.6-1.0 MeV polarised deuterons, vector and tensor analyzing powers 8-4925
^{6}Li(d,p_1)^{7}Li*, 0.6-1.0 MeV polarised deuterons, vector and tensor analyzing powers 8-4925
^{7}Li(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8-13075
^{24}Mg(d,p)^{25}Mg, 8-13 MeV, vector polarised deuterons, excitations function of cross sections 8-8826
Mg(p,p), A=24, 26, 5-6 MeV, polarisation in elastic scatt., thick target method 8-13079
^{100}Mo(^{14}N, ^{12}B)^{102}Ru, 90 MeV, semiclassical analysis of ^{12}B spin polarisation 8-33212
^{15}N(p,γ)^{16}O, anal. of ^{16}O giant dipole reson. struct. 8-4942
^{147}Nd, spin by vector analysing powers of ^{148}Nd(d,t)^{147}Nd 8-609
^{62}Ni(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8-29464
Ni(p,p′), A=58,60,62, E=17.2, 20.4, 24.6 MeV polarised protons, optical model, DWBA anal. 8-13094
^{16}O(^{16}O,^{12}C)^{20}Ne*, strong polarisation of ^{20}Ne levels obs. 8-25213
^{208}Pb (p,p), 1.04 GeV elastic scatt., polarisation 8-21549
^{208}Pb (p,p) elastic scatt., polarisation and spin-orbital amplitude parameters, 1 GeV *(Russian)* 8-17208
^{208}Pb(^{12}C,^{11}B)^{209}Bi, DWBA anal. including nuclear wave function polarisation 8-629
^{208}Pb(γ,γ), mean polarisation meas. of 4843 keV 8-29446
^{110}Pd(p,t)^{108}Pd(2_1^+), analysing power difference from ^{110}Pd(p,t)^{108}Pd(2_1^+) 8-37341
^{32}S (p,p), 5-6 MeV, polarisation in elastic scatt., thick target method 8-13079
^{34}S(d,α)^{32}P, 8.25-9.50 MeV, tensor-polarised deuterons, spin-parity assignments to ^{32}P levels 8-17219
^{34}S(d,d), elast. and inelast. scatt. of 11.8 MeV polarised deuterons 8-33191
^{30}Si(d,α)^{28}Al, 18 MeV, cross-section and vector analysing power ang. distribs. 8-41728
^{118}Sn(p,α)^{115}In, 20 MeV polarised protons, DWBA calcs. 8-41714
^{122}Sn(d,d), 15 MeV, optical model calc. 8-41729
^{122}Sn(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8-29464
^{46}Ti(d,d), 10 MeV, optical model calc. 8-41729
^{89}Yb(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8-29464
Zr(^{16}O,xnγ)Cd, parity assignments of Cd with A=105 to 109 8-41630
^{90}Zr(d,d), 10 and 15 MeV, optical model calc. 8-41729
^{90}Zr(p,p′), polarised protons, compound nuclear contribs. to IAR inelastic decay 8-8813

polariscopes *see polarimeters*

polaritons
ammonium bioxalate monohydrate spontaneous parametric scatt. spectra, polariton wave vector and Stokes lines analysis 8−43885
anisotropic crystal films, surface polaritons 8−26822
anthracene, O-O exciton absorption bands, thermomodulation study 8−39563
antiferromagnet, uniaxial, mag. polaritons in spin-flop phase 8−23349
biexcitons recombination, polariton effects 8−23033
Bose condensation, polaritonic, effects of superfluidity 8−18976
exciton resonances, interacting, dielec. theory 8−14673
ferroelectric H bonded crystals, linear response function for tunnelling systems in polariton region 8−43799
layer systems, mag. polaritons 8−31060
lecture on phonons and polaritons 8−26638
metal surface, light refl. from dye molecule monolayer 8−48246
metals, SHG by surface polaritons, theory 8−9416
molecular thin plate, with near-surface polariton transition layer, reflection and transmission spectra *(Russian)* 8−14677
nonlinear crystal, polariton parametric oscill. and stimulated Raman scatt. 8−30026
nonstationary Raman scattering, by polaritons, correlation spectroscopy *(Russian)* 8−23450
nonstationary Raman scattering, of light, by vibration and polariton excitations *(Russian)* 8−23449
phonon-polariton modes for freq. chirped optical pulse compression 8−46689
photon magnon bound states in ferromag. 8−47711
α-quartz, Au film coated, surface polariton dispersion, IR spectra obs. 8−48249
Raman scattering, photoelec. recording method *(Russian)* 8−23468
Raman scattering, two-photon reson., by excitons via intermediate excitonic mol., polarisation and polariton effects 8−10880
Raman scattering by surface polaritons and compensation effect 8−10374
self induced transparency, steady-state exciton-photon pulse dispersion law 8−30028
semiconductor, direct band-gap, polariton emission spectrum, exciton kinetics influence 8−14676
semiconductor, EM properties, general lecture 8−27173
semiconductor, magnetoplasmon-polariton surface modes, Voigt geometry 8−43451
semiconductors, mixed crystals, polaritons, dispersion relation 8−18977
surface, excitation by stimulated Raman scatt., theory 8−9413
surface polariton effects in spontaneous emission, effects of spatial dispersion 8−34879
surface polariton modes, correlation with attenuated total reflection minima, computational study 8−31265
surface polaritons allowing for spatial dispersion *(Russian)* 8−14675
TCNQ, metallic reflection band, vibronic struct. 8−19502
Wannier-Mott polaritons in mag. fields, review 8−2437
Ag, surface polariton absorption and emission spectra, edge effects 8−10375
$BaTiO_3$, tetragonal, over-damped soft E-polariton and dielec. dispersion 8−15111
Cu, surface polariton absorption and emission spectra, edge effects 8−10375
CuCl, anomalous TO-doublet origin for light scatt. study 8−43872
CuCl, giant two-photon absorption into excitonic mol., anomalous dispersion of excitonic polariton 8−27211
CuCl, polariton effects in resonant Raman scatt. 8−10881
CuCl, two-photon reson. Raman scatt., recoil of upper-branch excitonic polariton 8−27212
CuCl, two-photon resonant Raman scatt. via biexcitons 8−43302
$Ga_{1-x}Al_xAs$, surface phonon polaritons, frustrated total internal refl. expts. 8−47656
GaAs, polariton scattering, free carrier effects 8−34783
GaAs, surface nonlinear interactions, Green's function theory 8−42379
GeF_4, Raman spectra at 77K, scatt. angle, polaritons and space group 8−23439
$KBrO_3$, near-forward Raman scatt. by polaritons 8−43842
KH_2PO_4, ferroelectric phase transition exam. by spontaneous parametric light scatt. 8−19427
$LiIO_3$, possible separation of direct and cascade processes in active combination scatt. Raman spectroscopy 8−13764
$LiIO_3$, Raman induced Kerr effect with elliptical polarisation 8−42392
$LiNbO_3$, dispersion law of polaritons, refr. index in IR, and Raman spectra meas. 8−27232
$LiNbO_3$, inverse Raman scatt. by polaritons 8−23434
SiF_4, Raman spectra at 77K, scatt. angle, polaritons and space group 8−23439
TeO_2, paratellurite cryst., polariton Raman scatt. 8−25928
ZnO, ang. depend. of reflection spectra and directional dispersion of anisotropic exciton polaritons 8−31216
ZnO, near-forward Raman scatt. intensity of E_1(TO) polariton mode 8−23462
ZnSe film, surface polaritons, thermostimulated emission *(Russian)* 8−10904
ZnSe film, thermostimulated polariton emission 8−2436
ZnTe, relax. processes at high excitation levels, Bose-Einstein condensation of excitons 8−48219

polarization *see polarisation*

polarographs *see polarography*

polarography
see also voltammetry (chemical analysis)
cell voltage step production methods 8−7282
development, review 8−35769
liquid film flow down inclined plane, polarographic velocity meas. method *(French)* 8−34214
photographic colour developing agents in processing solns., polarographic determ. 8−4726
semidifferential electroanalysis, derivative neopolarogram peak shapes 8−7256
thin-layer continuous-flow and pulsating systems, anal. characts. 8−23980
O_2 partial pressure on blood sample meas., error reduction 8−7470

polarons
see also small polaron conduction
acoustic mode, frustrated linear energy-momentum relations 8−23034

polarons continued
alkali halide, F-centres, vibronic problem in higher excited states 8−10931
alkali halides, optical breakdown, 1.06 to 0.172 μm 8−35089
amorphous compound semiconductor, thermoelectric power and transport models 8−10482
central peak in polaronic cryst. 8−47712
chalcogenide semiconductors, optical and elec. props., comparison with SiO_2 8−6721
deep oxide acceptor, intra- versus inter-small-polaron transitions 8−30874
defect tunnelling, phonon assisted, in-band defect-induced phonon reson. modes effect 8−14419
hopping, quantal occurrence probability treatment 8−43313
magnetic semiconductor, spin polarons in s-d model with off-diagonal exchange 8−34784
molecular crystal, charge carrier mobility temp. depend. 8−10376
molecular polaron, dynamics and thermodynamics 8−14678
optical characts., bound polaron and phonon states *(Russian)* 8−39556
paramagnet system, low-temp. diffusive transport for polarons and defectons 8−43174
polar semiconductors, chemical shift of Zeeman masses 8−10338
polar semiconductors, effective Hamiltonians and binding energies of Wannier excitons 8−34777
rare earth compounds electron-phonon interaction influence on electronic phase transitions *(Russian)* 8−47743
semiconductor, polaron aspects of generalised Haynes' rules 8−18978
surface lattice vibrations, interaction with low-energy electrons 8−30820
two-polaron bound state, strong and weak coupling approx. 8−39039
n-CdS, polaron effective mass, DC Hall effect meas. 8−39037
CdTe, shallow donors, excited state transitions 8−6710
GE, microwave cyclotron resonance lineshape, magnetoplasma interference effect, reinterpretation of excitonic polaron 8−43287
GaAs, shallow donors, excited state transitions 8−6710
Ge, electron interaction with many excitons 8−26823
^{3}He solid, paramag., low-temp. diffusive transport for polarons and defectons 8−43174
$La_{1-x}Sr_xCrO_3$, x=0-0.2, AC and DC cond., 77-1300K, hopping of polarons 8−2477
MgO:Li, $[Li]^0$ defect, stress induced optical dichroism 8−35179
NiS, spin polarons exam. and metal-insulator transition 8−10377
SiO_2, amorphous, optical and elec. props., comparison with chalcogenide semiconds. 8−6721
Ti_4O_7, rel. to optical absorpt. and metal-insulator transitions 8−15165
WO_3, polar, electrochromic absorpt. bands, small polaron theory 8−39528

police
holography appl., footprint obs. *(French)* 8−9347

polishing
see also electrolytic polishing
bronzes, ancient, chem. polishing and etching for metallographic exam. 8−356
ceramic, polished section prep. using pedepin *(German)* 8−19983
ceramics, mounting and polishing technique, for microstruct. exam. 8−48580
glass, heat treated, thin foil prep. for TEM obs. 8−7154
III-V semiconductor, surface microhardness depend. on surface treatment method 8−15560
metal polishing for optical appl. 8−5587
metal surfaces for laser mirrors, ion polishing and vac. annealing 8−5588
metallographic specimens, grinding and polishing apparatus 8−23889
optical surface shaping by successively corrected mask method 8−18076
plasma, low press. high frequency induction cleaning and polishing of glass and Pt-Ir substrates *(Russian)* 8−35578
Polirit, commercially produced, for optical surface polishing, phys., chem. and tech. props. 8−46848
sapphire, absorbing microdefects effect on anisotropy of optical strength 8−2952
sapphire, polishing with colloidal SiO_2 8−39925
sapphire substrates, prep. for GaN epitaxy 8−39929
soft magnetic mat. prep. by precip. of insulating film on Fe powder in polishing bath 8−23637
steel, 40KhNMA, corrosion fatigue strength, effect of polishing and diamond smoothing *(Russian)* 8−31575
AgCl, surface layer stress distrib. after mech. treatment, polarisation-optical obs. 8−18887
CaF_2, polished crysts., rocking curve meas. *(German)* 8−2347
$Cd_xHg_{1-x}Te$, surface microhardness depend. on surface treatment method 8−15560
CdS, single cryst., surface treatment effects on photoluminesc., struct. and optical props. *(Russian)* 8−15224
CdS single crystal laser screen, photolum., determ. of layer depth disturbed by polishing 8−17977
GaAs (110), comparison of LEED intensities for chemically polished and cleaved surfaces 8−18884
GaAs, vapour phase etching and polishing with $AsCl_3$ 8−3243
KH_2PO_3, mechanically treated single crystal, depth and struct. of disturbed layer *(Russian)* 8−23839
LiF crystal, dislocation movement study with new chem. polish 8−15614
Si, polished plate, internal friction *(Russian)* 8−15441
Si, slice double-sided free polishing 8−11380
Y-Er, surface, high-freq. elec. cond. dispersion function, effects of polishing and annealing 8−19506
ZrO_2, near-surface phase transforms., effect of grinding and polishing 8−15557

pollution
see also air pollution; pollution detection and control; water pollution; water treatment
fusion power stations, recirculating power, unit cost, thermal pollution 8−29643
gamma-ray activity in coals, rel. to power station choice 8−11746
light pollution, effect on astronomical obs. 8−3954
light pollution, Simkin effect and Hg I 4047 Å night sky contamination effect on galaxy redshift determ. 8−41032
methylmercury, equilib. concs. in Ottawa River sediments 8−11923

pollution continued
night sky zenithal brightness monitoring, light pollution rel. to astronomical observations 8−49141
nuclear facilities, forecasting of environmental impact *(French)* 8−8994
nuclear waste disposal, migration in geologic formations 8−4994
plant trace element anal. by X-ray fluoresc. for environmental pollution study 8−3690
radionuclide conc. rel. to residence time in marine sediments near Maine Nuclear Power Reactor 8−49021
soil pollution indication, Ca and NO_3-N loss from microcosms 8−16019
soil residual contamination levels and decommissioning nuclear facilities, radiological criteria 8−11747
soil-water system interfacial reactions and heavy metal adsorption 8−3832
^{241}Am sorption on USA subsoils from differing weathering intensity areas, ^{241}Am, ^{237}Np and ^{99}Tc 8−16014
^{144}Ce gastrointestinal absorpt. and distrib. in suckling pig 8−15942
^{3}H, environmental transport from atm. release of mol. ^{3}H 8−11987
^{237}Np, sorption on USA subsoils from differing weathering intensity areas 8−16014
Pu distribution in Ohio soils, local and stratospheric sources 8−16015
^{222}Rn short-lived daughter population exposure in Great Britain 8−35970
Sr isotope excretion in man, comparison of stable Sr, ^{85}Sr and ^{90}Sr 8−24153
^{99}Tc sorption on USA subsoils from differing weathering intensity areas 8−16014

pollution detection and control
see also air pollution detection and control; noise abatement; remote sensing; waste disposal; water pollution detection and control; water treatment
coal power station fly-ash and slag, natural radioactivity meas. 8−17442
estimation, meas. and sampling methods *(French)* 8−20506
Fourier transform IR spectrometry, chem. and environmental anal. appls. 8−20100
gas and fluid analysis, continuous and quasicontinuous methods *(German)* 8−44437
instrumentation for pollution control 8−24363
nondestructive neutron activation analysis of environmental samples using low-energy photon spectrometry 8−3995
nuclear power plant, radiation monitoring systems, review 8−33292
organic residues, gas chromatogram quantitation, using algorithms for microprocessor based integrator 8−27839
proton activation analysis of environmental and ecological pollution determ. 8−3994
radiation protection legislation in West Germany, standards aspects *(German)* 8−5049
radiochemical and chemical trace analysis, reliability aspects 8−40106
radioisotope applications in agriculture, hydrology, medicine industry etc., booklet 8−35947
radionuclide transfer to crops and agricultural products *(French)* 8−8996
samples, X-ray anal., absolute sensitivity and detection limits 8−7261
tree rings, trace element distribs. using neutron activation 8−3939
I radioactive waste, solidification in conrete, leach rates 8−703
^{131}I determination in vegetation, ashing procedure 8−15930
^{131}I, low level detection in milk rel. to population dose 8−31911
U ores, dusts and mill tailings, simultaneous determ. of ^{238}U, ^{234}U, ^{230}Th, ^{226}Ra, and ^{210}Pb 8−15736

polonium
see also nuclei with ......
collector in electrometer, reductive effect, determ. from leakage current 8−37036
^{210}Po, concs., physico-chem. states and residence times in marine and estuarine waters 8−11913

polonium compounds
No entries

polyelectrolytes *see electrolytes; polymers*

polymer films
see also dielectric thin films; insulating thin films
asymmetric dense polymeric membrane, gaseous mixture separation 8−9696
cellulose hydrated film, orientational heterogeneity, IR spectra and dichroism obs. *(Russian)* 8−38990
cellulose membrane, methanol(formamide)-water soln. permeabilities 8−11557
coating on glass, current leakage path form. by water diffusion 8−10535
conformational transitions, activation energy determ. *(Russian)* 8−48186
FEP foil, charge transport, injected carrier hopping model 8−19171
growth in glow discharges *(German)* 8−35343
laser stimulated active diffusion, appl. to isotope separation *(Russian)* 8−2302
lavsan film, Ar ions bombardment for micropore filters preparation 8−3305
melt grown, birefr. effect on polarised light scatt., phase limitation 8−10867
membranes, use of McInnes glass electrode for determ. of CO_2 diffusion coeffs. 8−20067
metal-polymer films formed by electron-beam polymerisation, cond. control 8−48331
optical films for waveguides and dye laser, prep. and characts. *(Japanese)* 8−5551
optical properties meas., by integrated optical techniques 8−27342
oriented, elastic constants meas. 8−38261
partially crystalline, electron microscope struct. anal., soln. and melt-grown films as model specimens 8−30523
PET, transverse constriction and stresses accompanying uniaxial orientation 8−48475
photolytic, form. on semicond. surface, thickness modulation by p-n junction microfield 8−10561
plasma polymerisation, light propag. expt. *(Japanese)* 8−6846
plasma polymerized on metal substrates, adhesion and cohesion 8−3259
PMMA, photodielectric media for holographic recording, photochem. response 8−7219

polymer films continued
poly(glutamic acid)-poly(oxyethylene glycol), heterogeneous network film, polarising microscopic struct. obs. 8−9948
poly(n-vinylcarbazole)-trinitrofluorenone films, charge carrier trapping 8−14846
poly(vinylidene fluoride) film, pyroelectric coefficient determ. using dielectric heating 8−35096
poly 2,6-dimethyl-1,4-phenylene ether, liquid-induced crystallisation 8−30551
poly-N-vinylcarbazole, electrophotographic film, dark discharge 8−34864
poly-N-vinylcarbazole film, triplet-triplet energy transfer, chemiluminesc. 8−43944
polyacetylene: Br(Cl)(I)(AsF_5) electrical conductivity, metal-to-insulator transition 8−10525
polyacrylonitrile, polaris., pyroelec., electret film, solar energy conversion *(Russian)* 8−39507
polybutylene terephthalate film, photoluminesc. exam. 8−48213
polycarbonate film, by aq. acetone solns., roughness form. mechanism *(Russian)* 8−48554
polychlorotrifluoroethylene on metal substrates, adhesion and cohesion 8−3259
polyethylene, corona charged, surface potential decay 8−14795
polyethylene, elongated, TSC, 20 to 60°C 8−10826
polyethylene, mixed morphology and linear fractions, light scatt. obs. 8−2023
polyethylene, stretched, interpretation of polarised absorption and emission spectra of molecules 8−1012
polyethylene films, stretched, molecular distrib., anthracene, naphthalene in film 8−27298
polyethylene films, uniaxially and doubly oriented, crystallite size determ., microparacrystallite lamellar surface identification 8−48431
polyethylene terephthalate, lateral motion of charge 8−43458
polyethylene terephthalate, oriented, elastic constants meas. 8−38261
polyethylene terephthalate film, photoluminesc. exam. 8−48213
polyethylene terephthalate film, X-ray diffr. exam. of morphology 8−18558
polyethylene terephthalate films, gamma radiation induced cond. under high elec. field 8−47798
polyethylene ultrathin foil prep. by film casting 8−48340
polyimide, heat treatment conditions effect on ultimate strength, expt. planning methods 8−6952
polyimide film, dielec. AC props., expt. 8−43783
polyimide thin film vacuum deposition 8−39695
trans-1,4-polyisoprene, crystalline morphology in thin films 8−6019
polymalononitrile, plasma polymerized film, photoelec. props. 8−39158
polymethyl-α-cyanoacrylate, photodielectric media for holographic recording, photochem. response 8−7219
polymonochloroparaxylylene film, photoluminesc. exam. 8−48213
polypropylene, drawn, rheo-optical studies 8−15440
polythiourea, plasma polymerized film, photoelec. props. 8−39158
polyvinyl acetate:Cu, and undoped, thermally stimulated currents exam. 8−35083
polyvinyl fluoride film, pure and vanadyl ion doped, elec. cond., annealing 8−26859
polyvinylidene fluoride film, piezoelec., appl. in confocal pair of concave transducers 8−22241
polyvinylidene fluoride foil appls. for electroacoustic transducers *(German)* 8−22243
polyvinylidene fluoride X-ray diffr. pattern changes due to corona charging 8−14285
preparation for electronics appls. *(German)* 8−44011
PTFE on metal substrates, adhesion and cohesion 8−3259
pyroelectric coefficient determ. using dielectric heating 8−35096
resin-coated optical fibre, tensile strength tests *(German)* 8−33871
rodlike morphology, small angle light scattering, multiple scattering 8−15241
shear strength and friction 8−39913
silicone, film deposition, glow discharge polymerisation, elec. and thermal characts. 8−6467
stretched, interpretation of polarised absorption and emission spectra of molecules 8−1012
stretched, orientation and transition moment directions of small planar molecules 8−1015
stretching, with suction and blowing, heat and mass transfer 8−34033
Teflon FEP, electron beam charged film, charge centroid location 8−15095
vesicular film sensitometry, review 8−16878
viscoelastic props., capacitance change meas. *(Japanese)* 8−23752

polymer melts
acrylonitrile-butadiene-styrene terpolymers Sb_2O_3 effect of melt viscosity *(German)* 8−18265
bubbles formation, non-coalescing bubbles theory appl. 8−42640
demixtion, crit. points 8−26419
flexible chain polymer, topomorphism and phase dualism 8−14265
flow under const. and periodic deform. 8−47004
immiscible polymers, interface and surface props., thermodynamic theory *(German)* 8−26753
NBS polystyrene, memory-function determ., relax. tests 8−1619
poly(ethyleneterephthalate)-p-hydroxybenzoic acid copolyester, liquid crystalline, X-ray scatt. obs. 8−9949
poly(S)-2-methylbutyl vinyl ether, conformation, IR spectra 8−1116
poly(S)-5-methyl-1-heptene, conformation, IR spectra 8−1116
polydispersion effects, crit. behaviour *(French)* 8−42879
polyethylene, and general elastic liquids, stability of plane Poiseuille flow 8−9662
polyethylene, applicability of statistical rubber elasticity theory 8−42579
polyethylene film-resin melts, rheological props., prep. method depend. 8−34099
polyethylene melt, low density, filler effect on viscosity and viscoelasticity 8−46919
polyethylene melt, vortices in die entry region and viscosity meas. 8−1700
polyethylenes, molten, Weissenberg effect 8−9616
polyisobutylene melt, thermodynamic constitutive eqns., adiabatic deform. expts. 8−1620
polymeric fluids, entropy effects in viscoelasticity 8−9618
polymethyl siloxane liquids at high pressures 8−47609

polymer melts continued
  polyoxymethylene-copolyamide blend melt, viscoelastic peculiarities *(Russian)* 8−38263
  polypropylene melt, zero-shear-rate viscosity, press. depend. meas. 8−43164
  polystyrene melt, normal and shear stress relax., Rheometrics mech. spectrometer transient response 8−42577
  polystyrene melt, vortices in die entry region and viscosity meas. 8−1700
  polytetrafluoroethylene copolymers and oligomers, melt and solid, Raman active longit. acoustic modes 8−19484
  polyvinylacetate melt, thermodynamic constitutive eqns., adiabatic deform. expts. 8−1620
  reptation in entangled melts 8−22669
  row nucleation, phenomenological model 8−14301
  SCF approximation, connection between Yvon-Born-Green and Kirkwood hierarchies 8−42882
  strain crystallised, electron microscope obs. of molecular struct. 8−26450
  thermal conductivity, statistical mech. calcs. 8−34661
  viscoelasticity, rheological props., prep., transport and processing effects, tensile and shear flow *(German)* 8−13982
  vulcanisation process, crit. behaviour 8−11518

polymer solutions
  adsorption of chain molecules with polar head, scaling description 8−3378
  adsorption on small spheres, scaling approach 8−3377
  p-aromatic poly(amide hydrazide), dimethyl sulphoxide solvent, dynamic birefringence, conform., viscosity *(Russian)* 8−39525
  branched molecule systems, second virial coeff., chain length effects calcs. 8−37775
  branched polymer solutions, interaction function, thermodynamics, decomposition *(German)* 8−18531
  bulk viscosity theory 8−22880
  chain conformations in liq. and cryst. slates *(French)* 8−18552
  chain molecule dynamics, intramolecular diffusion controlled reaction for pr. terminal reactive groups 8−9289
  channel flow, drag reduction, viscous sublayer struct. 8−22385
  colloidal dispersions, interactions 8−11572
  computer simulation techniques for mol. theory verification 8−13633
  conference, drag reduction and turbulence struct., Washington, USA (June 1976) 8−22329
  configuration on interaction with interface 8−47659
  conformation, IR spectra 8−1116
  Couette cell for birefringent, viscous and dielectric props. meas. 8−37034
  cross-over, pair correlation function, small-angle neutron scatt. meas. 8−22626
  demixtion, crit. points 8−26419
  dielectric relaxation time, diluent effects 8−10843
  dilute, buoyancy-driven instabiliy 8−10206
  dilute, depolarized Rayleigh scatt. 8−35155
  dilute, dynamical props. 8−38608
  dilute, internal viscosities, frictional coeffs. calcs. 8−6171
  dilute solution, friction tensor, microscopic treatment 8−22314
  dissolution kinematics, numerical solution and expt. verification 8−26687
  drag reducing agents, decreasing mass transfer rate for Cu corrosion inhibition in soln. 8−19920
  drag reduction, dilute polymer soln., wall roughness effective slip depend., turbulence model 8−26162
  drag reduction, Polyox coagulant effects on turbulent boundary layer 8−26165
  drag reduction and burst cycle mechanism, dil. polymer soln. 8−26164
  drag reduction enhancement by mol. aggregates 8−26161
  drag reduction in pipe flow, flow time scales 8−22386
  drag reduction polymer additive in helicoidal flow, screw pump press. head 8−26166
  dynamics of polymer chains trapped in slit 8−2276
  elastic mixtures, stability criteria 8−18514
  elongational flow through porous bed, drag increase 8−22419
  entanglement density, statistical theory 8−5381
  ethylene-vinylacetate-copolymers charact. by gel chromatography, viscometry, osmotic meas. *(German)* 8−14496
  finite difference numerical solns 8−9661
  flexible molecules, dynamic intrinsic viscosity, hydrodynamic interaction 8−47548
  flow under const. and periodic deform. 8−47004
  fluctuation-dissipation relations, viscosity, mol. wt. depend. 8−14266
  Fourier transform IR spectroscopy, least squares curve fitting, appls. to polymer systems 8−15726
  galactomannan aqn. soln., rheological props., role of molecular mass and conc. *(French)* 8−22312
  gas bubble-water mixture with polymer additive, shock wave propag. 8−47021
  gel modes in solns. and networks at equilib. swollen state, inelastic light scatt. 8−1972
  Hamaker consts. and principle of corresponding states 8−11543
  intrinsic stress, birefringence tensor, bead/spring model, freq. depend. 8−42574
  jet thrust technique for normal stresses 8−9669
  laminar flow, effect of anisotropy on stress and strain-rate tensors *(Russian)* 8−22387
  laminar-turbulent transition in boundary-layer flow 8−9663
  latex, monodisperse, Kirkwood-Alder transition press. meas. 8−7239
  linear molecule systems, second virial coeff., chain length effects calcs. 8−37775
  macromolecular, laminar ultrafiltration, limiting flux numerical calc., variable diffusion coeff. 8−40214
  macromolecular fluid, stress-induced diffusion 8−10205
  macromolecular polydispersity by dynamic light scatt. and thermodiffusion 8−18816
  mechanical model flow, extensional viscosity 8−22378
  molecular end-to-end distance relax., Monte Carlo simulation, model depend. 8−22061
  motor oils, polymer-thickened, rapid extensional flow through small orifice 8−1709
  multicomponent system, phase separation, thermodynamic perturbation theory, calculus 8−18778
  neutron quasielastic scattering from freely jointed chains 8−18534

polymer solutions continued
  neutron scattering observations, review 8−14245
  NMR spectrum narrowing, dipolar spin coupling modulation 8−39413
  oligomeric liquid mixtures, transition to, polymer systems, thermodynamics 8−20048
  one- and two-phase flow through porous media 8−42659
  optically active stereoregular, conform. props., rel. to config. 8−33644
  PBLG solns., dielec. meas., using pseudorandom noise dielectric spectrometer 8−15084
  PEO 301, dilute soln., pipe flow turbulence struct. drag reduction 8−26196
  permeable polymer mol. in soln., intrinsic viscosity and friction coeff. 8−30353
  phase-equilibria of rod-like molecules in extensional flow field 8−26158
  phenomenological theory of polymer chain, renormalisation group approach 8−26418
  pipe flow, drag reduction 8−42631
  pipe flow, early turbulence 8−22380
  pipe flow, fluid friction 8−5769
  pipe flow, triggered laminar to turbulent transition, random coiling macromolecular soln. 8−26195
  plane polygonal, normal stress under oscill. shear flow 8−34420
  poly(2,6-dimethyl phenylene oxide) enthalpy of mixing with polystyrene 8−14471
  poly(methacrylic acid), aq. soln., gelation kinetics under shear stress 8−3387
  poly(S)-2-methylbutyl vinyl ether, conformation, IR spectra 8−1116
  poly L-lysine, temp. induced conformation transition in solns., optical rotary meas. 8−46474
  poly-1-vinyl napthalene, excimer dissoc., time resolved fluoresc. spectra 8−33643
  poly-γ-benzyl-L-glutamate-dichloroethane in conc. soln., mol. assoc., electro-opt. investig. 8−1973
  poly-n-butyl methacrylate, θ-solns., temp. coeff. of unperturbed dimens. 8−9290
  polyacrylamide-maltose syrup soln., meas. of viscoelastic flow props. 8−1622
  polyamide in isoamyl alcohol solutions, spin coating process modelling and rheology 8−27655
  polybutadiene-n-hexane-n-heptane soln., Rayleigh scatt., diffusion coeff., viscosity 8−15179
  polydimethyl siloxane solns., limiting viscosity no.-mol. wt. relations 8−18267
  polydimethylsiloxane-solvent system, NMR spectrum narrowing, dipolar spin coupling modulation 8−39413
  polydimethysiloxane, conc. soln. in benzene, polarised Raman scattering 8−9286
  polydispersity anal. in photon correlation spectroscopy 8−27247
  polyelectrolyte, non-Newtonian effects *(French)* 8−22311
  polyethylene oxide, aq., rot.-oscill. flow, rheological consts. determ. 8−30251
  polyethylene oxide, molecular dynamics in conc. soln., quasi-elastic neutron scatt. meas. 8−29870
  polyethylenoxide additive mixing, turbulent drag reduction, schlieren obs. 8−26163
  polyfluorostyrene, para- and meta-, dil. soln., ^{19}F magnetic resonance 8−10792
  polyisobutylene, memory-function determ., relax. tests 8−1619
  polyisobutylene-oil, laminar plane stagnation flow kinematics, laser Doppler anemometry 8−38374
  polymer solution, short-range order and solvent crystallisation; spectroscopic and microcalorimetric, methods *(Russian)* 8−26416
  polymer solution, short-range solvent orientational order, IR dichroism and photoelasticity obs. *(Russian)* 8−26415
  polymer-solvent interaction from gas-liquid chromatography, open tubular column expts. 8−35753
  polymeric fluids, entropy effects in viscoelasticity 8−9618
  polymethacrylic acid aq. solns., PMR spectra 8−27099
  Polyox 701, aq. soln., spectral effects in turbulent press. suppression 8−5771
  polyox solution, turbulent flow in tube with large surface roughness 8−1651
  Polyox-701 aq. soln., pipe flow, Newtonian and non-Newtonian LF turbulent press. similarity 8−5772
  polypeptide in conc. soln., mol. assoc., electro-opt. investig. 8−1973
  polypropylene-chloroform (chloromethane), χ-parameters, heat of mixing, vap. press. and microcalorimetric meas. 8−34626
  polystyrene, enthalpy of mixing with poly(2,6-dimethyl phenylene oxide) 8−14471
  polystyrene coils, benzene soln., internal modes by photon beat 8−10905
  polystyrene latex, colloidal crystal, grain boundary struct. and boundary diffusion obs. *(Japanese)* 8−15721
  polystyrene mixture solutions, second virial coeff. light scatt. meas. 8−14438
  polystyrene solution, drag reduction, mean vel. profile 8−22384
  polystyrene solution in benzene, thermodyn. interaction coeff. determ. 8−3367
  polystyrene solutions, ordered and disordered, particle dynamics determ. from time depend. multiple light scatt. 8−33672
  polystyrene-diethyl malonate system, osmotic compressibility and correlation range near crit. point 8−6694
  porous media flow, polymer effect onset and saturation limit 8−26190
  pulsatile flow in tube, flow enhancement, Goddard-Miller model 8−30324
  quenching solution, ZSP-1 8−23739
  Rayleigh light scattering photometry, low angle, soln. props. 8−35156
  Rayleigh scattering, depolarised, time correlation function 8−2862
  rheology, finitely extensible nonlinear elastic dumbbell theory 8−9617
  rheology, rel. to turbulent drag reduction 8−22315
  rheology and kinetic theory, review 8−38611
  rheology in laminar capillary tube flows 8−34170
  row nucleation, phenomenological model 8−14301
  SCF approximation, connection between Yvon-Born-Green and Kirkwood hierarchies 8−42882
  sodium copoly(ethyl acrylate-acrylic acid) copolymer, quasi-elastic light scatt. 8−35157
  statistical theoretical methods 8−18535
  statistical thermodynamics 8−18528

polymer solutions continued
  stiff polymer chain dynamics, local and global mode interaction, dil. soln. viscosity, dielectric relax. 8−37776
  styrene isoprene multiblock copolymers, microstruct. and dil. soln. props. 8−42885
  styrene-butadiene-styrene copolymer, struct. investigation by diffusion anal. 8−42884
  styrene-p-chlorostyrene triblock copolymer, dil. soln., conform. behaviour, comp. depend. 8−42886
  styrene-phenylacetylene copolymer, fluoresc. emission, energy redistrib. 8−39580
  styrene-vinylpyrrolidone block copolymer soln., conform. props., light-, X-ray scatt. and viscometry obs. *(Russian)* 8−37779
  Taylor-Gortler vortices, elongational viscosity effects 8−22379
  thermodynamic properties, under high press., light scatt. obs. *(German)* 8−20049
  thermodynamics, review *(German)* 8−18530
  turbulence structure, drag reduction 8−22381
  turbulent boundary layer, drag reduction 8−22414
  turbulent boundary layer flow, drag reducing additives, 2-D channels and circular pipes 8−26167
  turbulent boundary layers 8−18317
  turbulent cloud spreading, polymer additive effects 8−22383
  turbulent flow, drag reduction 8−26159
  turbulent flow over plate, drag reduction 8−5768
  turbulent fluctuations in viscous wall region 8−26160
  turbulent jet behaviour 8−1732
  turbulent mass transfer to pipe flow 8−1695
  turbulent wall flow model 8−18316
  viscoelasticity, rheological props., prep., transport and processing effects, tensile and shear flow *(German)* 8−13982
  viscosity, intrinsic 8−2281
  viscosity data as function of mol. wt. 8−18266
  viscosity data represented as function of mol. wt. 8−26716
  viscosity of suspension of nonharmonic dumbell mols. 8−2282
  vortex pairs, neutral surroundings, turbulent mixing on motion 8−26127
  water jet, turbulence fine struct., polymer addition effects, high speed photography 8−26178

polymerisation
  azetropic copolymerizations computer calc. *(Rumanian)* 8−23945
  benzophenone, sensitised crosslinking, polymerisation, UV curing, IR investig. 8−35709
  catalysis by graphite intercalation compounds *(French)* 8−27822
  charged particle detection, graft-and-dye method 8−17520
  curing, UV, photochem., liq. ink appl. 8−35709
  diacetylene single crystals, photopolymerisation, optical transmission spectroscopic exam. 8−27757
  fibre optic sheet form. by selective photopolymerisation, appl. in image guiding equipment 8−42477
  fluorocarbon monomers, plasma polymerisation 8−35304
  glycerides, high mol. wt. species prod. after contact with lunar grains 8−3333
  laser initiated polymerisation kinetics, mol. wt. distrib. of resultant polymer 8−15673
  linear macromolecules, cryst. growth 8−30561
  metal-polymer films, electron-beam polymerisation, cond. control 8−48331
  monomer gas photopolymerisation, polymer film form. on semicond. 8−10561
  multicomponent, differential and integral rate eqn. 8−23944
  β-nitrostyrene free anionic polymerisation during electron radiolysis, primary reactions 8−44378
  oligomeric liquid mixtures, transition to, polymer systems, thermodynamics 8−20048
  organic optical thin films, plasma polymerisation, light propag. expt. *(Japanese)* 8−6846
  m-phenylene diacrylic acid, four-centre-type photopolymerisation in cryst. state, holographic appl. 8−37832
  PMMA, laser initiated polymerisation kinetics, mol. wt. distrib. of resultant polymer 8−15673
  polyacrylamide, mech. degradation, polymerisation effect *(Japanese)* 8−11194
  propergol, rheological props. during polymerisation *(French)* 8−23762
  terephthalate liquid crystals, vibr. spectra, vol. struct. 8−18547
  vaccine production, use of ^{60}Co-γ-irradiation, polymerisation conditions 8−40320
  vulcanisation process, crit. behaviour 8−11518
  CaO-SiO$_2$ melt, viscosity and polymerisation *(Russian)* 8−26712
  1,6-di-(N-carbazolyl)-2,4 hexadiin, cryst. struct., luminesc., γ-ray polymerisation 8−18629
  FeO-SiO$_2$ melt, viscosity and polymerisation *(Russian)* 8−26712
  MnO-SiO$_2$ melt, viscosity and polymerisation *(Russian)* 8−26712
  S$_2$N$_2$, XPS, solid-state polymerisation 8−19630

polymerization *see polymerisation*

polymers
  see also elastomers; filled polymers; glass fibre reinforced plastics; glass transition; plastics; polymer films; polymer melts; polymer solutions; rubber
  π-electron energies for linear conjugated polymers, polynomial matrix method 8−17830
  ABS plastic, Cu film coating by ion plating *(Japanese)* 8−6858
  accelerated ageing data processing using linear regression analysis 8−39815
  acoustic vel. and absorpt. in liquids containing gas bubbles, effect of polymer additives 8−38779
  acrylonitrile-vinylacetate(styrene) copolymer films, gas permeation, chem. struct. effects *(Japanese)* 8−31691
  adsorbed, conformation, excluded vol. effects 8−2372
  air permeability subject to high press., testing apparatus 8−27823
  aliphatic-aromatic block copolyamides, synthesis, struct. and dynamic viscoelasticity, DTA and X-ray anal. *(Japanese)* 8−31377
  amorphous, bulk, structure models and exptl. methods, review 8−22671
  amorphous, excess charges, band gap levels and elec. props. 8−23053
  amorphous, molecular origin of relaxations 8−26058
  amorphous, stress-optical investig. of short-range order 8−22672
  amorphous, translational motion and lattice vibr. obs. by Raman scatt., T$_g$ phenomena 8−23469

polymers continued
  amorphous solids, time-temperature-pressure superposition phenomena, free volume theory 8−26059
  antithrombotic polymeric materials for artificial heart and devices for assisted blood circulation 8−36052
  athermal model chains, pair distrib. function, Metropolitan Monte Carlo calcs. 8−17827
  bioabsorbate, standards for in vitro and in vivo comparison and qualification 8−3677
  biopolymer, electronic transport mechanisms, asymmetry role 8−6370
  biopolymers, hydrophobic interactions 8−37777
  biopolymers, solid, apparatus for Seebeck coeff. meas. 8−21172
  biopolymers, studied by circular dichroism and optical rot., review 8−44457
  biopolymers, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
  birefringence, hereditary depend. of optical propag. difference on strain 8−48142
  bis(p-toluene sulphonate) diacetylene polymer, spin conc., g-values of single cryst. from EPR study 8−48037
  bisphenol-A polycarbonate, plasticized, melting and equilib. melting temp. 8−2234
  bisphenol-A-polycarbonate-triphenylamine solid soln., hole transport meas. 8−43438
  blend, interphase phenomena, form., thermodynamic, colloidal and morphology props. *(Russian)* 8−40089
  butadiene acrylonitrile copolymer, relaxation processes *(German)* 8−31439
  butadiene styrol rubber, effect of polyfunctional nitro-oligomers on relaxation *(German)* 8−31441
  butadiene-isoprene copolymers, monomer unit distrib., ^{13}C NMR determ. 8−26456
  cellulose nitrate emulsion, sensitivity and efficiency for α-particle detection 8−13380
  cellulose nitrate emulsion for α-particle track relocalisation 8−17480
  cellulose triacetate I, mol. and cryst. struct., parallel chains 8−30548
  chain, irregular, lattice distortions, SCF perturbation calcs. 8−6018
  chain, virial expansion 8−5383
  chain conformations in liq. and cryst. slates *(French)* 8−18552
  chain molecular amorphous solids, stat. thermodynamics and mol. theory 8−26442
  chain statistics and universality 8−29869
  chain-folded crystal, statistical mechs. in lattice model 8−47247
  characterisation by size exclusion chromatography 8−11580
  cholesterol-containing, struct. and liq. cryst. props. *(Russian)* 8−38622
  cholesteryl acrylate, and monomer, liq. cryst. order 8−9942
  cholesteryl methacrylate, and monomer, liq. cryst. order 8−9942
  cholesteryl p-acryloyloxybenzoate, and monomer, liq. cryst. order 8−9942
  composition coatings for rubbing mechanisms of optomech. instruments 8−29198
  conductive filler-polymer composite conductivity theory *(Japanese)* 8−11351
  conformation, IR spectra 8−1116
  conformational sp. ht. determ. method 8−14474
  contact electrification of dielectric solids, review 8−26934
  copoly(ethylene terephthalate/5-methoxyisophthalate), isothermal crystallisation, differential scanning calorimetry 8−30546
  copoly(ethylene terephthalate/isophthalate), isothermal crystallisation, differential scanning calorimetry 8−30546
  copolymers, cooperative reactions, sequential anal. of 2nd order Markovian chains 8−7204
  copolymers, cooperative reactions, sequential anal. of binary copolymer with protecting monomer 8−7203
  Crazing under applied compression 8−19875
  creep, effect of temp. and humidity, field test results 8−23793
  crystal growth, during annealing 8−14300
  crystalline, vibr. spectra, theory *(Russian)* 8−13502
  crystallisation, chain folding, statistical mechanical calc. 8−2020
  crystallising, defects and mech. relax. *(Russian)* 8−22789
  crystals, melting, intramol. and intermol. interactions effects 8−18745
  cyclic paraffin, longitudinal acoustic mode freqs., general theory for composite perturbed elastic rod 8−14421
  Dacron, arterial prosthetic material, props. 8−7537
  deformation, ultimate regimes for flexible chains 8−19844
  deformation mechanism, stress-induced phase transform. of (SN)$_x$ 8−23776
  deformation mechanism, twinnign in polydiacetylene single crysts. 8−23777
  deformation mechanisms of constrained chains, geometrically induced correlations of tie molecules 8−19835
  deformation mechanisms of constrained chains deform. energetics of tie molecules 8−19836
  diacetylene polymer, EPR exam. of partially crystalline polymer extracts 8−39400
  diacetylene polymers, photoelectron valence band spectra 8−43979
  dichromated PVA specific wavelength sensitisation for laser beam recording 8−5531
  dielectric anomalies at very low temps., acoustic anomalies analogy 8−31146
  dielectric loss, multiple relax., comparison with small-mol. solids 8−19409
  dielectric to viscoelastic data conversion 8−48109
  dissolution kinematics, model and its expt. verification 8−26687
  distribution function for random walks without self-intersection 8−8350
  dyestuffs in polymers, conc. distrib., microdensitometric determ., stops effect *(German)* 8−11598
  elastometric glasses and porous network polymers, review of future developments 8−22657
  electric strength rel. to permittivity, loss-angle, and volume resistivity 8−6631
  electrical conduction and polarisation phenomena at low fields 8−48113
  end-to-end distribution function, for most probable molecular weight distribution 8−13635
  energy bands of polymers with defects, ab initio SCF crystal orbital calcs. 8−30884
  entangled, viscoelastic props., interchain-intrachain entanglement model 8−42575

polymers continued
entangled polymers, viscoelastic props., transient network model 8−13918
epoxies, Epo-Tek H31 LV and H62, low temp. sp. ht. 8−43138
epoxy, three-component modified, development for dynamic photoelastic obs. of fracture 8−35474
epoxy acrylate coated fused silica fibres, dynamic and static fatigue 8−1385
epoxy acrylate coated optical fibre, long term strength, environmental effect 8−5582
epoxy acrylate coated optical glass fibre, strength and static fatigue 8−1386
epoxy acrylate coatings, UV cured, for optical fibres 8−1444
epoxy polymers, high temp./press. materials test for undersea environment 8−3213
epoxy resin, curing accelerator effect on props. and ingredients *(Japanese)* 8−27726
epoxy resin, destruction by diffused water 8−48511
epoxy resin, hardening, mechanical and dielectric losses 8−48115
epoxy resin based tissue substitutes for radiography studies 8−7424
epoxy resin ED-5, specific heat during solidification *(Russian)* 8−38816
epoxy resin fast fracture and crack arrest, finite difference anal. 8−1607
epoxy resin glued overlapped steel sheets, strength tests, nonuniform adhesive layer *(German)* 8−15647
epoxy resin Quetol 651, low viscosity, embedding biol. tissue for electron microscopy 8−20322
epoxy resins, crack propag. stability, effects of water, temp., specimen geometry, hardener 8−11324
epoxy resins, relationship between struct. and mech. props. *(Japanese)* 8−31438
epoxy-steel system, friction and wear 8−44229
EPR of free radicals, spin-lattice relax. time meas. 8−19331
ESCA investigation of struct., reactivity and bonding, O_2 (inert gas) surface modification 8−3438
ESCA investigations on selected systems, struct. and bonding obs. 8−14302
ethylene propylene diene terpolymer, crosslinked, AC elec. breakdown studies 8−43787
ethylene-β-chloroethylacrylate, ^{13}C-NMR microstruct. investigation, substitution increments, sequence distrib. *(German)* 8−13636
ethylene-glycidylacrylate copolymer, ^{13}C-NMR microstruct. investigation, substitution increments sequence distrib. *(German)* 8−13636
ethylene-vinyl alcohol copolymer, O_2 permeability *(Japanese)* 8−31702
extruded, glass transition temp., melting pt., DTA 8−2235
fabrication, processing, production, book 8−48363
fatigue crack growth, model 8−15506
fatigue testing apparatus in plane stressed state 8−3300
fibre, lifetime under load, in presence of UV radiation, stress depend. 8−48535
fibre, lifetime under load, in presence of UV radiation stress depend. 8−48534
fibrous material, drawing and annealing 8−15458
filled polymer, elastic moduli, effect of particle shape 8−15444
fluoropolymers, linear, valence electronic struct., LCAO cryst. orbital calcs., ESCA 8−5384
foil optical props. study by photoelasticity in const. and oscillating mech. fields *(German)* 8−31168
fracture mechanism of material with macrodefects *(Russian)* 8−35500
Fretting-induced damage between contacting steel-polymer surfaces 8−15539
friction of polymer-polymer pair, adhesive, interaction 8−3227
gels, non-linear behaviour under strong deform. 8−7240
gels, thermodynamic props., review *(German)* 8−20073
general composite perturbed elastic rod soln., longitudinal acoustic mode 8−18726
glass, fracture toughness determ. method *(Russian)* 8−11457
glass bead-reinforced epoxy resin composite, bulk and shear elastic props. 8−6959
glass temp., correl. to dilute soln. dielec. relax. rates 8−10175
glass temperature, rel. to cohesion energy and vacancy form. energy *(German)* 8−22670
glass transition temp., effect on various polymers *(German)* 8−30742
glass/Cu-polymer compound powders, prep. and corona charging props. *(Japanese)* 8−19679
glassy, multi-phase Stefan problem describing swelling and dissolution 8−2263
glassy, power law relationship between yield stress and shear modulus 8−15467
graft copolymers, normal vibrs., calc. method *(Russian)* 8−29871
graphite-epoxy hybrid laminates, low level Charpy impact response 8−11333
Gruneisen formulation of p-V equation of state, for solid and liq. 8−30733
heat treated, numerical simulation of AC elec. props. 8−43431
2,4-hexadyne-1,6-diol-bis-p-toluene sulphonate, partially polymerised single crystal, fluoresc. 8−6756
high-polymer physics, conf., San Diego, California, USA (March 1977) 8−14292
hologram recording by thermoplastic deform., book contrib. 8−25836
Homalite-epoxy duplex specimens, crack arrest study via dynamic photoelasticity 8−31515
2-hydroxy-3-crotonyloxypropyl methacrylate, synthesis, copolymerisation with maleic anhydride, photocrosslinking *(Japanese)* 8−31376
interfaces, visualisation by phase contrast electron microscopy 8−14295
at interfaces and interactions in colloidal dispersions 8−11572
interpenetrating polymer networks, and related materials, review 8−42923
intramolecular cross-linking reactions, Monte Carlo calcs. *(Russian)* 8−31636
intravenous catheters, comparative study of polymers in animals and man 8−7459
intrinsic viscosity meas. *(Polish)* 8−42687
Kapton laminate, substrate, electron beam evaporation of uniform Al film 8−11373
Kevlar 49 fibre, macromol. struct., electron diffr. and dark-field electron microscope obs. 8−34446
Kevlar-29, flexural fatigue and surface abrasion 8−15504
kinetic nature of strength 8−15524

polymers continued
lattice polymer dynamics, relax. time Monte Carlo anal. 8−5380
lattices, purification 8−7243
Lexan:triphenylamine, molecularly doped, hole transport by hopping 8−34831
Lexan:triphenylamine, photosensitisation using rhodamine B or thiapyrylium 8−34856
linear, slow relax. processes *(Russian)* 8−46475
linear macromolecules, cryst. growth 8−30561
localised electron states in impure polymer, Koster-Slater method, convergence and interleaving theorem 8−23051
longitudinal acoustic mode, appl. of general theory to planar zigzag methylene chains 8−14421
magic angle rotation ^{1}H NMR, appls. 8−43649
magnetic field, nonuniform const., effect on props. during hardening 8−11235
magneto-optical props., MCD, Frenkel exciton model 8−10873
metal-filled polymers, thermal cond., var. calcs. of upper and lower bounds 8−9550
methacryloyloxyethyleneoxycarbonyloxypropylene, NMR relaxation mechanism *(German)* 8−33527
microfibils of oriented polymers, struct. of amorphous sections 8−18559
molecular charge states, contact charge exchange 8−14822
molecular relaxation, comparison of TSD and dielec. loss meas. 8−10834
morphology and electrical properties, correlation, review 8−43786
multicomponent, props. and struct., review 8−44076
multicomponent polymer system, liq.-liq. phase separation, thermodynamic aspects of polymer compatability 8−14469
Mylar, shells, conical and cylindrical, high speed photographic exam. of buckling 8−44184
network junctions, elasticity, local constraints effects 8−2021
nylon, steady-state deform. and its effect on struct. and morphology 8−15459
nylon, stress cracking induced by $ZnCl_2$ solns. 8−27594
nylon 12 membranes, permeation characts. *(Japanese)* 8−31692
nylon 66, filament, heat setting and thermomechanical behaviour 8−15435
nylon 6, drawn yarn, origin of double melting peaks 8−3118
Nylon 6, fibre, crystallite dimensions, effect on struct., mech. and diffusive props. 8−11273
nylon 6, fibres, viscosity-average mol. wt. change during fracture 8−19882
nylon 6, stress depend. of US velocity *(Japanese)* 8−26629
nylon 6, swelling by absorbed water, mol. orientation effect 8−11285
nylon II, high-press. X-ray structural study 8−14296
off-lattice polymer chains, Monte Carlo calcs. 8−5382
one dimensional, nonlinear optical props. 8−46708
optical fibre, polymer clad SiO_2, ionising radiation effect 8−42405
optical fibre polymeric coatings, Bell Labs activities 8−1388
optically active stereoregular, conform. props., rel. to config. 8−33644
orientation measurement methods, review 8−48589
oriented, dynamic shear modulus determ. by acoustic method 8−23911
n-paraffins, longitudinal acoustic mode freqs., general theory for composite perturbed elastic rod 8−14421
PC, foil, electrochem. track etching for charged particle detection 8−17521
PCTFE, work to produce environmental crazing at low temps. 8−15553
perdeuteropolyethylene, IR and Raman intensities by electro-optical parameters, single chain 8−1115
perfluoropolyether, appl. to vac. pump technology *(Japanese)* 8−229
perfluoropolyethers as vac. pump fluids 8−32828
Perspex, dielec. breakdown and space charge, treeing 8−27160
perspex spheres, internal fractures due to stress wave focusing 8−18239
PET, fibre, crystallite dimensions, effect on struct., mech. and diffusive props. 8−11273
PET, foil, electrochem. track etching for charged particle detection 8−17521
phenolic, two-stage cured, molecular struct. of Novolac effect on thermal stability *(Japanese)* 8−3092
phenolic resin filled and unfilled, mech. relaxation behaviour, effects of temp. and time *(German)* 8−6963
photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
photographic emulsion 8−16866
photopolymer latent imaging system, for vol. phase hologram recording 8−42298
photopolymers, for holographic recording, using photopolymer material, redox sensitized 8−13674
physical problem determ. problems, tensile strength, elastic moduli *(German)* 8−15470
physically nonlinear, stress relaxation during stretching 8−23754
plane materials stress relax. and creep under biaxial loading, test procedure 8−3279
plasticized triblock copolymers, thermodynamic theory 8−15377
platelet adhesion to solid surfaces, effects of plasma proteins and substrate wettability 8−35814
Plexiglas, rod, breakdown charact. by longitudinal stress waves 8−38773
PMMA:rhodamine 6G, luminesc. greenhouse solar collector 8−13789
PMMA, activation energies of fracture and deform., comparison *(Russian)* 8−11303
PMMA, amorphous, reorientational relax., 6-165°C, polarised laser beam scatt. correlation 8−2864
PMMA, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
PMMA, biaxially oriented, shrinking kinetics in transform. range 8−27588
PMMA, cathode initiated surface flashover, propag. vel. 8−14233
PMMA, conformational energies calc. 8−25762
PMMA, craze zones at crack tips at different temps., meas. correl. with Dugdale model 8−23826
PMMA, extruded, glass transition temp., melting pt., DTA 8−2235
PMMA, fabrication of surface relief struct. with linewidth below 2000 Å 8−42478
PMMA, fracture stress 8−3216
PMMA, glassy, craze growth, expt. and model 8−15520
PMMA, indentation fracture mechanics 8−35490

polymers continued
PMMA, isothermal and adiabatic effects assoc. with crack propag. 8−23827
PMMA, laser initiated polymerisation kinetics, mol. wt. distrib. of resultant polymer 8−15673
PMMA, mech. degradation in presence of metals, effect of low mol. wt. environment generated during mech. working *(Russian)* 8−31422
PMMA, methanol crazes, grown from cracks, exam. of growth criteria 8−48551
PMMA, molecular alignment 8−14299
PMMA, monolayers collapse mechanism, surface press. and ellipsometric obs. 8−43214
PMMA, oriented, indentation fracture 8−35489
PMMA, oriented by extrusion, stress-optical study 8−47248
PMMA, pulsed dielectric breakdown, mech. stress photoelasticity obs. *(Russian)* 8−2800
PMMA, solid, stress-strain behaviour, strain rate and temp. effects, cryogenic temps. *(Japanese)* 8−11315
PMMA, stimulated backscatt. under mech. stress 8−1304
PMMA, strain rate effects on viscoelastic crack bifurcation 8−35473
PMMA, stress wave propagation 8−46910
PMMA, thermophysical props. at high hydrostatic press. 8−2317
PMMA, water swollen membrane, permeability *(Japanese)* 8−31704
PMMA, work to produce environmental crazing at low temps. 8−15553
PMMA and brittle materials, slow crack propagation anal. thermodynamic model 8−35488
PMMA plate with angled elliptic notch in tension, exptl. investig. 8−38257
PMMA thermo-electrets, temp. and field effects 8−31148
PMMA-d_8 ductile plastic optical fibre cables with improved visible and IR transmission 8−46834
PMMA-mortar composite, thermocatalytically polymerised, fracture morphology and mech. props. 8−27595
PMMA-styrene acronitrile system, selective electron beam etching 8−45603
bis cantena pol methylarsenide, energy gap depend. on As electron delocalization *(German)* 8−43296
poly(2,6-dimethyl phenylene oxide) enthalpy of mixing with polystyrene 8−14471
poly(α-methylstyrene), entangled, viscoelastic props., transient network model 8−13918
poly(ethyleneterephthalate)-p-hydroxybenzoic acid copolyester, liquid crystalline, X-ray scatt. obs. 8−9949
poly(N-vinylcarbazone), charge transport and struct., bromination effect 8−11516
poly(oxycarbonylimino-1,4-phenylene), apparent sublimation: thermal decomposition+condensation repolymerisation 8−3332
poly(S)-5-methyl-1-heptene, conformation, IR spectra 8−1116
poly(vinyl acetate), entangled, viscoelastic props., transient network model 8−13918
poly (alkyl cyano acrylate), sensitised with parabenzoquinone, holographic storage mechanism exam. 8−37850
poly vinylidene fluoride, injection process nature during poling, rel. to pyroelectricity 8−19422
poly-m-phenylene isophthalamide-ε-caprolactam, complex polymer cryst. 8−9967
poly-N-vinyl carbazole, and Br-substituted derivative, transient hole hopping transport, 150-500K 8−39108
polyacetal, exam. of fatigue crack propag. 8−48497
polyacrylamide, mech. degradation, polymerisation effect *(Japanese)* 8−11194
polyacrylamide gels, structural collapse in solvent, crit. endpoint 8−48702
polyacrylonitrile, prep. of C fibres with large breaking strain 8−44077
polyacrylonitrile and copolymers with polyisobutylene, specific heat and glass transition temp. meas. *(German)* 8−34603
polyalkylmethacrylates, vitreous, thermal cond., press. and temp. depend. 8−2315
polyamide, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
polyamide fibres, crystallinity and crystallite size meas. 8−30549
polyamides, molecular breaking under load, hydrolysis 8−11519
polybutadiene, adsorption behaviour, surface tension exam. *(Japanese)* 8−31690
polybutadiene, entangled, viscoelastic props., transient network model 8−13918
polybutene-1, microstructure determ. by ^{13}C-^{1}H NMR 8−26455
polybutylene terephthalate, hysteresis of stress-induced cryst. phase transition 8−31404
polycaprolactam fibre, lifetime under load, in presence of UV radiation, stress depend. 8−48535
polycarbonate, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polycarbonate, criterion for craze nucleation 8−19881
polycarbonate, degradation behaviour by vibratory ball mill *(Japanese)* 8−39732
polycarbonate, fretting on steel influence of experimental conditions on wear 8−44228
polycarbonate, glassy, temp. drop during deform. 8−15456
polycarbonate, highly hot-drawn, mechanical prop. and phys. struct. changes 8−14293
polycarbonate, notched specimens deform. and fracture 8−11293
polycarbonate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
polycarbonate, viscoelastic ductile, delayed yielding of plane stress viscoelastic Dugdale model 8−27569
polycarbonate craze shape temp. depend. 8−48529
polycarbonate diflone, air permeability, subject to high press. 8−27823
polycarbonate foils, detection of low energy ^{4}He, ^{12}C, ^{14}N, ^{16}O ions, etching props. 8−13391
polycarbonate membrane, porous, gas permeability *(Japanese)* 8−31698
polycarbonate porous membrane, pore size effect on gas permeability *(Japanese)* 8−31699
polycarbonate structure foams, fracture toughness 8−15500
polycarbonate-steel surfaces, changed in morphology induced by fretting 8−15538
polychlorotrifluoroethylene electrets, TSC profiles, poling conditions depend. 8−10835

polymers continued
polydextran, γ-irrad. frozen gel, electron trapping, EPR and optical obs. 8−20030
polydiacetylene:carbene, zero field splitting parameter sign, ESR temp. depend. determination 8−27075
polydiacetylene, cryst., refl. spectra, Kramers-Kronig transforms 8−43889
polydiacetylene, reflection spectra, thermochromism, temp. hysteresis and phase transformation 8−19452
polydiacetylene cryst., electronic struct. change at phase transition, Raman spectra 8−2833
polydiacetylene PTS crystal, Davydov splitting in spectra at 15000 to 19000 cm^{-1}, at low temp. 8−31212
polydiacetylene single crysts., twinning 8−23777
polydiacetylene-bis(toluenesulphonate), refl. spectra, 0-15 kbar, doublet press. shift 8−43891
polydiacetylenes, band struct., ab initio cryst. orbital method, and transport props. calc. 8−26811
polydiacetylenes, electronic structure, bond length variations effect, Xα SCF calc. 8−5378
polydiacetylenes, reversible creation of defects by laser pulses 8−23480
polydiethylene terephthalate chains, dipole moment, config. props. 8−9288
polydimethylsiloxane membrane, permeability of triethylamine vapour *(Japanese)* 8−31697
polydimethylsiloxne, end-linked chains, viscoelastic losses 8−46898
polydioxolan, crystallisation, morphology and melting props. 8−14297
polyester, stress-optic law, photoplasticity, RPE transition temp. 8−10120
polyester fibres, crystallinity and crystallite size meas. 8−30549
polyester fibres, orientation in drawn fibres, birefringence meas. 8−35344
polyester model material, optical response and yield behaviour 8−31453
polyester resin mortar, degradation in boiling water *(Japanese)* 8−11280
polyethylene, ageing prediction by isothermal differential scanning calorimetry 8−11485
polyethylene, amorphised by γ-irrad., interchain ordering, X-ray obs. 8−30545
polyethylene, anisotropic surface stress 8−14562
polyethylene, anomalous photodepolarisation, trapping 8−10838
polyethylene, carrier traps, photostimulated detrapping currents and TSC meas. 8−10458
polyethylene, chain-folded cryst., statistical mechs. in lattice model 8−47247
polyethylene, corona charged, direct drift mobility meas. 8−10837
polyethylene, cross linking by energy rich radiation, mech. and elec. props. *(German)* 8−20035
polyethylene, cross-linked and low-density, pseudo spherulite structures and elec. discharges 8−42920
polyethylene, cross-linked crysts., deform. mechanism 8−15469
polyethylene, crosslinked, super-oriented crystallisation under const. stress *(Japanese)* 8−34443
polyethylene, crystal structure at 4.5K 8−14288
polyethylene, crystalline, Mossbauer anisotropic elastic scatt. fraction 8−6616
polyethylene, crystallisation, chain folding, statistical mechanical calc. 8−2020
polyethylene, DC partial discharge and current 8−43790
polyethylene, deuterated, microspheres for laser fusion targets 8−46173
polyethylene, dynamic mechanical behaviour during creep to failure in uniaxial extension 8−15455
polyethylene, electric breakdown charact. *(Korean)* 8−2799
polyethylene, electronic density of states, new algorithm 8−18939
polyethylene, elongation, conform. set change IR obs. *(Russian)* 8−37778
polyethylene, expanded, dynamic model rel. to drop impact 8−7160
polyethylene, extended chain, prep. and study of separated single crystals 8−42924
polyethylene, extended chain crystal, fine structure and nucleation mechanism 8−14287
polyethylene, fibre, phase structure and molecular mobility, broad-line NMR spectroscopy 8−14290
polyethylene, fibrous samples, struct. obs. by low-angle X-ray diffr. 8−34445
polyethylene, high density, adhesion strength to St. 3 steel 8−23920
polyethylene, high density, crystallisation struct. revealed by solvent extraction 8−42922
polyethylene, high density, fracture fatigue kinetics, IR absorption spectra 8−11323
polyethylene, high density, lamellar struct. and plasticity micromechanism 8−23791
polyethylene, high density, solid-state extruded, pole figure anal. 8−18556
polyethylene, high density, subjected to biaxial tension, effect of loading cycle asymmetry on fatigue strength 8−44215
polyethylene, high density corona charged, TSC, oxidation effect 8−26882
polyethylene, high oriented, deformation mechanisms of constrained chains, geometrically induced correlations of tie molecules 8−19835
polyethylene, high-density, lamellar sep. during deform. 8−23775
polyethylene, high-density, oriented, deform. mechanisms 8−44171
polyethylene, high-density, semicryst., fold-surface morphology effect on deform. processes 8−34447
polyethylene, highly oriented, fibre composite model 8−3183
polyethylene, highly oriented, thermal conductivity 8−47614
polyethylene, IR and Raman intensities by electro-optical parameters, single chain 8−1115
polyethylene, irradiated, far IR spectrum rel. to crystallinity 8−27216
polyethylene, laser irrad., mol. emission from unionised gas 8−42777
polyethylene, linear, cold-deformed, texture and molecular chain mobility 8−19805
polyethylene, linear, strain rate effects on ratio of recoverable to nonrecoverable strain 8−27566
polyethylene, linear role of recovery forces in deformation 8−48459
polyethylene, liq. diffusion coeffs. determ., G-L chromatography, modified Deemter eqn. 8−2277

polymers continued
polyethylene, longitudinal acoustic mode freqs., general theory for composite perturbed elastic rod 8−14421
polyethylene, low density, absorption currents exam. 8−43785
polyethylene, low density, highly deformable, fracture surface roughness 8−44197
polyethylene, low density, with a single texture, oriented crystallisation of biphenyl 8−9966
polyethylene, melting on Al, XPS meas. 8−15556
polyethylene, modified with phosphonate ester pendant side group, thermal and mech. props. 8−11195
polyethylene, molecular clustering in mixtures with polyethylene-d$_n$, small-angle neutron scatt. 8−26451
polyethylene, molecular motion and spin-lattice relaxation 8−48071
polyethylene, observation of deformation process with X-ray TV system 8−15610
polyethylene, oriented, Raman active modes 8−23457
polyethylene, oxidised and gamma-irradiated, carrier traps, thermally stimulated currents 8−19050
polyethylene, perdeuterated, skeletal vibr. spectrum 8−23445
polyethylene, shish kebab structure, formation mechanism 8−14286
polyethylene, shock compressed, vel. of sound meas. 8−10123
polyethylene, solid, heterogeneity investigation by small angle neutron scattering 8−14298
polyethylene, solid, multicomponent decay of nucl. magnetisation, in rot. coord. system, anal. *(Russian)* 8−27106
polyethylene, steady-state deform. and its effect on struct. and morphology 8−15459
polyethylene, thermally oxidised, low-temp. dielec. relax., dipolar tunnel states 8−2797
polyethylene, treeing inception voltage, effect of blending and crosslinking 8−43788
polyethylene, uncrosslinked amorphous matrix embedded cryst. orientation distrib., strain energy and hydrodynamic pot. effects 8−9968
polyethylene, valence electronic struct., LCAO cryst. orbital calcs., ESCA 8−5384
polyethylene, vel. spectrometry of 3.5 GeV N ions 8−48896
polyethylene(-d$_4$), vibr. freqs., MNDO semiempirical SCF calcs. 8−1114
polyethylene cryst., unit cell variations with temp. and high press. 8−47250
polyethylene crystal, computer simulation of {110} twin boundary 8−30646
polyethylene expanding plasma, high power CO_2 laser radiation interaction 8−47138
polyethylene fibre explosion, neutron and energetic ion emission 8−5927
polyethylene high press. phase, struct., phase diagram and compressibility 8−9961
polyethylene implant-bone composite interfacial strength, porous high density polyethylene 8−31979
polyethylene interfaces, randomly spaced, transition radiation spectra from relativistic electrons 8−21805
polyethylene low density and high density, spherulite obs. in low density *(German)* 8−31398
polyethylene membrane (graphite charged) electrode, electron transfer *(French)* 8−27778
polyethylene molecules, transportation along their axis, energetics of defect motion, point dislocation energy calc. 8−14294
polyethylene naphthalate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
polyethylene oxide, Raman scatt. from longitudinal acoustic modes of crysts. swollen by oligomers 8−27226
polyethylene oxide, solid state relaxation, DSC study 8−9962
polyethylene oxide, solid-state relaxation, spin labelling technique 8−9963
polyethylene oxide ionic complexes, order-disorder transformations 8−47251
polyethylene pipes, lifetime determ., crack growth in thermoplastics under various conditions 8−39981
polyethylene rod, high oriented, mech. behaviour 8−15446
polyethylene single cryst., FT IR spectra, CH_2 rocking mode 8−2843
polyethylene single cryst., FT IR spectra, CH_2 wagging mode 8−2842
polyethylene single crystal in suspension, Fourier transform IR study 8−10877
polyethylene spherulites, high density, microstruct. and mech. props. 8−42921
polyethylene spherulites, lamellar struct. obs. 8−30547
polyethylene spherulites, STEM and microdiffr. obs. of micromorphology 8−34444
polyethylene spherulites, thermal expansion 8−2268
polyethylene terephthalate, amorphous state change by heat treatment below glass transition temp. 8−30550
polyethylene terephthalate, anomalous photodepolarisation, trapping 8−10838
polyethylene terephthalate, differential scanning calorimetry of melting, mosaic block struct. of cryst. layers 8−26452
polyethylene terephthalate, elongation, conform. set change IR obs. *(Russian)* 8−37778
polyethylene terephthalate, extruded, elastic consts. meas., mech. anisotropy 8−44155
polyethylene terephthalate, filament, heat setting and thermomechanical behaviour 8−15435
polyethylene terephthalate, high field transient cond., 50 µs-1 ms 8−43402
polyethylene terephthalate, irradiated with radiations with linear energy losses, peculiarities in chemical etching 8−39934
polyethylene terephthalate, photocarrier transport mechanism 8−10499
polyethylene terephthalate, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
polyethylene terephthalate, photoexcited, thermoluminescence field quenching 8−43942
polyethylene terephthalate, thermally stimulated creep method for mol. motions investig. 8−22787
polyethylene terephthalate, TSC in high temp. region 8−38872
polyethylene terephthalate fibre, lifetime under load, in presence of UV radiation, stress depend. 8−48535
polyethylene terephthalate photoelectret, TSC and photostimulated detrapping current obs. 8−10459
polyethylene thick-walled vials in liq. scintillation counting of ^{14}C 8−857

polymers continued
polyethylene total joint replacement, props. improvement by C fibre reinforcement, SEM obs. 8−24183
polyethylene TSC resulting from trapped carriers 8−6393
polyethyleneterephthallate, sorption of low MW solvents on struct. and mech. props. *(Russian)* 8−11358
polyfluorocarbon, synthesis and opt. spectra 8−23657
polyimide, effect of loading time on contact area *(Japanese)* 8−6230
polyisobutylene and copolymers with polyacrylonitrile, specific heat and glass transition temp. meas. *(German)* 8−34603
polyisoprene, rheological props., accelerator and temp. effects *(German)* 8−34101
polyisopropylene, isotactic, two-phase spherulite, ht. conduction anisotropy 8−2316
polyleucine membrane, water and water vapour permeation and solute separation *(Japanese)* 8−31701
polymer, yield behaviour, interpret. w.r.t. correlated motion 8−6973
polymer complex dynamic Young's modulus measurement equipment 8−1615
polymeric glasses, kinetic theory of brittle fracture 8−48526
polymers, atuomatic device for measuring elec. direct current props. *(German)* 8−45647
polymethacrylates (PMMA, PBMA, PMA and PMA AN), radiation-induced degradation obs. 8−27795
polymethylene, continuous diffuse electron scatt., correl. chain motion 8−6020
polymethylpentene, LF acoustic relaxation 8−38784
polymethylsiloxane-toluene gels, light scatt., compression moduli, cooperative diffusion 8−23970
polymide, elasticity of crystal lattice 8−3164
polyolefins, triboelectric charging, linear free energy relationships 8−6431
polyoxide chains, config. partition functions, entropy, (CH_2)y-o- repeat unit 8−17829
polyoxymethylene, effects of hydrostatic press. on shear deform. 8−15457
polyoxymethylene, kinetics of epitaxy and over-growth on needle-like single crystals 8−14291
polyoxymethylene, low temp. thermal conductivity 8−38886
polyparaxylylene film, photoluminesc. exam. 8−48213
polyparaxylyrene, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
polypeptide copolymer, trans-cis photoisomerisation 8−3331
polypeptides, helical sense characterisation by IR spectra 8−17831
polyphenylene oxide-polystyrene blends, spectroscope exam. of chain conform. and bonding 8−42925
polypropylene, drawn fibres, SEM and US study 8−47249
polypropylene, effects of hydrostatic press. on shear deform. 8−15457
polypropylene, electret, trapped injected electrons, EPR obs. 8−27093
polypropylene, extruded, elastic consts. meas., mech. anisotropy 8−44155
polypropylene, Fourier transform IR study of ordered and amorphous phases 8−27225
polypropylene, isotactic, air permeability, subject to high press. 8−27823
polypropylene, isotactic, diffusion const., increased hydrostatic press. effect 8−22898
polypropylene, isotactic, epitaxial crystn. on alkali halide surface 8−26787
polypropylene, isotactic, shear induced β-form crystallisation 8−18555
polypropylene, low and high density, exam. in transmitted and reflected light *(German)* 8−31398
polypropylene, orientated, loose fitting tube for optical fibre packaging 8−1338
polypropylene, spherol crystals, morphology and growth 8−18567
polypropylene monofilaments, tensile props., orientation degree depend., IR dichroism obs. 8−3163
polypropylene nonfilaments, highly drawn, plastic deform. 8−44174
polypropylene-bitumen mixture, thermomech. investigation changes in viscosity, ductility, elasticity, mol. wt. effects *(German)* 8−35454
polysaccharide grain model for IR spectrum of interstellar maser OH 26.5+0.6 8−12342
polysaccharides, vibr., conformation, IR spectra, computer anal. *(Russian)* 8−13637
polysaccharides in Galaxy, origin and nature 8−24543
polysiloxane homopolymers and random-block copolymers, surface degradation, with HF soln. 8−15554
polysiloxane-metal oxide interfaces, bonding mechanism, surface anal. by XPS and static SIMS 8−15643
polystyre, irrad, thermoluminesc. 8−2931
polystyrene, activation energies of fracture and deform., comparison *(Russian)* 8−11303
polystyrene, adhesive bonds, US attenuation effects 8−7141
polystyrene, amorphous, press. effect on glass transition and glassy state 8−26674
polystyrene, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polystyrene, craze initiation, in tension-torsion expts. 8−15519
polystyrene, degradation behaviour by vibratory ball mill *(Japanese)* 8−39732
polystyrene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
polystyrene, dissolution kinematics, model and its expt. verification 8−26687
polystyrene, electron trap depth distribs., thermolum. data 8−11002
polystyrene, enthalpy of mixing with poly(2,6-dimethyl phenylene oxide) 8−14471
polystyrene, expanded, dynamic compressibility 8−48476
polystyrene, filled with wood particles reversible deformation of wood particles 8−48437
polystyrene, glassy, craze growth, expt. and model 8−15520
polystyrene, glassy, struct., X-ray scatt. and conformational analysis 8−26449
polystyrene, isotactic, normal vibrational anal. 8−43869
polystyrene, isothermal and adiabatic effects assoc. with crack propag. 8−23827
polystyrene, molecular alignment 8−14299
polystyrene, monodisperse, entangled, viscoelastic props., transient network model 8−13918
polystyrene, monodisperse latex, shear US meas. 8−31711
polystyrene, non-isothermal rheological response during elongational flow 8−38262

polymers continued
polystyrene, oriented amorphous, supermol. structures rel. to mech. behaviour 8−22673
polystyrene, photoconductivity, UV-IR light, absorpt. and photoluminescence. spectra *(Japanese)* 8−34857
polystyrene, soln. grown isotactic crystals, degree and distrib. of crystallinity, thermal stability 8−9964
polystyrene, solution grown isotactic crystal, thermal change kinetics study by X-ray diffr. 8−9965
polystyrene, stress birefringence under nonisothermal conditions 8−15468
polystyrene, substituted, Raman, IR and neutron spectra of LF vibs. 8−2848
polystyrene+poly(2,6,-dimethyl phenylene oxide), isotactic, crystallisation and melting 8−18554
polystyrene dispersion, sterically-stabilised, reversible flocculation 8−44411
polystyrene latex particles, suspension in CTAB (Na_2SO_4), gas bubble surface charge meas. 8−21100
polystyrene microspheres in theta-pinch, ablation rates 8−18436
polystyrene particle colloidal suspension in KCl(LiCl) aq. solns., dielectric loss 8−35728
polystyrene spheres, crystallised suspension, gravitational compression 8−23975
polystyrene sulphonic acid, charged membrane, electroosmosis and streaming potential *(Japanese)* 8−31696
polystyrene-polybutadiene block copolymer, oriented microlattice obs. 8−2025
polystyrene-polymer, contact electrification model arising from eigenvalue spectra 8−47846
polystyrenes, p-halogenated, optical anisotropies, Kerr consts. 8−27246
polystyrol, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
polysulphone membrane, prep. and performance for ultrafiltration *(Japanese)* 8−31695
polytetrafluorethylene dispersed in acetal resin, tissue reaction 8−40412
polytetrafluoroethylene copolymers and oligomers, melt and solid, Raman active longit. acoustic modes 8−19484
polytetramethyl-p-silphenylenesiloxane, degree of crystallinity 8−26453
polytrioxane, γ-irrad., layer-like void formation 8−22760
polyurethane, foam, for organic material sampling in ambient air 8−20080
polyurethane, high temp./press. materials test for undersea environment 8−3213
polyurethane, quick-hardening SKU-PFL, synthesis and props., use in endoprosthetics 8−6887
polyurethane, stress plate in contact zone with solid indentor 8−1624
polyurethane foam, fast-neutron gauging for void detection 8−7157
polyvinyl acetal derivatives of 9-anthraldehyde, preparation and electrophotographic props. 8−29183
polyvinyl alcohol, dichromated, sensitisation to visible laser wavelengths 8−4716
polyvinyl chloride, dielec. props. at ULF, superimposed direct voltage *(French)* 8−15138
polyvinyl fluoride, dielectric support for glass transition 8−2239
polyvinylbutyral, high density, adhesion strength to St. 3 steel 8−23920
polyvinylbutyrolactonecoacrylonitrile membrane, selective and counter transport of Na^+ and K^+ *(Japanese)* 8−31700
polyvinylidene, fluoride, amorphous, low temp. anomalies, piezoelec. phenomenon 8−30724
polyvinylidene chars, heat treatment, EPR rel. to temp., A-centers 8−43639
polyvinylidene chars, heat treatment, EPR rel. to temp., spin centres 8−48036
polyvinylidene fluoride, DC conduction characts. 8−2488
polyvinylidene fluoride, direct obs. of cryst. transform. process under high press. 8−38630
polyvinylidene fluoride, poling by corona charging, pyroelec. effect 8−19423
polyvinylidene fluoride, suitability as underwater transducer material 8−1531
polyvinylidene fluoride-PMMA blends, dynamic mech. props. and sonic velocity, cryst. phase transitions 8−26454
polyvinylidenefluoride, melting and freezing, effect of structural factors *(German)* 8−15389
powder coatings, water permeability eval. by radioactive tracers *(Czech)* 8−11362
prebiotic polymers, possibilities in IR spectra of galactic sources 8−4336
processing technology, prod. of high chain extension 8−31378
propergol, rheological props. during polymerisation *(French)* 8−23762
PTFE, crystalline, subject to simple plane loading, limiting resistant, time and temp. factors 8−23794
PTFE, effect of loading time on contact area *(Japanese)* 8−6230
PTFE, epitaxial crystallisation of crystalline polymers on surface 8−14626
PTFE, shock compressed, vel. of sound meas. 8−10123
PTFE, struct. effects in stress-strain relations at elev. temps. 8−31484
PTFE, thermal cond., effect of material on working parameters of cryosurgery instruments 8−36037
PTFE seal for superfluid He 8−4625
PTS polydiacetylene single cryst. reflection spectra, exciton site splitting 8−31211
PVA, hollow fibre membrane for industrial scale dialyser *(Japanese)* 8−31693
PVC, creep meas., use of computer in rational determination of material values *(German)* 8−31474
PVC, dielectric props. in ultra-low freq. range *(French)* 8−23395
PVC, extended syndiotactic, modified Urey-Bradley force field calcs. 8−25500
PVC, filled with SiC particles, abrasion resistance *(Japanese)* 8−7055
PVC, hard, flow zone effect on degradation, rigidity, deformation, under fatigue *(German)* 8−15471
PVC, high temp. creep 8−48453
PVC, highly deformable, fracture surface roughness 8−44197
PVC, highly syndiotactic, X-ray diffr. and IR studies of annealed material, crystallinity 8−2022
PVC, kinetic nature of strength 8−15524
polymers continued
PVC, magneto-electrets, refr. index, temp. and mag. field effects 8−6655
PVC, magnetoelectret form., RF thermomagnetic treatment, dielectric aftereffects 8−6625
PVC, mech. comminution in fine struct. changes in porosity, density, specific surface area *(German)* 8−35345
PVC, mechanochemical degradation in primary struct., mech. vibration effects, IR spectra *(German)* 8−19769
PVC, rigid, physical ageing effect on elec. props. 8−10836
PVC, solid, stress-strain behaviour, strain rate and temp. effects, cryogenic temps. *(Japanese)* 8−11315
PVC, spontaneous current emission, various metal electrodes 8−43412
PVC, surface coating constituent mat., adsorpt. of Cs^+ 8−23843
PVC, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
PVC, thermal and dynamic glass transition temp. relation *(German)* 8−14450
PVC, thermally induced conformational changes, Fourier transform. IR spectroscopy 8−9287
PVC, volume stress/strain state using new apparatus 8−23896
PVC electret, thermally stimulated depolarisation 8−48112
pyrolysis-IR analysis 8−3404
quality testing using US vel. propagation meter 8−19976
Raman spectra, cryst. morphology, longitudinal acoustic mode 8−43859
Raman spectra, longitudinal acoustic mode 8−43858
random flight chain, surface adsorbed, end-to-end mean value 8−22060
reaction with metal formates in frictional contact zone 8−7057
reciprocating impact wear testing apparatus, results 8−15639
relaxation investigation *(German)* 8−31152
relaxation properties investigation method and instrument 8−39967
relaxation spectra determ. from electric discharge meas. with increasing temp. *(German)* 8−31151
resin:Cu^{2+}, interaction with ligands, EPR meas. 8−10756
resin:VO^{2+}, interaction with ligands, EPR meas. 8−10756
resin beams with glass fibres, crack propag. expt. 8−15521
resin synthesis for affinity chromatography 8−11579
review, plastic deformation during freeze-cleavage 8−14400
rosin and carnauba wax mixtures, hetero- to homocharge transition, temp. depend. *(Japanese)* 8−35082
rubber-epoxy resins, heterogeneity analysis, light scatt. and statistical methods 8−2024
rubber-like polymer, molecular relaxation process effect on strength *(German)* 8−31440
self-replicating macromolecules, Monte Carlo computer models 8−46473
semicrystalline, mol. morphology 8−38631
shape measures, flexible mol. chain, review 8−17832
shear strength and friction 8−39913
shear-induced crystallisation, optical study 8−14289
shells, for laser fusion targets 8−8987
ship noise reduction using viscoelastic materials 8−22226
simulation, by self-avoiding nonintersecting random chains, conc. effect 8−12639
single ring polymer, Lennard-Jones model, eqn. of state calcs. 8−5379
solid, impact compression crushing at low temps. *(Japanese)* 8−7032
solvent-polymer system, liquid multi-phase separation 8−14468
spray coatings, struct. investig. by multiple-external-refl. method 8−6235
statistical copolymers, normal vibrs., calc. method *(Russian)* 8−29871
steel-polymer wear mechanism during fretting corrosion 8−35522
stereoregular polymers, electronic density of states, new algorithm 8−18939
stiff, optimised Rouse-Zimm theory 8−46472
strain crystallised, electron microscope obs. of molecular struct. 8−26450
strain measurement, between −60 and +50°C 8−19974
stress meas., X-ray diffr. technique 8−5713
stress relaxation time spectrum, construction of single spectrum for polymers 8−44160
stress wave propagation, nonlinear, in perfectly flexible string 8−5670
styrene acronitrile copolymer, glass transition temp. determ. by elec. meas. 8−47506
styrene crosslinked polyester networks, low temp. γ′ relaxation 8−44156
styrene crosslinked polyester networks, low temp. γ relaxation, water and chem. struct. effects 8−44157
styrene polymers, elastomer toughening, grafting techniques 8−35347
styrene-butadiene copolymer, birefringence and stress relaxation 8−44158
styrene-butadiene copolymers, elec. strength meas. 8−15096
styrene-butadiene copolymers, struct. study by pyrolytic capillary gas chromatography *(German)* 8−18557
styrene-phenylacetylene copolymer, fluoresc. emission, energy redistrib. 8−39580
styrene-sodium methacrylate (9 mol.%) copolymer cond. relax. 8−38874
surface heating during vacuum metal deposition 8−48319
surface properties, review 8−34886
surface topography, high-resolution polymer replication 8−10264
synthetic, electron beam damage in electron microscope exam. 8−34409
Teflon, aluminised, spacecraft, surface material performance modelling 8−4061
Teflon, creep under flat cyclic stress 8−23800
Teflon, F content, determ. by instrumental neutron activation anal. 8−7262
Teflon, powder pellets for near-IR spectra 8−3401
teflon covered Ge(Li) diodes for fast neutron detection 8−25384
Teflon superleaktight gasket seals for use at low temps. 8−16806
Teflon thick-walled vials in liq. scintillation counting of ^{14}C 8−857
Teflon vials in Cherenkov counting 8−858
telechelic polybutadiene-methacrylate acid copolymers, X-ray study *(French)* 8−18553
tetramethyl-p-silphenylenesiloxane-dimethyl siloxane copolymers, degree of crystallinity 8−26453
thermal conductivity, temp. crystallinity and orientation depends., review 8−10234

polymers continued
thermal sampling technique for thermally stimulated discharge meas. 8−10831
thermally stimulated creep 8−11245
thermoluminescence, rel. to mol. relax. 8−11003
thermoplastics as engineering materials 8−27581
thickness depend. of G_c for shear lip propag. from single crack propag. 8−11305
thin film, tensile testing multiposition unit, for testing in vacuo and gaseous media 8−11478
toluene sulphonate diacetylene polymer, electronic and vibr. excitations, press. and temp. depend. 8−31188
transparent, laser-induced optical breakdown, chem. reactions effects *(Russian)* 8−35676
tribopolymerized solid lubricating coatings, formation and behaviour 8−35528
TSC, trap modulated electron and hole mobilities 8−10441
two-dimensional model of polymer with an excluded volume *(Russian)* 8−42926
vibrational spectra of chain, Green's function anal., Fourier method for perfect infinite chain 8−18725
vibrational spectra of chain, Green's function anal. 8−18724
N-vinylcarbazole-1-vinylnaphthalene copolymer, triplet-triplet annihilation carrier photocurrent, delay fluoresc. 8−2513
vinylidene fluoride copolymer electret, charge and polarisation distribs. meas. 8−35081
4-vinylpyridine acrylonitrile copolymer membrane, reverse osmosis charact. *(Japanese)* 8−31694
N-vinylpyrrolidone-methyl methacrylate copolymer water swollen membrane, permeability *(Japanese)* 8−31704
viscoelastic chain, local relax. props. anisotropy, internal friction influence *(Russian)* 8−37780
viscoelastic ductile, delayed yielding of plane stress viscoelastic Dugdale model 8−27569
viscoelastic properties dynamic evaluation for use in cardiac prosthetics 8−40405
volume dilatometer design 8−5706
volume stress/strain state, new testing apparatus 8−23896
wear limit, γ-irradiated and unirradiated *(Japanese)* 8−27649
wear testing of polymers for artificial joints 8−31981
C fibre reinforced polymer, strength props., fibre surface treatment effects 8−27636
C_3O_2 polymer, as source of UV absorpt. in Venus clouds 8−20665
LiH chains, long-range Coulombic contribution to direct space LCAO CO matrix elements 8−37774

polymorphic transformations
Alnico alloy, C addition effects on struct. and mag. props. 8−23835
anthracene, polymorphic forms, generation by repeated slip 8−34457
cholesteryl acetate, phase transitions and solid polymorphs 8−2255
copper phthalocyanine, chlorinated, stacking disorder 8−34622
copper phthalocyanine α-β phase transform., heat of transform., DTA investig. *(German)* 8−30754
diethylammonium cadmium chloride, X-ray study of structural phase transition 8−2055
p-diiodobenzene, phase transition obs. using interferometry 8−34616
1,8-dinitronaphthalene, orthorhombic struct. determ., 22 and 97°C, rel. to phase transition mechanism 8−6048
1,2-dipalmitoylglyceride, DTA and X-ray diffr., polymorphism *(French)* 8−43008
Earth mantle viscosity-depth profile, polymorphic phase transition effects 8−48998
ferromagnet, nonlinear magnetoelastic effects and phase transforms. *(Russian)* 8−48015
metal, HCP to BCC phase transition and melting 8−14463
organic molecular crystal, phase transforms. obs. using TEM, electron beam damage 8−34621
quartz, α-β phase transition point, struct., light scatt. *(Russian)* 8−47521
quartz, phase transformations and domain structures *(French)* 8−27509
rare earth alloy-hydrogen system, $R^1_xR^2_{1-x}H_2$-H_3, phase transitions 8−18767
rare-earth compounds, reaction processes in solid phase *(French)* 8−30756
ternary semiconductors, review of developments 8−34737
vanadyl phthalocyanine-copper phthalocyanine mixed crysts., α-β phase transform., heat of transform., DTA investig. *(German)* 8−30754
$[Ni(NH_3)_6](ClO_4)_2$, X-ray powder diffr. exam. of enantiomorphic transitions 8−2054
Ag-Hg amalgam, lattice const., temp. depend., explained in terms of Hg evaporation 8−26704
$AgBiS(Se)_2$, polymorphism and defects, electron microscopy 8−2254
$Ag_8GeS_6(Se_6)(Te_6)$, Ag_8SiSe_6, $Ag_8SnS_6(Se_6)$, absorpt. edge investigs. at phase transitions 8−35149
Ag_8GeSe_6, polymorphic transition, absorpt. coeff. meas. 8−2257
$AgNO_2$, high-pressure phase behaviour, crystal chemistry of univalent nitrites 8−30749
Ag_2S, $\alpha \rightleftharpoons \beta$ transitions 8−22846
$AgSbS_2$, synthetic crystals, DTA and cryst. struct., phase transitions *(German)* 8−42943
Ag_2Se, polymorphic transition, DTA meas. 8−34620
Ag_2Te, polymorphic transition, DTA meas. 8−34620
Am, polymorphic transforms. obs. *(Russian)* 8−6153
AuBr, α, I, P and BCC forms, transitions 8−38836
Au_5Mn_2, phase transformations and domain structures *(French)* 8−27509
$BaFe_2O_4$, $BaFe_{12}O_{19}$, formation, dilatometric investigs. 8−27459
Ca, electrical resistivity and thermoelectric power 8−26846
$CaLaGaO_4:Eu^{3+},Bi^{3+}$, luminesc. influenced by struct. transition 8−6773
$CaWO_4$ type compounds, system of polymorphic transitions 8−47268
CdP_2, Cd_3P_2, polymorphic transitions 8−23699
Co, deformed and annealed, mechanism and kinetics of polymorphic transformations *(Russian)* 8−35381
$CoCl_2.6D_2O$, neutron diffr. study, cryst. and mag. struct. *(French)* 8−42946
$Co_{0.65}Ni_{0.35}$, precursory phonon obs. of FCC to HCP transition 8−43082
$CuCr_2O_4$, heat capacity, entropy, polymorphic transition, 298-1000K 8−10196

polymorphic transformations continued
DI, thermodynamic properties 8−47517
DX, X=Cl, Br, I, thermodynamic properties, phase transitions 8−47518
Fe, α-, γ-, crysts., twinning, martensitic transforms., correspondence matrices *(German)* 8−31406
Fe epitaxial growth on Cu(111), supersaturation and mode of growth, LEED and AES exam. 8−18929
Fe, phase transition thermodynamics 8−18769
Ga, polymorphism at high press. *(French)* 8−47279
GeTe, elec. cond. and microhardness, thermal cycling effect *(Russian)* 8−35485
GeTe, thermal expansion meas. at phase transition 8−18771
HI, thermodynamic properties 8−47517
HX, X=Cl, Br, I, thermodynamic properties, phase transitions 8−47518
Hg_2Cl_2, low temp. phase transition, X-ray diffr., Raman spectra 8−22849
$InSbSe_3$, incongruently melting cpd. in In_2Se_3-Sb_2Se_3 system 8−44090
In_2Se_3-Sb_2Se_3 system, polymorphic transition pattern of In_2Se_3 8−44090
In_2Te_3, in In_2Te_3-PbTe system, polymorphic transition 8−35361
$KAsO_3$-K_3AsO_4, phase diag. 8−23681
KCN, elastic anomaly at 168K 8−27242
KCl, polymorphic transition press. at high temp., elec. resist. meas. 8−38837
KCl, press. induced low-temp. polymorphic transition, hysteresis 8−14467
$K_2Cr_2O_7$, thermal props. thermal anal. and X-ray diffr. obs. 8−30752
KD_2PO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8−43118
KF-YbF_3, KF-LuF_3, phase analysis 8−44101
KH_2AsO_4, high temp. phase transition, dielec. const., elec. condh and IR refl. meas. 8−43118
KNO_2, high-pressure phase behaviour 8−30749
$LiIO_3$, phase transitions obs. by DTA, heat treatment, X-ray diffr. *(Chinese)* 8−2249
$MgWO_4$ type compounds, system of polymorphic transitions 8−47268
Mn_6N_5 film, cryst. struct. and phase transform. exam. by electron diffr. 8−10189
$(ND_4)_3D(SO_4)_2$, press.-temp. phase diagram 8−38834
NH_4CNS, kinetic-morphological types of polymorphic transform., relax. theory 8−9993
NH_4Cl, thermal conductivity, crystal transformation 8−2310
$(Na,K)NbO_3$ solid solns., struct. transitions, neutron powder diffr. 8−38649
$(Na,Li)NbO_3$, ceramics, electrophys. and struct. props. near morphotropic transition 8−2816
$NaCaPO_4$-Ca_2SiO_4 partial system, phase diagram 8−35364
$NaCaPO_4$-Ca_3SiO_5 partial system, phase diagram 8−35365
$NaNO_2$, high-pressure phase behaviour 8−30749
Na_xWO_3, transition sequence, lattice parameters meas. 8−22852
$Nb_xCr_{1-x}O_2$, ($x \geqslant 0.5$), cryst. growth by chem. transport and phase transitions 8−35281
$NbH_{0.3}$, α-α′ phase transition, sp. ht. anomaly 8−39764
$NbTe_2$, phase transformations and domain structures *(French)* 8−27509
$NdAg_2$, high temp. modification, thermal effects 8−38665
Ni complex, $[Ni(en)_2Cl]_2Cl_2$, heat capacity, X-ray diffraction and mag. meas., phase transition 8−47515
$Ni(NH_3)_6(BF_4)_2$, enantiomorphic transition, X-ray powder diffr. meas. 8−30574
NiSe, thin film phases, struct. and resist. 8−39236
Pa, preparation by Van Arkel method, cryst. struct. 8−39715
PbI polytypes, phase transforms. and electrical behaviour 8−47839
$Pb(Zr,Ti)O_3:Mn$, crystal struct. and electrophysical props., piezotransformer props. 8−43806
$PrAg_2$, high temp. modification, thermal effects 8−38665
Rb halides, polymorphic transitions, temp. depend. of transition press., thermodynamical data *(French)* 8−38843
Rb_3Bi, cubic and hexagonal structs., transition 8−26480
RbH_2PO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8−43118
$RbNO_3$, cubic to rhombohedral transition, X-ray diffr. obs. 8−22681
$RbNO_3$, cubic to rhombohedral transition induced by orientation-shear strain coupling 8−22682
SiC, 2H→6H transform. mechanism, X-ray diffr. theory 8−30575
SiC, engng. ceramic, lattice resolution studies 8−27510
β-SiC, polytype stability, α→β phase transformation during growth 8−6028
β-SiC powder compact, microstruct. changes and β to α transform., Si vapour influence 8−19738
Si_3N_4-MgO, hot pressing and α-β phase transform. 8−27461
α-Si_3N_4-MgO (5 wt.%), hot-pressed, rel. to mech. strength development 8−44195
Sn, α→β transform., α-Sn nucleation and growth in β-Sn 8−38838
Sr, electrical resistivity and thermoelectric power 8−26846
$SrSi_2$, dimorphic, transform. of three-dimens. three-connected Si nets 8−42944
$SrUO_4$, α to β transition, anomalous behaviour 8−10182
$SrZrO_3$, high temp. phases, struct. determ., soft mode transitions 8−42942
TaS_2, phase transformations and domain structures *(French)* 8−27509
Ti alloy VT25, thermomechanical treatment effect on struct. and mech. props. 8−3152
Ti:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
TiO_2 type compounds, system of polymorphic transitions 8−47268
TiO_2-V_2O_5, interfacial reactions, 565-615°C, anatase-rutile transform. 8−31688
$TiS_{1.7}$, hexagonal polytypes form. mechanism 8−9990
TlI, rel. to mechanism of growth in silica hydrogels at 25°C 8−35287
$TlR(MoO_4)_2$ (R=La to Ho), polymorphism, X-ray diffr., thermographic anal. 8−47269
V:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
$V_{0.985}Al_{0.015}O_2$, struct. aspects of metal insulator transitions 8−18965
Y, film, thickness dependent polymorphism rel. to resistivity 8−39232
ZnS:Cu AC electroluminescent patterns and polytypic transformations 8−6784
ZnTe-CdSe, solid soln. formation and effects 8−27489

polymorphic transformations continued
ZrO_2, near-surface phase transforms., effect of grinding and polishing 8−15557
ZrO_2, Raman spectra, temp. depend. 8−6668

polymorphism
see also crystal structure; isomorphism; polymorphic transformations
carbon tetrabromide, ordered, polymorphism 8−22700
dianthronylidene ethane, luminescent excimer geometries, intermol. shift 8−27294
p-dichlorobenzene, Cl-Cl interactions at 100K, isotropic pot. functions calcs. 8−18578
2,2-dichloropropane, thermodynamic and structural studies of polymorphism 8−18571
DNA, polymorphism, X-ray diffr. and computerised model building study 8−27894
ice, thermal conductivity of nine solid phases 8−30801
Monte Carlo simulation of polytypes 8−6024
p-nitro-p′-methylbenzylidene aniline, polymorphism 8−18633
PAA, solid state polymorphism 8−42945
phospholipid monolayers, polymorphism 8−40120
semiconductor with polytype layers, interface exciton states 8−26819
stearic acid, large single cryst. growth from organic soln. 8−31314
1,1,1-trichloroethane, thermodynamic and structural studies of polymorphism 8−18571
X-ray powder patterns for polytypic struct. with stacking faults anal. 8−38577
B, and borides, cryst. chem., struct., book contrib. 8−47278
$BaMnO_{3-x}$, O_2 deficiency induced polymorphs 8−26531
Be-Si-O-N polytypes, X-ray study 8−27496
Be-Si-O-N system, polytype periodicities, direct obs. 8−18662
C, crystalline, intermediate form, CI lattice energy *(Russian)* 8−22693
Ca-Nb-O perovskites, struct. characterisation *(French)* 8−10021
$ZCaO.SiO_2$-$2CaO.Na_2O.P_2O_5$ system, polymorphism and solid soln. 8−19731
Fe-WO_3 system, struct. phase exam. by optical microscopy and X-ray diffr. 8−31389
$Fe_2(SO_4)_3$, Mossbauer isomer shift in rhombohedral and monoclinic forms 8−6609
Ga, cryst. struct., high press., X-ray diffr. obs. 8−42952
Ga, film, polymorphism, electron diffr. obs. *(French)* 8−18922
Ga metastable states, supercooling and polymorphism *(French)* 8−14325
$InSbS_3(Se_3)$, prep., polymorphism, cryst. struct. 8−44002
$Mg(OH)_2$, and calcination product, relations between particle size, shape and surface area 8−48355
$NbS(Se)_2$, polymorphism at high press. and temps., T_c and band struct. 8−26528
$Pr_{24}O_{44}$, beta phase, high resolution cryst. struct. images 8−42991
S, effect of high pressure system configuration 8−43104
Sb_5O_7I polytypes, cryst. growth, struct., ferroelastic and ferroelec. props. 8−31309
Sc-Fe-Si system, phase obs. at 800°C *(Russian)* 8−23661
Si polymorphs, optical props., orthogonalized LCAO calc. 8−10345
Si-Al-O-N polytypes, direct lattice resolution using high resolution electron microscopy 8−38682
SiC, 126R polytype, struct. determ., use of lattice imaging in electron microscope 8−26498
SiC, reaction sintered transform. interface morphology 8−31364
SiO_2 (silicalite), new hydrophobic crystalline silica mol. sieve 8−30598
$Tl_2B_4O_7$, polymorphism *(French)* 8−6035
$TlR(MoO_4)_2$ (R=La to Ho), polymorphism, X-ray diffr., thermographic anal. 8−47269
YSeF, crystal atomic struct. *(French)* 8−10001

polynomials
see also splines (mathematics)
arbitrary pseudo-Euclidean space, real and complex boosts 8−113
Bernstein's polynomials, differentiation and integration 8−40
circular plates subjected to transient loads, nonlinear dynamic response 8−16648
dual series eqns. involving Konhauser biorthogonal polynomials 8−4464
Earth surface topography, polynomial and Fourier trend surfaces computation 8−32245
elasticity plane mixed boundary value problem, Legendre polynomials soln. 8−4487
elastoplastic shell constitutive eqns. 8−18188
exospheric temperature, representation by sum of series in Legendre polynomials 8−45063
FORTRAN function writer, FURI, polynomial expansion 8−16631
frame corner plane stress distrib. and local buckling *(German)* 8−13940
gradient stress fields, stress intensity factor determ., nuclear safety appl. 8−34089
graph theory, of MO, symmetrical analysis and calc., eigenpolynomials 8−29729
Hermite polynomials, zeros 8−20938
Jacobi, augmented, sign, rel. to X-ray diffr. 8−22599
molecule, heteroconjugated, LCAO MO graph-theoretical formulation 8−890
multisolitons, kinklike, in polynomial field theories 8−21014
nuclear reactor kinetics eqns., piecewise polynomial approx. 8−4981
oscillatory subsonic piecewise continuous kernel function method 8−5763
Schrodinger equation, Darboux theory, appl. to construction of general soln. with Poshl-Teller potential *(Russian)* 8−12607
third-order Hermite polynomials, appl. to reactor kinetics eqns. 8−46138
triangular finite element universal matrices construction 8−36805

polytypism *see polymorphism*

Pomeranchuk poles and trajectories
cross section rise in high energy strong interactions, multipomeron exchange, Mandelstam diagrams 8−41516
double pomeron exchange characteristics, inclusive hadron-hadron reactions, cross section 8−17003
dual pomeron contrib. to inclusive distrib., triple-Regge, fragmentation, pionisation, regions 8−41509
dual resonance Pomeron, intermediate mass distribution 8−25026
dual unitarisation scheme, Pomeron and f Regge pole prod. 8−41512
dual unitarity scheme, single particle distrib., bootstrap eqn. 8−17002

Pomeranchuk poles and trajectories continued
eikonal Regge model, opacity and diffr.-dissociation cross section of grey disks 8−4845
eikonal theory, interacting Pomeron production by retaining Feynman graphs 8−8633
Froissaron exchange, unitary problem *(Russian)* 8−21403
geometrical pomeron 8−37188
gluonic resonances in hadronic spectrum, scalar mesons, pomerons 8−21394
hadron+hadron elastic scatt., >100 GeV, asymptotic theorems review *(Czech)* 8−29357
hadron total cross section, anal. of Pomeron-f complex 8−483
hadron total cross sections, semiempirical formulae, three component model with SU(3) components 8−41600
hadron-hadron collisions, parton model of hard and soft processes in small p_t inclusive reactions 8−41599
hadron-nucleon total cross section 8−45888
hadronic cross section strength, nonlinear unitarity eqn., internal symm. restriction 8−33042
high energy collisions of heavy nuclei, Glauber rescatt., Reggeon field theory 8−37369
high energy diffraction scatt., model with shielded pomeron, pp, πp, Kp investigation 8−17004
ordered phase in Reggeon field theory, Hamiltonian formulation, scatt. amplitude calc. 8−4807
particle correlations in multiperipheral resonance prod. model, broken SU_3 symmetry 8−45891
pomeron, clothed, physical, shielding cut mechanism 8−21401
pomeron current model for diffraction dissociation 8−4843
pomeron flavouring in reggeon field theory with thresholds 8−41437
pomeron flavouring Reggeon field theory with thresholds 8−29275
pomeron pole+cuts, power series formula 8−8631
pomeron-f identity hypothesis, test 8−45887
Pomeron-f identity scheme, vector meson prod. 8−12887
QCD, two-dimens., bare pomeron graph 8−4824
strong exchange degeneracy analysed in Kp and πp reactions, pomeron behaviour 8−41515
supercritical pomeron, parton model interpretation, appl. to scatt. off nuclei 8−41497
total and triple-Regge inclusive cross sections 8−400
triple Regge region, higher order ε terms 8−16954
triple-Pomeron coupling, normalisation 8−4842
triple-Regge limit, cut Reggeon field theory 8−8629
universality of clothed physical pomeron, geometrical pomeron, importance of asymptotically high energies 8−33047
K*(890) prod. at 13 GeV/c, Regge models 8−45961
$pN \to NN\pi$, 6 to 1480 GeV, pomeron exchange 8−45964
$\bar{p}N \to \bar{N}(N\pi)_{I=1/2}$, 5.7 GeV.c ρ exchange contrib., cross channel isospin amplitude anal. 8−45938
pp elastic scattering, high energy phenomenology of fixed pole pomeron 8−25080
pp large $|t|$ scatt. and Regge cuts 8−41587
$pp \to pX$, Deck effect contribution 8−21471
$pp \to pX$, triple-Regge fits, duality struct. of inclusive diffr. dissoc. 8−8715

Pontryagin maximum principle *see maximum principle*

Poole-Frenkel effect
amorphous solids, Poole-Frenkel cond. for centres with screened Coulomb pot. 8−19044
glass, single- and mixed-alkali, high field cond. and ionic jump processes 8−38873
MNOS memory device, charge retention by Frenkel-Poole detrapping 8−47874
polyacrylonitrile, pyrolyzed, surface layer, anal. of elec. cond. mechanism by impedance diagram *(Japanese)* 8−23148
thermal ionisation of an impurity in strong electric fields *(Russian)* 8−43410
ALF_3, evaporated layers DC props. and α-particle scatt. 8−14845
Al_2O_3 plasma anodised films, dielec. props. and high-field cond. *(Japanese)* 8−23185
GaAs oxidation saturation and MOS diode equivalent cct. 8−47875
Ge_3N_4 CVD film prod. and Al-Ge-Ge_3N_4-Al structure V-I and V-C characteristics *(Russian)* 8−47893
Si_3N_4 degradation due to high-temp. processing 8−6454
$Si_{12}Te_{48}As_{30}Ge_{10}$ film, amorphous, Poole-Frenkel cond. for centres with screened Coulomb pot. 8−19044
SnO_2, glaze, high field cond., 4.2-470K 8−23100

popcorn noise *see random noise*

population inversion
see also laser theory; lasers; stimulated emission
atomic engines, efficiency of coherent amplification 8−33717
expanding plasma, gain on transitions of hydrogenic ions 8−17918
molecular beam, population inversion induced by irradiation field varying in space *(French)* 8−17727
N-level atoms, coherent dynamics, anal. solns. 8−22105
N-level molecules, coherent dynamics, anal. solns. 8−22105
NMR, progressive-saturation selective population inversion technique, sensitivity gain 8−17692
plasma lasers in molecular medium, thermal ionisation and recomb. *(Russian)* 8−22118
pulse duration increase in self-limiting transitions *(Russian)* 8−33719
recombination lasers using elemental vap., stimulated emission conditions 8−17922
ruby laser rod, absorption coeff., loss coeff. and population inversion *(Japanese)* 8−37888
single mode laser, interaction with two-level atoms, gain without population inversion 8−17895
supersonic flow of inverted population gas flow round blunt bodies, amplification factor 8−5828
triple optical resonance, N-level system, N-1 photon reson., steady state level population calcs. 8−17888
two level atom, with freq. chirping, pulse shape depend. 8−17886
two-level system, adiabatic rapid passage, narrow IR saturation resons., book contrib. 8−9419
vector model, inversion by near-resonant sequential optical pulses 8−42312
Al, laser-produced plasma, population inversion between Al^{11+} levels, X-ray lines obs. 8−38539
CO_2, gasdynamic laser, simplified model for cavity flow, population inversion calc. 8−46567

population inversion continued
Cu, atom, electron impact cross section, elastic and ^2P and ^2D states, inversion ratios 8−9256
GeO, population inversion of electronic levels by oxidation, visible emission 8−13697
H-like ions, Lyman α self absorption, effect in quantum 2 and 3 states in recombining plasmas 8−37605
H-like plasmas for short-wavelength lasers, population inversion 8−34277
HCl laser, using H_2-ClF chain reaction, CW, performance 8−46593
He, plasma, stationary recombining, population inversion inferred from intensity meas. 8−9836
He-Ne lasers levels, modulation spectroscopy 8−46572
I, chemical generation of population inversion between spin-orbit states 8−17767
Ne-like multicharged ions, vacuum UV lasing action 8−1213
OH/IR stars, OH main lines masers inversion 8−28664
Rb+Xe, interatomic spectrum, theoret. and exptl. obs. 8−9112
SnO, population inversion of electronic levels by oxidation, visible emission 8−13697

porosity
see also porous materials
borides, metallic, sintering, review, book contrib. 8−48359
ceramic, electrical conductivity, porosity effects, 20 to 1000°C *(Polish)* 8−6385
ceramic nuclear fuel, porosity characterization, optical and electron microscope exam. 8−44302
clay, highly plastic, compaction and lime stabilization effect on pore size distrib. *(Japanese)* 8−31365
coalescence of gas-filled pores *(Russian)* 8−18679
dislocation configuraiton form. on pore healing under press. *(Russian)* 8−10050
dislocation mechanism of pore growth and healing under load, barrier influence *(Russian)* 8−18634
electrolytic foils, porosity meas. by electrochemical reaction 8−3265
ferromagnetic resonance linewidth, effect of pores *(Russian)* 8−6581
film, microporosity induced by nucleation and growth processes, TEM expt. 8−10303
Floc density, porosity and void ratio in colloidal systems and aerosols 8−3383
granular medium, compressibility and force transmission, discrete probabilistic model 8−15448
graphite, neutron irrad., microporosity, elec. resist., length, struct. changes 8−43051
graphite, neutron irrad., porosity changes, neutron small angle scatt. investig. 8−34544
graphite, porosity effect on strength variation 8−31369
metal, porous, stresses in deform. region during cold rolling 8−11241
metal, work-hardening, plastic, sintered, porous, irreversible deform. 8−35459
metal parts, sintered, corrosion and protection 8−44278
nuclear fuel element, cylindrical analytical soln. to mass transport eqn. 8−21643
polycarbonate porous membrane, pore size effect on gas permeability *(Japanese)* 8−31699
pottery, pore struct. rel. to characterisation 8−351
powder, effect on thermal conductivity *(Japanese)* 8−6191
PVC, mech. comminution in fine struct. changes in porosity, density, specific surface area *(German)* 8−35345
random bed, porosity estimation based on Lichtenstein Liapunov expansion functional 8−14078
rocks, nature of porosity rel. to transport phenomena in hydrothermal systems 8−36205
sapphire, shaped single crystals, porosity, microstruct. 8−2125
sintered material, porosity effect on temp. generated during grinding 8−35530
steel, austenitic Kh18N9T, porous fibres, oriented struct., strength props. 8−3199
steel, powder, rotary forging, porosity and deform. 8−23646
Al alloys, laser surface melted, porosity form. 8−44279
Al coating, plasma sprayed on steel substrate, microstructural investigation and oxidation effects 8−11426
Al_2O_3 cutting tool, performance relationships, porosity determ. 8−11169
C fibres, PAN-based, surface characts., active surface area, microporosity 8−35536
C, micropore analysis 8−14570
C, micropore volumes from isotherm eqn. 8−14569
C-C composite material, syntactic-foam type properties 8−44169
$CaTiO_3$-TiO_2, ceramic, phys. props. 8−43784
Fe, sintered, metallographic meas. of pore size, effect on mech. props. 8−19685
Fe, sintered, plastic deform., porosity effects 8−23801
HFO_2, polycrystalline, monoclinic, elastic props. at room temp. 8−27548
$(Na,Li)NbO_3$ ceramic, optimum prep. conditions and characterisation 8−3079
Nb_2O_5, hydrated gel, prep. conditions on pore struct., adsorpt. meas. 8−3068
Ni, temp. effect on porosity of Ni irradiated with Ni ions 8−2173
Ni-Zn ferrites, comp., lattice imperfections, sintering 8−3080
Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
SiO_2 film, thermally grown, pore size influence of punch-through voltage 8−6632
SiO_2, vacuum deposited, 7-10 μ, microhardness and structure 8−19669
$SrTiO_3$, sintering kinetics rel. to added SrF_2, ZrO_2 8−44037
ThO_2 ceramics, CaO and Y_2O_3 stabilised density, elec. cond., permittivity 8−47838
TiB_2, electrode, hot pressed, erosion resistance, struct. and porosity effects 8−3228
TiO_2, sintered ceramic, props. rel. to additives, impurities 8−35329
UC, effect of porosity on fission-gas-induced swelling 8−8959
UO_2 nuclear fuel element, lenticular pore movement 8−21644
W, porous, variation of open and closed porosity during sintering 8−15342
W_2B_5, sintering rel. to prod. by boron carbide process 8−11184
WSe_2, lubricant, prep. by self-propagating high-temp. synthesis, technological characts. 8−35338

porosity continued
ZrO_2 coatings, prod. by low-temp. oxidation, props. 8−23856
ZrO_2-Y_2O_3, solid solns., density meas. rel. to O vacancy model 8−2113

porous materials
see also flow through porous media
acoustic absorption characteristics *(Spanish)* 8−14405
anodic films on Al, nucleation and growth 8−44273
artificial kidney microporous membrane plasma filtration efficiency 8−48926
borosilicate glass, porous, surface area change with acid treatment, adsorption of N_2 and H_2O *(Japanese)* 8−44244
brittle porous materials, critical stress and crack size evaluation *(Russian)* 8−35494
bronze powders preparation by electrodeposition, porous components fabrication appl. 8−20026
ceramics, eval. of frost resistance by holography *(Japanese)* 8−19987
ceramics, frost resistance under 1-d cooling, pore size distrib. effect *(Japanese)* 8−44069
circular viscoelastic porous shell, dispersion of longitudinal waves *(Russian)* 8−42556
colloidal capillary-porous body, mass transfer parameters, adsorpt., osmotic moisture 8−11563
controlled pore glass, pore struct., determ. by electron microscopy and Hg penetration 8−43165
creep at high-temp. and after-effect *(Russian)* 8−39835
die filling and densification in hot extrusion forging of porous preforms 8−23645
elastic media, boundary-layer analysis of propagating mode II cracks 8−5696
fibre, permeable, quantitative charact. of porous struct. 8−19683
glass applications, review 8−3306
glass bead sintered pellets, pore struct. and diffusibility *(Japanese)* 8−14509
glass porous, struct. and texture rel. to heat treatment effects *(German)* 8−44140
hydrophilic uniform branched porous media, capillary equilib., with correl., anal. 8−18877
hydrostatic loading and unloading relation for porous materials with various fluid contents 8−28222
marine sediments, nature and reactions of dissolved organic matter in interstitial waters 8−49039
metal, plastic, work hardening, sintered, porous, irreversible deform. 8−19849
metal, shock speed meas., continuous recording 8−5708
metal, stresses in deform. region during cold rolling 8−11241
metal, thermal conductivity meas. 8−18150
metal fibre materials, thermal and elec. conductivities 8−10419
micropore filters, preparation by bombarding lavsan film with Ar ions 8−3305
moist porous solid, thermal cond., struct. model and computation method 8−2312
moisture transfer due to small temp. gradients in unsaturated porous media *(French)* 8−150
multi-layer soils, state vector approach to one dimens. consolidation 8−3757
Ni-Cr alloy Kh20N80, sintered sheet material, stopping power and pore size relationship 8−19693
Nichrome wire, porous, strength charact. 8−6997
Nucleopore membrane, pore struct., determ. by electron microscopy and Hg penetration 8−43165
polyethylene implant-bone composite interfacial strength, porous high density polyethylene 8−31979
reaction with mixed gases 8−44404
sintering, role of gas in healing of isolated pore by volume vacancy diffusion 8−15330
soil, pore water characts., modelling, similarity hypothesis 8−11941
spherical wave reflection at fluid plane interface with porous medium 8−42484
steel, stainless, sintered sheet material, stopping power and pore size relationship 8−19693
Volume changes experienced by porous solids during nonisothermal liquid-phase sintering and self-propagating high-temperature synthesis 8−15328
Vycor glass, positronium-surface interaction in pores 8−27347
Al_2O_3, porous, anodic, growth, physical model 8−48662
Al_2O_3, porous, anodic, growth, ionic cond. 8−48663
α-Al_2O_3, sintered or hot-pressed, porosity effect on positron mean lifetime 8−27463
C molecular sieve prep. by pore blocking 8−15324
KCl film, porous, injection mechanism for transmission secondary electron emission 8−19643
Mg, heating by shock compression, vap. form. *(Russian)* 8−2195
MgO, polycrystalline, grain growth and grain boundary migration, pore effects *(Japanese)* 8−19701
Ni coating, electron beam evaporated, ductility and struct. 8−11439
Ni, electrolytic and carbonyl grades, sintered sheet material, stopping power and pore size relationship 8−19693
Ti, sintered sheet material, stopping power and pore size relationship 8−19693
W, porous, variation of open and closed porosity during sintering 8−15342
Y ferrite-garnet, porous polycrystal, law of approach to saturation *(Russian)* 8−47956

porous media *see porous materials*

porphyrins *see organic compounds*

Portevin-Le Chatelier effect *see serrated yielding*

posistors
No entries

position control
see also attitude control
32.5 cm IR airborne telescope, pointing system 8−28523
mass spectrometer solid specimens, movement in vacuum chamber by small-scale device 8−315
Michelson interferometer, active noise compensation *(Russian)* 8−12751
microscope, single line CCD camera 8−41347
mirror positioning in Michelson interferometer by means of capacitor probes 8−21119

position control continued
neutron spectrometer, angular-displacement precision control with fast error-signal transducer 8−186
optical ultramicrometer technique using composite diffr. grating 8−4589
photogrammetric automaton 'Zenit' positioning, electromechanical system *(Russian)* 8−21101
photogrammetric system 'Zenit', read-out procedures design, for images with convex boundaries *(Russian)* 8−21105
SEM multisample stage, viewing via rotary control 8−4738
single crystal surfaces, goniometer control for precise grinding and electropolishing 8−4604
Soviet 6 metre reflecting telescope, position control via computer *(Norwegian)* 8−36456
target position checking by light beam using automatic two-coord. system 8−5564
Tokamak power reactor, position control and sensor requirements 8−5035

position finding *see navigation*

position measurement
see also astrometry
acoustic source passive location with symmetric line array, variance bounds 8−9480
acoustic systems for drill ship positioning 8−45057
attitude determ. of uncontrolled satellite, correlated meas. error effect 8−16262
bearing estimation bias resulting from source motion 8−29084
EM micrometers, noncontacting position transducer dynamic characts. 8−41277
equatorial coordinates derivation from astronomical photographs, Palomar Sky Survey appl. 8−32324
luminous pointlike object, three-dimensional trajectory recording 8−12671
magnetoacoustic rod position monitoring transducer system for nuclear power plant 8−33262
nanosecond hydrodynamic diagnostics, streaking camera, fibre optic probes 8−37096
ocean mining, position location system 8−45046
plasma column, position detector using segmented photodiode 8−1901
PWR, digital rod position indicator system for control rod drive line dynamic characts. study 8−33265

position sensitive particle detectors
applications in high-energy physics and other fields 8−9035
avalanche counter, fast, parallel-plate, bidimensional, position sensitive 8−37487
binary encoded position-sensitive scintillation hodoscope with reduced photomultiplier, pion detection 8−17506
Buechner magnet/PSD system, mass spectrom. of unslowed fission products, feasibility 8−29702
charged particle detector system for high rate expts., drift-proportional chambers, operating parameters 8−33379
computed tomographic reconstruction noise, effect on detectability 8−40296
curved crystal X-ray spectrometer, for HEAO-B satellite 8−49331
cylindrical drift chambers with delay line readout, resolution 8−33380
directional drift chambers system, design, construction, testing 8−33378
drift chamber performance in supercond. mag. field, electron drift angle meas. 8−37485
drift chamber system for BNL mag. spectrometer expt., design constraints, readout electronics 8−33382
drift chambers, Ar-ethylene mixtures investigation 8−25391
drift chambers, second coord. readout by charge division, optimised preamplifier system 8−33381
heavy ion detection system, drift chamber with parallel plate avalanche counter 8−29709
high resolution imaging X-ray detector, for astronomical meas. 8−49333
multiwire proportional chamber, small design, construct., performance, electronics 8−17507
multiwire proportional counter for microdosimetric studies 8−20286
MWPC, γ-image blurring reduction by delay line readout 8−37492
MWPC, external muon identifiers at CERN 8−37488
MWPC, fast delay line readout 8−37490
MWPC, high accuracy chambers, progress 8−33391
MWPC, high-flux fast readout system based on new monolithic integrated ccts. 8−37491
MWPC, missing data reconstruction in principal component anal. 8−17537
MWPC, pressurised, for neutron imaging, gas density, cathode biasing, effects on resolution 8−37518
MWPC in big mag. spectrom. as counter hodoscope for fast majority discrimination 8−33392
MWPC readout system 8−17505
neutron detector using (n,γ) on ^{157}Gd, ^{177}Hf foils, proportional chamber detection of conversion electrons 8−37517
parallel plate avalanche counters, simple accurate method for bidimens. position readout 8−21822
parallel plate avalanche detector for fission fragments 8−29710
planar positron cameras, 3-D reconstruction using Fourier deconvolution of generalised tomograms 8−40295
positron camera proportional chamber, Fourier deconvolution technique 8−40297
positron emission transverse tomograph, PETT IV 8−40299
proportional chamber, positive charge centroid direct meas., avalanche mechanism clarification 8−37486
proportional counter, for thermal and epithermal neutrons 8−25390
proportional delay line chambers for Fermilab external muon identifiers 8−37489
small angle neutron scatt. with azimuthal symmetry 8−46212
spark chamber, plasma memory and read-out *(French)* 8−46223
superconducting mag. spectrom. for cosmic ray flux meas. 8−25383
time-resolved X-ray diffraction counter and data acquisition system 8−45758
X- and γ-ray detectors and read out systems *(Japanese)* 8−33397
X-ray detector, position sensitive, inductance-capacitance line encoding 8−12800
Ar/Fe liquid hadron calorimeter 8−37503

position sensitive particle detectors continued
Ge camera, 2-detector, 512 element high purity prototype 8−40301
Ge, Compton scatter, spatial spread meas., imaging with position-sensitive detectors 8−46214

positioning *see position control*

positive column
see also glow discharges
axial electric field, in transverse mag. field 8−18472
axial electric field of column in transverse mag. field 8−30506
constriction in cryogenic discharge, ambipolar wall diffusion 8−18468
density oscillations due to negative ions, metastable atom model 8−1799
instability, of ionic component, amplification factor, dispersion eqn. 8−14232
ionisation waves excitation, in low-temperature plasma 8−1832
ionisation waves in axial mag. field, crit. current 8−42848
plasma parameter in transverse mag. field 8−9880
Ar, dissoc. recombination coeffs. 8−26367
He, gas discharge flow, contracted strata rel. to turbulence 8−1923
He, positive column, with diffusion loss to wall, axial elec. field effects *(Japanese)* 8−47196
He-Zn laser, negative glow and positive column discharges comparison 8−1217
Hg positive column, high press., excimer densities and destruction mechanisms 8−5967
N_2, ionic comp., mass spectra meas. *(Russian)* 8−22571
N_2-Ne, positive column, electron vel. distrib. function *(German)* 8−1885
Na-Ne-Ar discharge low-press., instability 8−9868
Ne, electron temp. depend. on transverse mag. field 8−1932
Ne, luminesc. discharge, loss mechanisms *(French)* 8−9877
Ne, positive column, with diffusion loss to wall, axial elec. field effects *(Japanese)* 8−47196
Ne, radial distrib. of excited atoms *(French)* 8−14237

positive feedback *see feedback*

positive ray sources *see ion sources*

positive rays *see ion beams*

positive temperature coefficient thermistors *see thermistors*

positons *see positrons*

positron annihilation *see electron positron interactions*

positron annihilation in liquids and solids
aliphatic unsaturated normal hydrocarbons, positron annihilation time spectra, polarisability depend. 8−6806
alkali halide, coloured crystal, possibility of Auger effect as result of positron capture 8−14381
alkali halides, Doppler broadening meas. of positron annihilation 8−26806
alloy, Fermi surface meas. using high resolution high intensity apparatus 8−23008
alloys, simple, positron annihilation and charge transfer 8−31274
benzene molecules, bound positrons, time spectrum of positron annihilation 8−42248
bulk lifetime, temp. depend. 8−47337
cyclodextrin, α and β, positronium decay, test of freq. vol. model 8−19592
n-eicosane-n-docosane mixtures, lifetime spectra obtained as function of temp. for various solid mixtures 8−18768
elastomers, vulcanised, positron annihilation and positronium destruction 8−35221
ionic crystal, positron annihilation decay kinetics *(Russian)* 8−6805
ionic crystals, positron annihilation review *(Hungarian)* 8−27350
ionic crystals with defects, separation of positron and positronium states 8−27351
lifetime calculations, approx. method for positrons trapped by lattice defects 8−48253
metal, BCC, high temp. positron annihilation 8−47421
metal, formation of positronium in 'metallic' pores 8−35222
metal, NDT appl. 8−3293
metal, NDT appl. 8−3294
metal, positron density distribution, temp. effects 8−47739
metal, positron lifetime spectra, anal. errors 8−19591
metal, positron self-trapping conditions 8−47338
metal, positron-phonon scatt. effect on positron trapping at monovacancies 8−26829
metals, electronic structure, positron annihilation studies *(Japanese)* 8−18951
metals, positron trapping at dislocations 8−10091
metals, vacancy form. vol. from positron annihilation meas. 8−47339
momentum density measurements, multicounter two-dimensional angular correlation of annihilation radiation apparatus 8−10331
nitrobenzene molecules, bound positrons, time spectrum of positron annihilation 8−42248
organic liquid mixtures, positronium form., spur process 8−1113
Rochelle salt, positron lifetime meas. during phase transitions 8−6644
steel, Cr-Ni, martensite defect identification by positron annihilation 8−39867
p-terphenyl:anthracene, impurity effects on positron lifetime spectrum 8−43954
p-terphenyl, cyclic hydrocarbon admixtures, positronium lifetimes meas. 8−19595
TGS, ferroelec., positron lifetime meas. during phase transitions 8−6644
TGS, positron annihilation and ferroelectric transition 8−19594
Vycor glass, positronium-surface interaction in pores 8−27347
Ag, electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8−34542
Ag, positron trapping by vacancies using ^{19}Ne source 8−47341
AgBr crystals, positron lifetime *(German)* 8−19593
Al, annealed and neutron irrad., exam. of positron lifetimes in voids and other defects 8−47426
Al, CC vacancy, electron and positron densities and temp. depend. of positron lifetime 8−19001
Al, electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8−34542
Al, gamma-ray impact, absolute pair production cross-section meas. 8−43958
Al, positron trapping, defect specific temp. depend. 8−47336
Al, quenched, positron annihilation study, vacancy clustering 8−27348
Al, vacancy form. energy from positron annihilation meas. 8−47340

positron annihilation in liquids and solids continued
Al, vacancy form. enthalpy, simultaneous positron lifetime and momentum meas. 8-47335
$Al_xGa_{1-x}As$:Si, charge state of impurity atoms, positron annihilation meas. 8-39062
AlH_3, covalent nature of chem. binding, positron annihilation obs. 8-18581
α-Al_2O_3, sintered or hot-pressed, porosity effect on positron mean lifetime 8-27463
Au, positron annihilation, 4.2-500K, Doppler broadening meas. 8-43957
BN, dislocation struct., single crystals, positron annihilation study 8-11016
$BaTiO_3$:Gd, positron lifetime spectra meas. 8-43956
BeH_2, ionic nature of chem. binding, positron annihilation obs. 8-18581
Cd, positron annihilation, 4.2-500K, Doppler broadening meas. 8-43957
Cd, positron lifetime, investigation of temp. effect 8-2940
Cr, band struct. and Fermi surface, angular correl. of positron annihilation radiation 8-6260
Cu alloys, liq. and solid, positron trapping 8-48255
Cu, electron irrad., positron lifetime exam. of annealing recovery 8-47354
Cu, gamma-ray impact, absolute pair production cross-section meas. 8-43958
Cu, plastically deformed, positron trapping rate temp. depend. 8-31276
Cu, positron lifetime, Doppler broadening of annihilation spectrum, temp. effect 8-2941
Cu, positron trapping, defect specific temp. depend. 8-47336
Cu, positron trapping by vacancies using ^{19}Ne source 8-47341
Cu, source effects 8-31272
Cu, umklapp annihilation of positrons, rot.-specimen method 8-2410
α-Cu-Ge, Fermi surface, high resolution positron annihilation study 8-6261
Cu-Ge (2 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8-35220
Cu-Mn, positrons as probe of phase transforms. 8-31401
Fe, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8-27349
Fe, gamma-ray impact, absolute pair production cross-section meas. 8-43958
α-Fe, laser irrad., Mossbauer effect and positron annihilation *(Russian)* 8-19390
Fe, spin dependent momentum distrib., APW calc. 8-2416
Fe vacancy form. by positron annihilation in thermal equilibrium 8-10041
GaAs:Si, charge state of impurity atoms, positron annihilation meas. 8-39062
Ge, electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8-34542
Ge, neutron irradiated, capture of positrons by radiation defects 8-38756
Hg-In, liq., positron annihilation meas. 8-43955
Hg-In alloys, liq., positron studies, trapping at solute-vacancy complexes 8-31271
Hg-Tl, liq., positron annihilation meas. 8-43955
In, positron annihilation, 4.2-500K, Doppler broadening meas. 8-43957
In, vacancy form. vol. 8-15245
KBr, single cryst., positron lifetimes, temp. depend. 8-48254
KCl, and KCl-AgCl, surface positron and positronium states, positron annihilation expts. *(Russian)* 8-39623
KH_2PO_4, ferroelec., positron lifetime meas. during phase transitions 8-6644
Li-Mg, positron annihilation and charge transfer 8-31274
α-$LiIO_3$, angular correlation curves of annihilation photons 8-19597
Li_2O-SiO_2 glass, crystn. and phase separation, positron lifetime and annihilation lineshape meas. 8-23550
Mo, band struct. and Fermi surface angular correl. of positron annihilation radiation 8-6260
$NH_4H_2PO_4$, antiferroelec., positron lifetime meas. during phase transitions 8-6644
NaCl, γ-irrad., C-centres, position ang. correl. obs. 8-22712
Nb, electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8-34542
Ni, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8-27349
Ni, positron capture by dislocations, vacancies, rel. to temp. *(German)* 8-30606
Ni, positron trapping, defect specific temp. depend. 8-47336
Ni, positron trapping by vacancies using ^{19}Ne source 8-47341
Ni, transformed into hydride and decomposed, dislocation density and dislocation profile depth, positron annihilation and X-ray estimation 8-38711
Ni-Ge (2 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8-35220
Pb, gamma-ray impact, absolute pair production cross-section meas. 8-43958
Pb, plastically deformed, annealed, positron trapping rate, 4-100K 8-31275
Re-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8-35220
Si, electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8-34542
Si, electron-irradiated, positron annihilation 8-48256
Si, mobility of positrons, drift vel. meas. 8-6808
Si:P, ion implantation doped, positron annihilation meas. 8-14380
Sn, gamma-ray impact, absolute pair production cross-section meas. 8-43958
Ta-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8-35220
Ti, deform. and H_2 inclusion effect on annihilation γ-ray ang. correl. curve shape 8-31273
TiC, calcs. of 2γ-ang. correlations and Compton profiles 8-39624
$TiH_x(D_x)$, comp. effects *(Russian)* 8-6807
TiO_3, semicond.-metal transition, positron annihilation study 8-15246
V, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8-27349

positron annihilation in liquids and solids continued
V, electronic density of states, effective mass, electron-phonon interaction, Coulomb pseudopot. *(Russian)* 8-26804
V_3Si, press. depend. of positron lifetimes 8-11015
V_3Si, quasi-one-dimens. band struct. 8-19596
W-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8-35220
Zn, positron annihilation, 4.2-500K, Doppler broadening meas. 8-43957

positron states
benzene molecules, bound positrons, time spectrum of positron annihilation 8-42248
ionic crystals with defects, separation of positron and positronium states 8-27351
metal, positron density distribution, temp. effects 8-47739
metal, positron self-trapping conditions 8-47338
metal, positron-phonon scatt. effect on positron trapping at monovacancies 8-26829
nitrobenzene molecules, bound positrons, time spectrum of positron annihilation 8-42248
Al, CC vacancy, electron and positron densities and temp. depend. of positron lifetime 8-19001
$Al_xGa_{1-x}As$:Si, charge state of impurity atoms, positron annihilation meas. 8-39062
GaAs:Si, charge state of impurity atoms, positron annihilation meas. 8-39062
KCl, and KCl-AgCl, surface positron and positronium states, positron annihilation expts. *(Russian)* 8-39623
Pb, plastically deformed, annealed, positron trapping rate, 4-100K 8-31275

positronium
see also electron pairs
bound-state solutions in relativistic two-body formalism 8-13443
chemistry, inhibition in aq. solns. 8-40070
cyclodextrin, α and β, positronium decay, test of freq. vol. model 8-19592
elastomers, vulcanised, positron annihilation and positronium destruction 8-35221
formation, by positron scatt. from Ne, (Ar) atoms 8-9283
formation, quenching and inhibition in Ag and Cd salt solns. 8-15690
formation in organic liq. mixtures, spur process 8-1113
formation in polar liquids, unsolvated electron effects 8-17826
hyperfine interval, α^2 corrections, three-photon virtual annihilation contrib., QED calc. 8-41451
hyperfine quadratic shift in electric field, pressure dependence 8-13442
ionic crystals, anomalous props. of positronium atom, exciton state 8-2433
ionic crystals with defects, separation of positron and positronium states 8-27351
lifetimes in He-SiO_2(MgO) mixtures 8-42247
metal, formation of positronium in 'metallic' pores 8-35222
methane, gas density fluctuations, orthopositronium annihilation rate depend. 8-37773
orthopositronium, decay rate, prod. by slow positrons 8-42249
orthopositronium, vacuum decay rate 8-46468
orthopositronium annihilation, photon ang. correl. *(Russian)* 8-22059
semiconductor, anomalous props. of positronium atom, exciton state 8-2433
p-terphenyl, cyclic hydrocarbon admixtures, positronium lifetimes meas. 8-19595
Vycor glass, positronium-surface interaction in pores 8-27347
$Al_xGa_{1-x}As$:Si, charge state of impurity atoms, positron annihilation meas. 8-39062
Ar, positron scatt., positronium form. cross-section calcs. 8-9283
GaAs:Si, charge state of impurity atoms, positron annihilation meas. 8-39062
KCl, and KCl-AgCl, surface positron and positronium states, positron annihilation expts. *(Russian)* 8-39623
Ne, positron scatt., positronium form. cross-section calcs. 8-9283
Si, electron-irradiated, positron annihilation 8-48256

positrons
see also electron pairs; electrons
imaging instrumentation for physiological functions 8-24196
lifetime spectra, anal. using DBLCON version of POSITRONFIT with nonGaussian prompt 8-33359
total collision cross sections, for electron- or positron-atom scatt. in curved axial mag. field, transmission meas. 8-1082

potassium
see also nuclei with ......
adsorbed layers on W (112) planes, flicker noise field emission obs. 8-26774
adsorbed on W(112) planes, temp. depend. of noise spectral density functions 8-2992
adsorption on Mo (100) and oxidised Ta (112), effect on emission props. and work function 8-11060
adsorption on W, field emission flicker noise, coverage depend. 8-35262
anharmonic lattice dynamics 8-18720
atom, 1st reson. level, effective electron-ionis. cross sections, plasma discharge method 8-13603
atom, electron excitation cross sections for six autoion. config., Born approx. calc. 8-25713
atom, electron impact excitation cross sections, Vainshtein approx. 8-25721
atom, electron impact excitation velocity consts. for reson. levels, meas. *(Russian)* 8-1086
atom, electron impact reson. transition excitation, unitarised distorted-wave polarised-orbit model 8-25710
atom, inner core neutral binding energies, relaxed orbital relativistic Hartree-Fock-Slater calc. 8-13433
atomic spectra, 5^2P to 4^2S resonance line, rare gas perturbations, constant calcs. 8-9126
boiling, expt. study of outflow from accelerating two-phase nozzle 8-1721
brain K^+ dynamics during cerebral angiography, rel. to contrast agent neurotoxicity 8-35954
cyclotron wave excitation, surface electron scatt. effects 8-6429
drop, in He atmosphere, diffusional evap. in EM radiation field 8-43112

potassium continued
Earth core, K content rel. to heat source and thermal model 8-15982
Fermi surface pressure dependence meas. by de Haas-van Alphen effect 8-26807
field desorption from W (001), (011) and (112) planes 8-34715
field emission from individual planes of single crysts. on W tips 8-27385
fixation effect on physicochemical and engineering props., of montmorillonite *(Japanese)* 8-31366
Gruneisen parameter temp. var. for BCC struct. 8-6137
high-field Righi-Leduc effect lattice thermal cond. 8-34825
ileum epithelial cells and intercellular spaces, microprobe meas. of Na, K and Cl conc. profiles, rabbit 8-35819
intercalated in graphite, electronic band struct. calc. 8-6255
intercalation-desorpt. cycle with partially graphitised C, stacking faults investig. 8-47396
in interstellar grains, isotopic anomalies 8-28761
interstellar K I, 4044 Å line obs. 8-24533
interstellar K I, quadratic depend. of column density on N_h 8-20872
ion implantation in Fe, perturbed ang. distrib. 8-12969
ionic exchange selectivity in PMMA gels 8-35719
lattice sp. ht. and thermal vibrs. 8-30768
liquid, isothermal compressibility calc. at 400 to 1800K from density data 8-2186
liquid, T_c, P_c, V_c, from eqn. of state 8-2228
Matthiessen's rule, low temp. deviations 8-14724
mesosphere Na and K abundances, simultaneous nighttime lidar meas. 8-36239
methyl iodide+K(Rb), reaction cross sections 8-40043
model pseudopotential, form factors, binding energy and compressibility calcs. 8-26486
phonon dispersion, modified de Launay model 8-34573
phonon dispersion curve crossing in (ξ00) direction 8-38795
phonon spectrum calc., microscopic theory of force constants 8-26647
plastic deformation 8-30693
selective and counter transport through polyvinylbutyrolactonecoacrylonitrile membrane *(Japanese)* 8-31700
solubility in Fe-S liq., silicate-K-(Fe-S liq.) equilibria and planetary implications 8-11843
surface layer on W, stimulated ionisation by superthermal Na, Cs beams, energy depend 8-31292
thermal magnetoresistance, high-field, 2.5 to 8K 8-23072
thermodynamic props. at high press. *(Russian)* 8-47536
$AgCl:K^+$, impurity effect on plasticity 8-14398
$Cl+K_2 \rightarrow KCl+K^*$, chemiluminesc., electronic emission intensity 8-35689
K I, lifetime meas. of lowest ^2D-states, elec. quadrupole excitation 8-42004
K I isoelectronic series, transition probabilities, oscill. strengths, lifetimes, branching ratios 8-33470
K^-, multichannel photodetachment 8-42027
K^-, photodetachment cross-sections and multipole polarisabilities, extended asymptotic model 8-42028
K-NaCl adhesion 8-18914
K-Rb arc lamp development for space laser communications 8-46646
$K+Br_2$, inelastic scatt., total cross-sections, trajectory surface hopping calcs. 8-46420
$K+Br_2$, nonreactive differential scatt., 0-10 eV, scatt. angle 8-42156
$K+CF_3I \rightarrow KI+CF_3$, products translational distrib., crossed beam reaction 8-31629
$K+CH_3I \rightarrow KI+CH_3$, products translational distrib., crossed beam reaction 8-31629
$K+Cl \rightleftharpoons K^++Cl^-$, chemi-ionis. and recomb. cross sections 8-33583
$K+D_2O \rightarrow OD^-+K^++D$, 100-200 eV, $D_2O^-(^2A_1)$, state 8-17770
$K+H_2O(D_2O)$, ionising collisions in crossed-beam systems 8-48641
$K+He^+$, single-electron capture cross-sections 8-37737
$K+He(2^3S_1)$, Penning ionis. in stationary afterglow 8-42184
$K+I_2(IBr)(Br_2)(ICl)(Cl_2)$, ion-pair form., bond stretching effect on cross sections 8-1064
$K+Mf^+$, charge exchange and excitation processes 8-17772
$K+N_2(H_2)(O_2)$, excited atom quenching, semi-empirical model 8-1065
$K+NH_3$, rot. inelastic, time-of-flight spectra 8-5325
K+NaCl(NaD), prior statistical distribs., collinear reactions 8-35670
K^++Na, differential scatt. cross section, electronic excitation via. rot. coupling in NaK^+ 8-13579
K_2, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8-21985
K_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8-13617
K_2, optically pumped, relax. in at. collisions 8-17765
$K_2{}^+$, core-core interaction potential calc. 8-25645
$K_2{}^+$, Simons-type pseudopots. calcs. 8-5120
$K_2+Li_2(Na_2) \rightarrow 2KLi(2KNa)$, equilib. const., enthalpy change 8-25750
K_2CrO_4, domain structure, ferroelastic 8-18702
^{40}K, decay consts. for use in geochronology and cosmochronology 8-28189
$^{40}K/^{41}K$ in deep-sea sediments magnetic spherules, poss. meteorite origin 8-11874
^{41}K in Allende meteorite, search for anomaly prod. by proton-associated alpha-irradiation 8-49398
Li^++K, differential scatt. cross section, electronic excitation via. rot. coupling in LiK^+ 8-13579
Na^+/K^+ intracellular ratio, rel. to protein synthesis control and cataract form. 8-11646
Na^++K, differential scatt. cross section, electronic excitation via. rot. coupling in NaK^+ 8-13579
Si:K, ion implanted, influence of doping and annealing on carriers 8-38742
ZnTe:K, fluorescence spectra meas. 8-10949

potassium alloys
Fe-K, dil., mag. hyperfine field, TDPAC meas. 8-43699
K-Cs alloys, elec. resist., minima for K_2Cs, K_7Cs_6 concs. *(German)* 8-14708
K-Rb, dil., calc. of press. depend. of low-temp. transport props. 8-30905
K-Rb, liq., elec. resistivity, temp. depend. 8-39084
K-Rb(Na), dil., anisotropy of electron-impurity scatt. in K, de Haas-van Alphen effect meas. 8-18943
K-Rb(Na), dil., anisotropic scatt. of conduction electrons by impurities 8-18944

potassium alloys continued
KLi, appearance pot., dissoc. energy, ionis. pot., mass spectra obs. 8-25750
Na-K, liq., dynamical struct. factor calc. 8-22634
Na-K alloys, liq., thermal conductivity, NaK_2 formation 8-10416
Na-K liquid alloy, self and mutual diffusion coeff. 8-22877
Na-K-Cs alloys, liquid contact material, phase diagram calcs. 8-6145
Na_xK_{1-x}, solid-liquid transition 8-6144
Rb-K alloys, localised phonon modes, classical mol. dynamics compuer simulation 8-10147
$Rb_{1-c}K_c$, phonon spectra, single site CPA 8-10142

potassium compounds
see also potassium alloys; Rochelle salt
alkanoates, phase relationships and thermal behaviour branching effects 8-43111
Auger spectra, shake-up satellites 8-27369
dipotassium tartrate single crystal, SHG 8-13757
feldspar, pulsed RF radiation produced by scratching *(Russian)* 8-19607
fluorides, $KM^{II}M^{III}F_6$, (M=1st row transition metal, Zn, or Mg), divalent and trivalent ion distribs., Mossbauer obs. 8-2777
graphite intercalation compound, polarised refl. spectra 8-31213
graphite-K inclusion compounds, paramagnetism after treatment by π or n donors *(French)* 8-10749
intercalated donor cpds. of graphite, Raman scatt. 8-10890
intercalation compound with graphite, resistivity anomalies and phase transform. 8-26839
$KCl-BaCl_2$ system, solid solns., phase diagram, enthalpy of soln., vibr. entropy. 8-39751
$KZnF_3:Er$ excitation of 650 GHz phonons in spin-lattice relax. 8-27089
potassium bis(oxalato)beryllate, cryst. struct. *(French)* 8-34499
rare earth potassium molybdates, flux growth of $RKMo_2O_8$, R_2MoO_6 and R_6MnO_{12} in $R_2O_3-K_2O-MoO_3$ system 8-35289
TCNQ salt, K-TCNQ, cryst. struct. *(French)* 8-43006
TCNQ salt, K-TCNQ, energy gap, electron-phonon interaction, IR spectrum 8-15167
ternary chlorides, $ABCl_3$ type, optical props. 8-35111
$\beta-Al_2O_3-K_2O$, sp. ht., 0.1-1 K, evidence for localised low-energy excitations 8-34632
$B_2O_3-K_2O$, thermal cond. of melt in region 900 to 1100°C, effect of convection 8-2309
$BeF_2-KF-CaF_2-AlF_3:Nd^{3+}$ (Er^{3+}) glass, multiphonon relax., fluoresc. obs. 8-15219
C_xK intercalation compound with graphite, low temp. specific heat meas. and XPS 8-26693
$CaCl_2-KCl$, binary melt, viscosity *(Japanese)* 8-10209
$CdCl_2-KCl-H_2O$, water activity, 0 and 50°C, conc. depend. *(Russian)* 8-31679
CdF_2-KF, liquid mixture, enthalpy of mixing 8-48684
$CdK_4(P_3O_9)_2.2H_2O$, cryst. chemistry and cryst. struct. determ. *(French)* 8-26505
$CoCl_2-KCl-NaCl$ system, melting diagram investigation by thermographic anal. *(Russian)* 8-3111
$Hg_4PO_4NO_3.H_2O$, cryst. struct. *(French)* 8-42992
KAg_4I_5, ionic conductivity and heat capacity near T_c 8-47584
KAl_2Br_7, ^{81}Br NQR and ^{27}Al NMR 8-6597
$KAl(SO_4)_2.12H_2O$, occlusion formation during dendritic crystal growth, expt. 8-38993
$KAlSi_2O_6$, elec. cond. meas. 8-47787
$KAlSi_3O_8$, orthoclase, impact structs., peak shock press., X-ray diffr. investig., lunar rock bombard. appls. 8-7002
$KAlSi_3O_8-BaAl_2Si_2O_8$ hyalophane, natural and heat treated, cryst. struct. refinement 8-2072
$K_xAl_xTi_{8-x}O_{16}$, ionic cond., rel. to struct. and chemical bonding *(French)* 8-18824
$KAsO_3-K_3AsO_4$, phase diag. 8-23681
KB_6, prep., cryst. struct., thermal stability, phys. and chem. props., book contrib. 8-47304
$KB_5O_8(D_xH_{1-x})_2O$, isotope exchange during crystallisation from aqueous solns. 8-18569
$KBO_2.4/3H_2O$, unusual hydrogen bonding 8-2058
$K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8-2901
KBr, aq. solns. hypersonic sound vel. and absorpt. meas. 8-30699
KBr, cryst. growth physical vapour transport method for low dislocation density crysts. 8-43992
KBr, dislocation interaction with radiation-induced single halogen interstitials 8-34536
KBr, dislocation internal friction, orientation depend. 8-48439
KBr, elastic moduli, quadratic fit against temp. 8-14397
KBr, emission spectra of $O_2{}^-$ and $NO_2{}^-$ centres at high hydrostatic press. 8-10943
KBr, exposed to US waves, dislocation multiplication in original stage 8-47383
KBr, F-centre luminesc., MCD effects 8-39598
KBr film, oblique incidence transmission spectra for polarised extreme UV radiation 8-39614
KBr in contact with KCl, mutual diffusion, development of relief on contact surfaces 8-22964
KBr, liquid inelastic neutron scatt. obs. from short wavelength charge fluctuations 8-47487
KBr, M-centre, lifetime data for excited state 8-35193
KBr, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8-15238
KBr, $NO_3{}^-$ centre form. by γ-bombardment in air *(Russian)* 8-31668
KBr, orbital g-factor and spin-orbit splitting of F-centre excited state, magnetoabsorpt. and MCD 8-2886
KBr, plate, distortions due to 10.6 μm laser irrad., interferometric obs. 8-46697
KBr, shock adiabatic, nonparametric equation of state 8-10121
KBr, single cryst., positron lifetimes, temp. depend. 8-48254
KBr, surface lattice dynamics, Green function method 8-34693
KBr, thermolum. and reactions of freed interstitial and trapped hole centres 8-23538
KBr, triplet state lifetime of F_2 centre, mag. field effect 8-35177
KBr, vacuum UV absorption spectra, exciton splitting rel. to exchange interaction 8-23494
KBr, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8-10769

potassium compounds continued
KBr, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
KBr:$(CrO_4^{2-})(MoO_4^{2-})(MnO_4^-)(ReO_4^-)$, absorption spectra 8−10924
KBr:Ag, mag. field effect on luminesc. of paired Ag^- ions 8−27313
KBr:Ca, $F \rightarrow Z_1$ colour centre conversion, hologram recording appls. 8−17877
KBr:In, type A long-wave luminesc., polarisation obs. 8−10944
KBr:P, colour centre fine struct., ODMR 8−6604
KBr:SO_4^{2-}, $Ba^{2+}(Ca^{2+})$, IR absorpt. band parameters, temp. depend. *(Russian)* 8−31226
KBr:SO_4^{2-}, IR absorpt. spectra, cation impurity influence *(Russian)* 8−10901
KBr:Tl, emission spectra, press. effects 8−23509
KBr:Yb^{2+}, X-ray and intracentre luminesc. 8−6737
KBr(I), absolute cross sections of second order Raman scatt. 8−39548
KBr(I): $O^{2-}(S^{2-})(Se^{2-})(Te^{2-})$, low temperature photochemistry on chalcogen vacancy centres 8−18641
$KBrO_3$, near-forward Raman scatt. by polaritons 8−43842
KC_{24}-tetrahydrofuran, physical props. *(French)* 8−26692
KC_8, intercalation compounds, development as reagents in organic synthesis 8−27444
$KC_8H_{2/3}$, H_2 chemisorption *(French)* 8−27432
$KC_8H_{2/3}$, struct., X-ray anal. *(French)* 8−26538
KCN, elastic anomaly at 168K 8−27242
KCN, F-centres, optical props. 8−2892
KCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
KCN, lattice dynamics in disordered cubic phase 8−38794
KCN, liq., mol. dynamics computer simulation 8−38609
KCN, phase transition at 168K, neutron inelastic scatt. line shapes for phonons obs. 8−38840
KCN, phonon freq. distrib., cubic and monoclinic phases 8−22800
KCN-KCl mixed system, order-disorder transition, dielec. props. meas. 8−15112
KCN-KCl mixed system, order-disorder transition, Raman spectra obs. 8−15113
KCN_xKCl_{1-x}, phase transition and OCN^- vibr. spectrum 8−43093
K_2CO_3, molten, IR emission spectra *(Japanese)* 8−19469
$KCdF_3$:Mn^{2+}, evidence for F distortion, ligand ^{19}F ENDOR meas. 8−23369
$K_2Cd_2(SO_4)_3$, melt growth and ferroelastic transition, and K_2SO_4-$CdSO_4$ phase diagram 8−31335
$K_2Cd_2(SO_4)_3$, piezoelec. langbeinite-type, cryst. struct. and ferroelastic transform. 8−6036
$K_2Cd_2(SO_4)_3$, piezoelectric, cryst. struct., near ferroelastic transition 8−42984
$K_2CeSi_6O_{15}$, cryst. struct., X-ray diffr. meas. 8−18619
$K_2CeSi_6O_{15}$, synthesis and X-ray structural anal. 8−2096
KCl, (100) face, mol. dynamics computer simulation of surface props. 8−18880
KCl, absorpt. coeff. meas., using pulsed CO_2 laser, calorimetric method 8−18028
KCl, adsorbed on GaAS (110), adsorpt.-desorpt. processes and phase transitions 8−2361
KCl, and KCl-AgCl, surface positron and positronium states, positron annihilation expts. *(Russian)* 8−39623
KCl, aq. solns. hypersonic sound vel. and absorpt. meas. 8−30699
KCl, Ba^{2+} diffusion, light scatt. meas., dipole mechanism *(Russian)* 8−22900
KCl bicrystals, grain boundary migration kinetics, effect of solutes 8−43185
KCl, bulk and surface absorpt. of CO_2 laser radiation, calorimetric data analysis 8−25904
KCl, cation motion energy parameters, dielectric relax. meas. 8−30784
KCl, channelling of MeV H^+ and He^+, zero dose meas. 8−18689
KCl, cryst., colour centres, ionic cond., X-ray effects, thermoluminesc. *(Russian)* 8−6056
KCl, cryst., plasma prod. by laser impact, effect on surface 8−1866
KCl, cryst. growth, physical vapour transport method for low dislocation density crysts. 8−43992
KCl crystal, refr. index, 10.6 μm ellipsometric meas. 8−24847
KCl crystallites, nucleation, oriented growth on amorphous SiO_2 using square-wave surface relief grating 8−47672
KCl, dislocation internal friction, orientation depend. 8−48439
KCl, doped, elec. conductivity and optical absorpt., quenching from 750°C 8−2289
KCl, ENDOR line splitting by UHF field *(Russian)* 8−43678
KCl, elastic moduli, quadratic fit against temp. 8−14397
KCl, electron irrad., F-centre absorpt., ellipsometric obs. 8−23501
KCl, electron trapping by alkali ion impurities 8−47809
KCl, emission spectra of O_2^- and NO_2^- centres at high hydrostatic press. 8−10943
KCl, exposed to US waves, dislocation multiplication in original stage 8−47383
KCl, F centre pairs, ODMR, close and distant pairs 8−43691
KCl, F_3-centre quartet state, IR emission spectra 8−43930
KCl, F- and H-centre production by nonradiative decay of self-trapped exciton 8−23042
KCl, F-centre form. and dissociation under pulsed electron irrad. 8−18643
KCl, F-centre luminesc., MCD effects 8−39598
KCl, F-centre phonon many-mode interaction, absorption band shape 8−2883
KCl film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
KCl film, porous, injection mechanism for transmission secondary electron emission 8−19643
KCl, influence of elec. field on proton channelling 8−26614
KCl, laser produced shocks rel. to material damage 8−31285
KCl laser window, with chalcogenide glass two-layer low-absorpt. antirefl. coating 8−37927
KCl, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911
KCl, low temp. space charge polarisation 8−43789
KCl, luminesc. excitation spectra of F-aggregate centres, 400-900 nm. *(Russian)* 8−10980
KCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KCl, migration of brine inclusion, nonequilib. morphology 8−38882
KCl, molten, diffusion of Li^+ ion *(Japanese)* 8−14489
potassium compounds continued
KCl, molten, rot. ordered ion distrib., mol. dynamics simulation 8−22630
KCl molten salt, thermodynamic function, Brillouin spectroscopy, hypersonic vel. *(French)* 8−35161
KCl, NO_3^- centre form. by γ-bombardment in air *(Russian)* 8−31668
KCl, optical material, thermal expansion, 60-300K 8−33791
KCl, phonon scattering on small radius colloids 8−38798
KCl, photoelastic consts. at 10.6 μm, interferometric and polarimetric meas. 8−25934
KCl plate, distortions due to 10.6 μm laser irrad., interferometric obs. 8−46697
KCl, polarisability, near-Hartree-Fock limit SCF MO calc., bond length 8−42239
KCl, polymorphic transition press. at high temp., elec. resist. meas. 8−38837
KCl, press. induced low-temp. polymorphic transition, hysteresis 8−14467
KCl, pulsed RF radiation produced by scratching *(Russian)* 8−19607
KCl, pure and Pb^{2+}-doped, X-irrad., quenching effects on thermal glow curves 8−27333
KCl, soln., elec. cond., dielec. relax., kinetic characts. 8−34641
KCl solutions, weak electric field influence obs. for soln.-solid system *(Russian)* 8−11522
KCl surface, electron bombard., F-centre absorpt. investigated by use of lateral light waves 8−4707
KCl, surface lattice dynamics, Green function method 8−34693
KCl, temp. depend. of dislocation charge, piezoelec. defect technique 8−22733
KCl, thermal cond. under press. meas. 8−30802
KCl, thermal hysteresis in ionic cond., dielec. loss meas. 8−34652
KCl, thermodynamic activity in Dead Sea brine 8−31673
KCl, triplet state lifetime of F_2 centre, mag. field effect 8−35177
KCl, vacuum condensation of Au, spatial distribution of nuclei 8−18931
KCl, vacuum UV absorption spectra, exciton splitting rel. to exchange interaction 8−23494
KCl, water solution calorimeter, determination of energy equivalent 8−23961
KCl, with colour centres, laser stimulated luminesc. 8−6749
KCl, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769
KCl, X-irradiated, release of stored energy 8−38753
KCl, zone refined single crystal growth for high power CO_2 laser optics 8−22181
KCl:$(CrO_4^{2-})(MoO_4^{2-})(MnO_4^-)(ReO_4^-)$, vibronic absorption spectra 8−10924
KCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
KCl:Ag, hole capture radius, scintillation luminesc. obs. *(Russian)* 8−39582
KCl:Ag(Cu), strong IR luminescence obs. of Ag^0 centres 8−6736
KCl:Au, EPR and optical absorpt. 8−39397
KCl:CN^-, phonon-internal mode hybridisation, neutron scatt. 8−2217
KCl:Ca, $F \rightarrow Z_1$ colour centre conversion, hologram recording appls. 8−17877
KCl:Cu, additively-coloured crysts., for hologram recording plates *(Russian)* 8−29914
KCl:Eu, OH^-, EPR meas. on Eu^{2+} complex 8−10773
KCl:Eu crystallophosphores, aggregation of $Eu^{2+}v_c^-$ centres *(Russian)* 8−43909
KCl:K, F-centre coloured, for highly efficient holographic storage 8−37833
KCl:K^+ crystal, highly efficient phase holograms 8−33707
KCl:Li, ⟨111⟩ off centre Li^+ under biaxial stress, bistable tunnelling 8−15090
KCl:Li, additively coloured, luminesc. material for IR region *(Russian)* 8−15209
KCl:Li^+, off to on centre defect transitions under hydrostatic press. 8−15199
KCl:NH_4Cl, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
KCl:Na, photodichroic holographic recording, polarisation sensitivity 8−29911
KCl:Na^+, R-centre exam., uniaxial stress effects on zero-phonon lines 8−47371
KCl:OH, mag. field-independent capacitance thermometers 8−4623
KCl:OH^-, image effect in previously electrolytically coloured crystals 8−22714
KCl:P, colour centre fine struct., ODMR 8−6604
KCl:Pb, colouring, room temp., influence of conc. and aggregation state of Pb 8−14339
KCl:Pb^{2+}, decay of luminescence emission 8−39593
KCl:Pb^{2+}, γ-irrad., rel. to props. 8−31262
KCl:RbCl, $SrCl_2$, IR window material, cryst. growth and props. 8−31333
KCl:SO_4^{2-}, $Ba^{2+}(Ca^{2+})$, IR absorpt. band parameters, temp. depend. *(Russian)* 8−31226
KCl:Sn^{2+}, thermally stimulated space charge decay 8−48111
KCl:$SnCl_2$, action of ionising radiation on Sn aggregation processes 8−34543
KCl:Sr^{2+}, polarisation-plastic effect 8−2794
KCl:$SrCl_2$, H_{aa} annealing, X-ray irrad., H centre capture by IV dipoles 8−10927
KCl:Sr(Ca), thermoluminescence and colour centre thermal stability in irradiated sample 8−43941
KCl:Tl, 475 nm emission, attributed to Tl^+ dimer 8−39611
KCl:Tl, emission spectra, press. effects 8−23509
KCl:Tl and KCl, F-centre production by positive ions and X-rays 8−38760
KCl:Tl^+, absorpt. spectra, electrolytic coloration, migration in electric field, heat treatment 8−23504
KCl:V^{2+}, phonon induced zero field splitting 8−39073
KCl:Yb^{2+}, X-ray and intracentre luminesc. 8−6737
KCl-$BaTiO_3$, composite cryst., F-centres, thermoluminesc., DC field and X-irrad. effects 8−2926
KCl-KBr, solution hardening and softening at low temp. 8−31414
KCl-KBr conc. solid soln., edge dislocation motion in stress field *(Japanese)* 8−2138
KCl-KBr mixed crystal, piezo-optic birefringence 8−31169
KCl-KBr solid solution, yielding model on plateau stress 8−27568

potassium compounds continued
KCl-KBr:Mn mixed cryst. system for thermoluminescence dosimetry, glow curves, dose response 8–24150
KCl-LiCl:Cu^+, fused eutectic, diffusion and surface effects, chronopotentiometry *(French)* 8–11524
KCl-NaCl electrolyte mixtures, in aq. soln., viscosity, individual electrolyte effects *(German)* 8–22881
KCl(Br) substrate, epitaxial crystn. of isotactic polypropylene 8–26787
KCl(Br)(I), Czochralski growth, dynamical aspects, use of optical diameter controller 8–31332
KCl(Br)(I), electron beam excited, luminesc. and cond. of nonideal degenerate electron-hole plasma 8–10488
$KClO_3$-$CsClO_3$, NQR, mag. susceptibility meas. 8–35059
$KClO_4$ crystal growth and nucleation in SiO_2 gels 8–48299
$K_2Co(CN)_6$, quadrupolar spin-lattice relax. in solids 8–39429
$KCoF_3$, antiferromag., obs. of domains by X-ray topography 8–14981
$KCoF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8–43981
$K_2Co_3(SO_4)_2$, phase transitions, dielec. props. obs. 8–6643
$K_xCr(Mn)(Co)O_2$, layer struct., elec. cond. behaviour *(French)* 8–26542
$KCrO_2$, two-dimensional antiferromag., mag. props. *(French)* 8–23251
K_2CrO_4:SO_4^{2-}, IR absorpt. spectra, local symmetry of impurity ions *(Russian)* 8–2893
$K_2Cr_2O_7$, acidic soln., UV absorbance standard verification 8–21092
$K_2Cr_2O_7$ in perchloric acid soln., UV absorbance standards 8–32851
$K_2Cr_2O_7$, thermal props. thermal anal. and X-ray diffr. obs. 8–30752
$KCr(SO_4)_2.12H_2O$, spin lattice relaxation, in liquid He and in vacuum 8–39434
K_2CsSb, evaluation as photocathode material 8–11072
$K_2CuCl_4.2H_2O$, proton NMR *(Korean)* 8–19342
$KCuF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8–43981
K_2CuF_4, optical absorption spectra, correl. with g-shifts, reduced spin-orbit coeff. determ. 8–23485
$K(D_xH_{1-x})_2PO_4$, isotope exchange during crystallisation from aqueous solns. 8–18569
$K(D_xH_{1-x})_2PO_4$, monoclinic and tetragonal forms, existence in aq. soln. 8–47262
KD_2PO_4, central mode, spin lattice relaxation dispersion 8–15108
KD_2PO_4, cryst. high-freq. modulation in Pockels cell, acoustic phenomena 8–1336
KD_2PO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8–43118
KD_2PO_4, Nd:YAG laser radiation freq. doubling 8–46615
KD_2PO_4, soft ferroelec. mode anisotropy 8–14430
KD_2PO_4, transverse dynamics, short-range interaction effects 8–14408
KD_2PO_4, X-ray topography of single crysts. grown on KDP seeds 8–23594
KD_2PO4 transmission line Pockels cells, optical rise time meas. 8–46778
$KD_3(SeO_3)_2$, acoustic phonon softening and spontaneous strains 8–26652
$KD_3(SeO_3)_2$, deuteron mag. reson. in ordered and disordered phase 8–39414
$K_2Er(NO_3)_5$, cryst. struct. by X-ray diffr., cryst. binding 8–42988
KF, orbital g-factor and spin-orbit splitting of F-centre excited state, magnetoabsorpt. and MCD 8–2886
KF, surface lattice dynamics, Green function method 8–34693
KF, thermal positive ion emission from thick layers, effect of substrate metal 8–19627
KF-BeF_2-DyF_3, crystalline and vitreous phases of cross sections 8–44096
KF-BeF_2-DyF_3, phase diagrams, intensification region 8–44097
KF-PbO-SiO_2 glass shear wave velocity and its temp. depend. *(Japanese)* 8–30702
KF-YbF_3, KF-LuF_3, phase analysis 8–44101
KF+Eu^{2+}, cryst., hyperfine splitting, EPR 8–2733
$K_3Fe(CN)_6$, automated electrodic potentiometry of solns. 8–35736
$K_3Fe(CN)_6$, L_I and L_{II} X-ray emission spectra 8–39631
$K_3Fe(CN)_6$, paramag. relax., phonon bottleneck effects 8–23322
$K_4Fe(CN)_6.3H_2O$, Raman spectrum and dielec. relax. 8–19476
$KFeF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8–43981
K_2FeF_4, Raman scatt. in two dimens. antiferromagnet 8–19488
K_2FeF_5, crystal atomic struct., single crystal diffr. 8–10002
K_2FeF_5, one-dimens. antiferromag., single cryst. Mossbauer spectra 8–23376
$K(Fe_{1.5}Mg_{0.5}Si_4O_{10})(OH)_2$, cryst. struct. refinement 8–26545
$K_{10}(Fe_3O(SO_4)_6(H_2O)_3)_2.12H_2O$, mag. exchange interaction of trinucl. Fe^{3+} complex *(German)* 8–14947
β-$K_5Fe_3O(SO_4)_6.10H_2O$, monoclinic struct. *(German)* 8–34473
$KFeS_2$, quadrupolar hyperfine anisotropy, Mossbauer spectra meas. 8–19393
$KFeSi_2O_6$, elec. cond. meas. 8–47787
$KGd(WO_4)_2$:R^{3+}, stimulated emission 8–23496
KH_2AsO_4, and deuterated isomorph, ferroelectric mode and molecular vibr. press. depend. 8–19424
KH_2AsO_4, and KD_2AsO_4, IC spectra and phase transitions, under pressure 8–31180
KH_2AsO_4, dielec. props. and birefr., simultaneous obs. 8–15130
KH_2AsO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8–43118
KH_2AsO_4, KD_2AsO_4, slow dynamics from Cr^{5+} EPR 8–15126
KH_2AsO_4, pres. depend., LF dielec. response, ferroelec. props. 8–15120
KH_2AsO_4, soft shear mode, Brillouin scatt. obs. 8–15176
$KH_{2(1-x)}D_{2x}PO_4$, photoelasticity and electrooptic effects at forbidden deform. *(Russian)* 8–35117
KH_2PO_3, mechanically treated single crystal, depth and struct. of disturbed layer *(Russian)* 8–23839
KH_2PO_4, 1.06 μm stable conversion into fourth harmonic, using composite medium master oscillator 8–46724
KH_2PO_4, and isomorphs, dielec. props. and birefr., simultaneous obs. 8–15130
KH_2PO_4, and KD_2PO_4, IC spectra and phase transitions, under pressure 8–31180
KH_2PO_4 and $K(H_xD_{1-x})_2PO_4$, acoustooptical and photoelastic props. 8–27181
KH_2PO_4, central peak susceptibility and US propag. near T_c 8–15125

potassium compounds continued
KH_2PO_4, cryst. high-freq. modulation in Pockels cell, acoustic phenomena 8–1336
KH_2PO_4, damping of transverse acoustic and ferroelec. modes 8–14413
KH_2PO_4, depolarised light scatt., dynamic central peak 8–10858
KH_2PO_4, electro-optic props. near ferroelec. transition 8–19445
KH_2PO_4, ferroelec., positron lifetime meas. during phase transitions 8–6644
KH_2PO_4, ferroelectric phase transition exam. by spontaneous parametric light scatt. 8–19427
KH_2PO_4, ferroelectric-ferroelastic phase transition, γ-ray diffr. 8–43819
KH_2PO_4, ferroelectric, crystal growth in silica gel, effect of pH and gel ageing 8–48301
KH_2PO_4, high. press. tricrit. point rel. to zero press crit. point 8–15117
KH_2PO_4, KD_2 PO_4 crystals used for laser control, acoustic vibr. suppression 8–1363
KH_2PO_4, KD_2PO_4, slow dynamics from Cr^{5+} EPR 8–15126
KH_2PO_4, kinetics of growth from aqueous soln. 8–6838
KH_2PO_4, Landau-Devonshire coeffs. 8–15116
KH_2PO_4, laser accessory for freq. doubling 8–46725
KH_2PO_4, laser light scatt. spectroscopy 8–10156
KH_2PO_4, linear response function for tunnelling systems in polariton region 8–43799
KH_2PO_4, liquid inclusion form., hydrodynamics and supersaturation role 8–30559
KH_2PO_4, low impurity content, magnetic anisotropy *(Russian)* 8–6506
KH_2PO_4, near IR absorpt., influence of deuteration 8–27237
KH_2PO_4, optical material, thermal expansion, 60-300K 8–33791
KH_2PO_4, phase transition, pseudospin analysis 8–10157
KH_2PO_4, photoelastic const. behaviour new ferroelectric transition 8–19441
KH_2PO_4, polarisation switching, influence of mobile point defects 8–31165
KH_2PO_4, Raman scatt. near T_c, search for soft modes 8–15114
KH_2PO_4, struct. transitions, optical SHG and γ-ray diffr. results 8–14459
KH_2PO_4, third order nonlinear optical difference frequency generation 8–22176
KH_2PO_4, tricrit. point, γ-ray and neutron diffr. 8–39516
KH_2PO_4, two doublet model for ferroelec. phase transition 8–39510
KH_2PO_4 type ferroelectric, phase transition to spontaneous coherent state, theory *(Russian)* 8–6647
KH_2PO_4, with and without inversion centres, nonlinear susceptibilities *(Russian)* 8–13750
KH_2PO_4:VO^{2+}, EPR spectra, Hamiltonian parameters, ferroelec. transition 8–39387
KH_2PO_4-type crystal, domain wall mobility, two-dimens. ordering effect 8–48137
KH_2PO_4-type ferroelectrics, inelastic neutron scatt. theory 8–48122
KH_2PO_4;Tl, UV absorption bands obs. 8–27266
$KH_3(SeO_3)_2$, acoustic phonon softening, US vel. meas. 8–14429
$KH_3(SeO_3)_2$, high-resolution PMR 8–35053
$KH_3(SeO_3)_2$, proton NMR study about paraelastic-ferroelastic transition 8–23363
KI, dispersion of phonons calc. 8–26646
KI, F-centre luminesc., MCD effects 8–39598
KI, far IR, quartic damping, and quasiselection rule for gap compounds 8–31195
KI, intrinsic luminesc. quenching, by X-ray induced coloration 8–19539
KI, luminesc. polarisation for free and bound excitons 8–10942
KI, MCD of α and β bands 8–27192
KI, self-trapped excitons and F-centres, picosec. range form., absorpt. bands 8–19515
KI, surface lattice dynamics, Green function method 8–34693
KI, thermal cond. under press. meas. 8–30802
KI:In(Tl), type A long-wave luminesc., polarisation obs. 8–10944
KI:Pb^{2+}, absorpt., excitation and luminesc. spectra 8–19519
KI:Se_2^-, reson. secondary emission, total spectrum *(Russian)* 8–19551
KI:Tl, activated crystal, induced recombination emission *(Russian)* 8–48214
KI:Tl, emission spectra, press. effects 8–23509
KI:Tl, triple decay-time in low-energy emission 8–43929
KI:Tl^+ type phosphor, press. effects on triplet relaxed excited states, quadratic Jahn-Teller interaction 8–23510
KI:Yb^{2+}, X-ray and intracentre luminesc. 8–6737
KIO_3, temp. depend. Raman spectra and phase transitions *(Russian)* 8–15171
KIn_2F_7, cryst. struct. *(French)* 8–18590
$K_{0.75}Li_{0.25}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8–2852
KLu_3F_{10}:Eu^{3+}, crystal field and spin-orbit parameters 8–30892
$KMgF_3$, extreme UV spectra, 9-30 eV 8–23486
$KMgF_3$, laser window material, surface and bulk absorpt., photoacoustic meas. 8–25912
$KMgF_3$:Co^{2+}, γ-irrad. single cryst., visible and IR absorption, MCD, annealing data 8–10926
$KMgF_3$:$Co^{2+}(Fe^{2+})(Mn^{2+})(Ni^{2+})$, high energy absorption spectra interpretation 8–6716
$KMgF_3$:Fe^{2+}, transferred hyperfine interactions, EPR exam. 8–31105
$KMgF_3$:V^{2+}, zero-phonon line splitting in $T\times\varepsilon_g$ Jahn-Teller problem 8–19006
$KMgF_3$:Yb^{3+}, transferred hyperfine interaction of Yb^{3+}, ENDOR meas. 8–19375
$K_2Mg_4Mo_4O_{16}(OH)_2(H_2O)_2$ study of non-stoichiometry *(French)* 8–30604
$K_xMg_{x/2}Ti_{8-x/2}O_{16}$, ionic cond., rel. to struct. and chemical bonding *(French)* 8–18824
$K_2Mn_{1-x}Cu_xF_4$, dynamic Jahn-Teller effect, NMR *(Japanese)* 8–19347
$KMnF_3$, exchange integral in Mn^{2+}-Mn^{2+} pair calc. 8–34974
$KMnF_3$ film, photoelec. yield spectra, rel. to band struct. 8–43980
$KMnF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8–43981
$KMnF_3$, optically detected antiferromag. reson. 8–15029
K_2MnF_4, antiferromagnet, magnon renormalisation, two-magnon Raman scatt., kinematic interaction 8–23228
K_2MnF_4, Heisenberg antiferromag., magnon renormalisation 8–23259

potassium compounds continued
K_2MnF_4, two dimens. Heisenberg system, shift of half-field EPR line 8−23325
$K_3Mn_2F_7$, antiferromagnet, two magnon Raman scatt. 8−15164
$K_2Mn_{1-x}Fe_xF_4$, tetracrit. line in x-H-T phase diagram, neutron scatt. exam. 8−47977
$K_2Mn_{1-x}Fe_xF_4$, vs. transition temperature, phase diagram, critical lines crossing tetracritical point, discussion 8−39326
$K_2Mn_{1-x}Ni_xF_4$, antiferromagnets, impurity associated and host magnetizations, NMR exam. 8−10800
$K_2Mn_2(SO_4)_3$, phase transition, X-ray diffr. study of high and low temp. phases 8−38832
$K_2Mn_5[Si_{12}O_{30}].H_2O$, synthetic Mn milarite, cryst. struct. 8−18618
K_2MoOCl_5, mol. and cryst. struct. from X-ray diffr. obs. 8−6046
$K_3(MoO_4)(ReO_4)$, cryst. struct. *(French)* 8−47295
KN_3, IR refl. spectra, fundamental lattice modes, azide ion dipole derivatives 8−48166
$K^+(NH_3)_n$, gas phase clusters, relative bond strengths, thermodynamic props. 8−35649
KNO_2, high-pressure phase behaviour 8−30749
KNO_3, antiferroelec., press. induced II to IV phase transition, Raman scatt. 8−15161
KNO_3, aq. soln., heat capacity at 298.15K 8−3364
KNO_3, melt, NO_3^- ion struct., pulsed neutron diffr. obs. 8−22631
KNO_3, melt, Tl^+ high dilution diffusion, interferometry 8−47546
KNO_3, molten, X-ray diffr. structural anal. 8−42887
KNO_3 pellet, dissolution in KNO_3 soln., mass transfer coeff. in crossed electric and mag. fields 8−48741
KNO_3-$Cd(NO_3)_2$ molten mixtures, electrical conductance, non-Arrhenian behaviour 8−43158
KNO_3-$Sr(NO_3)_2$ molten mixtures, electrical conductance 8−43159
K_2NaCrF_6, Cr^{3+} optical spectrum open shell SCF MO cluster CI calc. 8−19501
$K_3NaP_2O_7.4H_2O$, cryst. struct. *(French)* 8−42961
$K_xNa_{1-x}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8−2852
$KNa[Pt(CN)_4].3H_2O$, neutron diffr. cryst. struct. exam., refinement by least squares 8−2079
$KNbO_3$, ferroelec., nonlinear optical susceptibility calc. 8−9409
$KNbO_3$, ionic grouping theory of electro-optical and nonlinear optical effects of crystals *(Chinese)* 8−27183
$KNbO_3$, photoconductivity and TSC 8−2520
$KNbO_3$, photovoltaic current, temp. and spectral depend. 8−47828
$KNbO_3$ powder synthesis, unit cell determ. 8−11168
$KNbO_3$, single cryst., dielec. breakdown and electroluminesc. 8−2917
$KNbO_3$, thermoelec. effect and phase transitions 8−48123
$KNbO_3$:Fe, photorefr. effects and photocurrents 8−43434
$K_3NdSi_6O_{15}$, cryst. struct. determ. 8−34493
$KNiF_3$, antiferromag., obs. of domains by X-ray topography 8−14981
$KNiF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
K_2NiF_4, 2D antiferromag., volume depend. of superexchange, US velocity meas. of T_n 8−19237
K_2O, in porcelain raw material, determ. by ion exchange chromatography 8−7272
K_2O-Al_2O_3-P_2O_5-Nb_2O_5 glasses, struct. singularities, IR spectra *(Russian)* 8−2861
K_2O-AlF_3-B_2O_3 glass, Al atom bonding mode, optical absorption of VO^{2+} and AlK_α spectrum *(Japanese)* 8−11023
K_2O-B_2O_3 glass, PbO-activated, luminesc. and excitation spectra *(Russian)* 8−10979
K_2O-$Li_2O(Na_2O)$-SiO_2 glass heat of mixing *(Japanese)* 8−10195
K_2O-MgO-SiO_2 glass, crystalline phase precipitation during crystallisation early stages, DTA *(Japanese)* 8−42919
K_2O-PbO-PbF_2-SiO_2 glass shear wave velocity and its temp. depend. *(Japanese)* 8−30702
K_2O-SiO_2 glass, IR reflection spectra change due to moisture corrosion *(Japanese)* 8−19914
K_2O-SiO_2 glass, Raman scattering of dissolved CO_3^{2-} ions 8−27848
K_2O-TiO_2-SiO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667
KOH, electrolyte, using Mo disc electrode, anodic solution kinetics *(Russian)* 8−11523
KOH glass: tryptophan (tyrosine), γ-irrad., electron traps, stimulated luminesc. 8−11536
KOH, melt, preferential dissolution of Mg_2SiO_4, etching obs. 8−34513
K_2OsCl_6, displacive phase transition, thermal expansion meas. 8−10188
$K_2PbCu(NO_2)_6$, effect of hydrostatic press. on successive Jahn-Teller phase transitions 8−43120
$K_2Pb(MoO_4)_2$, and isomorphs, domain struct. and phase transition *(Russian)* 8−6159
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, lattice softening, temp. depend. of elastic consts., US meas. 8−14432
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, struct. rel. to quasi one-dimensional elec. props. 8−14716
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, one-dimensional cond., phys. props. *(Japanese)* 8−30916
$K_2Pt(CN)_4Br_{0.3}.3.2D_2O$ neutron$\rightarrow_{0.3}.3.2D_2O$, neutron$D_2O$ neutron scattering 8−10133
$K_2Pt(CN)_4Br_{0.3}.3.2D_2O$, lattice dynamics, neutron scatt. expts. 8−14412
$K_2Pt(CN)_4Br_{0.3}.xH_2O$, dynamical props. near Peierls instability, neutron scatt. 8−14436
$K_2Pt(CN)_4Cl_{0.3}(Br_{0.3}).3H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
$K_{1.75}Pt(CN)_4.1.5H_2O$, struct., single cryst. neutron diffr. expts. 8−14321
$K_{1.75}Pt(CN)_4.1.5H_2O$, Pt chain distortion, X-ray obs. 8−14322
$KR(SO_4)_2$, R=La to Tb, unit cell parameters, thermal stability and decomposition 8−18613
K_2ReCl_6, displacive phase transition, thermal expansion meas. 8−10188
K_2ReF_6, cryst. struct. 8−42971
$KReO_4$, quadrupole coupling, cation electric field gradients 8−35060
K_2SO_4, hexagonal-orthorhombic phase transition, ferroelasticity 8−2251
K_2SO_4, IR and Raman spectra of vap. over heated matrices 8−25525
K_2SO_4, solid-state detector for potentiometric determ. of SO_2 in air 8−16151

potassium compounds continued
K_2SO_4 solid-state detector for potentiometric determ. of SO_2 in O_2-variable gases 8−20505
K_2SO_4, X-ray L-emission spectra of S *(Japanese)* 8−15254
β-K_2SO_4:Tl^{2+}, ESR spectra theory 8−23323
K_2SO_4:VO^{2+}, polycryst., struct., EPR 8−15014
K_2SO_4:XO_4^{2-}, X=Cr, Se, Mo, W, lattice-impurity interactions, IR spectra 8−19522
K_2SO_4-$ZnSO_4$ system, glass formation and phase diagram study, physical props. 8−27500
K_3Sb, and Na_2KSb, photocathode materials, band struct., empirical pseudopotential calc. 8−10346
$K_{0.51}Sb_{0.67}{}^{III}Sb_2{}^{V}O_{6.26}$, pyrochlore, cryst. struct. *(French)* 8−34470
K_2SeO_4, hexagonal-orthorhombic phase transition, ferroelasticity 8−2251
K_2SeO_4, incommensurate modulation along axis perpendicular to x-axis 8−6154
K_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8−15051
$K_2SnF_6.H_2O$, crystallographic characts. *(French)* 8−10011
K^+TCNQ^-, optical absorpt. spectra of small particles 8−19505
$KTa_{1-x}Nb_xO_3$, quantum limit of ferroelec. transitions, dielec. and elastic consts. meas. 8−15128
$KTa_xNb_{1-x}O_3$, ferroelectric transition, US attenuation, elastic consts., soft modes 8−23411
$KTaO_3$, electromech. props. and electron tunnelling 8−23403
$KTaO_3$, nonpiezoelec. dielec., light-sensitive Rayleigh wave generation by surface piezoelectricity 8−43228
$KTaO_3$:Gd semicond., temp. depend. of thermal diffusivity and Seebeck coeff. 8−10481
$KTaO_3$:Gd^+, influence of external elec. field on EPR 8−15020
$KTaO_3$:Ti^{3+}, EPR meas. 8−35028
KTa_5O_{13} structure, relationship to α-PbO_2 struct., crystallography data 8−42996
$K_6Ta_{10.8}O_{30}$, cryst. struct., X-ray diffr. and electron microprobe meas. 8−34489
KTb_3F_{10}, cubic packing of $[Tb_3F_{32}]^{14-}$ polyanions, X-ray diffr. obs. 8−10023
$K_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
K_2TeO_3, D_2O soln., $^{123,125}Te$ Fourier transform NMR 8−15046
K_2TiF_6, in LiCl-KCl eutectic mixture, analysis of reduction waves of Ti ion in chronopotentiometry *(Japanese)* 8−20025
$K_2Ti_6O_{13}$ fibre synthesis from melt reaction of TiO_2 and K_2CO_3 *(Japanese)* 8−44070
$KTiOPO_4$, nonlinear optical props., freq. doubling of 1.06 μm laser radiation 8−42386
$K_2UO_2Br_4$, force consts., IR spectra 8−5216
$K_5(UO_2)F_9$, optical spectra, vibr. freqs. calcs. *(Russian)* 8−31205
KVO_3, cryst. struct. 8−6043
$K_{0.33}WO_3$, hexagonal, phonon dispersion curves, neutron scatt. obs. 8−14411
KY_3F_{10}:Eu^{3+}, crystal field and spin-orbit parameters 8−30892
$KY(WO_4)_2$:R^{3+}, stimulated emission 8−23496
$K(Zn,Mn,Co)F_3$, crysts., Mn, Co distrib., as function of cryst. region *(German)* 8−14375
$KZnF_3$ film, photoelec. yield spectra, rel. to band struct. 8−43980
$KZnF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
$K_xZn_{x/2}Ti_{8-x/2}O_{16}$, ionic cond., rel. to struct. and chemical bonding *(French)* 8−18824
K_xZrS_2, intercalation cpd., X-ray K absorption edges 8−39627
$K_2Zr[Si_3O_9]$, wadeite, cryst. struct., refinement, X-ray diffr. meas. 8−2091
$K_2[B_{12}D_{12}]$, in aqueous soln., laser Raman spectra 8−15158
$K_2[B_{12}H_{12}]$, in aqueous soln., laser Raman spectra 8−15158
$K_3[Fe(CN)_6]$ X-ray Fe K absorption edge struct. of $[Fe(CN)_6]^{3-}$ meas. 8−43959
$K_4[Fe(CN)_6].3H_2O$, X-ray Fe K absorption edge struct. of $[Fe(CN)_6]^{4-}$ meas 8−43959
$K_2[M(H_2O)_6](YO_4)_2$, Tutton's salts, M=Cu, Ni, Zn, Y=S, Se stereochem., neutron struct. determ. 8−18609
$K_2[MoO_{1-x}(OH)_{2x}(H_2O)_{1-x}O(MoO_4)_2].2H_2O$, proton NMR for chem. comp. at −195°C 8−38651
$K[OsNBr_4H_2O]H_2O$, mol. and cryst. struct. from X-ray diffr. obs. 8−6046
$K_2[Pt(CN)_4]X_{0.3}.3H_2O$, X=Br, Cl, X-ray and neutron diffr., 31K-room temp. 8−42964
$K_2[SnCl_6]$, defects determ., dipole relax. in phase transform. *(German)* 8−22711
LiCl-KCl, analysis of reduction waves of Ti ion in chronopotentiometry of K_2TiF_6 *(Japanese)* 8−20025
LiCl-KCl eutectic mixture, purification, effect of impurity ions *(Japanese)* 8−40108
Li_2CrO_4-K_2CrO_4, phase diagram determination by DTA and X-ray diffr. 8−31391
LiF-NaF-KF molten mixture, diffusivity and solubility of H_2 8−34640
$Li_{1-x}K_xI$, intrinsic optical absorpt. spectra 8−23500
$MgCl_2$-KCl, binary melt, viscosity *(Japanese)* 8−10209
$Mg_{0.7}Na_{0.9}K_{2.0}Ca_{2.4}Al_{9.1}Si_{26.9}O_{72}.xH_2O$, erionite, cryst. struct. exam., stacking faults 8−2083
$(Na,K)NbO_3$ solid solns., struct. transitions, neutron powder diffr. 8−38649
NaCl-KCl mixed crystal, growth, X-ray exam. and microstruct. 8−44001
NaCl-KCl mixture, electrical, electromag., and acoustic props. *(Russian)* 8−30759
Na_2KSb, evaluation as photocathode material 8−11072
$Na_{0.5}K_{3.5}(Te_2O_6(OH)_4).6H_2O$, cryst. struct. determ. 8−26520
Na_2O-K_2O-Al_2O_3-SiO_2 glass, mixed alkali effect, nonbridging O content effects 8−18827
Na_2O-K_2O-SiO_2, Na diffusion 8−26724
Na_2O-K_2O-SiO_2 based glasses, high field cond. and ionic jump processes 8−38873
$Pb_{0.9}K_{0.1}(Zn_{1/3}Nb_{2/3})O_{2.95}$-$PbZrO_3$-$PbTiO_3$, morphotropic tetragonal-rhombohedral phase boundary 8−48129
RbCl-KCl powder blends, diffusional homogenisation, X-ray diffr. exam. 8−18847
RbCl-KCl(H_2SO_4)-H_2O, water activity, 0 and 50°C, conc. depend. *(Russian)* 8−31679
$SrCl_2$:KCl, polycryst., ionic cond. 8−2292
$ZnK_4(P_3O_9)_2.4H_2O$, cryst. struct. determ. *(French)* 8−26503

potential dividers *see voltage dividers*

potential energy curves and surfaces of molecules
for Morse curves see Morse potential
see also molecular vibration
alkali trimers, semiempirical pot. energy surfaces calcs. 8−25649
atomic clusters, main group elements, pot. energy surfaces 8−46477
azomethane, trans-cis isomerisation, INDO-SCF and CI calc. 8−25440
benzaldehyde, and deuterated forms, in p-xylene, 4.2K, nπ* phosphoresc. assignments 8−9197
p-chlorobenzene, and deuterated forms, in p-dibromobenzene and p-dimethoxybenzene, 4.2K, ππ* phosphoresc. assignments 8−9197
crossing of potential energy curves, Teller's conditions 8−13407
cyclopropenyl radical and anion, planar, E state pot. surfaces, CI and SCF calcs. 8−5155
diatomic bound molecules with zero bond order, excited biexcitons 8−9049
diatomic long-range molecules, highly vibr. excited state 8−29768
Dunham coeffs., high-order contribs. 8−46285
ethane, two-channel dissoc., dynamical effects, classical trajectory study 8−40042
ethyl cation, rearrangement pseudorotation modes, reaction mechanisms, permutation theoretic anal. 8−44369
formaldehyde, core ionisation, valence orbital relax. calcs. 8−5135
Fues potential, vibr.-rot. spectra, Schrodinger eqn. soln., pot. energy curves *(Spanish)* 8−36784
group IV A monosulphides, dissoc. energy calcs. 8−29733
homotetrahedryl cation, rearrangement pseudorotation modes, reaction mechanisms, permutation theoretic anal. 8−44369
methane, $1B_1(1T_2)$ state, photodissoc., extended basis calcs. 8−9093
methyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
trans,trans-muconodinitrile, mol. reorientation, unequal well pot. energy calcs. 8−26461
polyatomic system, pot. energy surfaces, semiempirical calcs. 8−41974
serine proteases, enzymatic reaction mechanism, CNDO/2 mol. orbital calcs. 8−27751
silacyclopentane, Raman spectra, pot. energy surface, barrier to interconversion 8−25541
tetramethylurea-d_0,-d_{12}, IR spectra, normal coord. anal. 8−978
trifluoromethyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
trimeric molecular complex, excitation localisation and transfer, monomeric internal vibr. effect 8−17581
A_2B, analytical pot. functions, several surface minima 8−5158
AlH, valence excited states, pot. curves 8−41973
AlO, ground state, pot. energy curve, dissoc. energy 8−46286
AlO, spectra, vibr. consts., pot. curves, Franck-Condon factors and r-centroids 8−42243
Ar_2^+, bound-free absorpt. cross section for Π and Σ states 8−5140
Ar_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
BeO, $X^1\Sigma^+$ state pot. energy curve, ground state dissoc. energy 8−41977
Br_2+Li, bond stretching effect on charge transfer reaction cross section 8−11507
CH_2^+, unimol. decay, nonadiabatic interaction, selection and propensity rules 8−23932
$(C_2H_5)_2Fe^+$ complexes, vibrational electronic (Franck-Condon) Raman transitions 8−42070
CHNO isomers, interconversion pot. energy surfaces, geometries, electronic structs. 8−35660
CO, electric field depend. 8−13424
CO, isotopic mols., Dunham pot. energy coeffs. 8−41979
CO_2, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
CO_2, Dunham coeffs., high-order contribs. 8−46285
CO_2^-, complex symmetric stretch pot., from CO_2 reson. electron impact data 8−25726
CO_3, and isotopic forms, struct., normal coord. anal. 8−965
Cl_2+Li, bond stretching effect on charge transfer reaction cross section 8−11507
ClO_2, analytical pot. functions, several surface minima 8−5158
$CsH^-CsH^+(CsH)$, ab initio ground-state pot. energy curves, electron affinities 8−41946
D_2, ${}^1\Sigma_g^+$ states, adiabatic calc. of vibronic states 8−5198
D_2, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
D_2, G, K double-minimum excited state, vibr. eigenvalues 8−33442
D_2, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
D_2^+, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
DCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
GeO, RKRV Franck-Condon factors and r-centroids, $(A^1\Pi-X^1\Sigma^+)$ transition, pot. energy curves 8−29817
H-like clusters, DIM pot. energy hypersurfaces, stationary points 8−25763
H_2, G, K double-minimum excited state, vibr. eigenvalues 8−33442
H_2, HD, ${}^1\Sigma_g^+$ states, adiabatic calc. of vibronic states 8−5198
H_2, HD, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
H_2, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
H_2^+, semiempirical nonadiabatic pot. energy curves calcs. 8−17744
H_2-inert gas, bound complex form., anisotropic intermol. pot., IR spectra anal. 8−37634
H_3, pot. energy surfaces, semiempirical calcs. 8−41974
HBr, Dunham pot. energy coeffs. 8−41979
HC_2, ground state energy surface, ab initio SCF calc. 8−33446
HC_2^-, ground state energy surface, ab initio SCF calc. 8−33446
HCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
HCS^+-CSH^+ system, pot. surface for H abstraction, internuclear bending for ground and excited states 8−29744
HCl^-, resonance states, CI calcs., pot. energy curves 8−29755
HD, G, K double-minimum excited state, vibr. eigenvalues 8−33442
HD, nonadiabatic effects in the B, C and E, F states, rot. line strengths 8−5148
HF, pot. curves, diagrammatic perturbation theory, spectrosc. consts. 8−25458
HI, Dunham pot. energy coeffs. 8−41979
HO_2, analytical pot. functions, several surface minima 8−5158

potential energy curves and surfaces of molecules continued
H_2O, modified LEPS surface, ground state 8−17584
H_2O^+, pot. energy surface, linear approach 8−41978
H_3O radical, stability, ab initio UHF-CI calcs. 8−5137
He_2^{2+}, autoionising states, adiabatic pot. energy curves calcs. 8−42140
He_2^{2+}, electronic energies, James-Coolidge method calcs. 8−17564
HeH^{2+}, pot. energy curves for 2pπ and 3dδ excited states 8−29756
$HeLi^{4+}$, pot. energy curves for 2pπ and 3dδ excited states 8−29756
Hg_2, fluoresc. and absorpt. spectra anal., pot. energy curves 8−999
Kr_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
KrF*, bound-free emission spectra, simulation 8−29806
Li clusters, DIM pot. energy hypersurfaces, stationary points 8−25763
Li_2, core-excited states, UV photoabsorpt. and ejected electron spectra 8−37655
LiCN, vibr.-rot. spectra, model with two large-amplitude coords. 8−5196
LiH, isotopic species, $A^1\Sigma^+ \rightarrow X^1\Sigma^+$ bands 8−42091
LiH, LiH^-, pot. energy curves, electron affinity, spectroscopic consts. 8−5129
LiH^{3+}, pot. energy curves for 2pπ and 3dδ excited states 8−29756
$(LiH)^+$+meson system, ground and 1st excited state pot. surfaces, quantum mech. calc. 8−5377
$LiH^-(LiH)$, ab initio ground-state pot. energy curves, electron affinities 8−41946
$LuCl_3$, pyramidal struct. and force field coeffs., electron diffr. obs. 8−9250
Mg_2, Mg_2^+, electronic struct., pot. energy curves, multiconfig. SCF calcs. 8−5124
MgH, Morse and Lippincott pots., r-centroids, dissociation energy 8−13446
MgO, dissociation energy from RKRV potential energy curve 8−37768
Mn-C_2H_2 and Mn-C_2H_4, π-bonded, pot. energy curves, SCF calc. 8−5136
NCO^+, partial pot. energy surfaces, ab initio SCF CI calcs. 8−37554
NH^+, pot. curves, ab initio CI calcs., equilib. distances 8−17579
NH_2^+, quintet states, pot. energy surfaces, ab initio SCF MO calc. 8−25419
NH_3, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
NH_3-CO_2 complex, matrix isolat,on IR spectrum, struct., ab initio SCF calcs. 8−5209
$NaH^-(NaH)$, ab initio ground-state pot. energy curves, electron affinities 8−41946
NaK, laser-induced fluoresc. in supersonic nozzle beams 8−25593
NaNe, van der Waals mol., form., laser spectroscopy 8−29797
Ne_2F, energy surfaces, application of molecular electronic struct. theory 8−25452
NeH_2^+, ab initio potential surfaces, frozen orbital approximation calcs. 8−41927
NiH, pot. energy curves, Hartree-Fock and valence bond methods 8−41958
NiH_2, pot. energy curves, Hartree-Fock and valence bond methods 8−41958
O_2, excited state geometries and energies, ab initio pot. energy surfaces 8−5151
O_2, valence states, ab initio config. interaction calcs. 8−25448
OH, Dunham pot. energy coeffs. 8−41979
Rb_2, $X^1\Sigma_g^+$ state, Raman spectra, fluoresc., vibr. energy 8−46345
SO, pot. energy curves, pseudopot. multi-struct. valence bond calcs. 8−9094
SO_2, analytical pot. functions, several surface minima 8−5158
SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
SO_4, and isotopic forms, struct., normal coord. anal. 8−965
ScF_3, pyramidal struct. and force field coeffs., electron diffr. obs. 8−9250
SeO, IR bands of 10296 and 10491 Å, rot. struct. 8−5224
Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
XeF_6, UV absorpt. band shape 8−5289

potential energy functions
see also Lennard-Jones potential; molecular vibration; Morse potential; muffin-tin potential
alkali halides, cryst., force consts., IR absorpt. freq., logarithmic pot. function calcs. 8−2832
alkali metal diatomic ions, core-core interaction potential calc. 8−25645
alkali-inert gas system, mol. band profiles of induced dipole transitions 8−42135
anisotropic molecule-atom interactions, glory scatt. calc. in sudden approx. 8−25654
atom-surface 3-9 interaction, bound state vibr. spectrum 8−14615
atomic long-range forces, contrib. to phaseshift in electron scatt. 8−5344
atomic particles, equilib. const. and parameters of interaction pot. 8−1045
chloroaromatics, mol. crysts. Cl atom pot. energy calcs. 8−42948
closed shell atom+ion interaction, electron gas model, polarisation inclusion 8−37699
complex atom*+inert gas atom, model pot. curves, including CI 8−42154
diatomic molecules, dispersion energy, nonexpanded multipoles 8−9215
diatomic molecules, soluble potential 8−21996
p-dichlorobenzene, Cl-Cl interactions at 100K, isotropic pot. functions calcs. 8−18578
trans-dimethyldiazene-1, 1, 1-d_3, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
trans-dimethyldiazene-d_0,d_6, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
dimethylsulphide-d_3, two interacting C_{3v} rotor system, mol. coupling parameters, Raman spectra 8−42074
ethane, force consts., model potential function vs. mol. orbitals calcs. 8−29829
ethylene, dimer interaction, lattice energy, multipole expsn., at.-at. pots. 8−9218
formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566

potential energy functions continued
- Fues potential, vibr.-rot. spectra, Schrodinger eqn. soln., pot. energy curves *(Spanish)* 8-36784
- general-purpose molecular mechanics program construction principles 8-13411
- group IV A monosulphides, dissoc. energy calcs. 8-29733
- inert gas crystal, correlation forces *(Russian)* 8-22686
- interaction potential, direct determ. from gas viscosity meas. 8-37702
- intermolecular potentials, vibr. coupling behaviour 8-25668
- ion+atom, long-range interaction, anal. Born-Oppenheimer pot. energy function calcs. 8-1048
- ion-surface impact, interatomic pot. screening function correction factor for computer simulation 8-23574
- isobutene-d_0, -d_6, torsional pot. functions, spectra anal. 8-25528
- Lennard-Jones and Stockmayer pot. parameters, crit. evaluation, correl. methods 8-1966
- methane+methane, intermol. pot., electron gas approx. calc. 8-9214
- trans-methyldiazene, pot. function 8-33507
- molecular crystals, Cl atom pot. energy calcs. 8-42948
- molecules, spherically symmetric, repulsive energy determ. 8-42153
- open-shell systems, FSGO calcs. with model pots. 8-33413
- pyrazine, dimer interaction, lattice energy, multipole expsn., at.-at. pots. 8-9218
- spline interpolation method, for potential energy data 8-46412
- Stockmayer and Lennard-Jones pot. parameters, crit. evaluation, correl. methods 8-1966
- Ar, from viscosity results and Ar_2 data 8-29830
- Ar-Ne(Kr) systems, pot. parameters from binary diffusion coeffs. 8-37700
- Ba+Xe, spectral line contour meas. determ. of potentials 8-25477
- $BeAr^+$, long range pot., pot. inversion method 8-21992
- H_2^+, intramol. interaction energy, convergence of perturbation expansions 8-17745
- o-H_2+Ar, relax. and kinetic cross sections, DWBA calc. 8-25655
- H_2+H_2(D_2) potentials, isotropic part 8-5311
- o-H_2+He, relax. and kinetic cross sections, DWBA calc. 8-25655
- H_2+inert gas, intermol. pot. anisotropy determ. from total collision cross sections, expt. 8-21988
- H_2+inert gas, intermol. pot. anisotropy determ. from total collision cross sections, theory 8-21989
- HBr, Dunham pot. coeffs., nonlinear least squares fit calcs. *(French)* 8-13561
- HBr-nN_2 aggregates, near IR spectra in monatomic matrix 8-21921
- HCl-nN_2 aggregates, near IR spectra in monatomic matrix 8-21921
- $(H_2O)_2$, accurate atom-atom potential 8-21990
- I_2, in CCl_4 and cyclohexane solns., higher vibr. levels, dephasing lifetimes, from reson. Raman spectrum 8-42068
- N_2, inner shell $(1s)^{-1}(\pi 2p)^1\Pi$ state, energy, vibr. struct., electron impact investig. 8-13611
- NH_3, ground state, analytical pot. function 8-1050
- NH_3, inversion-vibration interactions, pot. energy function calcs., isotope effects 8-33567
- Na+$SiCl_4(C(CH_3)_4)(Si(CH_3)_4)(Sn(CH_3)_4)$, rainbow scatt. at thermal energy, anisotropic pot. 8-29837
- Ne, adatom on Xe-plated graphite 8-18904

potential energy surfaces for collision processes
- atom+diatom, 3-dimens. electronic nonadiabatic reactive collision theory, electronuclear basis 8-3321
- atom+diatom, collinear exchange reaction rates and probabilities, threshold behaviour 8-27738
- atom+diatom, long-lived trajectories near reactivity band boundary 8-29836
- atom+diatom, prior statistical distribs., collinear reactions, theory review 8-35670
- atom+diatom, rot. infinite-order sudden-approximation, low energy appls. 8-1052
- atom pair recombination, on solid surface, dynamics pot. calcs. 8-7197
- bound state systems, kinetic energy and path curvature 8-19998
- complex atom*+inert gas atom, model pot. curves, including CI 8-42154
- dissociative charge transfer collisions, vibr. enhancement 8-33597
- double potential wells, tunnelling and over-barrier decay rates, method of beats calcs. 8-44363
- doublet and quartet states, abstraction reactions, pot. energy surfaces calcs. 8-31627
- ethylene+F$\cdot$($CH_3\cdot$), transition state, ab initio calc. 8-48640
- gas-solid energy transfer, internal vibr. energy effects 8-35234
- ketocarbene-ketene rearrangement, reaction path, ab initio calc. 8-20008
- methyl isocyanate, isomerisation RRKM theory using effective strong collision freq. 8-44365
- multiphoton IR photodissoc., pot. energy surface classical trajectory calcs. 8-11532
- polyatomic molecule, dissoc., natural collision coords. 8-44373
- qualitative potential energy surfaces, from linear comb. of fragment configs. 8-44349
- reactivity band boundaries, trapped trajectories, theory 8-29836
- slow atoms, inverse scatt., semiclassical approx. calcs. 8-17747
- transition state characterisation by struct.-reactivity coeffs. 8-40026
- unimolecular reactions, in one dimension, theory 8-44364
- unimolecular reactions, RRKM theory using effective strong collision freq. 8-44365
- Ar+N_2, polarisation in elastic scatt., close-coupling calcs. 8-25650
- Ar+N_2, rot. inelastic collision, orientation depend., close coupling calcs. 8-9232
- Ar^++H_2, collinear reactions, electronic nonadiabatic transitions 8-7180
- B^{3+}+H, charge transfer cross sections, ab initio potential energy curves 8-37741
- C^++H_2, C^+ fine-struct. excitation, interstellar cloud cooling 8-25675
- C^{4+}+H, charge transfer cross sections, ab initio potential energy curves 8-37741
- CO+H_2, pot. energy surface anisotropy in nonreactive region, ab initio calcs. 8-29832
- CO_2+inert gas, vibr. and rot. energy transfer, quasiclassical trajectory study 8-33578
- Ca+He(Ne), press. broadening, line shifts 8-5290
- Ca*+He(Ne), model pot. curves, including CI 8-42154

potential energy surfaces for collision processes continued
- D+He(2^1S)(2^3S), associative and Penning ionisation, autoionisation, calcs. 8-25674
- $D_2^+ + O(^3P) \rightarrow OD^+ + D$, reaction dynamics, cross-section at. quadrupole moment effects 8-3324
- F+H_2, 3-dimens. electronic nonadiabatic reactive collision theory, electronuclear basis 8-3321
- F+H_2, reactive collision, semiclassical dynamics on multiple electronic surfaces, 3-dimens. calcs. 8-27746
- F+H_2 nonadiabatic effects, scatt. theory, coupled-channel calcs. 8-22010
- F^++H_2, empirical and ab initio correlation diagrams, pot. energy surfaces 8-40041
- $F_2 + X \rightarrow XF + F$ (X=Mu,H,D,T), isotope effects, quantum mech. and information theoretic calcs. 8-44360
- H+He(2^1S)(2^3S), associative and Penning ionisation, autoionisation, calcs. 8-25674
- H+methane, abstraction and exchange reactions, energy barriers, UHF-CI calcs. 8-11512
- H_2+Ar, Arrhenius dissoc. activation energy, vibr. depend., trajectory calc., 4500K 8-35662
- (H_2+H^+, H_2^++H) collinear system, electronically nonadiabatic effects 8-1063
- H_2+H(F), minimum energy reaction path, reference coord. approach 8-40025
- H_2+Kr, differential cross-sections, diffraction undulations, anisotropic pot. calcs. 8-9223
- H_2^++H_2, pot. energy surface and nonadiabatic regions, charge exchange and reaction, VB calc. 8-40027
- HCN(DCN), photodissoc. dynamics, rot. (vibr.) energy disposal 8-48672
- HCl+Ar(He), rot. energy transfer, quasiclassical trajectory calcs. 8-42173
- HCl(ν=1,2)+O(^3P_g), reaction and deactivation, laser-induced fluoresc. obs. 8-35669
- HD^+, radiative recombination rates 8-37708
- $He + H_2^+ \rightarrow HeH^+ + H$, diatomics-in-mols. and spline fitted ab initio surface, vibr. effects 8-20010
- He^++H_2, dissoc. charge transfer, vibr. enhancement 8-33597
- He^++He, multicurve-crossing problem, numerical test of semiclassical approx. 8-13590
- HeH^+, radiative recombination rates 8-37708
- Hg, slow atoms, inverse scatt., semiclassical approx. calcs. 8-17747
- Hg+I_2 reaction, adiabatic pot. energy surface 8-15666
- $Hg + I_2 \rightarrow HgI + I$, endoergic reaction, prod. ang. distrib. 8-15665
- K+I_2(IBr)(Br_2)(ICl)(Cl_2), ion-pair form., bond stretching effect on cross sections 8-1064
- Li+He, press. broadening, line shifts 8-5290
- Li^++CO, differential cross-sections, ab initio CI vibrotor pot. energy surface calcs. 8-46421
- Li^++CO, rot. excitation, ab initio CI pot. energy surface, classical mech. and coupled states calcs. 8-25665
- Li^++CO(N_2), differential cross-sections, classical trajectory calcs. 8-29841
- Li^++Na, direct and charge exchange scatt., differential scatt. cross-sections meas. 8-42158
- Li*+He(Ar), Li principal series line broadening and shift, interat. pot. consts. 8-42165
- Mg*+He(Ne), model pot. curves, including CI 8-42154
- $N(^4S)+O_2(^3\Sigma_g^-) \rightarrow NO(^3\pi_u)+O(^3P)$ doublet surface minimum energy path calcs. 8-7194
- Na, slow atoms, inverse scatt., semiclassical approx. calcs. 8-17747
- Na^++Li, direct and charge exchange scatt., differential scatt. cross-sections meas. 8-42158
- Ne^-+Na^+(K^+)(Li^+), electron gas model pots. and collision integrals *(French)* 8-42169
- NeH_2^+, ab initio potential surfaces, frozen orbital approximation calcs. 8-41927
- O_3, pot. energy surface analytical function, atmospheric reactions 8-7174
- OH^-+inert gas, collision-induced dissociation 8-29834
- Si+H_2(O_2)(He)($SiCl_4$), $3p^2(^1D_2)$ state behaviour, at. absorpt. spectra 8-29846
- Xe_2, photoelectron spectra, $X^1\Sigma^+_{(1/2)g}$ ground state pot. 8-5280

potential scattering
- Azzarelli Collas representation for scatt. amplitude, generalisation 8-8261
- boson system, bound state scatt., interaction via δ-function potentials 8-16728
- bound-state effective pot. formulation of dynamical symm. breaking 8-8554
- bremsstrahlung, stimulated, high intensity, convergence of approx. 8-16687
- classical and quantum transport theories 8-16603
- Coulomb spheroidal functions, integral eqns. and relations 8-409
- cross sections and scatt. amplitudes 8-42152
- Dirac operator with highly singular potentials 8-21359
- discrete inverse scatt. theory, Schrodinger eqn., difference approxs. 8-32724
- eikonal theory of high-energy pot. scatt. 8-16675
- eikonal-type expansions, projectile scatt. by local pot. 8-41195
- elastic scatt., variationally optimised T matrices 8-74
- fast particle scattering on exponential type singular potential 8-37157
- five-body equation, wave function treatment for binary partitions 8-16686
- global wavefunctions, appl. to scatt. theory 8-41179
- ground state properties, energy level lower bounds, particle in mag. field and external pot. 8-8260
- heavy particle elastic collisions, quantum effects *(Japanese)* 8-21015
- high energy behaviour of scatt. amplitude in presence of confined channels 8-8268
- intermediate system lifetime in quantum mech. collisions 8-45521
- inverse power singular pot. with complex coupling const., phase shift 8-41176
- inverse problem at fixed energy 8-41203
- inverse scatt. problem, spin-orbit and central pot. 8-32714
- inverse scattering transform solvable nonlinear evolution eqns., existence, Lax's method extension 8-32711
- ion-ion scattering, momentum dependence, in microscopic theory 8-41752

potential scattering continued
K-matrix, off-shell 2-body scatt. with Woods-Saxon pot. 8−21002
large-angle potential scattering in variable phase approach 8−91
Legendre Pade approximants, and appl. to pot. scatt. 8−28982
Legendre Pade approximants, convergence, to Coulomb and other scatt. amplitudes 8−28983
Lippmann-Schwinger approach to elastic scatt. by semiinfinite crystals 8−47687
local two-body interactions, general off-shell phase eqns. 8−36880
Moller wave operators for pot. scatt. 8−45495
multiple pot. scatt., soln. by finite iteration 8−28993
multiple scatt. series, eikonal approx. 8−21358
neutron scatt. from parity violating pot. 8−25167
neutron scattering theory, parity violating interaction 8−25166
nonlocal continuous potentials, theory of integral operators and eigenvalue anal. 8−8274
nucleon-nucleon hard-core system, bound states and scatt., for teaching 8−41115
on-shell three-body multiple scatering eqns. 8−28988
one-dimensional scatt. theory, stability of direct and inverse problems 8−4523
oscillation-free transformations, periodic potential 8−16636
partial waves with nonzero ang. momentum, zero range pot. method *(Russian)* 8−29006
partial-wave Schrodinger differential and integral eqns., comparison of numerical solns. 8−16671
particle interactions with infinite and semi-infinite periodic potentials 8−28991
path integral representation for inelastic scatt. amplitude quasiclassical approx. 8−36888
perturbation methods for local and nonlocal pots. 8−16696
potential scattering, JWKB phase shifts, using Gauss-Mehler quadrature formulas 8−46411
quantum wave, linear pot. hill, Schrodinger eqn. soln. for teachers 8−12492
relativistic electron Coulomb scatt., approx. to cos γ 8−28962
relativistic generalisation of linearly rising pot. 8−4768
resonance theory of potential scatt., phase shift parameters 8−16685
Riemann solution in one-dimen. inverse problem 8−28979
Rutherford scattering formula, small-angle end, for teachers 8−16608
Schwinger variational principle for bound states and scatt. problems 8−16932
statistical mechanics, quantum and classical, unified treatment of scatt. and dynamics 8−45522
stochastic Liouville equation for quantum-mechanical scatt. for particle in field of variable scatterers 8−140
three-body Amado-Lovelace eqn. at positive energies, anal. soln. 8−16938
three-body problem, bound state and scatt. problems 8−16684
three-particle scattering, subtraction techniques 8−24694
three-particle system, orthogonal projection 8−90
total scattering cross sections for optical pots., quasiclassical calcs. 8−8270
two-body transition matrix and UPA model, convergence props. of generalised separable expansion 8−16939
two-potential formulae for rearrangement scattering 8−4512
ultracold neutron reflection from one-dimens. pot. barrier, reson. struct. *(Russian)* 8−37393
WKB approx. for potential reconstruction by differential scatt. cross section *(Russian)* 8−45818
Yukawa potential, scatt. amplitude, nonperturbative var. approx. calcs. 8−24981
n, ultracold, transmission through moving pot. barrier 8−8867
p+^{4}He, interaction potential from inverse scatt. problem method *(Russian)* 8−46068
He+Ar(Kr)(Xe), He*(2^{1}S) scatt., low energy repulsion systematic struct. 8−22000
potential transformers
Tesla transformer accelerator, electron beam prod. 8−326
potentials (bioelectric) *see bioelectric potentials*
potentials (crystals) *see crystal internal fields*
potentials (electric) *see electric potential*
potentiometers
see also voltage measurement
AC, features and ccts. *(Polish)* 8−29128
automatic crack growth recording using PSR-1-19 potentiometer 8−39971
DC meas., in 100 mV-10 nV range *(Polish)* 8−41332
joint motion meas. by triaxial electrogoniometer, for human prosthesis design 8−11781
linear rotary type, nonlinearities compensation 8−45646
low resistance differential type for standard cells testing *(Polish)* 8−29127
potentialograph, electrical circuit 8−4638
recorder, Servogor, features, appls. *(German)* 8−12681
temperature measuring bridge cct., thermistor appl. 8−207
powder diffraction cameras *see cameras; X-ray crystallography apparatus*
powder metallurgy
atomisation of melt, charact. of metal powder 8−19688
atomization of melts with water, process parameter effect on powder props. 8−19689
borsic fibre reinforced Al, hot pressed forged, plasma sputtered *(Russian)* 8−35330
bronze, spheroidal, equivalent sphere diameter calc., Saltykov method 8−31362
bronze powder preparation by electrodeposition, porous components fabrication appl. 8−20026
crystalline particles at sphere-plane contact, nondiffusional deform. under capillary forces 8−15329
die filling and densification in hot extrusion forging of porous preforms 8−23645
electric discharge sintering, metal powder+punch electrode reactions 8−11148
information service, Soviet 8−8181
metal, work-hardening, plastic, sintered, porous, irreversible deform. 8−35459
milling conditions effect on densification during pressing and sintering 8−11149
Ni-Cr alloy Kh20N80, sintered sheet material, stopping power and pore size relationship 8−19693
powder metallurgy continued
Nichrome wire, porous, strength charact. 8−6997
particle deformation during cold isostatic pressing 8−44052
sintered metal, cold forming with self aligning dies 8−11158
spark erosion prep. of powders 8−27452
steel, alloy hot forging for differential pinion gear 8−15337
steel, austenitic Kh18N9T, porous fibres, oriented struct., strength props. 8−3199
steel, austenitic stainless, powder, sintering behaviour 8−44051
steel, Cu-Mn-Zn, Zn addition effects in powder forgings produced by liquid solid alloying 8−11157
steel, maraging 350, produced by powder metallurgy, mech. props. 8−15334
steel, powder, rotary forging, porosity and deform. 8−23646
steel, powder forged for carburizing appl., core props., mech. props. 8−15339
steel, sintered, high speed, with Ti(C,N) additions 8−11160
steel, stainless, medium hardness, densification of particulate materials, general law 8−19692
steel, stainless, sintered sheet material, stopping power and pore size relationship 8−19693
superalloy appl., aircraft engine production techniques 8−3073
Volume changes experienced by porous solids during nonisothermal liquid-phase sintering and self-propagating high-temperature synthesis 8−15328
Ag, fine particles, adhesion and sintering, TEM exam. 8−44053
Al, powder, fission under weightlessness conditions *(Russian)* 8−31357
Al, powder, liquid phase sintering, solid-state solubility effect on vol. change 8−35332
Au, fine particles, adhesion and sintering, TEM exam. 8−44053
B fibre reinforced H, hot pressed forged, plasma sputtered *(Russian)* 8−35330
Be, plasma spray/sinter technique, Ar, satellite support structures, appls. 8−7079
Cr, powder, plasma deposition for production of contact portions of cermet electric heating element 8−11364
Cr, powder comminution method effect on props. of TiC-steel+Cr composite 8−15341
Cu, densification of particulate materials, general law 8−19692
Cu, dislocation form. during sintering *(German)* 8−31361
Cu, equivalent sphere diameter calc., Saltykov method 8−31362
Cu-Al, fission under weightlessness conditions *(Russian)* 8−31357
Cu-TiC precipitation hardened composite, struct. effect on friction 8−11337
EuB$_6$, synthesis and hot pressing fabrication for appl. to neutron absorbing core control material 8−8904
Fe, carbonyl powder, particle size distrib. anal. by microscopy with statistical anal. of results 8−19691
Fe, cast, air-atomized powder, effect of particle size on C and O contents 8−15340
Fe, medium hardness, densification of particulate materials, general law 8−19692
Fe powder, carbonyl, R10 and R20, manufacturing effects on magnetic permeability 8−35009
Fe, powder preforms., hot consolidated rolled strip, mech. props. 8−15338
Fe, sintered parts, densification in burnishing process by rocking die method 8−35331
Fe-Cu-C, mixed powder compact, sintering mechanism 8−15343
Fe-Mo-(C)-(Ni), sintering 8−35333
Fe-Si(Mn)(C), atomisation of melt, charact. of metal powder 8−19688
Mg-Al (25 wt.%) powder, reaction with high press. H_2, MgH_2 form. and decomposition *(Korean)* 8−11554
Mg-noble metal alloy, sintered, supercorroding for heat and H_2 gas generation, seawater reaction 8−15607
Mo, powder sintering, transition metal activators, 1000-1350°C, heterodiffusion model 8−44044
Ni, ductile, electrolytic, densification of particulate materials, general law 8−19692
Ni, electrolytic and carbonyl grades, sintered sheet material, stopping power and pore size relationship 8−19693
Ni powder, atomisation of melt, charact. of metal powder 8−19688
Ni superalloy powder, thinning technique for microstruct. obs. using analytical electron microscopy 8−48587
Ni-Cr alloy, dispersion-hardened, prod. by mech. alloying 8−15345
Ni-Cr-Ti-Co-W-Al-Mo alloys AF-115 and AF2 1DA, superalloy powder compacts, fatigue origins 8−48521
Pb powder, automatic image analysis for charact. of size and shape distrib. 8−11473
Pb powder prod. by electrolysis of fused salts 8−19690
Pb-Bi alloy, fine powder electrodeposition and X-ray struct. obs. 8−11163
Ta(C,N)-Ni-HfC(HfN)(Mo$_2$C)(VC), sintering, prod. of hard metals 8−11155
TaC-NiC, powder for plasma arc spray coating appl. 8−15591
Ti, sintered sheet material, stopping power and pore size relationship 8−19693
TiC-Ni-Co-Cr, sintered, mech. props. effect of processing factors 8−11159
TiC-steel composite, effect of method of Cr additions on props. 8−15341
W, brittle spiral fibre, densification of particulate materials, general law 8−19692
W fibre reinforced Ni composite, prep. by hot isotactic pressing, mech. props. *(Slovak)* 8−19694
W fibre reinforced Ni-Cr (20 wt.%), hot pressing kinetics 8−35334
W fibre reinforced Ni-Cu composite, liquid phase sintering under press. 8−19695
W powder, hydrostatic pressing 8−11161
W, powder, produced by plasma regeneration *(Russian)* 8−31360
W/Cu powder with varying W particle size, burning behaviour and crack form. tests *(German)* 8−7005
W-Cu sintered alloy, produced from coreduced powders, densification 8−11154
W-Ni, liquid phase sintering, microstruct. meas. 8−44054
WC-Co sintered carbide tips, microscopic stress anal. 8−5663
WC-Ni detonation sprayed coating, wear resistant 8−35594
WC-TiC, powder for plasma arc spray coating appl. 8−15591
WC-TiC-Co, powder for plasma arc sprayed coating 8−15591
WC-TiC-TaC, powder for plasma arc spray coating appl. 8−15591

powder sprayed coatings
  electrostatic, particles velocity meas. by laser anemometer 8-18364
  Mo powder properties for plasma-sprayed coatings 8-48548
  ZnO-Cs, fabrication, UPS meas. 8-15279

powder spraying
  powder metal sprayed coatings, bond strength, influence of surface preparation 8-11150

powder techniques *see powder technology*

powder technology
  see also densification; hot pressing; powder metallurgy; powder spraying; sintering
  agglomeration techniques in powder technology, review 8-39713
  atomization review 8-23642
  binary powders, inhomogeneous mixture, procedure for determining specific volume 8-48345
  disperser for powder, suspension and emulsion production 8-23636
  electrophotographic dry powder toner concentration control *(Japanese)* 8-24878
  flow measurement by gravimetric method *(Polish)* 8-9740
  fluid bed forming in vacuum under vibratory action model 8-11147
  grain size determination by transient low press. air transmission 8-32965
  one sided die compaction, internal stresses 8-23641
  shrinkage measurement during hot pressing strain gauge device 8-11146
  vacuum hot pressing, continuous, of transparent ceramics, press design criteria 8-23643
  (Li,Na,Cu,Zn) ferrites, nonceramic synthesis, electrochem. investig. 8-35339
  $Mg(OH)_2$, and calcination product, relations between particle size, shape and surface area 8-48355
  $Mo+H_2S \rightarrow MoS_2$ 8-3078
  V-Mn-O system, phase comp. during oxide prep. 8-27447
  ZrN, plasma-formed, ESCA and supercond. transition temp. 8-19697

powders
  see also densification; granular structure; particle size; powder sprayed coatings; powder spraying; sintering
  alkali halides, microcryst. powders, colour centres, refl. spectra 8-23493
  atom-surface reaction, EPR anal. via ultrahigh vacuum/flow system 8-7232
  bronze, preparation by electrodeposition from normal salt baths of Cu, Sn, porous components fabrication appl. 8-20026
  ceramic, specific surface area meas. by gas adsorption 8-11144
  characterisation, survey of instruments and methods 8-11474
  component particle size analyser, using X-ray fluorescence *(Japanese)* 8-15615
  diamond, powders, oxidised surfaces, thermal desorpt. spectra 8-47661
  dynamic compaction, review 8-3071
  feldspars, initial sintering, theoretical treatments and exp. procedure 8-44067
  fine particle shape characterisation by decision matrix design and cybernetic mode operation 8-11143
  flow measurement by gravimetric method *(Polish)* 8-9740
  glass ceramic prep. by hot pressing and crystallisation of glass powder, mech. props. 8-15351
  glass powder, light scatt., close particle packing 8-1161
  glass/Cu-polymer compound powders, prep. and corona charging props. *(Japanese)* 8-19679
  granular material, particle crushing under high triaxial stresses *(Japanese)* 8-15466
  graphite powder compacts, diffusion of H_2 and N_2, time-lag analysis 8-2301
  green bodies, isostatically pressed, extruded and slip cast, binder distrib. 8-27448
  III-V nitride, preparation technology *(Czech)* 8-3037
  light scattering, close particle packing 8-1161
  metal oxide, quantitative surface meas., XPS method and appl. 8-40104
  metal powder suspension in air, spontaneous ignition temperature *(Russian)* 8-47027
  model laws, especially for silo models 8-38383
  particle classification calc. by geometry 8-23640
  particle profile charact. rel. to profile Fourier coeff. 8-11142
  purine, γ-irrad., dose-response curves 8-7215
  PVC, mech. comminution in fine struct. changes in porosity, density, specific surface area *(German)* 8-35345
  pyrimidine, powder, dose-response curves 8-7215
  pyrimidine powder, γ-irrad., dose-response curves 8-7215
  sample prep. for spectral anal. 8-23884
  science review *(Japanese)* 8-15326
  segregation of solid mixture in rotating vessel, cascading angle of particles effect *(Japanese)* 8-15327
  soft magnetic mat. prep. by precip. of insulating film on Fe powder in polishing bath 8-23637
  spherical powder sintering by surface diffusion, computer simulation 8-48344
  stream mean flow rate meas. by Doppler scatt. null enumeration *(Russian)* 8-47071
  submicron, sintering, surface area reduction kinetics, model 8-44039
  tensile strength data and failure loci from Jenike shear cell tests 8-31476
  testing, nondestructive, using electron spectroscopy 8-3430
  thermal conductivity, particle size and porosity effects *(Japanese)* 8-6191
  triboelectric charging, incremental charge-mass characterisation 8-17833
  work index estimation during grinding *(Japanese)* 8-19680
  Al_2O_3, fine powder, prep. by evaporative decomposition of solns. 8-39725
  Al_2SiO_5, solid state reaction with $Ca_2P_2O_4$ *(Japanese)* 8-19702
  $CaAl_2O_4$, fine powder, prep. by evaporative decomposition of solns. 8-39725
  CaO-MgO-Al_2O_3-SiO_2, glass-ceramic prep. by hot pressing and crystallisation of powder 8-11192
  CaO-MgO-Al_2O_3-SiO_2, glass ceramic, prep. by hot pressing and crystallisation, mech. props. 8-15351
  Cr, ultrafine particles, coatings for selective absorpt. of solar energy, efficiency 8-18060

powders continued
  Cu, compressed spherical powder, electrical conductivity *(German)* 8-6343
  Fe, passivating oxide layer comp. 8-31558
  FeO compacted powder, effect of wall groove orientation and wall lubricants, on WC wall friction 8-23831
  HFO_2, powder, preparation technique for highly sinterable powder 8-39714
  KBr, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8-15238
  KCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8-15238
  $KNbO_3$ powder synthesis, unit cell determ. 8-11168
  LaB_6, US comminution of refractory compound powders 8-23656
  $MgAl_2O_4$, active spinel, prep. and crystallite growth mech. 8-27465
  Mo, properties for plasma-sprayed coatings 8-48548
  NaBr powder coloured in electrodeless discharge, reflectance spectra, thermoluminescence props. 8-6796
  NaCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8-15238
  Nb_xC powders, plastic deform. characts. on vibratory milling 8-11183
  Ni powder, light scatt., close particle packing 8-1161
  NiO-Al_2O_3 powders, coprecipitated particle-size distrib. meas. 8-39726
  $^{237}NpO_2$ powder, oxalate based, prep. and charact. 8-11166
  PLZT powders, chemical prep. and hot pressing 8-44059
  Pb-Bi alloy, fine powder electrodeposition and X-ray struct. obs. 8-11163
  SiC, US comminution of refractory compound powders 8-23656
  Si_3N_4-ZrO_2, sintered and hot pressed, exam. of mech. props. 8-48509
  β-SiO_2-MgO reaction, diffusion controlled 8-6882
  $SrO.HfO_2(ZrO_2)$, US comminution of refractory compound powders 8-23656
  TiB_2, electrode, hot pressed, erosion resistance, struct. and porosity effects 8-3228
  TiN-VN refractory powder composite, resistors, produced in low temp. 8-11182
  $UO_{2\ \mathrm{and}\ 2.11}$, temperature factor determ. by powder elastic neutron diffraction 8-10152
  UO_2 powder, precompaction effect on compressibility 8-41846
  UO_2 powder, sintering charact. 8-35341
  W powder, hydrostatic pressing 8-11161
  WC, crystallite size distrib. of powder, SEM method *(German)* 8-47218
  WC, hexagonal, meas. of mean square shift of atoms in micron powders *(German)* 8-47313
  Y_2O_3, hot cast ceramic, prod., used as dielectric 8-11181
  Y_2O_3, US comminution of refractory compound powders 8-23656
  ZnO, ground powder, X-ray Fourier anal. *(Japanese)* 8-39727
  ZnO, powder layers, conductivity, O_2 chemisorpt. and photodesorpt. effects 8-43441
  ZrC, US comminution of refractory compound powders 8-23656
  ZrO_2, powder, preparation technique for highly sinterable powder 8-39714
  ZrO_2, Y_2O_3 stabilised, hydrothermal growth 8-15302
  ZrO_2-Zr cermet composite, hot pressed, fracture toughness 8-27604

power apparatus
  see also electric machines; power conversion; transformers
  superconductivity, research study *(Japanese)* 8-19192

power cables
  see also power overhead lines; superconducting cables; underground cables
  PWR crosslinked polyethylene insulated low noise triaxial cable *(Japanese)* 8-670

power control
  see also load regulation
  injection laser automatic level control by optoelectronic feedback *(German)* 8-33883
  magnetically stored energy, fast switching into external load, for pellet fusion 8-13339
  microwave enzyme inactivation system, electronic control to reduce dose variability 8-40285
  Tokamak superconducting coils, active energy transfer rate control using inductor-convertor bridges 8-13338

power conversion
  see also direct energy conversion
  plasma valve design with liq. metal cathodes, high-power conversion/switching appls. 8-9865

power factor measurement
  No entries

power factor meters *see power factor measurement*

power factor Q *see Q-factor*

power generation, electric *see electric power generation*

power lines *see power cables*

power measurement
  see also wattmeters
  coaxial power meter, based on Hall effect in semicondcutors 8-238
  lamp, calorimetric meas. of radiant energy, student expt. 8-8191
  laser calorimetry development at NBS and Calorimetrics Inc. 8-22161
  laser mass production and radiated power meas. improvements 8-37064
  laser power meter calibration for the range 5-1000 W using electrically calibrated calorimeters and beam splitters 8-1241
  laser pulse energy, optical calorimeter design *(Polish)* 8-29998
  laser pulse energy measurement by liquid calorimeter *(Russian)* 8-22163
  laser radiation pulse, liquid absorption cell technique, digital readers *(Russian)* 8-18000
  wattmeter, static, for use in educational establishments 8-45656

power overhead lines
  see also power cables
  deflection of cables under complex loading, incremental algorithm 8-9558
  radiation power of lines, spectrophotometric appl. *(Japanese)* 8-8453

power overhead transmission lines *see power overhead lines*
power packs *see power supplies to apparatus*
power plants
see also solar power; space vehicle power plants
air pollution, plume dispersion modelling for inversion breakup at power plant 8−3933
district heating in Stockholm, nuclear power and oil-fired plant comparison 8−37458
district heating systems, combined generation by fossil fired and nuclear power plants 8−37457
MHD, working fluid, seeded combustion products of petroleum-acetylene-O_2 mixtures 8−34256
nuclear power plant, impact and fate of released Cu on aquatic environments 8−7665
ocean thermal energy conversion (OTEC), emerging programme of significance to marine community 8−44875
ocean thermal energy conversion plant design, oceanographic data interpretation, ERDA program 8−44874
ocean thermal gradients, power plant design 8−16059
pipelines under creep conditions, allowable thermal stresses *(Russian)* 8−13930
wet cooling system for power plants, atm. impact of plumes and fogging 8−7761
power station computer control
nuclear reactor, point-model, heuristic approach to reinforcement learning control 8−46144
power station control
see also power station computer control
BWR, automatic protection system *(German)* 8−4989
BWR power plant, direct cycle, low sensitivity optimal controller study 8−8947
nuclear, B&W integrated control system improvement 8−8946
power stations
see also energy resources; geothermal power stations; nuclear power stations; power plants; steam power stations
coal-fired, fly-ash and slag natural radioactivity meas. 8−17442
noise control costs 8−33958
pipelines under creep conditions, allowable thermal stresses *(Russian)* 8−13930
thermal energy plants, NO_x emission, review of preventive measures *(Croatian)* 8−3935
power supplies to apparatus
see also cells (electric); constant current sources; power plants; power supply circuits; prosthetic power supplies
28 kV for IR visual micropyrometer 28 kV power source features *(Russian)* 8−12701
500 V homopolar generator for Tokamak device 8−5957
atomic absorption spectrophotometry, W filaments as electrothermal atomisers 8−44433
bolometer amplifier, IR spectrometer for Meteor artificial satellites *(German)* 8−28484
cardiac stimulator, isotopic generators appl. *(Spanish)* 8−15922
Cherenkov counter spectrometric channels, optimum supply conditions of 58AVP photomultipliers 8−9031
cyclotron, motor generator current control and stabilisation, semicond. device appl. 8−21790
DORIS current supplies, equipment design and performance *(German)* 8−21797
electron accelerator, high-current, high pulse, inductive energy storage 8−46189
electron synchrotron storage ring RF power supply *(German)* 8−17453
electrostatic accelerator delay line voltage multiplier 8−33326
flux pump supply, using inductive current transfer 8−12704
fusion reactor pulse power supplies development 8−8990
fusion reactor using air powered fibre optic coupled pulser 8−13342
harmonic current AC filters at KEK accelerator 8−33333
ion source with electron bombardment, power-supply block 8−8467
JIPP T-II injector 8−29689
neutral beam injection system power supply, 80 to 150 kV, development program 8−13367
nuclear fuel rod sealing by capacitor bank 8−8910
particle, accelerator automatic klystron power supply system transient behaviour theory *(German)* 8−5077
pulsed power conversion with inductive storage, for particle accel. in fusion device 8−13340
pulser, high average power, for Cu halide laser systems 8−5497
R&D instrumentation, selection of power supply 8−246
streamer chamber, pulse transformer-based HV system 8−5095
Tokamak device by homopolar generator 8−5958
Tokamak devices for nuclear fusion *(Dutch)* 8−741
Tokamak ohmic heating pulsed power supply digital simulation 8−8991
transformer-rectifier flux pump power supplies performance anal. 8−12703
X-ray electron spectrometer appls. 8−21307
X-ray electron spectrometer reference voltage supply 8−21307
X-ray equipment, low power high-voltage devices 8−21309
zone refiner, electron beam, regulated DC power supply and emission current control 8−6844
power supply circuits
see also constant current sources; power supplies to apparatus
coils for RF powered implant telemetry, design 8−31926
controlled, for electrolytic enrichment of T in environmental samples 8−21173
crystal heater supply using controlled electron bombardment 8−181
current regulated sweep unit for supercond. solenoid 8−4659
inductor-convertor bridges, for Tokamak supercond. coils active energy transfer rate control 8−13338
power supply systems *see power systems*
power system control
see also load regulation; power station control
6.3 Mb/s optical fibre communication for power system protection and control 8−1423
environmental dispatch simulation and emission dispersion modelling 8−32221
JET pulse power supply system 8−25327
pulsed MHD convertor, threshold energy characts. for elec. power production with resistive load 8−1908
power system protection
see also lightning protection; overcurrent protection; transformer protection
6.3 Mb/s optical fibre communication for power system protection and control 8−1423
power systems
see also power apparatus; total energy systems
fibre-optic communication systems for electric power companies 8−1422
nuclear plant safety system redundancy, cable routine inspection 8−735
power transformers
electro-medical equipment, leakage current source, safety measures *(German)* 8−3625
transformer rectifier flux pump power supply using inductive current transfer 8−12704
transformer-rectifier flux pump power supplies performance anal. 8−12703
Fe-Si (3 wt.%) cores with insulative coatings, morphological and struct. SEM characteris. 8−23881
power transistors
V-groove multichannel power MOST, non-pinched off regime, elec. props. *(French)* 8−23174
GaAs MESFET fabrication using dual-bubbler CVD system 8−6856
power transmission lines
EHV, ground level gradient, small plants and animals biological studies 8−31856
electric field effect on communication line maintenance personnel 8−40353
superconducting, He refrigerators optimisation, w.r.t. cost and reliability 8−24802
power utilisation
see also drives; environmental engineering; heating; metering; refrigeration; transportation
district heating from Kaiseraugst nuclear power station 8−37462
district heating in Stockholm, nuclear power and oil-fired plant comparison 8−37458
duplex chemical system for storage and transport of heat from LWR, district heating 8−37460
heat recovery from nuclear plants for agriculture and pisciculture 8−37464
heat supply from nuclear reactors and coal combustion, appl. study 8−37455
low temp. heat extraction from nuclear power plants for district heating 8−37456
nuclear energy for combined electricity and district heating prod. 8−37459
nuclear plants, heat extraction from steam generators 8−37465
nuclear power appl. to district heating systems 8−37454
PWR nuclear steam supply system for district heating and elec. prod. 8−37466
soil warming, waste heat from nuclear power station 8−37463
PPP calculations
benzene, X-ray photoelectron spectra, C 1s shake-up struct., PPP CI calc. 8−42126
bispyrrol-indigo, π-electronic struct., PPP-type calc. and config. anal. 8−21855
cyclopenta[h]cycl[4.2.2]azine, electronic struct., photoelectron data 8−5286
diamino-quinone, π-electronic struct., PPP-type calc. and config. anal. 8−21855
ethylene, π-electron system, self-consistent many-body theory 8−25432
fluorene conjugate bases, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
polyacenes, electronic transition bands, Franck-Condon factors, PPP SCF MO/CI calc. 8−33430
porphin, electron spectra, PPDP/S approx. calc. *(Russian)* 8−13435
porphin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
porphyrin a, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
protoporphyrin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
TCNE-stilbene complexes, and analogs, charge transfer energy calc. isomer prediction 8−21854
transition from collective motion model of π-electrons to semiempirical Pariser-Parr-Pople theory *(Russian)* 8−5146
π-electron systems, self-consistent many-body theory 8−25432
praseodymium
see also nuclei with ......
glass:Pr^{3+}, polarised luminesc. 8−48224
CsBr:Pr, absorpt. and fluoresc. spectra, crystal field 8−2885
$LaCl_3$:Pr^{3+}, hyperfine struct. of 6011 Å line, laser-induced absorpt. line narrowing 8−15196
LaF_3:Pr^{3+}, $^1D_2$ metastable state, hyperfine splittings, enhanced and saturated absorpt. spectra 8−43694
LaF_3:Pr^{3+}, hyperfine splitting of $^1D_2$ metastable state, RF optical double reson. 8−35067
$NaLaO_2$:Pr^{3+}, obs. of efficient luminesc., UV excitation 8−43922
Pr, XIII, UV spectra, 60-600 Å reson. lines 8−33455
Pr^{3+}, nuclear quadrupole screening parameter, many-body perturbation theory calcs. 8−47751
$PrCr_{2.3}Ti_{2.3}O_9$, flux growth and chem. characts. 8−23595
praseodymium alloys
La_{1-x} Pr_xSn_3, Kondo effect from excited cryst. field levels, elec. resist. 8−14723
$La_{1-x}Pr_xSn_3$, singlet ground-state system, mag. susceptibility 8−19215
$La_{1-y}Pr_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
Pr-Tb, elec. resist. temp. depend. 8−2462
$PrAg_2$, high temp. modification, thermal effects 8−38665
PrAl, annealed, mag. props. and mag. struct. 8−6517
PrCoAl, mag. props. 8−2659
$Pr(Co_{1-x}Cu_x)_5$, magnetocrystalline anisotropy exam. 8−39315
$Pr(Co_{1-x}Cu_x)_5$, saturation magnetisation anisotropy 8−47960
$Pr_{0.25}La_{0.75}Mg$, cryst. field, neutron diffr. meas. 8−34810
$Pr_{0.25}I\ a_{0.75}Zn$, cryst. field, neutron diffr. meas. 8−34810
$PrSn_3$, inelastic neutron scatt. spectra, cryst. elec. field effects 8−43336

praseodymium compounds
see also praseodymium alloys
$Ca_{0.5}Pr_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8−2260
Eu-Pr-Fe-O system, solid solns. of ferrogarnet and ferroperovskite type 8−27488
Pr-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
$PrCl_3$, cooperative Jahn-Teller ordering of elec. dipoles in non-Kramers doublets 8−15115
$PrCl_3$, spectral energy transfer 8−19550
PrF_3, ionisation energies, satellite struct., photoelectron spectra, MS $X\alpha$ calcs. 8−13425
PrF_3, spectral energy transfer 8−19550
$PrFeO_3$, thermodynamic study of form. 8−48685
$Pr_{0.2}La_{0.8}F_3$, fluorescent line narrowing, time depend. effects 8−31244
PrN, m.p. N_2 press. depend., Pirani-Alterthum meas. 8−43103
PrO, visible spectra, 7500-8500 Å, VII and X systems, rot. anal. *(French)* 8−46355
$Pr_{24}O_{44}$, beta phase, high resolution cryst. struct. images 8−42991
Pr_6O_{11}, mag. and transport props., multiphonon hopping conduction 8−19211
Pr_7O_{12}, n-beam struct. images, expt. observations and computer calc. 8−38593
$Pr(OH)_3$, Jahn-Teller antiferroelectric ordering 8−10859
$Pr(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
$Pr_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
PrSb, crystal field effect in thermal expansion 8−19305
PrSb, mag. excitations, press. depend., inelastic neutron scatt. meas. 8−10699
$Pr_{1-x}Sr_xCoO_3$, electronic and mag. props., itinerant ferromagnetism obs. 8−10660
$PrVO_3$, neutron diffr. exam. of first order mag. transition 8−2685
$YO_{1.5}$-PrO_x, phase relns. and electrophys. props. of solid solutions 8−23686
$Y_{2.5}Pr_{0.5-x}Ca_xFe_5O_{12}$, magnetic aftereffect exam. 8−23304
YbPrBiIG, wave props. of domain wall 8−48011

preamplifiers
analogue differential preamplifier for mechanical recording 8−40447
charge sensitive preamplifiers, signal and noise response 8−33404
chopper, strain gauge blood pressure transducer appl. 8−3659
cooled low-noise bolometer preamplifier 8−4698
EMG, miniature skin-mounted preamplifier for surface meas. 8−35990
FET pre-amp., use with HgI_2 as low energy X-ray spectrom. 8−37479
hybrid p-i-n photodiode-FET preamplifier design for digital optical receivers *(German)* 8−33878
IR detector/preamplifier systems at cryogenic temp. 8−45710
isolated, electrophysiology appl., cct. 8−31922
low noise preamplifier, for gravit. research 8−243
semiconductor detector to cold resistance preamplifier, signal coupling through cable or delay-line transformer 8−33401
solid-state detector spectrometer system, energy resolution, electronic aspects 8−46231
spectrometer, high voltage power module and charge amplifier design 8−40826
X-ray semiconductor radiation detector, cooled preamplifier systems *(Slovak)* 8−21813
GaAs, low-noise, FET preamplifier for low-temp. NMR and SQUIDs 8−4672

precipitation
microstructural process and features only
see also Guinier-Preston zones; segregation; Widmanstatten structure
alloy, precip. dimensions, annealing temp. depend. *(Russian)* 8−15399
Alnico alloy, C addition effects on struct. and mag. props. 8−23835
binary alloy, morphological stability, discrete lattice theory, appl. to interfacial zones 8−3133
binary alloys, generalised coarsening theory 8−39778
binary metals, morphological stability study 8−11231
brass, surface microstruct. changes on immersion in $CuSO_4+H_2SO_4+HI$ soln. 8−19945
cuboidal precipitate in anisotropic matrix, elastic strain field calc. 8−48416
diamond, natural, defect struct., recent obs. by new methods 8−30628
dislocation, inertia, influence on movement near precipitates *(Russian)* 8−14346
ellipsoidal morphology volume fraction estimation method using Young's modulus data 8−39781
extended growth defect characterisation, review 8−30649
FIM techniques, appl. to metallurgical problems, review 8−35620
G 8−44130
glass, decomposition, phase separation processes, diffusion coeffs. determ. *(Germany)* 8−39736
grain boundary cohesion, segregation effects 8−15411
grain boundary segregation, two dimensional compd. form. and precipitation 8−15408
growth kinetics of plate shaped precipitates 8−6934
growth kinetics of plate-like precipitates, vol. diffusion controlled growth 8−6935
kinetics, effect of particle solubility and inhomogeneities 8−27530
Mossbauer line broadening, drift-induced, in elastic field of second phase particle *(Russian)* 8−19382
mullite, crystallisation from SiO_2-Al_2O_3 melts 8−47243
p-n junction, thermally associated field emission near precipitates 8−14801
p-n junctions, thermally assisted field emis.ion near precipitates 8−14809
steel, 30KhG and 30KhN, carbide formation, Mo alloying effects *(Russian)* 8−48402
steel, austenitic, alloyed with N, decomposition of solid solution 8−23712
steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
steel, austenitic, Cr-Ni-Mo (25, 28, 20 wt.%), containing N_2, electron microscope obs. of Cr_2N precipitates *(Japanese)* 8−15404
steel, austenitic, nitrided, creep, effect of N_2 and Ti and prior deform. 8−23789
steel, austenitic stainless, aged and deformed, growth and dissolution of NbC particles 8−39782
steel, austenitic stainless, stabilized, creep improvement, effect of B precipitation and hyperquenching *(French)* 8−23784

precipitation continued
steel, carbide phases formation during annealing, of lower bainite *(Russian)* 8−6930
steel, Cr, high C, in situ transform. of cementite to M_7C_3 and internal defects of M_7C_3 by tempering 8−31412
steel, Cr-Mo (2.25, 1 wt.%), annealed, heat treatment effect on tensile props. 8−11243
steel, Cr-Mo (2.25, 1 wt.%), decarburization, carbide effects in high temp. Na *(Japanese)* 8−15403
steel, Cr-Mo (9, 1 wt.%) appl. of electron energy loss spectrometry to precipitate morphology 8−48414
steel, CrMo and CrMoV, creep resistant, ductile-brittle transition temp., precipitation effects *(German)* 8−19856
steel, ferritic, FeC form. kinetics, Monte-Carlo simulation *(German)* 8−39779
steel, heat resistant, explosive loading effects on struct. and mech. props. *(Russian)* 8−39787
steel, high-speed, shiny nonfusion rings in friction welding, origin 8−23872
steel, lath martensite, elastic interaction of H_2 with precipitates 8−3129
steel, low-C, coherent precip. of VC 8−35392
steel, maraging, Ni (18 wt.%), grain boundary precipitation, scanning Auger electron obs. 8−3132
steel, maraging, Ni-Co-Mo (18,10,5 wt.%) precipitation *(Japanese)* 8−15402
steel, maraging Ni-Co-Mo, precipitation, elec. resist. meas. *(Japanese)* 8−11228
steel, Mg effect on precipitation of C and or N, and mech. props., during strain ageing *(German)* 8−35387
steel, mild, yield strength and fracture toughness, microstruct. effect, heat treatment 8−27615
steel, precipitation of AlN *(French)* 8−23711
steel, quench ageing effect of Mn content on C and N precipitation and mech. props. *(German)* 8−31409
steel, Si, metallography of bainitic transform., carbide precipitation 8−27527
steel, stainless, nitride phase determination method 8−7276
steel, stainless, type 316, electron beam heating effect on extracted intermetallic precipitate 8−35394
steel, stainless precipitate phasee in type 321 after ageing 17 years at 600°C 8−27525
steel, tempered, kinetics of solution of Mn in precipitated cementite *(Russian)* 8−6891
steel, V- or Cr- or Mn-, tempering, initial stages of carbide form., electron diffr. *(Russian)* 8−19760
steel austenitic Cr-Ni-Be, cellular precipitation *(Japanese)* 8−11229
steel VNS-2, damping capacity, magnetomechanical, phase transform. effects 8−31445
superconductor, elementary interaction force between flux-line lattice and precipitates 8−10623
vacancy adsorption on internal boundaries, rel. to recrystalln. and precip. 8−10084
Zircalloy in thermal gradient, calc. of supercharging effect of H_2 and hydride distrib. 8−21639
Ag, compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
Ag-Cu, metastable solubility lines on Ag side 8−39737
Al alloy 7075, acoustic emission sources during plastic deform. 8−27573
Al-Al_2Cu, aligned eutectic, precipitation, TEM and microhardness meas. 8−27529
Al-Au(Cu), growth kinetics of plate shaped precipitates 8−6932
Al-Au(Cu), growth kinetics of plate shaped precipitates 8−6933
Al-Au(Cu), growth kinetics of plate-shape precipitates 8−6934
Al-Au(Cu), growth kinetics of plate-like precipitates, vol. diffusion controlled growth 8−6935
Al-Cr (0.1 wt.%), exam. of pre precip. behaviour, by elec. resistivity meas. and TEM exam. 8−48406
Al-Cu, intergranular morphology of θ' precipitates, angle between grain boundary/precipitate plane 8−48413
Al-Cu alloy precipitation and heat of evolution, microcalometric obs. *(Japanese)* 8−15406
Al-Cu-Mn-Zr-Fe-Si (6,0.3,0.18,0.3,0.1 wt.%) experimental evidence of Mn enrichment in Al_2Cu precipitates by EDS in TEM 8−15415
Al-Ge alloy, Ge particle size, determ. by small- and wide-angle X-ray scatt. 8−19966
Al-Li, alloy, ageing, δ'-phase precip., effect of quenching conditions *(Russian)* 8−19761
Al-Li alloy, thermal anal. of precipitation 8−15417
Al-Li alloys, precipitating, annealing spectrum 8−31429
Al-Mg alloy, disperse β-phase, kinetic laws of coagulation *(Russian)* 8−27518
Al-Mg_2Si (0.95 wt.%), excess Si effect on ductility 8−27580
Al-Mg-Mn alloy, disperse β-phase, kinetic laws of coagulation *(Russian)* 8−27519
Al-Mg-Si rod, extruded and cold drawn, annealing *(German)* 8−39804
Al-Mn (1.8 wt.%), cold-rolled, precipitation and recrystallisation 8−27540
Al-Zn-Mg, grain boundary surfaces, plasmon loss satellites in Auger spectra 8−15261
Al-Zr solid soln., discontinuous precipitation of metastable Al_3Zr 8−3130
Al_2O_3, sintered, TEM ons. of K containing β''' precipitates 8−27522
α-Al_2O_3:Fe, ferrimagnetic resonance exam. precipitate nature and size determ. 8−48405
Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
Au-Cu-Ni(Ag), phase precipitation on domain boundaries *(Russian)* 8−39777
Be, phase struct. *(Russian)* 8−15401
Co, compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
Co-Cr-Nr-TaC eutectic alloys, fatigue, microstructure effects 8−23803
Co-Fe-Nb alloys, effect of cold working on mag. props., and precipitation morphology 8−39803
Cu, compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
Cu matrix, small oxide precipitates, two-phase system, sputtering and secondary ion emission 8−39650
Cu-Be (2.1 wt.%), discontinuous precipitation *(Japanese)* 8−19766

precipitation continued
- Cu-Fe, growth kinetics and interfacial energy of coherent γ-Fe particles *(Japanese)* 8−19765
- Cu-Mn, positrons as probe of phase transforms. 8−31401
- Cu-Mn-Al, constricted hysteresis loop rel. to microstruct. 8−19273
- Cu-Nb-Sn dil. alloys containing Nb_3Sn precipitates, superconductivity 8−43507
- Cu-Ni film, (001), in situ oxidation, TEM obs. 8−23874
- Cu-Ni-Cr (28, 2.8 wt.%), spinodal alloy, microstruct. and tensile props. 8−39858
- Cu-V-Ga dil. alloys with V_3Ga particles, supercond. props. and microstruct. 8−39278
- $Cu_{2+x}Mn_{1-x}Al$, omega phase, roles of electron microscopy and electron diffraction *(French)* 8−27524
- CuZn, omega phase, roles of electron microscopy and electron diffraction *(French)* 8−27524
- FE, electrolytic, dissolved H precip., effect on flow stress *(Japanese)* 8−39848
- Fe, compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
- Fe-Cr-Ni liquid alloy, N_2 soln. and TiN precipitation 8−6931
- Fe-Cu alloy, vapour-deposited, struct. and thermal stability 8−43265
- Fe-Mo (3at.%), internally nitrided, precipitate, morphology and chemistry 8−44128
- Fe-Ni, austenite formed from martensite during annealing in (α+γ) region, crystallographic study 8−19782
- Fe-Ni-Co, diffusion controlled phase growth 8−30782
- Fe-Ni-Cr alloy 800, minor alloying element effect on creep, ageing microstruct. 8−27572
- Fe-Ni-Cr-Ti-Al, ausaging alloy, cellular precipitate indentification *(Chinese)* 8−11225
- Fe-Ni-Mo, small angle X-ray scatt. study, pre-precipitation phenomenon obs. *(French)* 8−19757
- Fe-Ni-Ti alloy, ageing mechanism, neutron diffr. expts. *(Russian)* 8−48403
- Fe-Ni-Ti martensitic alloy, γ′ particle effect on crystallisation struct. *(Russian)* 8−44129
- Fe-Ni-V alloy, ageing of martensite *(Russian)* 8−39808
- Fe-Ni(Si), precipitation of AlN *(French)* 8−23711
- GaAs, etched, saucer-pit defect identification 8−43021
- GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8−6067
- Ge:As, containing dislocation loops, dynamic scatt. of X-rays, extinction effect 8−47384
- H_2 in Al-Zn-Mg at grain boundaries after water vapour embrittlement 8−15564
- In surface, impurity precipitation and resolution at melting point 8−14553
- KCl:Sn^{2+}, thermally stimulated space charge decay 8−48111
- K_2O-MgO-SiO_2 glass, crystalline phase precipitation during crystallisation early stages, DTA *(Japanese)* 8−42919
- $LaNi_5$, self restoring of active surface, photoemission, mag. susceptibility study 8−48280
- Mg-Al (9 wt.%), ageing via cellular reaction, microanal., cell boundary vel. meas. 8−11230
- Mo, compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
- NaCl:Ca, precipitate form., transform. after annealing, critical flow stress 8−38848
- NaCl:Pb, precipitation of Pb impurity 8−48415
- NaCl:Sn^{2+}, thermally stimulated space charge decay 8−48111
- Nb-Al (20 at.%), diffuse scatt. before Nb_3Al phase form., unstable phase *(Russian)* 8−3131
- Nb-Cu (0.02 wt.%), Cu electron Nb_5Si, $NbSi_2$ and NbB_2 form. *(Russian)* 8−15400
- Nb-Ti (60 at.%), aged, TEM exam. of precipitation process *(Japanese)* 8−48409
- Nb-Ti superconducting alloy, critical current density, heat treatment effects *(Japanese)* 8−14909
- Nb_3Al superconductors, sputter deposited, BCC to A15 transition, microstruct. investig. 8−27512
- Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
- Ni alloy, STEM microanalytical techniques comparison for precip. comp. determ. 8−35790
- Ni alloy Mar M200, directionally solidified Hf additions, effect of vol.% γ′ on creep rupture 8−27526
- Ni, β-phase form., H enriched, at surface and grain boundaries, during H_2 absorption *(Russian)* 8−31410
- Ni, compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
- Ni, polycryst., bulk-to-surface precip. and surface diffusion of C, AES data interpretation 8−34713
- Ni superalloy, cast, microstruct. and microanalysis 8−35393
- Ni-A-Ti (6,1 wt.%), γ′ phase precip., deform. effects *(Russian)* 8−48404
- Ni-Al (14 at.%), two stage ageing effect on spatial distrib. of γ′-phase particles *(Russian)* 8−39805
- Ni-Al (6.05 wt.%), prediction and meas. of precipitate number density 8−19756
- Ni-Al (6.35 wt.%) foil, radiation-induced precipitate redistrib. 8−30681
- Ni-Al (6.35 wt.%) precipitate coarsening, redistribution and renucleation during ion irradiation 8−23709
- Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8−35496
- Ni-Cr alloy KhN70VMTYu, heat resistant, explosive loading effect on struct. and mech. props. *(Russian)* 8−39787
- Ni-Cr-Al-Cr-Hf-Zr-C, directionally solidified eutectic with (Hf,Zr)C reinforcement, precipitation, and thermal cycling 8−44057
- Ni-Cr-Al-Ti-Mo, low temp. mech. behaviour, precipitation 8−39860
- Ni-Cr-Co, Nimocast alloy 738, γ″ precipitate morphology and creep rupture, thermal stress crack effect 8−11318
- Ni-Cr-Mo-Fe-Mn, Kh12M23, intermetallic phases exam. *(Russian)* 8−39740
- Ni-Mo-Al and Ni-Mo-Al-V, high-resist., struct. transforms., TEM *(Russian)* 8−19762
- Ni-Si, ion beam irradiation induced Ni_3Si surface film segregation 8−38761
- Ni-Si solid soln., radiation, induced precipitation dose rate effects 8−6936

precipitation continued
- Ni-Ti (8 and 10 wt.%) alloy, aged, precipitation behaviour at 550 to 950°C, X-ray and electron microscopy exam. 8−39785
- Ni-W-B, superalloy, M_5B_3 type boride 8−44131
- NiO, with spinel-type defect struct., ferromagnetic reson. meas. 8−43647
- NiO-Al_2O_3 powders, coprecipitated particle-size distrib. meas. 8−39726
- Pb glasses, Cu containing, crystallisation 8−47241
- Pb-Ag, Ag precipitation kinetics 8−19758
- Pb-Na alloy, with Pb_3Na precips., flux pinning, crit. currents obs. *(German)* 8−14907
- $Pb_{1-x}Cd_xS$ metastable epitaxial films, growth and physical props. 8−27417
- PbNa, type-II superconductor, regularly ordered precipitates, peak effect, crit. current meas. *(German)* 8−19196
- Si Czochralski wafer intrinsic gettering by oxide precipitate induced dislocations 8−6092
- Si Czochralski wafer oxide precipitate-dislocation complex characterisation 8−14357
- Si, dislocation free, O_2 precipitation, stacking fault form. 8−38731
- Si dislocation-free crystal O precipitation obs. 8−6095
- Si, dislocation-free single crystals, growth microdefects, etching and X-ray expts. 8−47385
- Si wafer, Czochralski grown, precipitation during high temp. oxidation 8−11381
- Si:B, implanted, oxidation induced precipitate defects, TEM 8−31556
- Si:B, implanted, shrinkage of rod shaped defects 8−6061
- Si:B, ion-implanted, dislocation climb, TEM obs. 8−6062
- Si:B, solubility and precip., and supersat. resulting by thermal predeposition 8−11232
- Si:Ir, precipitation of solid soln., photocapacitance, electrical resistivity meas. 8−47833
- Si:Li, precipitation centres, elec. cond., Hall effect meas. 8−48417
- $SmCo_5$ based alloys, dissociation process *(Russian)* 8−27542
- Sn-Ni electrodeposit, metastable, transform. kinetics, X-ray and SEM meas. 8−38979
- Te-Pb (20 at.%) alloy, amorphous, obtained by rapid cooling from liq. state, crystn. behaviour 8−26445
- β IIITi alloys solution treated and aged, estimation of precipitate volume fraction using Young's modulus 8−39781
- Ti-Mn (0.4 and 12 wt.%), bonding between α-β interfaces, subsequent deform. 8−14517
- TiC-base alloys, anomalous phase flaky precipitation *(Japanese)* 8−48401
- TiN, precipitation of ordered δ′-phase *(Russian)* 8−6929
- U-Al (0.78 at.%), behaviour of metastable phases under neutron irrad., application of model 8−48408
- UC+UC_2, neutron irradiation, U_2C_3 deposition 8−33253
- V-D alloys, low frequency internal friction study 8−48444
- V-N system, phase formation *(Russian)* 8−39739
- V-O alloy, temp., dose and conc. depend. of void form. following V^+ ion beam irradiation 8−10105
- V_4O(β-phase), X-ray study of precipitated phase *(Ukrainian)* 8−6928
- ZnS-O, single cryst., fast neutron irrad., optical props. 8−27331
- Zr-Nb (2.5 wt.%), memory effect in hydride precipitation 8−11227

precipitation (atmospheric) *see atmospheric precipitation*

precipitation (meteorology) *see atmospheric precipitation*

precipitation (physical chemistry)
- *for precipitation within solid systems (microstructural changes) see precipitation*
- *see also crystal growth from solution; flocculation*
- aerosol, multicomponent, coagulation eqn., with/without particle growth 8−35727
- aerosol particle size distrib., dynamic behaviour, coagulation, condensation, nucleation and removal 8−35726
- colloids, hydrophobic, coagulation mechanism 8−40085
- macromolecular multicomponent system, phase separation, thermodynamic perturbation theory, calculus 8−18778
- nitrate solutions, highly active, precipitation of Mo compounds during evaporation 8−37426
- Ostwald ripening, reaction-controlled, of precipitates in steady state, general kinetics 8−35715
- Ostwald ripening of precipitates, general kinetics 8−27808
- AgBr, crystal growth behaviour, influence of Gibbs-Thomson effect 8−24883
- $CaCO_3.H_2O$, formation of aragonite 8−27427
- CdS precipitates from acetate solns., crystal structure and photocond. obs. *(Japanese)* 8−10502
- CdS_xSe_{1-x} thin-film position-sensitive photoresistor prod. and props. *(Russian)* 8−43503
- $Co(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589
- Cu-Al_2O_3, composite coatings, prep. by precip., props. 8−23841
- $CuMn_2O_4$, formation in phase transition during ht. treatment of $Cu(OH)_2$-αMn$(OH)_2$ 8−23659
- $Fe(OH)_2$, gel, coprecipitation of divalent metal ions in soln. *(Japanese)* 8−31714
- $MgMn_2O_4$, formation in phase transition during ht. treatment of $Mg(OH)_2$-α-Mn$(OH)_2$ 8−23659
- Nb, precipitation from gaseous phase, during H_2 reduction of $NbCl_5$ and $TaCl_5$, Ta behaviour *(Russian)* 8−44017
- Nb_2O_5, hydrated gel, prep. conditions on pore struct., adsorpt. meas. 8−3068
- $Ni(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589
- $PbCrO_4$, cryst. growth kinetics and particle size in precipitating K_2CrO_4-$Pb(NO_3)_2$ mixed soln. 8−26472
- Pu, separation, by MnO_2 coprecipitation from fresh and saline water 8−27814
- SnO_2:Eu powder phosphor, prep., low energy electron excitation 8−39608
- Ta, purification from Nb during precipitation from gaseous phase, during H_2 reduction of $NbCl_5$ and $TaCl_5$ *(Russian)* 8−44017
- TiO_2-Sb_2O_3 system, phase comp. of roasted coprecipitates 8−23651
- WC-Co cemented carbides, effect of Co form and distrib. in prep. starting mixture 8−44072
- $Zn(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589

precipitation ageing *see precipitation hardening*
precipitation annealing *see precipitation hardening*
precipitation hardening
age temperature shifting rel. to phenomenological theory of annealing and precipitation hardening 8−15428
ageing alloys, single cryst., deform. and hardening 8−23716
glass, chemically strengthened, ion exchange temp. and time influence on stress profiles and strengths 8−31417
glass, diffusion strengthening technique 8−31418
rubber-epoxy resins, heterogeneity analysis, light scatt. and statistical methods 8−2024
steel, austenitic stainless, Cr-Ni-Mo-Mn, Mo, Mn and ageing effects 8−35413
steel, Cr-Mo-V, creep, effect of microstruct., heat treatment, transform. temp. 8−11248
steel, maraging, DI52, low cycle fatigue in gaseous H_2 *(Russian)* 8−35478
superalloy, microstructure resulting from alloying and heat treatment, effect on creep, fatigue, fracture strength 8−11246
Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
Al-Cu (4 wt.%), precipitation hardened and fatigued alloys, solute loss at fracture surface, EPMA exam. 8−39893
Al-Cu (4 wt.%) alloy, precipitation hardened, single crystal, directional plastic behaviour, exam. 8−39788
Al-Mg-Si, thermomechanically treated, age-hardening 8−11236
Al-Zn-Mg (3,1.5 wt.%), precipitation hardened and fatigued alloys, solute loss at fracture surface, EPMA exam. 8−39893
AlZnMg alloy, precipitation hardened, strength 8−39786
Be-Cu high-strength alloy characteristics for electrical components 8−48547
Be-Cu mill-hardened strip stress relaxation obs. 8−48485
Co-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Cu based materials, sputter deposited at high rate, microstruct. and props. 8−22988
Cu-Be (2.1 wt.%), discontinuous precipitation *(Japanese)* 8−19766
Cu-Be alloy *(Japanese)* 8−35398
Cu-Co (2 at.%), age hardened, stage I fatigue crack propag. 8−3203
Cu-Cr, precipitation hardened, wear 8−3234
Cu-Fe, single crystal with coherent γ-Fe particles, precipitation hardening 8−31416
Cu-Ni-Cr, microstruct. behaviour and mechanical hardening 8−47281
Cu-TiC precipitation hardened composite, struct. effect on friction 8−11337
Cu-Ti(0.7 at.%), plastic deform. and precip. hardened, annealing time 8−48446
Cu_3Au-Co, underaged, ordered and disordered single crystal, hardening mechanisms 8−3134
Fe, cast, increase in yield strength, after phase transformations 8−44125
Fe-Mn-Al-C, hardening during ageing, 450-750°C *(Russian)* 8−3135
GeTe, elec. cond. and microhardness, thermal cycling effect *(Russian)* 8−35485
Mg-Al(-Zn), solute-vacancy binding energies from hardness meas. 8−39789
Ni-base superalloy, IN-738, microstruct. changes during isochronal heat treatment, 773-1467K 8−27531
Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Ni-Nb(-Cu)-C, NbC dispersed supercond. tapes, fabrication and characts. 8−19773
steel, 36NKhTYu, aged, rate of discontinuous precipitation of γ'-phase, short high-temp. treatments *(Russian)* 8−11226
Ti alloy, microstructure resulting from heat treatment, alloying, effect on creep, fatigue, fracture strength 8−11246
Ti-Al-V-Cr-Mo-Zr (3,8,6,4,4 wt.%), beta-C, microstruct. effect on mech. props. 8−27577
U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8−23729
Zr-Nb alloy, isothermal decomposition at elevated temp. 8−27470
prediction theory *see filtering and prediction theory*
predictive control
BWR, control rod sequence exchanges utilizing an off-line predictive code 8−21725
predictor-corrector methods
see also Runge-Kutta methods
temperate lakes, finite element analysis of one dimensional thermocline problem 8−49042
predissociation of molecules *see molecular predissociation*
prerotation *see rotation*
presentation, technical *see technical presentation*
presentation methods, radar *see radar displays*
presintering *see sintering*
pressing, hot *see hot pressing*
pressure
see also atmospheric pressure and density; high-pressure phenomena and effects; radiation pressure; vapour pressure
composite cylindrical shells, reinforced, stability loss under isotropic external pressure 8−42554
elastic linear, material of hexagonal symm., half-space, indentation by circular punch 8−34020
fluctuations in heat transfer channels with surface boiling *(Russian)* 8−14088
interstellar gas, press. effect in stellar line accretion theory 8−32525
lattice gas model, press. by Monte Carlo computer simulation 8−4564
pressure, atmospheric *see atmospheric pressure and density*
pressure control
see also vacuum control
blood pressure control in hypertensive crisis, closed loop control of sodium nitroprusside infusion 8−44688
blood pump pressure servovalve control, moving coil system *(German)* 8−24182
proportional counters, thin-window, rocket-borne, gas press. control system 8−17512
vapour pressure control, liq. ^{4}He applic. 8−16900
X-ray telescope, gas control system for counter expts. 8−40827
Pu fuel research facility for advanced LMFBR fuel *(Japanese)* 8−29624
pressure measurement
see also vacuum measurement; vapour pressure measurement
aerospace instrumentation, conference, Las Vegas, Nev., USA, (May 1977) 8−12075
atmosphere, use of NS LX1600A press. transducer as short-range altimeter 8−28344
blood pressure cuff control unit, automatic multi-function device 8−36013
blood pressure direct measurement for intensive care and operations, computerised correction system 8−44635
boundary layer turbulence, press. fluctuation meas. by optical interferometry 8−26222
cerebrospinal fluid pressure meas. by passive telemetry, improved instrument 8−31927
diamond anvil press, press. distrib. meas. from ruby fluoresc. line shift 8−12710
differential, digital technique 8−38424
differential pressure transducer, optimum use for high precision measurement 8−162
digital automatic blood pressure recorder *(Japanese)* 8−24168
digital pressure indicator construction and application 8−21112
drag reduction spike, fluctuating pressure wind-tunnel meas. 8−30310
dynamic expansion method for press. scale realisation in 10^{-3} to 10^{-8} torr range, uncertainty analysis *(German)* 8−37025
electro-mechanical sensors, mechanical compensation methods influence on error characts. *(German)* 8−16786
epidural intracranial press. monitoring with press.-sensitive on-off type switch sensor 8−44626
ferrofluid, pressure measurement using nonmag. manometer *(Russian)* 8−24785
FM pressure transducer resonant diaphragm pressure-freq. characts. derivation 8−41295
gas sample, IR spectra, nonlinear least squares method 8−15738
human hip prosthesis pressure radiotelemetering, design features 8−3671
intracranial pressure monitoring, implantable two-channel telemetry system 8−3637
intracranial pressure noninvasive monitor for infants, fontogram 8−40373
intracranial pressure telemetering, in vivo and in vitro, with capacitance transducer 8−7457
intraocular pressure, importance of tonometry in glaucoma diagnosis and therapy 8−40383
intraocular pressure, telemetry monitoring 8−3632
intraocular pressure measurement, for glaucoma, comparison of Schiotz standard tonometer and applanation tonometer 8−48915
linearly varying pressure rate meas., instrument design 8−8395
manometer diaphragm pressure sensitive characts. plotting by tabular analytical method *(Russian)* 8−8397
piezoelectric press. bar transducer, dynamic transmitting props. *(Chinese)* 8−4605
pneumatic/elec. transducer with miniaturised Si sensor *(German)* 8−185
pressure reducer, piston type, for continuous pressure meas. up to 1 MPa 8−4602
probe-tube microphone, press. fluctuation meas. in flowing combustion plasma 8−18443
pulmonary artery blood press. anal. algorithm 8−40376
pulmonary venous pressure estimation from routine chest radiographs using hybrid optical-electronic system 8−44657
pulsatile air flow, time-averaged stagnation pressure probe design 8−14116
re-entry vehicle flight tests, boundary layer acoustic meas. 8−16275
sphygmomanometer, random-zero design with variable height reservoir 8−35986
static or dynamic, interferometric techniques, transducer calibration 8−21159
techniques available at National Bureau Standards, USA 8−36964
transducer elastic diaphragm creep metrological characts. anal. *(Russian)* 8−8396
turbulent boundary layer, wall interference effects of static pressure probes 8−1762
turbulent boundary layers, freq.-wave-vector spectrum determ. using acoustic transducer 8−38430
ureteral catheterisation manometry and urodynamics *(Slovene)* 8−44668
uterine activity monitoring, internal and external methods 8−35973
walking, synchronisation of optical press. distrib. and 3-dimens. force meas. under sole human foot *(German)* 8−35975
X-ray diffraction study, high temp.-high press., appl. to press. calibration above 100 kbar *(Japanese)* 8−24809
K arrested left ventricle finite deformation anal. in canine hearts *(Japanese)* 8−3543
O_2 partial pressure on blood sample, polarographic method, error reduction 8−7470
pressure sintering *see sintering*
pressure transducers
blood, strain gauge transducer, chopper preamplifier cct. 8−3659
blood pressure transducer for student use, using hybrid IC 8−8186
blood pump pressure servovalve control, moving coil system *(German)* 8−24182
calibration, interferometric techniques 8−21159
cerebrospinal fluid pressure meas. by passive telemetry, improved instrument 8−31927
design for nuclear reactor environment 8−823
differential digital type, operations 8−38424
differential pressure transducer, optimum use for high precision measurement 8−162
diffused Si pressure transducer, stress conc. at transverse gauges 8−12711
elastic diaphragm creep metrological characts. anal. using thin shell dynamics method *(Russian)* 8−8396
fission reactor safety-related sensor, response verification 8−13253
force measuring, EM, design and appl. *(Russian)* 8−16784
gait trainer for hemiplegic patients with lower limb sensory loss 8−48940
high-temperature high response fluctuating pressure meas. probe 8−13855
intracranial pressure noninvasive monitor for infants, fontogram 8−40373

pressure transducers continued
- intracranial pressure telemetering, in vivo and in vitro, with capacitance transducer 8−7457
- LMFBR fuel pin plenum press. transducer 8−8884
- long-term performance characterisation programme 8−12712
- magnetoelastic, Fe-cored, choke-type, compressive force meas. *(Polish)* 8−12684
- magnetoelastic pressure gauges with monolithic cores *(Polish)* 8−24810
- NS LX1600A pressure transducer, use as short-range altimeter 8−28344
- one-piece sensitive element type, design 8−1617
- operating temperture range extension using semicond. tensoresistors 8−4608
- piezoelectric, local press. meas. in cadaveric human hip joint 8−40445
- piezoelectric press. bar transducer, dynamic transmitting props. *(Chinese)* 8−4605
- pneumatic force transducer 8−21128
- pneumatic/elec. with miniaturised Si sensor *(German)* 8−185
- resonant diaphragm pressure-freq. characts. derivation 8−41295
- semiconductor sensors, props. and appls. *(German)* 8−36991

pressure vessels
- axisymmetric vessels, shearing stress minimisation by automated design optimisation 8−17289
- Babcock & Wilcox steam supply system, operating experience 8−21752
- Caorso plant, dynamic tests and seismic records of RHR building 8−41872
- cell with temp. uniformity monitoring 8−230
- concrete, finite element creep anal. 8−41813
- concrete, pressure vessels, multicavity PCRV, design and anal. for ultimate strength calc. 8−44182
- concrete, uniaxial compressive strength, 450-1033K 8−44299
- concrete reinforced walls, local behaviour under missile impact *(French)* 8−44180
- concrete reinforced walls, local response to missile impact 8−44181
- corrosion protective coatings for reliable operation 8−11424
- dynamic response to fluid pressure pulses 8−26077
- elastic creep fatigue rules fo ASME B&PV code case 1592 8−44211
- for fission reactors, high temp. design system *(Japanese)* 8−673
- GCFR, development of PCRV steam generator cavity closure 8−41849
- gradient stress fields, stress intensity factor determ., nuclear safety appl. 8−34089
- intersections, review of lower-bound limit anal. 8−34008
- KS-150 reactor, radial shielding model, neutron and γ-ray spectra meas. *(Slovak)* 8−21624
- LMFBR concrete containment struct., exptl. anal. of dynamic loading 8−41867
- LWR, ultrasonics materials testing 8−17339
- multicavity PCRV, review of design and anal. 8−44182
- nozzle-to-cylinder structures subjected to internal pressure, finite plate method 8−34007
- oceanographic pressure vessel for trapping deep-sea animals, simply actuated closure 8−3821
- PCRV, embedment strain gauges 8−41873
- PCRV, stress anal. considering concrete cracking 8−44213
- prestressed pressure vessel, calc. of principal stresses 8−13206
- PWR acoustic monitoring instrumentation 8−17309
- reactor press. vessel nozzle under internal press. safety against bursting *(German)* 8−17326
- rectangular fibre reinforced plastic pressure vessel *(Japanese)* 8−11197
- shell, cylindrical, effect of material orthotropy on stress state around circular hole 8−34023
- spherical cavity surrounded by infinite elasto-plastic medium, upper bound on asymptotic pressure 8−38214
- steel, AISI 1010, low-cycle fatigue at temps. up to 1200°F 8−35516
- steel, ferritic nuclear pressure vessel, methodology for fracture props. variability evaluation 8−33257
- steel, heavy section, rupture tests 8−44212
- steel, internal pulsed loads, effect of scale, geometry and filler on strength 8−21659
- steel, notched, acoustic emission meas. during pressurisation 8−21638
- steel, pressure vessel, acoustic emission during loading by pulsating internal press. *(German)* 8−19973
- structural mechanics, conf. 8−41874
- tensile testing in high-pressure gases at high temps. 8−44303
- US inspection, of PWR reactor *(Czech)* 8−29658
- water pressure testing, test method and anal. *(German)* 8−25260
- welded pressure vessels, residual stresses determination 8−40014
- Westinghouse steam generators, operations update 8−21751
- Al alloy, 5083-0, pressure vessel material, delay effects 8−35515
- WC-Co, evidence for H embrittlement 8−48530

primary cells
- electrochemical cells without liq. junction, use of central connectors 8−8199
- standard, testing using low resistance differential potentiometer *(Polish)* 8−29127
- Ag/AgI/Te thin film galvanic cell, shelf life determ. 8−35702
- Ag-AgCl film aqueous soln., charge transfer mechanism 8−11527
- Li, for pacemakers, selection criteria *(German)* 8−3670
- Li, Pb compounds as cathode materials, evaluation 8−11525

primary cosmic radiation *see primary cosmic rays*

primary cosmic rays
- composition, anal. of number of nucl. cascade avalanches in ionisation calorimeter 8−12064
- difference coupling coefficients, method for cosmic rays 8−28461
- EAS, violation of scale invariance in hadron interactions, 10^{15} to 10^{17} eV 8−7849
- equatorial modulation and north-south asymm. due to interplanetary mag. field 8−16253
- fluctuations of 10^{14} eV rays, Musala Peak obs. 8−49254
- flux measurements by supercond. mag. spectrom. 8−25383
- nuclei, charge comp. and energy spectra, energies >5 GeV per nucleon 8−16259
- relative abundances of nuclei with $Z\geqslant 7$ from plastic detectors 8−16260

primary cosmic rays continued
- underground observations, spectrographic method, medium to high energy range 8−32307
- He isotopic composition from 123 to 279 MeV per nucleon, meas. and anal. 8−49251

printed circuits
- regular polygonal clamped plates carrying concentrated masses, free transverse vibration 8−42559

printers
- data averager/printer, 7-channel, for cardiovascular and other physiological signals 8−40366
- high-speed non-impact printer, design and principles 8−21247
- high-speed non-impact printer, optical character generation requirements 8−21246
- line printer displayed binary hologram generation by phase reference method 8−9344
- matrix, for digital LANDSAT colour image data display 8−12024

printing
- electrostatic ink jet drop formation characteristics *(Japanese)* 8−25766
- paper, surface characterisation and printability criteria, stochastic approach 8−18878

prismatic dislocations
- Ti, single crysts., recrystallised, X-ray topography obs. 8−10054

prisms (optical) *see optical prisms*

probabilistic logic
- multivariate and conventional ECG analysis programs compared 8−7492

probability
- *see also game theory; Monte Carlo methods; queueing theory; random processes; statistics*
- 20 GHz multi relay links, simultaneous probability of rain attenuation 8−3898
- atmospheric precipitation probability forecasts, nonparametric technique based on pattern recognition algorithm 8−44946
- atmospheric surface layer temperature extremes, probability determ. method 8−45020
- bibliography, probabilistic ideas in field theory and statistical mechanics 8−8230
- cell proliferation transition-probability theory, cell cycle kinematics 8−24039
- colloidal dispersion, particle size distrib. change kinetics, statistical approach 8−7241
- composite materials, cylindrical shells, probability anal. of stability, mass minimisation 8−42553
- ECG diagnosis, variation in probability levels 8−44664
- exponential random variables sum, probability density function 8−12537
- interplanetary magnetic fields, probability distrib. functions of microscale fluctuations during quiet conditions 8−4053
- LMFBR accident consequences, probabilistic anal. by response surface techniques 8−29595
- magnetosheath, microscale mag. fluctuations during quiet conditions, probability distrib. functions 8−4053
- microsystems, nondistributivity, empirical correctness 8−28989
- multiparticle production processes, cluster formation model, math. formulation 8−478
- non-Gaussian stochastic processes, operators method of anal. *(Russian)* 8−16627
- non-Markovian probability density function, itinerant oscillator model of mol. fluid 8−47222
- nuclear vessels, probabilistic model for assessment of collision likelihood 8−5063
- plasticity, polycrystalline, based on dislocation processes 8−26621
- Poisson processes subset selection procedures, binomial and multinomial problem appls. 8−36802
- PWR, probabilistic anal. of interfacing system in LOCA 8−21678
- submicroscopic processes, dice games illustrating reactor neutron flux and radioactivity, teaching 8−12515
- two-body reactions, rigorous formulae for statistical errors on zeros and partial waves 8−4527
- von Neumann algebra, conditional expectations 8−45459
- wave-packet, position probability, classical and quantum spreading, for teaching 8−24606
- ZPR, noise analyses, determination of kinetic parameters *(Rumanian)* 8−46139

probes
- *see also electron probes; muon probes; plasma probes*
- bubble size, correction for wall effect in point probe meas. 8−9681
- cholestric crystal microprobes, non-perturbing, for meas. in EM fields 8−16791
- conductometric, field disturbances in conducting fluid modelling *(Russian)* 8−231
- crossed slotted tube resonator, double resonance NMR probehead 8−265
- current rpobe, noninductive, construction 8−4663
- diagnostic probe, for intense electron beams 8−12787
- dielectric microthermometer, non-perturbing, for meas. in EM fields 8−16791
- dosimeter, evaluation of implantable elec. field probe within finite simulated tissues 8−40345
- echoencephaloscope, two-probe three-mode design 8−44567
- EM, fibre optic telemetric linked, 0.2 to 12 GHz range 8−15859
- feeler probes for surface roughness meas., error source 8−169
- fibre optic temperature probe 8−208
- flame, flow patterns at probe sampling pt. *(Russian)* 8−35687
- gas flow dust content, temp. and speed meas. method 8−34216
- Hall, induction meas. in small dimension magnetic loops *(Hungarian)* 8−4665
- imaging atom probe, using single time-gated channel plate 8−21276
- light probe for bubble detection in fluidised bed 8−30376
- liquid N_2 level detector for storage Dewar, teaching labs. 8−41125
- magnetometric, calib. by supercond. solenoid using NMR *(Czech)* 8−29130
- murine malignant tumours, in vivo probe dielectric meas. 8−11761
- myocardial transmural heat gradient instantaneous meas. 8−44661
- NMR probe, for combined homonuclear multiple pulse decoupling and magic angle spinning 8−12735
- oscillating conductivity probe, density and density gradient meas., hysteresis effect 8−32796

probes continued
pulsatile air flow, time-averaged stagnation pressure probe design 8−14116
radiant heat flux portable direct reading measuring device, CERL flux-probe features 8−45633
single coil double resonance NMR probe for solid state studies 8−264
sound separation probe for jet engine flowing duct noise meas. 8−13878
static pressure probe, incompressible turbulent boundary layer, wall interference effects 8−1762
surface potential probe for 77K operation and with nanosecond response 8−12726
vibrating capacitor probe for surface and adsorption studies 8−10274
HgI$_2$ miniature probes for in-vivo medical appls., fabrication, spectroscopic evaluation 8−40308
Ni-NiCr thermojunction for multichip component temp. meas. *(German)* 8−202

process computer control
IC manufacture, automatic high vacuum coater, using minicomputer or microprocessor 8−48317
microprocessor triac interface, used to control kiln temperature 8−45632

process computers
BWR plant diagnosis system, on line appl. 8−46146

process control
see also process computer control
gas and fluid analysis, continuous and quasicontinuous methods *(German)* 8−44437
glass raw materials and batch prep., review 8−3085

Procopiu effect
ferromagnetic film, thickness deposition control using transverse Procopiu effect 8−23306

product control *see quality control*

production
this heading is restricted to industrial production
see also assembling; manufacture; quality control; reliability
laser mass production and radiated power meas. improvements 8−37064
optical factory, pilot prod., struct. and technological prep. 8−18079

production testing
capacitance meters, direct reading using auto-ranging 8−32835
ceramic, automatic US defect detection for tile grading and packing processes 8−23885
electronic component hermetic package water content anal. by mass spectroscopy 8−21263
semiconductor manufacturing, interferometric method for surface deform. meas. 8−32793

professional aspects
Mathematical Association of America, activities relevant for physicists 8−41107

program and system documentation
TELEMED system user support organisation and program library 8−7491

program testing
ECG analysis programs, diagnostic statement reproducibility 8−7495
Minnesota code ECG program validation 8−7507

programmed control
see also process control
automatic acoustic emission analysis system *(Russian)* 8−46866
evoked potential multi-channel data acquisition system, microprocessor controlled 8−11750
high performance liquid chromatography with programmed runs 8−11583
laser interferometry coordinate control system, for photogrammetric automaton 'Zenit' *(Russian)* 8−21103
materials testing, programmed loading unit for test machines 8−23900
meter for photosensors time characts., using programmed strobing of anal. zone 8−283
NQR spectrometer, digitally programmed bidirectional square-wave freq. mdoulation 8−21189
observatory scanning spectrophotometer *(French)* 8−20638
sequence controller for Harwell 6000 series modular instrumentation 8−24784
stimulator, programming unit for prolonged cyclic stimulation 8−3685
I$_2$ laser, with programmed mag. field 8−33750

programmer training *see training*

programming
see also analogue computer programming; computer software; program and system documentation; program testing; systems analysis
human factor studies, conf., San Francisco, USA (Oct. 1977) 8−48742

programming, mathematical *see mathematical programming*

programs (computer listings) *see complete computer programs*

project engineering
see also design engineering; electromagnetic compatibility; quality control; reliability; systems engineering
Appalachian Education Satellite Project activities and outcomes 8−12450
EHV transmission line ground level gradient, small plants and animals biological studies 8−31856

projectiles
see also ballistics; missiles; rockets; weapons
acceleration meas. using stroboscopic picture, teaching demonstration 8−36779
axisymmetrically rotating, stability of nonstationary motions *(Russian)* 8−24659
high-speed cineradiography 8−41395
javelin dynamics including body interaction 8−38184
penetration into targets, mechanics 8−18159
penetration mechanics, theoretical and experimental study 8−30173
ricochet of dumb-bell shaped projectiles off sand 8−30172
ricochet of spherical projectiles off sand 8−26025
rotation meas., Brenneke slugs 8−45744
teaching, range formula for above ground level launch 8−8190
thick target penetration model based on pressure bar force meas. 8−30174

projectors (optical) *see optical projectors*

promethium
see also nuclei with ......
Pm^{3+}, intermediate coupling props., relativistic average of config. wavefunctions applicability 8−17574

promethium alloys
No entries

promethium compounds
see also promethium alloys
No entries

prominences (solar) *see solar prominences*

propagation, wave *see wave propagation*

proportional + derivative control *see two-term control*

proportional + integral control *see two-term control*

proportional control
hand opening by proportionally controlled electrical stimulator *(Croatian)* 8−44693

proportional counters
see also position sensitive particle detectors
alpha recoil gas proportional counter, neutron spectra meas. 8−5089
applications in high-energy physics and other fields 8−9035
avalanche localisation and effects 8−46217
barometric effect on low level counting 8−33374
beam meas. of proportional wire shower counter and hadron calorimeter modules 8−37499
charged particle detector system for high rate expts., drift-proportional chambers, operating parameters 8−33379
curved crystal X-ray spectrometer, for HEAO-B satellite 8−49331
delay line chambers for Fermilab external muon identifiers 8−37489
drift chambers, Ar-ethylene mixtures investigation 8−25391
drift chambers for $e\pi$ and eK scatt. meas. 8−859
gas counters of slow neutrons, edge effect 8−33384
gas scintillation proportional counter, burst length discrimination system 8−21824
hard X-ray imaging instrument, for solar and cosmic sources 8−49332
HEAO-B, imaging proportional X-ray counter 8−40823
HEAO-B monitor proportional counter instrument 8−40822
HEAO-B X-ray telescope, gas control system 8−40827
heavy particle with single positive charge, search in H$_2$, D$_2$ *(Chinese)* 8−876
hybrid spark chamber for radioisotope distrib. meas. 8−46227
inert gas and mixtures, detection gas suitability for proportional scintillation counter *(German)* 8−41901
low-pressure chamber with high space resolution 8−870
magnetic large acceptance spectrom. using wire chambers 8−46207
MEA, magnetic detector at Adone 8−33367
methane, proportional counter gas, primary ion pairs distrib. prod. by C-K$_\alpha$ source 8−29704
multiwire, Xe-filled, use as detector in bone mass meas. 8−15884
multiwire proportional chamber, small design, construct., performance, electronics 8−17507
multiwire proportional chamber readout system, CAMAC test 8−17510
multiwire proportional counter, electron capture ratios, calc. of corrections 8−29703
multiwire proportional counter for microdosimetric studies 8−20286
MWPC, γ-image blurring reduction by delay line readout 8−37492
MWPC, CAMAC readout system 8−46248
MWPC, external muon identifiers at CERN 8−37488
MWPC, high accuracy chambers, progress 8−33391
MWPC, high-flux fast readout system based on new monolithic integrated ccts. 8−37491
MWPC, missing data reconstruction in principal component anal. 8−17537
MWPC, position sensitive, fast delay line readout 8−37490
MWPC, pressurised, for neutron imaging, gas density, cathode biasing, effects on resolution 8−37518
MWPC, rectangular electrode frame prestressing and deformation 8−29708
MWPC in big mag. spectrom. as counter hodoscope for fast majority discrimination 8−33392
MWPC instrumentation for CERN SPS secondary beams 8−46206
MWPC positron camera, 3-D iterative reconstruction method 8−40302
MWPC readout system 8−17505
neutron supermonitor 4-NM-64 with control of long term stability of meas. 8−21808
position sensitive detector for thermal and epithermal neutrons 8−25390
position sensitive neutron detector using (n,γ) on ^{157}Gd, ^{177}Hf foils, proportional chamber detection of conversion electrons 8−37517
positive charge centroid direct meas., avalanche mechanism clarification 8−37486
positron camera proportional chamber, Fourier deconvolution technique 8−40297
positron image reconstruction in nuclear medicine, three-dimens., fast iterative method 8−7443
pressurised Xe-filled multiwire proportional chamber for radionuclide imaging 8−48871
proton recoil, fast monoenergetic neutron fluxes meas. procedure anal. 8−17478
relativistic electron ionisation loss, transition radiation effect 8−25389
scintillation, built-in K getter 8−29707
scintillation large area gas counter for X-ray astronomy 8−49321
scintillation large area gas counter for X-ray astronomy 8−49322
shaper amplifier for proportional chambers, logical microcircuits and high time resolution 8−5103
small low-background counter for X-ray astronomy 8−29705
superconducting mag. spectrom. for cosmic ray flux meas. 8−25383
thin-window, rocket-borne, gas press. control system 8−17512
time-resolved X-ray diffraction counter and data acquisition system 8−45758
tissue equivalent, meas. of photon dose fraction in neutron radiotherapy beam 8−3605
toroidal, Mossbauer spectroscopy appl. 8−33364
wire chambers system for particle coords. meas. in π^- beam 8−9025
X-ray detection for fluorescence anal., proportional counter with slight pulse amplitude shift *(German)* 8−46213
X-ray detector, wall effect elimination, method 8−4753
X-ray emission meas., on Salyut-4, extraterrestrial sources 8−28521

- **proportional counters** continued
  - X-ray fluorescence, spectrom. for Viking Lander 8–40792
  - X-ray powder diffractometer proportional counter detector system, digital read-out 8–4751
  - X-ray spectrometer, proportional counter as input for meas. chain electronics 8–40826
  - ^{109}Cd nuclear transformation rate meas. using 4π proportional counter 8–21826
  - ^{3}H proportional counter for fast reactor neutron field spectral charact. *(Japanese)* 8–46222
  - Xe filled gas scintillation proportional counter in space environment, background radiation rejection efficiency 8–21819
- **propulsion**
  - *see also aerospace propulsion; electric propulsion*
  - nuclear, gaseous core reactor based on U plasma core, present research 8–33244
  - nuclear, gaseous core reactor with U-fuelling, preliminary expts. 8–33243
  - nuclear gaseous core reactor, UF$_6$ technology 8–33254
  - ship, fission reactor appl. *(German)* 8–29638
- **prospecting (geophysical)** *see geophysical prospecting*
- **prosthetic power supplies**
  - development progress 8–15917
  - heart, elec. powered totally implantable total artificial heart 8–40434
  - heart, nuclear powered, using modified Stirling engine *(Croatian)* 8–44695
  - heart hydraulic power and control modules, implantable 8–31978
  - implantable piezoelec. drive invertor for left ventricular assist device 8–15927
  - left ventricular assist system microprocessor controlled electromechanical convertor 8–15928
  - pacing impedance determination in man from resist. meas. 8–40417
  - requirements for disabled person rehabilitation equipment 8–15929
  - Li batteries for pacemakers, selection criteria *(German)* 8–3670
- **prosthetics**
  - *see also artificial limbs; artificial organs; sensory aids*
  - antithrombotic prosthetic surfaces development, bioelectrochemical approach 8–40414
  - aortic valve, Bjork-Shiley, steady flow in vitro vel. 8–44735
  - aortic valve, expansible nature of base, rel. to prosthetic design 8–40232
  - aortic valve, Reul-Ghista optimal tri-leaflet Avcothane design performance 8–44736
  - aortic valve opening, haemodynamics 8–20208
  - aortic valve prosthesis water hammer pulse effect *(Japanese)* 8–3676
  - aortic valve stress analysis using finite element computer program 8–48930
  - aortic valves, press. drops under steady and pulsatile flow, in vitro meas. 8–44731
  - arterial prosthetic material, Dacron, props. 8–7537
  - artificial heart material *(Japanese)* 8–11773
  - biomaterial compatibility for cardiovascular appls., biological evaluation 8–36056
  - blood circulation assist devices, antithrombotic polymeric materials 8–36052
  - bone-cement interface bond enhancement technique 8–31980
  - bone-pin connections, mech. behaviour 8–44698
  - cardiac ventricle and valve evaluation, flow visualisation data anal. 8–40425
  - ceramics for bone replacement *(Polish)* 8–20316
  - communication prothetics, adaptive, microprocessor-based, for persons with severe motor handicaps 8–48941
  - Dacron vascular substitute, tensile mech. behaviour comparison with Tetron *(Japanese)* 8–11774
  - deformation measurements using holographic interferometry *(German)* 8–35911
  - dental alloys and amalgams, etching techniques for Au-containing Ag$_3$Sn 8–3291
  - dental amalgam, exam. of fracture toughness and critical strain energy release rate 8–48933
  - dental amalgams, Cu-rich, SEM and energy dispersive X-ray analysis 8–24184
  - dental material transparency meas. device 8–31975
  - dentures, porcelain, rapid U anal. by delayed fission neutron method 8–15907
  - equipment and functional training *(Japanese)* 8–44701
  - femur, human, with implanted Charnley prosthesis, stress anal. 8–20314
  - femur with proximal prosthesis, 3-dimens. anisotropic stress anal. and failure prediction 8–40424
  - fibre reinforced composites, flexural strength, denture base appl. *(Japanese)* 8–40409
  - fractured femur fixation device, optimum design using finite element anal. 8–36050
  - haemodynamic design considerations 8–40428
  - handicapped persons technical aids, R&D in Sweden *(Japanese)* 8–48934
  - health care expansion aided by integrated electronics 8–11751
  - heart valve, numerical anal. of blood flow 8–15854
  - heart valve design flow evaluation using finite difference transforms 8–44733
  - heart valve flow pattern visualisation by laser technique 8–44734
  - hinged knee, influence of dynamic loading on mech. loosening 8–48938
  - hip joint, lubrication effects 8–40413
  - hip joint prosthesis, internal strain meas. by built-in gauge calibration and error sources *(French)* 8–44705
  - hip joint prosthesis reliability 8–11777
  - hip prosthesis design, femoral stem 8–36058
  - hip total replacements, welds in stems of cast Co-Cr femoral components 8–44697
  - human hip joint, pressure radiotelemetering, design features 8–3671
  - internal strain meas. by built-in gauges *(French)* 8–32806
  - joint endoprostheses, long-term stability of metallic materials 8–36059
  - joint motion meas. by triaxial electrogoniometer, for human prosthesis design 8–11781
  - joint replacement, design trends to reduce failures 8–31973
  - joint replacement, present practice and results 8–11776
  - joint replacement in upper limb 8–3674
  - joints, wear testing of polymers 8–31981
- **prosthetics** continued
  - knee locking, sensor-controlled external system, exptl. study 8–40406
  - manufacturing and selling problems *(Japanese)* 8–44702
  - mechanical testing of implants and materials 8–36057
  - medial collateral ligament substitute specification and design 8–36060
  - mitral valve prosthesis in vitro tester, unique design 8–40426
  - mitral valve replacement, prediction of postoperative systolic left ventricular wall stress 8–40427
  - orthopaedic implants, SEM study of wear 8–15926
  - orthotic-prosthetic and manipulator system uses of microprocessors *(Croatian)* 8–44694
  - patellar tendon bearing prosthesis, simplified model for short-below-knee stump 8–27986
  - physically handicapped persons' apparatus, recent status of R&D *(Japanese)* 8–44703
  - physically handicapped persons' apparatus standardisation *(Japanese)* 8–44699
  - polyethylene, C fibre reinforced ultra-high mol. wt. 8–31969
  - polyethylene implant-bone composite interfacial strength, porous high density polyethylene 8–31979
  - polyethylene total joint replacement, props. improvement by C fibre reinforcement, SEM obs. 8–24183
  - polymer, bioabsorbable, standards for in vitro and in vivo comparison and qualification 8–3677
  - polyurethane, quick-hardening SKU-PFL, synthesis and props., use in endoprosthetics 8–6887
  - pulsatile blood pump, vortex diode used as outflow valve 8–44724
  - sensory feedback, recommended electrocutaneous codes 8–44715
  - standardisation of technical terms *(Japanese)* 8–44700
  - Tetron vascular substitutes, tensile mech. behaviour comparison with Dacron *(Japanese)* 8–11774
  - tissue reaction to polytetrafluorethylene dispersed in acetal resin 8–40412
  - transapical left ventricular bypass, prolonged use in sheep and man 8–40435
  - urethral occlusive techniques for restoration of urinary continence, development 8–7543
  - visual prosthetic device, bioengineering and biomedical aspects of focal surface model 8–48942
  - wear of articulating surfaces in protheses, holographic interferometry exam. 8–40415
  - Ag$_3$Sn, dental alloy, prod. by melt extraction technique, exam. of mech. props. 8–48349
  - Ni-Cr, corrosion resistance of dental casting alloys 8–31561
  - Ti for implantation, biological props. and appls. 8–3678
- **protactinium**
  - *see also nuclei with ......*
  - body-centred tetragonal metal, enthalpy of soln. 8–48686
  - preparation by Van Arkel method, cryst. struct. 8–39715
  - ^{231}Pa, determ. in coastal sediments and seawater, activity ratios, disequilib. 8–27851
  - ^{147}Pm, deposition on anodically polarised Pt surface 8–27424
- **protactinium compounds**
  - PaN, prep. by heating Pa, cryst. struct. 8–39715
- **protection**
  - *see also alarm systems; corrosion protection; power system protection; protective coatings; radiation protection; safety*
  - BWR, automatic protection system *(German)* 8–4989
  - hearing protectors, meas. of real-ear attenuation by standardised test methods 8–1508
  - hearing protectors, performance estimation 8–40192
  - industrial ear protectors, standardisation of testing, current developments 8–22225
  - industrial noise and hearing conservation 8–22223
  - industrial noise induced deafness and protective measures 8–22224
  - operating room airborne contamination protection using electrostatic particle repulsion system 8–28125
  - strain gauge, sealants suitability determ. 8–4610
- **protective coatings**
  - *see also corrosion protective coatings; wear resistant coatings*
  - adsorption of Cs ions on constituent materials 8–23843
  - boride coatings on Ni alloy, thermal stability, exam. of coating 8–44271
  - boride diffusion coatings on steel, fractographic exam. of struct. 8–44270
  - borides, lightweight ceramic armour appls., ballistic tests, computer simulation, book contrib. 8–48556
  - corrosion theory, rel. to protective coatings 8–19918
  - epoxy acrylate coated fused silica fibres, dynamic and static fatigue 8–1385
  - epoxy acrylate coated optical fibre, long term strength, environmental effect 8–5582
  - epoxy acrylate coated optical glass fibre, strength and static fatigue 8–1386
  - epoxy acrylate coatings, UV cured, for optical fibres 8–1444
  - fusion reactor, Tokamak, first wall coating materials and techniques 8–8974
  - laminated cermet coating on Cu, thermal shock performance 8–7081
  - metal coating of optical fibres, for strengthening and surface protection 8–30103
  - optical element, film effect on mech. strength 8–1318
  - optical fibre polymeric coatings, Bell Labs activities 8–1388
  - oxide, in situ form. on heat exchanger materials, inhibiting effect on H$_2$ permeability 8–8895
  - plasma polymerized on metal substrates, adhesion and cohesion 8–3259
  - polymer coated glass, current leakage path form. by water diffusion 8–10535
  - space-shuttle thermal-protection coating, testing techniques at 870°C 8–35604
  - steel, nitride coated, brittleness eval. by AE *(Chinese)* 8–11453
  - steel, U8, diffusion coating protection for H$_2$ embrittlement, SCC and tensile tests *(Russian)* 8–31513
  - steel 20, diffusion coating for protection against H$_2$ effect on mech. props. 8–31589
  - steel substrate, US testing 8–23908
  - Teflon, aluminised, spacecraft, surface material performance modelling 8–4061
  - AlN, reactively sputtered, on GaAs, Ga$_{1-x}$Al$_x$As and GaAs$_{1-x}$P$_x$ *(French)* 8–23849

protective coatings continued
- Al_2O_3, coating on Cu, thermal shock performance 8−7081
- Al_2O_3, on Al mirror, refl. depend. on angle of incidence, 8 to 12 μm 8−37960
- CaF_2, protection from biological overgrowths 8−18034
- Cu-Al_2O_3, composite coatings, prep. by precip., props. 8−23841
- $Ga_{1-x}Al_xAs$ DH laser, LPE surface protective coating 8−35320
- LiF_2, protection from biological overgrowths 8−18034
- Mo, ionic siliciding, diffusion layer prod. 8−23855
- Ni-Al-Ti protective coating, on Ni-Al alloy IN 100, Ti content influence, oxidation behaviour *(French)* 8−3258
- SiO_2, on n-GaAs, Ga content after annealing at 730-940°C neutron activation anal. 8−43255
- SiO_2, vacuum deposited, 7-10 μ, microhardness and structure 8−19669
- $SrZrO_3$ coatings, plasma-sprayed, spectral emittance *(French)* 8−26709
- TiP, form. by high temp. reaction of Ti with P 8−44260
- VC-TiC, high rate deposition by activated reactive evaporation, and characterisation 8−11372
- Zn coating on continuous galvanising line, mass meas. and control 8−19960
- Zr(C,N), coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 500-600°C *(French)* 8−44266
- ZrN, coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 550-700°C *(French)* 8−44266
- ZrO_2, coating on Cu, thermal shock performance 8−7081
- ZrO_2 coatings, prod. by low-temp. oxidation, props. 8−23856

proteins
- *see also gelatin*
- acetylcholinesterase increase on exposure of dark-reared rats to light 8−24069
- acid phosphatase activity following hyperthermia of mouse spleen, rel. to heat potentiation of X-ray damage 8−48842
- actin, binding of myosin mol. to two actin filaments 8−27884
- actin, myosin subfragment-1 attachment, effect on equatorial X-ray refls. 8−27880
- actin-myosin, muscle contraction cross-bridge model 8−44475
- actin-myosin filament overlap rel. to number of Ca binding sites on glycerinated muscle fibres 8−44465
- actomyosin, head rot. and dissoc., muscle exponential rate processes rel. to MgATP conc. 8−44468
- adenylyl cyclases, stimulation by hormones and regulation by nucleotides, review 8−15760
- adsorption at liq.-solid interface, ellipsometric estimation of film thickness 8−44740
- adsorption on glass, in detergent soln. 8−44401
- aggregates exposed to UV radiation, limiting conc. of paramag. centres 8−24029
- albumin, ^{99m}Tc labelling for lung imaging, quality control 8−28069
- albumin, bovine serum, hydrated, dielectric props. at 9.9 GHz 8−15758
- albumin, bovine serum, in soln., five-component dielec. dispersion 8−15759
- albumin, bovine serum, laminar ultrafiltration, limiting flux numerical calc., variable diffusion coeff. 8−40214
- ^{125}I-albumin, convective and diffusive transport through rabbit aortic tissue 8−44482
- albumin, human serum, AsF_3^- NMR probe for anion binding sites 8−48748
- albumin clearance from alveoli, tissue permeation vs. airway displacement 8−27979
- albumin macroaggregates labelled with radioisotopes for clot detect. 8−7438
- albumin-unsaturated fatty acid binding kinetics, fluoresc. anal., rel. to struct. lability of biomembranes 8−15755
- alcohol dehydrogenases, yeast and horse-liver, radiation chem. evidence for differences in amino acid composition 8−40116
- alkaline endonuclease activity in thymus and spleen of irrad. mice 8−28004
- D-amino acid oxidase, crit. residues, pulse radiolysis and inactivation study 8−27897
- α-amylase transport across pancreatic acinar cell basolateral membrane 8−44481
- aortic wall stress-strain characts. after sequential enzymolysis 8−3530
- Na^+, K^+-ATPase, identification of membrane-embedded segment of large polypeptide chain 8−3447
- ATPase, ion-activated, role in biomembrane, active transport, review 8−15814
- Na^+,K^+-ATPase, membrane, as digitalis receptor binding model 8−40111
- autoradiography and soft laser scanning in radioisotope work, appl. to metabolic studies 8−3576
- bacteriorhodopsin, purple membrane struct., Halobacterium halobium 8−15782
- bacteriorhodopsin, reson. Raman kinetic spectroscopy on μsec time scale 8−20320
- bacteriorhodopsin 580 nm ultrafast transient, psec kinetics 8−44455
- bacteriorhodopsin chromophore photoisomerisation rel. to purple membrane proton pump 8−35804
- bacteriorhodopsin in planar membranes, elec. response to light 8−35806
- bacteriorhodopsin isomers, dark equilib. and photochem. 8−15771
- bacteriorhodopsin photoconversion products, EPR and low temp. spectrophotometry 8−15769
- bacteriorhodopsin photocycle hydration effects, in thin purple membrane layers 8−7320
- bacteriorhodopsin phototransients, circular dichroism meas., comment 8−21954
- basic pancreatic trypsin inhibitor, methyl group PMR, 360 MHz 8−27887
- blue proteins, activation of electron transfer reactions 8−44446
- cataract formation in vitro, rel. to protein synthesis control and intracellular Na^+/K^+ ratio 8−11646
- cereal, proton-induced X-ray emission and nuclear reactions for determ. of protein quality 8−20321
- ceruloplasmin, human, mol. wt. determ. by hydrodynamic methods and low-angle X-ray scatt. 8−15761
- chondromucoprotein, effects of ^{60}Co γ-irrad. 8−7400
- Cl Mn II complex with protein, EPR spectra and zero field splitting interaction 8−35793

proteins continued
- collagen, 3_1 helix-coil transition in polypeptides, circular dichroism obs. 8−35795
- collagen, axial arrangement of α-chains, intramolecular polar and apolar interactions 8−27891
- collagen, reconstituted, mech. props., drug release support appl. 8−3666
- collagen, role in elastic props. of calcified tissue 8−3539
- collagen fibres, of dermis, structural and mech. charact. and natural interweaving 8−48824
- collagen fibril, probabilistic aspects of struct. 8−27886
- collagen triple helical struct. study using Fourier transform 8−7318
- concanavalin A receptor, of human erythrocytes, receptor function in lipid bilayers 8−48764
- concanavalin A-carbohydrate interactions, implication of protein aromatic amino acids, radiolysis 8−40110
- conformational changes in aqueous soln. and in mixed solvents, IR absorpt. spectra 8−15762
- cytochrome c oxidase, oxidised and reduced, X-ray absorpt., edges, using synchrotron radiation 8−48758
- cytochrome c-bacteriochlorophyll, low-temp. electron transfer in bacterial photosynthesis 8−44470
- cytochrome c-$Fe(CN)_6$ electron transfer, verification of vibronically coupled electron tunnelling 8−48750
- cytochrome-c, hydrated, dielectric props. at 9.9 GHz 8−15758
- DNA-protein cross linking mediated by X-rays 8−27898
- drug-matabolising enzymes in liver rel. to hormones after whole- and partial-body irrad. 8−48840
- dynamic states, role of geometry and elastic strains 8−48745
- electron microscopy, real-space filtering of images from optical autocorrel. patterns 8−8479
- electronic transport mechanisms, asymmetry role 8−6370
- endonuclease, rel. to DNA electron damage repair in E. coli mutants 8−31775
- enzymatic catalysis, orbital perturbation anal. 8−31623
- enzyme, diffusion-controlled reaction rate to buried active site 8−35796
- enzyme activities, effects of whole-body X-irrad. on creatine biosynthesis, rat 8−3559
- enzyme activity, kinetic assay, progress curve algorithm for spectrophotometric meas. 8−20083
- enzyme microwave inactivation system, electronic control to reduce dose variability 8−40285
- enzyme reaction rate determ. by capacitance meas. 8−31997
- enzyme-substrate interaction forces influence on reaction rates 8−31765
- enzymology in subzero temp. range, air-bath cryostat 8−48949
- ferrihaemoglobins, $(Fe^{3+})d^5$ config. 8−39071
- ferritin particles, BeO supporting films in high resolution electron microscopy 8−12792
- ^{123}I-fibrinogen scintigraphy for thrombosis detect. 8−7437
- fibrinogen solution, effect of scavengers on radiation-susceptible sites 8−11701
- ^{125}I-fibrinogen uptake test for detect. of deep vein thrombosis, review of current practice 8−7436
- fluorescent probe binding to proteins error in interpretation of double-reciprocal plot and Scatchard plot 8−24021
- freeze-fracturing of capillary layers of cells, membranes, viruses, new hinged device 8−20327
- β-galactosidase induction in X-irrad. E. coli B and B/r 8−28005
- gelatin film, deuterated, IR absorpt. spectra, heat treatment and ageing *(Russian)* 8−39621
- globular protein struct., large angle X-ray diffuse scatt. exam. 8−3444
- β-glucoronidase release by leucocytes exposure to shear stress 8−40125
- glycophorin, of human erythrocytes, receptor function in lipid bilayers 8−48764
- grain legumes, proton-induced X-ray emission and nuclear reactions for determ. of protein quality 8−20321
- GTPase, light-activated, in vertebrate photoreceptors 8−3481
- haeme a, low-spin ferrous, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
- haemoglobin, ^{3}H distribution in glycogen, haemoglobin and chromatin of mice drinking tritiated water 8−31910
- haemoglobin, absorpt. spectra, light scatt. method meas. *(Russian)* 8−21939
- haemoglobin, aq. soln., X-ray induced changes 8−11699
- haemoglobin, deoxygenated sickle cell, gels, liq. cryst. props. 8−3 45
- haemoglobin, human, liganded, kinetics of alkaline tetramer-dimer dissoc., laser scatt. obs. 8−48749
- haemoglobin, sickle cells, 3-dimens. reconstruction of fibres 8−44452
- haemoglobin+CO reaction kinetics, using various regimes of photolytic illum. 8−48753
- haemoglobin measurements using solid-state noninvasive tissue refl. oximeter 8−35919
- haemoglobin S solution, effect of deoxygenation on US absorpt., rel. to sickle cell blood 8−44477
- haemoglobin-erythrocyte membrane interaction, γ-ray effects, EPR 8−7402
- haemoglobin-haptoglobin deoxygenated complexes, Mossbauer spectroscopy 8−24020
- helix-coil transitions in specific sequence biopolymers 8−35794
- high-potential Fe protein of Chromatium vinosum, low-lying excited state, EPR 8−3448
- histone F2a solutions, effect of ionic composition of medium on struct. and effectiveness of intermol. interactions 8−48744
- immobilised enzymes, glasses as bioactive materials, review 8−3698
- immunochemical analysis, standardisation of light scatt. meas. 8−36081
- insulin, radioimmunoassay, improvement in precision and accuracy of commercial kit 8−48884
- insulin and analogue, side-chain mobility and tyrosyl circular dichroism 8−15770
- lactate dehydrogenase+free radicals, reactions, pulse radiolysis 8−7214
- leghaemoglobin of Lupinus luteus, cryst. struct. of first component 8−27893
- lipoprotein, very low density, particle distrib. by intensity correl. spectroscopy 8−21228
- long-range interactions, approx. method 8−7317
- luminescent label Eu^{3+}, spectra and binding centres 8−15754
- lysozyme, computer simulation of solvent struct. 8−40113
- lysozyme, hydrated, dielectric props. at 9.9 GHz 8−15758

proteins continued
lysozyme, light-induced riboflavin binding 8−27899
lysozyme, stepped character of thermal denaturing, optical density at 290 nm 8−15763
lysozyme bound water, thermally-stimulated press. and current 8−15757
lysozyme-water mixture, phase separation, rel. to cold cataract form. in young rat lens 8−11640
α_2-macroglobulin values in serum of X-ray workers 8−28020
malic dehydrogenase isoenzymes in wheat shoots and chloroplasts, effect of light 8−11696
metalloenzyme, metal ion geometry and mechanism from PAC expts. 8−44449
Cd-metallothionein, test object for dark field electron microscopy of protein struct. 8−11610
microtubule polymerisation in vitro, effects of ^{60}Co gamma irrad. 8−20222
mobility from spin-echo determ. of about T_2 values in proton-decoupled ^{13}C NmR 8−2769
molecule, simulation of single mol. images combining computer and electron micrograph analysis 8−37781
muscarinic acetylcholine receptor increase on exposure of dark-reared rats to light 8−24069
myoglobin , oxyhaeme complex, single cryst., visible spectrum, electronic struct., coord. geometry 8−44456
myoglobin-Fe^{3+} compounds, Mossbauer and suscept. expts. 8−24019
myosin head return to thick filaments after muscle contraction 8−7319
myosin molecule binding to two actin filaments 8−27884
myosin subfragment-1 attachment to actin, effect on equatorial X-ray refls. 8−27880
nerve membrane protein conform. and energy changes, rel. to action pot. 8−44497
neurotoxin, snake venom, appl. mol. graphics to struct. determ. 8−27892
nuclear non-histone protein interaction with DNA, γ-ray effect 8−7401
S_1 nuclease detect. of DNA damage and repair in γ-irrad. rat brain tumour 8−48838
oxyhaemoglobin, mag. props. and structure 8−48751
oxyhaemoglobin, mag. susceptibility of frozen aq. soln., 25 to 250K 8−6507
peroxidase, low-temperature radioreduction, MCD and absorpt. spectra 8−31763
phospholipase A and mechanism of action of aldosterone 8−24053
phycobilin pigment role in photosynthesis 8−48752
phytochrome, role of light in regulating plant growth and development, review 8−11695
phytochrome subunit, evidence for symmetry 8−27890
plasma low density lipoproteins, human, size and surface effects rel. to phase transitions 8−3446
plasma membrane of mouse egg, effect of fertilisation on lateral diffusion of lipids and proteins 8−44480
platelet adhesion to solid surfaces, effects of plasma proteins and substrate wettability 8−35814
poly-γ-benzyl-L-glutamate-dichloroethane in conc. soln., mol. assoc., electro-opt. investig. 8−1973
poly-γ-methyl-L-glutamate, interfacial conformational modifications 8−2339
polypeptide in conc. soln., mol. assoc., electro-opt. investig. 8−1973
prelumirhodopsin, psec. kinetics, primary photochem. event in vision, proton translocation 8−44508
protein, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
protein-ligand equilibrium binding, mathematical models 8−48688
proteolytic enzymes and substrates, effect on elec. cond. of lipid membranes 8−15779
protohaeme, low-spin-ferrous, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
purple membrane of Halobacterium halobium, energy transfer 8−44467
purple membrane protein chromophore, fluoresc. 8−44454
purple membrane protein retinal chromophore, role of protein in photochem. 8−15772
review, plastic deformation during freeze-cleavage 8−14400
rhodopsin, bathochromic shift origin 8−31767
rhodopsin, cattle, phosphorylated, isoelec. focusing 8−15766
rhodopsin, isorhodopsin and bacteriorhodopsin, and photoproducts, temp. and wavelength effects on photochem. 8−11612
rhodopsin, primary photophys. and photochem. processes in visual excitation 8−15773
rhodopsin, transient light-induced conform. changes 8−15774
rhodopsin and intermediates, absorpt. spectra and orientational change of chromophore 8−7321
rhodopsin conformation, spectral studies 8−15765
rhodopsin lateral diffusion in surface membrane of rat retina rod external segment 8−15828
rhodopsin phosphorylation as possible mechanism of visual adaptation 8−15836
rhodopsin photosensitivity, thermal stability and metarhodopsin prod., extractant effects 8−7355
rhodopsin stability in rods and dark noise in retinal bipolar cells 8−11644
RNase inactivation due to elastic nucl. collisions 8−28008
serine proteases, enzymatic reaction mechanism, CNDO/2 mol. orbital calcs. 8−27751
serum of human, density meas., improved mech. oscillator technique *(German)* 8−28098
spin-lattice relax. time, role of cross-relax. 8−35800
structure factors from electron density, test on model crystal 8−47204
structure factors from electron density distrib., theoretical foundations 8−47203
structure prediction from amino acid sequence 8−24026
testes, γ-irrad., glycogen a metabolising enzymes following radiation-induced atrophy 8−15869
testes, inorganic pyrophosphatase and pyrophosphate following γ-irrad. of rat 8−15868
thaumatin antibodies as model of sweet taste receptor 8−27975
triplet state energy transfer 8−20143
trypsin inhibitor, mol. dynamics, computer simulation 8−9932
tryptophanase induction in X-irrad. E. coli B and B/r 8−28005

proteins continued
UDPG-dehydrogenage, rat liver, struct. alterations and functional vars. due to γ radiation 8−15873
UV irradiated, luminesc. quenching, EPR and absorpt. spectra 8−15768
visual pigment retinal chromophore, role of protein in photochem. 8−15772
visual pigment unprotonated chromophore-protein bond, ^{13}C NMR spectra 8−11607
X-ray diffuse scattering curves, nature of 4.5 Å max. 8−31769
^{13}C, NMR of peptides and proteins, review 8−24023

proton absorption
No entries

proton accelerators
see also cosmotrons
14UD Pelletron accelerator at ANU, energy calib. using $^{12}C(p,\alpha)$ 8−17449
CERN 400 GeV superproton synchrotron, facility description 8−37471
collective accelerator, superconducting resonators and solenoids, Q-values and field profiles 8−46188
collective accelerator, superconducting solenoids, resonators and cryogenic system 8−46187
HEPI accelerator, active filter of annular electromagnet 8−33338
IFVE accelerator, coherent beam instability 8−837
ISABELLE ISR, computer based control and monitoring system 8−46191
KEK, harmonic current AC filters 8−33333
linear, appl. to reactor fuel breeding 8−29630
linear, optimum particle bunching 8−5068
non-neutral proton ring, const. radius mag. accel. 8−46192
proton double extraction for irradiation of Mirabel and Lyudmila bubble chambers 8−839
secondary electron amplification in high energy accelerators 8−46193
synchrotron, beam, 70 GeV channel, shaping system, for Protvino Inst. neutrino expts. 8−37476
synchrotron, beam parameter diagnostics via IR undulator emission *(Russian)* 8−836
synchrotron, proton beam 70 GeV, for Protvino Inst. neutrino expts., characts 8−37475
synchrotron, pulsed neutron facility at Rutherford 8−29208
synchrotron slow extraction beam parameter monitoring and control system in CAMAC standard online with ES 1010 computer 8−29674
tevatron, Fermilab proton accelerator with supercond. mag. ring 8−835
π factories, multidisciplinary role 8−21791

proton angular distribution
see also proton spectra
$^{10}B(t,p)^{12}B$, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−13109
$^{11}B(\gamma,p)^{10}Be$, 18 to 31 MeV, photoproton spectra and ang. distrib., excited state transitions 8−13056
$^{13}C(^3He,p)$, 20 MeV, p ang. distrib., ^{15}N energy levels 8−21581
$^{19}F(t,p)^{21}F$, 0.9 and 1.1 MeV, proton ang. distribs., possible compound nucl. form. 8−17218
$^2H(p,2p)n$, 8.5 MeV, n-p final state interaction, cross section, ang. distrib. 8−21560
$^2H(p,p)$, 6.8 MeV, ang. distrib. meas. *(Russian)* 8−21566
$^{26}Mg(p,p')$, 6 MeV, spin-flip probability, ang. distrib., energy depend. 8−13078
$^{142}Nd(e,e'p)$, spectra and ang. distribs. meas., $T_>$ giant reson. anal. 8−13069
$^{16}O(d,p)^{17}O$, anal. using deuteron deform. effects *(Japanese)* 8−37355
Si, ang. distribs. of 6.6 MeV protons, 12.5 MeV deuterons, and 24 MeV α-particles 8−29720

proton beam effects *see proton effects*

proton belt *see radiation belts*

proton detection and measurement
cellulose nitrate track detectors, detect. of efficiency and range meas. of alphas and protons 8−17524
dose buildup from secondary protons and recoil electrons, 185 MeV protons 8−15898
fluorescent intensification screen+photographic film combination, response to proton exposures, radiography 8−20268
U liquid Ar calorimeter, response to high energy protons, calc. 8−46224

proton-deuteron interactions
see also proton-deuteron scattering
charged-particle multiplicity distribs. in 100 GeV interactions 8−33101
coherent elastic and inelastic pd scatt. at 2800 GeV^2, cross sections, momentum transfer squared depend. 8−37233
diffractive excitation at high energies and small momentum transfer *(Russian)* 8−17036
$pd \rightarrow Xd$, diffraction dissociation, high energy 8−25087
single particle distribs. with large momentum transfer at 3.3 GeV/c *(Russian)* 8−41596
$dp \rightarrow ppn$, 8.5 MeV, n-p final state interaction, cross section, ang. distrib. 8−21560
$pd \rightarrow d'N^*$, backward N^* prod., 1.0 to 5.0 GeV, exam. of N^* exchanges 8−21448
$pd \rightarrow t\pi^+$, 410-809 MeV, ang. distrib. meas. 8−29466
$pol \rightarrow ppn$, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723

proton-deuteron scattering
see also proton-deuteron interactions
coherent elastic and inelastic pd scatt. at 2800 GeV^2, cross sections, momentum transfer squared depend. 8−37233
double scattering on H target, d alignment, spin struct. of NN amplitude 8−45937
elastic pd scattering at 51.6 GeV/c, scatt. amplitude, slope parameter 8−33093
$p(\bar{p})+d$, high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
$^2H(p,p)$, energy spectrum, detector, telescope design and performance 8−13384

proton effects
acoustic signature of proton beams traversing fluid media 8−38162
benzene, fluoresc. quenching by pulsed proton irrad. of cyclohexane soln. 8−5270

proton effects continued
  ionosphere, channel lower hybrid resonance excitation by superthermal particle streams *(Russian)* 8−4025
  metal, irradiation-induced creep strain measurement, design and construction of apparatus 8−15634
  polarised nuclear target materials 8−29723
  quartz, comparison of different radiation effects 8−26596
  refractory matrices, fast release of reaction products from 600 MeV irradiation 8−29652
  synchrotron, beam parameter diagnostics via IR undulator emission *(Russian)* 8−836
  tissue reactions and fractionated dose schedules, RBE 8−31858
  tomography, proton beams computed reconstruction 8−48870
  V, polycrystalline, 20 keV protons penetration depth, ultrasonic meas. technique 8−30677
  Zircaloy-2, irradiation creep under H^+ bombardment at 5.5 MeV 8−14392
  Ag, proton irrad., radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
  Au foil, optical transition radiation, bombardment by 29 MeV protons 8−2938
  Au, proton impact, blocking profile calcs. 8−18694
  Au, proton irrad., radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
  C, foil, energy loss straggling meas. for low energy protons 8−47459
  Cu, proton irrad., radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
  GaAs, modification of Zn diffusion profiles by proton irrad. 8−43043
  GaAs:Cr, optical modulation study of proton bombardment 8−6720
  GaAs:Cr, optical modulation spectra affected by 150 keV proton beam 8−10871
  GaP, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775
  Ge, high parity detectors, 6 GeV/c proton irradiation 8−37508
  Ge single cryst., radiation piezoelec. effect 8−19419
  Hg, thick target, proton and deuteron irradiation, Tl yield determ. 8−2174
  InSb, ion bombard. and defect annealing, n- and p-type cond. layer prod. 8−26606
  KCl:Tl and KCl, F-centre production by positive ions and X-rays 8−38760
  Mo, proton irradiated, annealed and rolled, void form. 8−22774
  NaCl, F-centres near monoenergetic proton stopping region, space charge effect 8−18640
  Nb, radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
  Nb_3Sn, proton and γ-irradiated, lattice dynamics from ^{119}Sn Mossbauer studies 8−39458
  Nb_3Sn, proton irradiated, Mossbauer effect at 78K 8−19394
  Ni, radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
  n-Si, 300 keV proton irrad., temp. depend. of defect prod. 8−6113
  Si, feeding-in and blocking of 2 MeV protons, simple diffusion model 8−22782
  Si, irradiation damage 8−34556
  Si, proton damage, depth profile anal. by channelling 8−43054
  Si:As, 1.5 MeV H^+ and He^+ irradiations of As diffused layers 8−47447
  Si:C, disorder profiles by proton backscattering, proton bombardment annealing 8−47449
  Si:C, H^+ and He^+ beam impact phemomena, damage annealing rates 8−47450
  W, single cryst., proton integral dechannelling functions *(Russian)* 8−10111
  $ZnSiP_2$, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775

proton excited X-ray emission *see ion microprobe analysis*

proton interactions *see electron-proton interactions; kaon-proton interactions; lepton-nucleon interactions; photon-proton interactions; pion-proton interactions; proton-deuteron interactions; proton-nucleus reactions; proton-proton interactions*

proton magnetic moment
  $\bar{p}$ mag. moment and mass determ. 8−45990
  π^0 emission by protons with anomalous mag. moment in const. EM field, Furry formalism *(Russian)* 8−410
  H_2O, Bohr magneton electron and proton g-factor ratio determ. 8−33526

proton magnetic resonance
  alkali metal difluoride, MHF_2, free induction decay 8−2753
  p-alkoxybenzoic acids, nematic liq. cryst., proton spin lattice relax., mol. dynamics 8−34425
  amino acids, polycryst., proton mag. relax. and mol. motion 8−20139
  amniotic fluid, human proton relax. times in low field range, appl. to nucl. magnetography *(French)* 8−3574
  anthranilic acid, solid, amino group reorientation, PMR second moment obs. 8−35046
  basic pancreatic trypsin inhibitor, methyl group PMR, 360 MHz 8−27887
  benzene, ^1H chem. shift tensor, proton mag. shielding anisotropy 8−19348
  benzenesenol, CCl_4 soln., PMR, barrier to internal rot. 8−1006
  bone powder and ash, PMR and IR spectra, chem. anal., bond lengths 8−3414
  boroxines, trioxadiborolanes, evidence for aromaticity from mass spectral and NMR meas. 8−9172
  bromobenzene, in EBBA, ^1H NMR and NQR of D, geometric struct. 8−17689
  cement pastes, binding props. 8−23355
  chlorobenzene in EBBA, ^1H, D NMR and NQR, geometric struct. 8−17689
  chloroform, liq., crit. fluctuations, proton spin relax. obs. 8−19358
  2-chloropyrimidine, CS_2 soln., mol. reorientation, ^1H, ^{13}C nucl. mag. relax. 8−27105
  clathrate deuterohydrates, ^1H NMR lineshape of tunnelling methyl group, <5K 8−46370
  copper benzoate, spin 1/2 system, one-dimensional nucl. relax. 8−39427
  cyclohexane-d_0, -d_{11} ^{13}C-^1H coupling constant 8−13519
  di-t-butyl nitroxide radical, in soln., proton relax., meas. of H-bonding 8−27103

proton magnetic resonance continued
  o-dibromobenzene, r_α-struct. determ. from PMR with ^{13}C satellites, bond lengths and angles 8−25560
  o-dichlorobenzene, r_α-struct. determ. from PMR with ^{13}C satellites, bond lengths and angles 8−25560
  3,5-dichlorobenzyl mercaptan, PMR, barrier to rot. about C-C bond 8−17696
  2,4-dihydroxy benzoic acid, PMR obs., proton second moment, 77 to 383K effect of OH group rot. 8−10784
  o-diiodobenzene, r_α-struct. determ. from PMR with ^{13}C satellites, bond lengths and angles 8−25560
  4-4′ dimethylbenzophenone, ^1H spectrum using multiple pulse decoupling-magic angle spinning NMR probe 8−12735
  N,N-dimethylmethanesulphonamide+phenol (chlorophenol), assoc., PMR 8−23941
  DNA, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
  DNA hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
  electrolyte solutions, NMR relaxation of ^1H, ^2D, ^{23}Na *(Russian)* 8−15053
  fluoranil-macrocyclic polyether mol. complexes, configs., IR and NMR obs. 8−33529
  L-glutamic acid, solid, amino group reorientation, PMR second moment obs. 8−35046
  hornblendes, refinement of struct. characts. by reference to PMR data 8−22704
  liquid crystal, spiral-like, struct., PMR of dissolved mols. 8−1981
  mesogen compounds, melting behaviour, proton NMR spectra 8−15044
  methyl group, ^2H quadrupole coupling const., from ^1H and ^2H NMR data 8−25563
  methyl group, internally rot., attached to symm. top mol., NMR relax. 8−13515
  methyl group, proton spin relax. due to intermol. proton coupling, reorientation 8−25564
  methyl groups, detection of proton NMR at arbitrary temps. of tunnelling system 8−39432
  methyl-containing mol. solids, proton NMR line shape, methyl group tunnelling 8−6588
  methylfluoride, anomalous behaviour of proton chemical shift in gas-liquid crit. region 8−39419
  mica, Fe^{2+} distrib. on octahedral sites, PMR investig. 8−15041
  microemulsions, PMR spin-lattice relax. time meas., inversion recovery method *(French)* 8−48066
  muscle water transverse and longit. NMR relax. rates 8−35810
  nonadecane, mol. motion in solid, ^1H spin relax. 8−15048
  one-dimensional charge transfer conductors, press. effects on mag. props., review 8−6505
  organic compounds, electron donating, PMR spectra, paramag. shifts induced by N_2O_4 *(Russian)* 8−21946
  organic solid, exciton motion effect on proton relax. 8−14671
  phenols, orthosubstituted, proton acceptor soln., PMR of H-bonding 8−13517
  phosphatidylcholine hydration, adsorpt.-desorpt. isotherm and PMR 8−15781
  polymers, magic angle rotation ^1H NMR, appls. 8−43649
  polymethacrylic acid aq. solns., PMR line breadths 8−27099
  polymethinecyanines, symm. solvent effects on electronic struct., ^1H, ^{13}C NMR 8−13516
  polynucleotide hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
  polynucleotides, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
  proteins, spin-lattice relax. time, role of cross-relax. 8−35800
  pyrrole, liq. and nonaq. solns., ^{14}N NQR, ^1H line shape anal. 8−6598
  $tRNA_{yeast}{}^{phe}$, Fourier transform PMR in aq. soln., ^1H exchange and relax. rates meas. method 8−15049
  sphingomyelin bilayer systems, monolayer coupling, choline methyl proton line width 8−35807
  TANOL, linear chain antiferromagnet, long-range order, magnetisation, PMR 8−23266
  TBBA, smectic, spin-lattice relax., self-diffusion, mol. rot. 8−35055
  TCNQ-HMTSeF, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
  TGS, proton spin-lattice relax. time, temp. depend., near transition pt. 8−43668
  thiopen-2,5- dicarboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8−1004
  thiophen-2-carboxaldehyde, in lyotropic mesophase, mol. struct. and orientation 8−1004
  thiourea-cyclohexane inclusion compound, thiourea-d_4 derivative, temp. depend. of cyclohexane spectra, cyclohexane molecular motion 8−31116
  TMMC, linear antiferromag., 3D ordering and spin correlations, mag. field effect 8−19262
  transition metal complexes, proton NMR chem. shift, covalency parameters calcs. 8−42098
  1,3,5-tribromobenzene mesophase, spiral-like, struct., PMR of dissolved mols. 8−1981
  1,3,5-trichlorobenzene mesophase, spiral-like, struct., PMR of dissolved mols. 8−1981
  1,2,3-trifluorobenzene, ^{13}C, ^{19}F, and ^1H NMR spectral anal. 8−37659
  trimethylphosphate, plastic and hard crysts., liq., nucl. spin-lattice relax. mol. motion 8−48065
  tryptophan, Fourier transform PMR in aq. soln., ^1H exchange and relax. rates meas. method 8−15049
  DL-tryptophan, polycryst., amino group rot., reorientation, mol. struct., 77-555K, PMR obs. 8−35047
  TTF-TCNQ, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
  TTF-TCNQ electronic props. 8−2763
  water, adsorb3d on Mg vermiculite, elec. pot. calc., rel. to spectra interpretation 8−26763
  water, direct observation in rotating frame *(Russian)* 8−39422
  water adsorbed in kaolinite dispersions, PMR exam. *(Russian)* 8−35058
  wrist, human, radiographic thin-section image by NMR 8−24112
  $BaFHF_2$, free induction decay 8−2753
  $CaSO_2.2H_2O$, few thermodynamic invariants, proof from PMR 8−43657

proton magnetic resonance continued
$CaSO_4.2H_2O$, mol. reorientations and mol. diffusion, PMR 8−43671
Cd complex, aminoacetate, proton spin-lattice relaxation, temp. depend. 8−31119
Cu complex, $CuCl_2.2NC_5H_5$, spin 1/2 system, one-dimensional nucl. relax. 8−39427
Cu complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
$Cu(NO_3)_2.2^1/_2H_2O$, long-range ordered state, mag. props. 8−39417
$Cu(NO_3)_2$(pyrazine), single cryst. PMR 8−2761
H_2, solid, nuclear magnetism at reduced ortho conc. 8−10787
$H_{1.6}MoO_3$ bronzes, proton mobility 8−39426
H_2O powder, PMR chem. shift anisotropy, nucl. mag. screening tensor 8−17687
H_2S, powder, PMR chem. shift anisotropy, nucl. mag. screening tensor 8−17687
$KCl:NH_4Cl$, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
$K_2CuCl_4.2H_2O$, nucl. dipole interaction and transferred hyperfine tensors determ. *(Korean)* 8−19342
$KH_3(SeO_3)_2$, ferroelastic, central peak in local proton fluctuation spectrum 8−23363
$KH_3(SeO_3)_2$, high-resolution PMR 8−35053
$K_2[MoO_{1-x}(OH)_{2x}(H_2O)_{1-x}O(MoO_4)_2].2H_2O$, proton NMR for chem. comp. at −195°C 8−38651
$LiNH_4SO_4$, phase transitions, temp. depend. of NMR, spontaneous polarisation, birefringence and SHG 8−10191
NH_4^+, NMR line shapes at low temp., composite tunnelling, reorientation 8−48054
NH_4ClO_4, with 0.015% and 0.1% D, proton Zeeman relaxation 8−6592
NH_4ReO_4, PMR, NH_4^+ tunnelling, ground torsional level struct. 8−27097
NH_4ReO_4, proton absorpt. lineshape and spin-lattice relax., ^{187}Re anomalous temp. depend. 8−48067
$Na_{7.5}Ca_{0.5}(AlSiO_4)CO_3.2H_2O$, cancrinite, proton-containing groups, PMR meas. 8−2094
$Na_2[MoO_{1-x}(OH)_{2x}(H_2O)_{1-x}O(MoO_4)_2].2H_2O$, proton NMR for chem. comp. at −195°C 8−38651
Pd complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
$PdH_{0.76}$, ^{1}H spin-lattice relax. meas. 8−43672
PdH(D), superconducting, electronic spin density, isotope effects 8−39262
$RbCl:NH_4Cl$, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
$SrFHF_2$, free induction decay 8−2753
$Sr(NH_3)_6$, PMR linewidth, proton tunnelling and NH_3 rot., rapid NH_3 diffusion 8−35045
Ti-H, H diffusion and phase consistution, V **influence, proton spin-lattice** relax. meas. 8−27484
$TlHF_2$, free induction decay 8−2753
W, with H adatoms, PMR meas. of adsorption state, surface migration 8−10275
Zn complex, aminoacetate, proton spin-lattice relaxation, temp. depend. 8−31119

proton-nucleus reactions
for inelastic proton-nucleus scattering, see "proton-nucleus scattering"
see also neutron-proton interactions; proton-proton interactions; proton radiative capture
backward inclusive scattering of polarised protons from nuclei 8−17206
CD $^{90}Zr(p,\pi^+)^{91}Zr$, 160 MeV, ang. distributions 8−37345
clusterisation and secondary particle correl. *(Russian)* 8−33133
cumulative pion production models, comparison 8−13092
EAS, violation of scale invariance in hadron interactions, 10^{15} to 10^{17} eV 8−7849
emulsion nuclei, 400 GeV/c proton interactions, charged particle multiplicity 8−21558
emulsion stars of 200, 300, 400 GeV protons, multiplicities, ang. distribs. 8−596
high-energy, correlation between fast target protons and hadron+nucleon collisions 8−41681
high-energy reactions in astrophysics, comparison of methods for cross-sections calc. 8−28505
light and intermediate nuclei, polarisation phenomena interpret. 8−13051
multiplicity distribs. of compound shower and grey track, proton-emulsion interaction 8−591
particle-stable neutral nuclei prod. search, multi-GeV energies 8−25189
pre-equilibrium decay of nuclei of mass ≃90 in 10-100 MeV reactions 8−17171
prompt μ production in p-nucleus collisions, multiple prod. model based on lepton-hadron relation 8−29362
pseudorapidity distribution for 50, 100, 200 GeV/c beams, energy proton, target depend. targets ranging from C to U 8−17202
relativistic particle angular distribs., inelastic proton-nucleus interactions, 20 to 200 GeV/c *(Russian)* 8−46065
spherical nuclei, excitation of collective states in high-energy proton interactions 8−17073
trimuon events, probability of production by short lived source of neutrinos 8−37343
C+p, 24 GeV, J/ψ prod. cross section 8−46055
D^0(1.865) production in proton-nucleus collisions at 400 GeV/c 8−13099
H+p, 24 GeV, J/ψ prod. cross section 8−46055
K subthreshold prod., struct. function 8−21564
L^0 prod. in pN collisions, 400 GeV/c upper limit on cross section 8−37243
(p,d) backward pick-up react. for inclusive deuteron spectra at 180° 8−17203
(p,n) cross sections on nuclei with A=89 to 130, anomalous optical model pot. 8−25188
(p,t) reactions, two stage processes in direct reactions, (p,d)(d,t) *(Dutch)* 8−29439
(p,xn) reactions, cross-sections and astrophysical appls. 8−28504
$\bar{p}$ subthreshold prod., struct. function 8−21564
$p+Be\to\varphi+X$, 400 GeV/c, φ decay modes, OZI rule 8−599
p+nuclear emulsion, 400 GeV nonwhite stars 8−13097

proton-nucleus reactions continued
$p+nucleus\to\mu^++\mu^-+anything$, 400 GeV, high-mass dimuon continuum 8−37344
pp total cross section from cosmic ray p-nucleus and pp data anal. *(Russian)* 8−17064
W+p, 24 GeV, J/ψ prod. cross section 8−46055
^{127}(p,xn) and ^{127}I(p,pxn), excitation functions, yields for ^{123}Xe prod. 8−594
Ag, proton-induced fission at 400 GeV, ternary to binary event ratio 8−13170
^{107}Ag+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
^{108}Ag+p, 70 GeV/c central collisions, s-particles ave. multiplicity 8−21567
Ag(p,f), 600 MeV, mass yields in binary fission 8−8819
Al+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
^{27}Al+hp, 400 MeV, multinucleon removal in quasifree process, p-γ coincidence expt. 8−37342
$^{27}Al(p,\alpha_0)^{24}Mg$, 1.12-3.08 MeV, ^{28}Si resonances 8−13091
^{38}Ar(p,n), threshold meas., ^{38m}K β-end point energy determ. 8−46030
^{40}Ar(p,d), 35 MeV, DWBA anal., spectroscopic factors 8−17204
^{40}Ar(p,n), 8.3 meV, ^{40}K excitation energy, γ decay, of lowest T=2 state 8−8769
Au, proton-induced fission at 400 GeV, ternary to binary event ratio 8−13170
B, 20 to 50 MeV, total reaction cross sections compared to opaque-nucleus model 8−33174
$^{11}B(p,3\alpha)$, E_p=2 to 4 MeV, energy depend. of interference phenomena 8−13084
$^{11}B(p,\alpha\alpha)^4He$, Q=8.68 MeV, quasi-free effect search 8−4947
Be+p, 400 GeV/c, dihadron prod., A depend. of prod. cross sections for massive dihadron states 8−33180
Be+p, 400 GeV/c, two hadron correlations at large transverse momenta 8−46060
Be+p collisions 400 GeV, meas. of dihadron mass continuum and search for narrow resonances 8−33178
$Be+P\to\mu^++\mu^-+anything$, 400 GeV, high-mass dimuon continuum 8−37344
^{209}Bi+ZZ *(Russian)* 8−46120
^{209}Bi+p, 39 MeV, intranuclear cascade model 8−33185
^{79}Br+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
^{80}Br+p, 70 GeV/c, s-particles ave. multiplicity 8−21567
$^{81}Br(p,n\gamma)$, ^{81}Kr low lying levels from γ spectra, γ-γ coincidences 8−25195
$Br(p,xn)^{77}Kr$, prep. of carrier free ^{77}Kr using natural Br 8−29678
C, 180° prod. of protons in high-energy reacts. 8−8816
C+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
^{12}C+p, 50 MeV, three particle final state *(Russian)* 8−29471
$^{12}C(p,^6Li)^7Be$, 51.9 MeV, DWBA anal. of angular distribs. 8−46058
$^{12}C(p,\alpha)$ for energy calib. of 14UD Pelletron accelerator at ANU 8−17449
$^{12}C(p,\alpha)^9B$, knockout mechanism 8−29474
$^{12}C(p,d)^{11}C$, 700 MeV, transitions confirm multistep processes 8−46110
$^{12}C(p,p')X$, 316, 516 MeV, analysing powers at backward angles 8−46062
$^{12}C(p,pd)^{10}B$, quasi-elastic cluster knock out, cross section calc. 8−46042
$^{12}C(p,pt)^9B$, quasi-elastic cluster knock out, cross section calc. 8−46042
$^{12}C(p,\pi^+)^{13}C$, 185 MeV, DWBA with Kisslinger type optical pot. 8−4938
$^{12}C(p,\pi^+)^{13}C$, relativistic pion stripping formalism 8−41717
$^{14}C(p,n)^{14}N$, n polarisation ang. distrib., R-matrix anal., ^{15}N excited states 8−4937
^{40}Ca+p, energy dependent radial functions formalism of continuum shell model 8−25185
$^{40}Ca(p,^{17}Ne^{22}Na^{28}Al)$, 40-85 MeV, ^{24}Na yields in 'fission-like' reactions 8−598
$^{40}Ca(p,\pi^+)^{41}Ca$, relativistic pion stripping formalism 8−41717
$^{44}Ca(p,\alpha)$, ^{41}K l-forbidden M1 decay from 1st excited state 8−13024
^{a}Cd(p,t), A=106, 104, at high excitation, observation of hole states 8−25187
$^{111}Cd(p,n\gamma)^{111}In$, E_p=6 MeV, γ-ray spectra and ^{111}In level scheme 8−13083
^{140}Ce(p,X), 17.5-48 MeV, proton total cross section 8−8809
Cu+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
Cu+p, dimuon prod., struct. in Υ region near 9.5 GeV 8−17201
Cu+p collisions, 400 GeV, prompt ν prod. 8−46061
$Cu+p\to\mu^+\mu^-+anything$, 400 GeV, high-mass dimuon continuum 8−37344
$^{63}Cu(p,p3n)^{60}Cu$, 30-47 MeV, cross-section meas. 8−13090
$^{63}Cu(p,pn\gamma)$, 22-28 MeV, ^{62}Cu high spin states, level scheme *(French)* 8−21496
$^{65}Cu(p,\alpha_0)^{62}Ni$, 1.1-3.6 MeV, Wigner cusps 8−41719
^{65}Cu(p,n), cross sections and spectra, exciton model *(Russian)* 8−21536
$D(p,\pi^+)T$, 410, 605, 809 MeV, pion angular distrib. 8−29466
$^{19}F(p,\alpha)^{16}O$, 1.5 to 2 MeV, [211] quartet state in ^{20}Ne 8−46006
Fe, proton bombardment, stable nuclide form. and separation 8−20045
Fe+p inclusive react., structure function of conserved hadrons, 100-1600 GeV *(Russian)* 8−41611
$^{54}Fe(p,\alpha)^{51}Mn$, multi-step-direct-reaction anal. 8−8818
^{54}Fe(p,p′), cross sections and spectra, exciton model *(Russian)* 8−21536
^{56}Fe+p, 39 MeV, intranuclear cascade model 8−33185
$^{158}Gd(p,n)^{158}Tb$, 7.4 MeV, equilib. and nonequilib. contribs. 8−21565
Ge(p,t), 26 MeV, ^{70,72,74}Ge excited states, spins, parities 8−25194
Ge(p,t), shape transition obs. 8−25190
$^2H(p,d\pi^+)n$, 585 MeV, d momentum spectra 8−41718
^{2}H(p,2p), 156 MeV $d^3\sigma$ and $d^4\sigma$ spectra for collinear nucleon system 8−17175
^{2}H(p,2p)n, 8.5 MeV, n-p final state interaction, cross section, ang. distrib. 8−21560
$^2H(p,p)^3He$, four-body problem calc. 8−516

proton-nucleus reactions continued
^{2}H(p,pn), 156 MeV $d^3\sigma$ and $d^4\sigma$ spectra for collinear nucleon system 8−17175
^{3}He(p,2p)d, 590 MeV, in noncoplanar geometry, two particle spallation, diffr. description *(Russian)* 8−33160
^{3}He(p,dp), (p,2p), and (p,pn), 156 MeV $d^3\sigma$ and $d^4\sigma$ spectra for collinear nucleon system 8−17175
^{4}He+p, 18.6 GeV/c, coherent prod. of low mass $p\pi^+\pi^-$ states 8−33175
^{4}He(p,d)^{3}He, 275-500 MeV, large angle meas. 8−41713
^{4}He(p,d)^{3}He, direct-reaction mechanisms 8−581
^{4}He(p,p′), high energy, nonlocal imaginary pot. in one channel approx. 8−592
^{127}I(p,xn)Xe→(β)→I reactions, yield curves for cyclotron prod. of ^{123}I, ^{125}I and ^{121}I 8−44611
^{191}Ir(p,4nγ), 38 MeV, low lying and high spin states in ^{188}Pt side band 8−4936
^{191}Ir(p,n), 10 MeV, ^{191}Pt level scheme, γ, conversion electron spectra, spins, parities 8−25149
La(p,f), 600 MeV, mass yields in binary fission 8−8819
^{6}Li, 180° prod. of protons in high-energy reacts. 8−8816
^{7}Li(p,n)^{7}Be, activation and ang. distrib. meas., absolute neutron yield determ. 8−17199
^{7}Li(p,n)^{7}Be, microscopic multi-channel calcs. to 2.5 MeV c.m. 8−4934
Li(p,n), neutron spectra from thick target bombardment, for therapy 8−28049
^{176}Lu(p,t)^{174}Lu, energy levels and rotational bands in ^{174}Lu 8−37346
^{24}Mg+p, 400 MeV, multinucleon removal in quasifree process, p-γ coincidence expt. 8−37342
^{24}Mg(p,X), 17.5-48 MeV, proton total cross section 8−8809
^{26}Mg(p,$\pi^\pm$), 180 MeV, effect of Δ^{++} components in nuclei 8−33181
^{14}N+p, 50 MeV, three particle final state *(Russian)* 8−29471
^{14}N(p,pd)^{12}C, quasi-elastic cluster knock out, cross section calc. 8−46042
^{14}N(p,pt)^{11}C, quasi-elastic cluster knock out, cross section calc. 8−46042
^{15}N+p reactions, ^{16}O energy levels near 15 MeV excitation, R-matrix anal. 8−29460
^{15}N(p,α) (p,αγ), 0.9-1.25 MeV, ^{16}O levels, J^π 8−509
^{15}N(p,α)^{15}N, 2.50-5.14 MeV, 3^+ ^{16}O reson. state excit. 8−580
^{148}Nd(p,2nγ), 12.1-20.2 MeV, γ-spectra, deduced ^{147}Pm level struct. 8−510
^{60}Ni+p, 400 MeV, multinucleon removal in quasifree process, p-γ coincidence expt. 8−37342
^{16}O+p, 50 MeV, three particle final state *(Russian)* 8−29471
^{16}O+p, energy dependent radial functions formalism of continuum shell model 8−25185
^{16}O(p,pd)^{14}N, quasi-elastic cluster knock out, cross section calc. 8−46042
^{16}O(p,pt)^{13}N, quasi-elastic cluster knock out, cross section calc. 8−46042
^{17}O(p,γ), 0.56 MeV, populating ^{18}F 5603 keV level, isospin mixing 8−543
Pb+p, 600 MeV, pion production, energy spectra, A depend. *(Russian)* 8−17213
^{207}Pb+p, 70 GeV/c, s-particles ave. multiplicity 8−21567
^{208}Pb(p,d), two stage processes in direct reactions *(Dutch)* 8−29439
^{208}Pb(p,π^+)^{209}Pb, 160 MeV, ang. distributions 8−37345
^{208}Pb(p,t)^{206}Pb, successive and simultaneous transfer processes, on-shell, DWBA methods 8−8812
Pb(p,t), A=204,6,8, E=35 MeV, spectra and ang. distribs. meas. DWBA anal., sum rules 8−13101
^{a}Pd(p,t), A=104, 102, at high excitation, observation of hole states 8−25187
^{110}Pd(p,t)^{108}Pd(2_1^+), analysing power difference from ^{110}Pd(p,t)^{108}Pd(2_1^+) 8−37341
Pt+p, dimuon prod., struct. in Y region near 9.5 GeV 8−17201
Pt+p→μ^++μ^-+anything, 400 GeV, high-mass dimuon continuum 8−37344
Pt(p,d)^{193,195,197}Pt, l-assignments, spectroscopic factors 8−8810
^{226}Ra(p,f), 12 MeV, prompt neutron energy distrib. meas. 8−13182
^{226}Ra(p,f), 12 MeV, prompt γ-ray spectra meas. 8−13183
^{121}Sb(p,n)^{121m,g}Te, 4-24 MeV, yield meas. 8−37349
^{123}Sb(p,n)^{123m}Te, 4-24 MeV, yield meas. 8−37349
^{45}Sc(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in ‘fission-like’ reactions 8−598
^{28}Si+p, 400 MeV, multinucleon removal in quasifree process, p-γ coincidence expt. 8−37342
^{150}Sm(p,2nγ), 18-26 MeV, level struct. of ^{149}Eu, spin, parity 8−21561
^{a}Sn(p,t), A=122, 120, 124, 116, 118, at high excitation, observation of hole states 8−25187
^{118}Sn(p,α)^{115}In, 20 MeV polarised protons, DWBA calcs. 8−41714
^{119}Sn(p,n)^{119}Sb, 16-20 MeV, isobaric analogue state, ang. distrib. meas. 8−29468
^{120}Sn(p,n)^{120}Sb, nuclear alignment of ^{120}Sb temp. depend. 8−41720
Sn(p,n)S6, S6, A=120, 122, 3^+ isomeric states quadrupole moments (p,n) excited, TDPAD method 8−41635
Ta, 180° prod. of protons in high-energy reacts. 8−8816
Ta+p, 28.5 GeV/c, backward particle emission, energy depend. 8−25236
^{181}Ta(p,n)^{181}W, 10.2 MeV, CC neutron spectra and angular distrib. meas. *(Russian)* 8−25198
Tb(p,f), 600 MeV, mass yields in binary fission 8−8819
^{99}Tc(p,d), 22.9 MeV, ^{98}Tc energy levels, l-values, spectroscopic factors, parities 8−25183
^{124}Te(p,2n)^{123}I, improved targetry and radiochem. for ^{123}I prod. 8−28064
^{124}Te(p,n)^{124}I, improved targetry and radiochem. for ^{124}I prod. 8−28064
^{128}Te(p,t)^{126}Te(2_1^+), analysing power difference from ^{110}Pd(p,t)^{108}Pd(2_1^+) 8−37341
^{232}Th(p,f), 4-7 MeV, cross sections *(Russian)* 8−41794
Ti, 20 to 50 MeV, total reaction cross sections, compared to optical model prediction 8−33174
^{48}Ti(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in ‘fission-like’ reactions 8−598
^{48}Ti(p,n), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
^{169}Tm(p,n), cross sections and spectra, exciton model *(Russian)* 8−21536
U, proton-induced fission at 400 GeV, ternary to binary event ratio 8−13170
U+p, particle-stable neutral nuclei prod. search, multi-GeV energies 8−25189
^{235}U(p,f), 13.7-14.2 MeV, isobaric analogue resonances, fission width 8−21616
^{238}U, deuteron and proton bombardment, excitation function determ. 8−41709
^{238}U, proton-induced fission, asymm. region, nucl. charge distrib. 8−4967
^{238}U+ZZ *(Russian)* 8−46120
^{238}U(p,2n), production of ^{237m}Np fission isomer, statistical model anal. 8−25256
^{238}U(p,f), 35-85 MeV, nuclear charge dispersion in light mass region 8−8864
^{238}U(p,f), 4-7 MeV, cross sections *(Russian)* 8−41794
^{238}U(p,nf), multiple scatt. effect due to filling in of blocking patterns 8−21617
^{238}U(p,xnf), lifetime of second chance fission at threshold, in UO$_2$ single cryst. 8−17259
^{50}V(p,α), 13.85 MeV, level density parameters, statistical model anal. 8−13130
^{51}V(p,d)^{50}V, 51.9 MeV, symm. pot. anal. 8−33182
^{51}V(p,n), 1.56-5.53 MeV, total cross section, excitation functions, isobaric analogue resonance 8−4943
V(p,^{17}Ne^{22}Na^{28}Al), 40-85 MeV, ^{24}Na yields in ‘fission-like’ reactions 8−598
W+p, 25 GeV, search for neutral nuclei *(Czech)* 8−29454
W+p, 400 GeV/c, dihadron prod., A depend. of prod. cross sections for massive dihadron states 8−33180
^{187}W+p, 2 to 5 GeV/nucleon, multiplicities of secondary particles *(Russian)* 8−46066
Zn(p,X), A=64, 66, 68, 17.5-48 MeV, proton total cross section 8−8809
^{91}Zr(p,nγ), 3.5-4.8 MeV, ^{91}Nb lifetimes, branching ratios, multipole mixing ratios 8−13011

proton-nucleus scattering
see also neutron-proton scattering; proton-proton scattering
elastic and inelastic proton-nuclear scatt. at high energy *(Chinese)* 8−13074
elastic proton and neutron, cross sections, microscopic optical model pot. calcs. 8−593
giant quadrupole resonances in light nuclei excited by α or p inelastic scatt. 8−624
Glauber theory of spin-orbit interactions 1 GeV (p,p) scatt. 8−37336
intermediate atomic weight nuclei, 6 MeV proton scatt. anal., quadrupole deform. 8−13076
light and intermediate nuclei, polarisation phenomena interpret. 8−13051
microscopic optical model anal. of (n,n) and (p,p) cross sections 8−29434
polarised proton elastic scatt., 30 MeV, optical model anal. 8−597
review, hadron-nucleus interactions at high energies, phenomenological models 8−8859
solar flare energy spectrum simulation from monoenergetic incident proton beam 8−12786
(p,n) transitions to anti-analogue states, fluctuations in Lane pot. 8−8815
(p,p), isobaric analogue resonances, microscopic and phenomenological parameters, S-matrix eval. methods 8−13045
(p,p), knock-on exchange, local equivalent methods 8−33184
(p,p) scatt. on light nuclei, 6 MeV, optical model anal. *(Russian)* 8−25200
(p,p′), direct, and multistage processes, DWBA anal. *(German)* 8−25202
(p,p′) and (e,e′) scattering, core polarisation, microscopic models, transitions, cross sections, form factors 8−604
p($\bar{p}$)+light nuclei, high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
^{40}Ar(p,p)^{40}Ar, E_p=1 MeV, cross section meas. 8−13089
^{11}B(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8−13075
^{9}Be(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8−13075
^{9}Be(p,pn)^{8}Be, kinematically complete exam. of ^{9}B and ^{9}Be levels 8−21550
^{12}C, excitation cross sections induced by 1 GeV protons and electrons, Glauber theory *(Russian)* 8−41684
^{12}C, penetration range, 200 MeV to 2 GeV *(French)* 8−4964
^{12}C(p,p′), pair decay of 7.65 MeV level meas. 8−29469
^{12}C(p,p′), single proton distrib. anal. 8−603
^{12}C(p,p′), spin flip excitation of 1^+ T=0 state 8−8817
^{12}C(p,p′)^{12}C, PWIA anal. and bound-state momentum distribs. 8−601
^{12}C(p,p), 0.8 GeV, ang. distrib. meas. 8−25186
^{12}C(p,p), analogue resonances to ^{13}C parent states 8−13046
^{12}C(p,p), multichannel quasi-separable pot. approach 8−37320
^{14}Ca(p,p), A=40, 42, 44, 48, 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{40}Ca (p,p), elastic scatt., polarisation and spin-orbital amplitude parameters, 1 GeV *(Russian)* 8−17208
^{40}Ca, penetration range, 200 MeV to 2 GeV *(French)* 8−4964
^{40}Ca+p, optical model potential, spin-orbit component from internucleon pot. 8−46039
^{40}Ca(p,p′), 25-46 MeV, effects of two-step process determ. 8−21569
^{40}Ca(p,p), 1.04 GeV elastic scatt., polarisation 8−21549
^{40}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{42}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{44}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{48}Ca(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
Ca(p,p), 1 GeV, neutron densities 8−17087
Ca(p,p), 30 MeV, A=40, 48, pick-up and inelastic scatt. contributions to p optical pot. 8−25182
Ca(p,p′), 19 MeV, nuclear struct. anal. 8−17197
Cd(p,p)Cd, A=110, 112, 5-9 MeV, isobaric analogue reson., QRPA calc. 8−576
^{50}Cr(p,p) and (p,p′), E_p=6 MeV, cross sections, opt. pot. parameters 8−13086
^{52}Cr(p,p′), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
^{52}Cr(p,p) and (p,p′), E_p=6 MeV, cross sections, opt. pot. parameters 8−13086

proton-nucleus scattering continued
D(p,p), 630 MeV, asymmetry in scatt. polarised protons *(Russian)* 8−46064
^{54}Fe(p,p), 3.28-4.53 MeV, ^{55}Co IAR, J^{π} assignments 8−574
^{56}Fe(p,p′), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
Fe(p,p′), A=54,6, E=17.2, 20.4, 24.6 MeV polarised protons, optical model, DWBA anal. 8−13094
^{1}H(p,p)^{1}H, E_p=1 MeV, cross section meas. 8−13089
^{2}H, elastic scatt. of protons and α-particles *(Russian)* 8−21566
^{2}H(p,2p)n, inelastic scatt. mechanism at moderate energy *(Russian)* 8−41723
^{2}H(p,p), 10 MeV, differential cross section, p and d analysing powers 8−46063
^{3}H(p,p), 1-10 MeV, isospin splitting of 1p-1h excitation in ^{4}He 8−41622
^{3}H(p,p), 4-12 MeV, Amado model quasi-three body calc. 8−25191
^{3}H(p,p), 8 to 17.1 MeV, cf. neutron polarisation in ^{3}He(n,n) 8−25171
^{3}He(p,p), 1.75 to 4.13 GeV/N, small angle scatt., Glauber model *(Russian)* 8−41726
^{3}He(p,p)^{3}He, four-body problem calc. 8−516
^{3}He(p(polarised),p)^{3}He, nuclear force and T-violation effects 8−4797
^{4}He (p,p), 200, 350, 500 MeV, differential cross-section and analyzing power meas. 8−17195
^{4}He+p, interaction potential from inverse scatt. problem method *(Russian)* 8−46068
^{4}He+p($\bar{p}$), high energy cross section calc., complex ang. momentum theory *(Russian)* 8−46067
^{4}He(p,p), 560-1730 MeV, Dirac eqn. optical model anal. 8−29467
^{4}He(p,p), ($\bar{p}$,$\bar{p}$), 24, 50 GeV quasieikonal model, complex momenta theory *(Russian)* 8−29473
^{4}He(p,p)^{4}He, 0-18 MeV, statistical anal., data fluctuations, error estimation 8−25196
^{41}K(p,p′), ^{41}K l-forbidden M1 decay from 1st excited state 8−13024
^{41}K(p,p′), impurity in Co, hyperfine field calc. by gamma ray ang. corr. method 8−6340
Kr(p,p′), 51.9 MeV, low-lying octupole states anal. 8−21497
^{7}Li(p,p), polarisation effects for elastic scatt. near (p,n) reaction threshold 8−13075
^{7}Li(p,p)^{7}Li, microscopic multi-channel calcs. to 2.5 MeV c.m. 8−4934
^{24}Mg(p,p′), 135 MeV, high spin unnatural parity states, anal. 8−37334
^{24}Mg(p,p′), 22.5 to 28.5 MeV, giant reson. effects 8−4923
^{26}Mg(p,p′), 6 MeV, spin-flip probability, ang. distrib., energy depend. 8−13078
Mg(p,p), A=24, 26, 5-6 MeV, polarisation in elastic scatt., thick target method 8−13079
Mg(p,p′), giant quadrupole resonance strength, p- and α-inelastic scatt. and α capture 8−37323
^{55}Mn(p,p), (p,p′), cross section fluctuations anal. 8−21551
^{15}N+p reactions, ^{16}O energy levels near 15 MeV excitation, R-matrix anal. 8−29460
^{15}N(p,p)^{15}N, 2.50-5.14 MeV, 3^{+} ^{16}O reson. state excit. 8−580
^{58}Ni (p,p), 1.04 GeV, elastic scatt. 8−21549
^{58}Ni(p,p), 0.8 GeV, ang. distrib. meas. 8−25186
^{58}Ni(p,p), 1 GeV, neutron densities 8−17087
^{62}Ni(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8−29464
Ni(p,p′), A=58,60,62, E=17.2, 20.4, 24.6 MeV polarised protons, optical model, DWBA anal. 8−13094
^{16}O(p,p′), 25-46 MeV, effects of two-step process determ. 8−21569
^{16}O(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{17}O(p,p)^{17}O, 1.4-3.0 MeV, spin-parity assignment in ^{18}F 8−29391
^{207}Pb(p,p′), 135 MeV, DWIA test 8−33186
^{207}Pb(p,p’), excitation of neutron-hole states, 61.2 MeV protons 8−8724
^{208}Pb (p,p), 1.04 GeV elastic scatt., polarisation 8−21549
^{208}Pb (p,p) elastic scatt., polarisation and spin-orbital amplitude parameters, 1 GeV *(Russian)* 8−17208
^{208}Pb(p,p′), 40, 45 MeV, fine struct. in giant resonance region, collective dipole spin flip excitation 8−46056
^{208}Pb(p,p), 0.8 GeV, ang. distrib. meas. 8−25186
^{208}Pb(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{208}Pb(p,p), 30 MeV, pick-up and inelasti scatt. contribution to p optical pot. 8−25182
^{208}Pb(p,p)^{208}Pb, 1 GeV, neutron and nuclear matter space distribs. *(Russian)* 8−502
^{102}Pd(p,p′γ), 8 MeV, ang. correl. meas. to determ. level scheme 8−21559
^{195}Pt(p,p′), single proton distrib. anal. 8−603
^{32}S (p,p), 5-6 MeV, polarisation in elastic scatt., thick target method 8−13079
^{82}Se(p,p) elastic, inelastic 4.5-77 MeV scatt., IAS, ^{83}Se low-lying states 8−573
^{28}Si(p,p′), 135 MeV, high spin unnatural parity states, anal. 8−37334
^{28}Si(p,p′γ)^{28}Si, 3.5-3.8 MeV, spin-flip probability in resonance region *(Russian)* 8−41725
^{122}Sn(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8−29464
^{48}T(p,p′), 4.7-5.4 MeV, cusp behaviour of cross-section obs. 8−29470
^{181}Ta($\pi^{\pm}$,p), ($\pi^{\pm}$,d), E=100, 220 MeV, p and d spectra meas. 8−648
^{48}Ti(p,p), 1 GeV, cross sections using nuclear densities from self-consistent methods *(Russian)* 8−41724
^{48}Ti(p,p), E_p=1 GeV, elastic differential cross sections 8−13082
^{89}Y(p,p′), two stage processes in direct reactions *(Dutch)* 8−29439
^{89}Yb(p,p), 20 MeV, elastic and inelastic scatt., analysing powers *(Dutch)* 8−29464
^{90}Zr(p,p′), polarised protons, compound nuclear contribs. to IAR inelastic decay 8−8813
^{90}Zr(p,p)^{90}Zr, 1 GeV, neutron and nuclear matter space distribs. *(Russian)* 8−502

proton polarisation
final state polarisation in pp elastic scatt. 209-515 MeV 8−461
high intensity beam by radiation quenching and photoionisation by H atoms *(Russian)* 8−46202
light and intermediate nuclei, proton induced reactions, polarisation phenomena interpret. 8−13051
$\gamma p \to \pi^{+} n$ below 1.02 GeV, polarized target asymm. meas. 8−17029
γp scattering, proton polarisability determ. 8−17025

proton polarisation continued
$K^{-}p \to K^{-}p$, elastic scatt. at low energies, polarisation parameter 8−12932
$\pi^{+}p$ scatt., 291.4 and 310.0 MeV, polarisation parameter 8−41571
QCD, $\bar{q}$ polarisation in quark sea of proton 8−12867
Cr complex, Cr^{V}, doping agent for polarised targets 8−46198
D(p,p), 630 MeV, asymmetry in scatt. polarised protons *(Russian)* 8−46064
^{2}H(γ,np), <800 MeV, proton polarisation in $\gamma n \to \pi^{-} p$ *(Russian)* 8−41700
^{3}H(p,p), 8 to 17.1 MeV, of neutron polarisation in ^{3}He(n,n) 8−25171
^{6}Li(^{3}He,p)^{8}Be, 14 MeV, p-^{8}Be optical model parameters 8−25208

proton production
electroproduction struct. function and constituent-particle scatt. 8−45931
fast stable particles from light emulsions nuclei following 1.5 GeV/c K^{-} interactions 8−17245
hadron-nucleus collisions, backward particle emission, energy depend. 8−25236
inclusive electroproduction of forward protons in fireball model 8−41554
(μ,pxn), reaction probabilities on targets from ^{23}Na to ^{209}Bi 8−29451
(n,pπ^{-}) reactions on nuclei, 8 to 24 GeV/c, coherent diffractive prod., cross sections 8−41711
^{107}Ag+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
Be(γ,p), intermediate energy bremsstrahlung, cross sections 8−13061
^{79}Br+p, 24 GeV/c, in nucl. emulsion, particle emission freq. variation 8−37335
^{20}Ne+emulsion nuclei, Monte Carlo simulation pion and proton multiplicities 8−37363
^{60}Ni+π, 70 MeV, γ+charged particle coincidence spectroscopy, cross section, p multiplicity 8−46111
^{16}O+emulsion nuclei, 75-200 MeV/nucleon, pion and proton multiplicities 8−37363

proton-proton inclusive interactions
charged particle associated multiplicities at ISR energies 8−21473
charged particle average multiplicities comparison in π±p and pp collisions, quark model *(Russian)* 8−17065
charged particle correlations between forward/backward hemispheres in pp collisions at ISR energies 8−29366
charged secondary particles average multiplicities, total cross sections, lepton-hadron relation 8−33100
deep inelstic pp, πN, eN scatt., lepton-hadron relation, multiparticle prod. phenomena, average multiplicities 8−37247
dynamical model for multiplicity distribs. in πp and pp-collisions, pion prod. 8−21469
Higgs bosons from two-gluon annihilation in pp collisions 8−41501
jet structure in high p_t events, importance of parton transverse momentum 8−432
large p_t hadron production, lowest subprocess model, two body reactions 8−4887
large transverse momentum hadron+hadron collisions, particle-jet correls., quark scatt. model 8−4883
longitudinally-polarised beam and target, total cross-section meas., 3, 6, GeV/c 8−4870
meson prod. with large transverse momentum, effective gluon model 8−8717
multiplicity distribs. of charged particles at ISR energies 8−8709
one-dimensional cascade model of interacting nuclei using Glauber theory 8−17233
perturbative reggeon calculus, topological cross sections 8−8632
phenomenological two-component model for hadron constituents, large p_t spectra, pp inclusive reactions 8−25086
$pp \to Xp$, diffraction dissociation, high energy 8−25087
quark parton model, total cross sections 8−45859
total cross section from cosmic ray p-nucleus and pp data anal. *(Russian)* 8−17064
transverse spin depend. of total cross-section at 1-3 GeV/c 8−33078
d and $\bar{d}$ production in pp collisions at CERN ISR 8−33099
e production in pp collisions at 53 GeV, small transverse momenta electrons 8−29367
η/π^{0} prod. ratio at high transverse momenta 8−41602
$K^{\pm}$, single particle spectra in 100-400 GeV pp interactions 8−17059
Λ, Λ, $\Sigma^{\pm}$(1385) prod. in 405 GeV/c interactions 8−21477
p, single particle spectra in 100-400 GeV pp interactions 8−17059
p-nucleus interactions, 20 to 200 GeV/c relativistic particle angular distribs. *(Russian)* 8−46065
p+Be, inclusive proton spectra anal. 8−21480
$p+Be \to \varphi+X$, 400 GeV/c, φ decay modes, OZI rule 8−599
p+^{187}W, 2 to 5 GeV/nucleon, multiplicities of secondary particles *(Russian)* 8−46066
$\bar{p}p$, 22.4 GeV/c, multiplicities and forward-backward correls. 8−17061
$\bar{p}p$, 32 GeV/c, π and neutral strange particles inclusive prod. 8−4881
pp, $p\bar{p}$ inclusive interactions, lepton pair prod. and Drell-Yan mechanism 8−8718
$\bar{p}p$ and pp reactions, μ prod., Drell Yan prod. of intermediate vector bosons 8−29364
$\bar{p}p$ annihilation, π^{+}, π^{-} and π^{0} probability distrib. 8−41604
$p\bar{p}$ annihilation at rest, γ-ray spectrum 8−21450
$pp \to \delta^{++}(1236)$, Λ^{0}, 100 GeV/c, one-meson-exchange mechanism anal. 8−8712
$pp \to eX$, origin of small p, direct electrons 8−21474
$\bar{p}p \to K^{0}X$ or ΛX or ΛX at 12 GeV/c 8−4885
$pp \to \Lambda X$, 19 GeV/c, polarisation at high transverse momenta 8−37246
$\bar{p}p \to \mu^{+}\mu^{-}X$, neutral current effects, $SU_l(2) \times SU_r(2) \times U_{l+r}(1)$ theory 8−17060
$pp \to pX$, Deck effect contribution 8−21471
$pp \to pX$, triple-Regge fits, duality struct. of inclusive diffr. dissoc. 8−8715
$pp \to \bar{p}X$, upper atmosphere, p/$\bar{p}$ flux ratio calc. 8−40783
$\bar{p}p \to$ pions, 1.6 GeV/c, branching ratio meas. 8−17038
$pp \to \pi^{-}X^{+++}$ inclusive double-charge-exchange π^{-} prod., 100 GeV/c 8−37250
$pp \to \pi^{0}X$, 100, 200 GeV/c high transverse momentum π^{0} prod., quark scatt. 8−45976
$pp \to \pi^{0}X$, 100 and 200 GeV, ang. depend. of π^{0} prod. 8−41603
$pp \to \pi^{0}X$, 53, 63 GeV, inclusive π^{0} prod. at very large transverse momenta 8−45980
$pp \to \pi^{0}X$, one-gluon-exchange quark scatt. 8−8714

proton-proton inclusive interactions continued
- $pp \to \pi^0 X$, parton model, polarised proton, large p_t π^0 prod. asymm. 8−12936
- $pp \to \pi^{\pm} X$, charge ratio for cosmic pion spectrum in atmosphere 8−28463
- $pp \to \pi X$, 23 GeV, Monte Carlo anal., parton Fermi motion 8−45977
- π distribs. in 205 GeV/c reacts. 8−8716
- π prod. in pp collisions at 102, 400 GeV, transverse momentum props. 8−8713
- π^- multiplicity distribs. *(Russian)* 8−41742
- π^- prod., 13 to 300 GeV/c, inclusive distribs. *(Russian)* 8−45946
- π^0 and $\pi^{\pm}$ produced in pp collisions, correl., multiparticle prod. mech. 8−8708
- $\pi^{\pm}$, single particle spectra in 100-400 GeV pp interactions 8−17059
- $\pi^{\pm}$single particle distribs. in pp, πp collisions, transverse momentum, rapidity depend. hard scatt. models 8−29361
- Be+p, 400 GeV/c, two hadron correlation at large transverse momenta 8−46060
- $\bar{p}p \to \Lambda$, 10 to 300 GeV, triple Regge framework 8−21472
- $pp \to \mu$ pairs, 200, 300, 400 GeV, test of scaling hypothesis 8−4888
- $pp \to \pi X$, large p_T π prod., QCD theory 8−45861

proton-proton interactions
- *see also proton-proton inclusive interactions; proton-proton scattering*
- diffractive cross-section determ. for six-prong interaction at 205 GeV/c 8−33097
- diffractive excitation at high energies and small momentum transfer *(Russian)* 8−17036
- electron pair production cross section, and Υ(9.5 GeV) prod. 8−25085
- exotic mesons and p-$\bar{p}(e^+$-$e^-)$ annihilation 8−21393
- fragmentation model and minimal rule 8−25019
- hydrodynamic model, nonlinear pion+pion chiral Lagrangian, $e^+ + e^-$ and p+p collisions 8−32966
- inelastic cross section in proton-proton interactions 8−4939
- massive lepton pair prod., constituent interchange model 8−8611
- massive muon pair data, cf asymptotically free parton model 8−8605
- $pp \to 2\gamma$+anything, $\sqrt{s}=52$ GeV, 2 photon mass spectra 8−21470
- statistical bootstrap model anal. of $N\bar{N}$ annihilations 8−37224
- unitary impact-parameter model for multicluster prod. 8−33091
- $D^0(1.865)$ production in proton-nucleus collisions at 400 GeV/c 8−13099
- N-Δ reson. with T=1, $J^p=2^-$ obs. in pp scatt. 8−17041
- np observables, ^{3}P-waves effects, phase shift anal. of pp expts. 8−33077
- $\bar{p}p$, 0.76 GeV/c, lower limit on $\bar{p}$ lifetime 8−45968
- $\bar{p}p$, 100 GeV/c, inclusive ρ^0 and f^0 prod. 8−41605
- $\bar{p}p$, 12 GeV/c, search for $K3\pi$ at 2.6 GeV/c^2 8−25090
- $\bar{p}p$, 1.6 GeV, comparison with empirical model 8−25060
- $\bar{p}p$, 2.32 GeV/c, cross-sections, C-invariance, π and ρ^0 multiplicities anal. 8−41569
- pp, $\bar{p}p$, fireball mass and pion multiplicity 8−45974
- $\bar{p}p$, soft-pion amplitude for π^0 emission 8−41570
- $\bar{p}p$, three-body annihilations, rel. to quark rearrangement model 8−21444
- pp, two component fireball model 8−45965
- $pp \to (p\pi^+)(p\pi^-)$, observation of charge exchange double dissociation 8−25079
- $pp \to (p\pi^+\pi^-)(p\pi^+\pi^-)$, s-depend. of double diffraction dissociation 8−25084
- $\bar{p}p$ annihilation, asymptotic props., parton model, kaon prod. *(Russian)* 8−466
- $\bar{p}p$ annihilation mechanisms, 2.5 to 9.1 GeV/c, pion prod., quasi two body process 8−17039
- $pp \to d\pi^+$, differential cross-section and polarisation 8−8683
- $\bar{p}p \to F_1\omega$, F_1 spin-parity anal., boson spin tests from sequential decays 8−29345
- $\bar{p}p$ inelastic reactions, 22.4 GeV/c, charge asymm. at large p_t 8−476
- $\bar{p}p \to K^+K^-\pi^+\pi^-$, 2.32 GeV/c, cross section, C conservation, errors 8−21446
- $pp \to N\Delta$, parity violation in Weinberg model 8−8701
- $pp \to n\Delta^{++}$, 6-1500 GeV/c, differential cross-section 8−8700
- $pp \to n\Delta^{++}$, unconventional behaviour of isospin-one exchanges 8−21445
- $\bar{p}p \to$neutral meson$+\pi^+\pi^-$, or neutral meson$+\bar{p}p$, 7.2 GeV/c, quark model anal. 8−41561
- $\bar{p}p \to \bar{n}n$, 1-3 GeV/c, scintillation-counter study 8−41567
- $\bar{p}p \to \bar{p}\omega p$ or $\bar{p}p\pi^+\pi^-\pi^0$, 9.1 GeV/c, cross sections, momentum depend. 8−29344
- $\bar{p}p \to \bar{p}p\pi^+\pi^-$, 32 GeV/c 8−4881
- $\bar{p}p \to \pi^+\pi^-$, 6 GeV/c, differential cross sections, line reversal symmetry 8−41564
- $\bar{p}p \to \pi^+\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
- $pp \to \psi\gamma$, inclusive prod. anal. 8−25091
- $\bar{p}p+\bar{n}n$, energy depend. of np charge exchange, phenomenological anal. 8−25082
- π distribs. in 205 GeV/c reacts. 8−8716
- π prod. in pp, np, πp interactions, mass quantisation *(French)* 8−25059
- ρ-dominance in model for inelastic pp collisions 8−37238
- W-boson prod. cross sections and hadronic jets in pp and $\bar{p}p$ collisions 8−8707

proton-proton scattering
- *see also proton-proton interactions*
- dibaryon resonance existence 8−45939
- differential cross section energy dependence, large angles, 2-9.7 GeV/c 8−37227
- diproton resonance in pp system 8−4871
- EM corrections at low energy *(Japanese)* 8−17023
- final state polarisation in pp elastic scatt. 209-515 MeV 8−461
- fixed pole pomeron, high energy phenomenology of pp elastic scatt. 8−25080
- forward elast. scatt., 4-10 GeV/c 8−8682
- geometrical scaling real part effects in pp elastic amplitude 8−37232
- high energy diffraction scatt., model with shielded pomeron, pp, πp, Kp investigation 8−17004
- high-energy 100 to 2048 GeV/c, based on Van der Walls type eqns. 8−29358
- large momentum transfer struct. in pp elastic scatt. at 201 GeV/c 8−8697

proton-proton scattering continued
- longitudinally-polarised beam and target, spin-spin correl. parameter meas., 6 GeV/c 8−4870
- multiple scatt. of quarks, elastic pp cross-section 8−4868
- phase shifts, 25 to 70 MeV *(Japanese)* 8−17037
- polarisation expts., 6 GeV/c, pure spin cross sections, Wolfenstein parameters 8−41568
- polarisation in elastic scatt., correlation coeff. at 550 and 630 MeV *(Russian)* 8−12929
- polarised cross-sections for high-P_t^2 pp scatt. at 11.75 GeV/C 8−8698
- pomeron pole+cuts, power series formula 8−8631
- Regge cuts and large $|t|$ pp scattering 8−41587
- resonance, possible existence in the $^3F_3$ state 8−4869
- scattering matrix determ. from scatt. meas., exptl. technique 8−25063
- spin parameters meas. in pp scatt. at 2, 3, 4, 6 GeV/c 8−25078
- spin-spin forces, energy depend. in 90^0 elastic scatt. 8−45941
- strong van der Waals interaction in low energy pp scatt. 8−41563
- $p\bar{p}$, elastic events separation in bubble chamber at 5.7 GeV/c 8−13379
- $\bar{p}p$, forward elast. scatt., 4-10 GeV/c 8−8682
- pp $^3F_3$ resonance as resonance in πNN system 8−45940
- $p\bar{p}$ elastic scatt., 1.9 to 2.6 GeV, differential cross-section zeros 8−29346
- $\bar{p}p$ elastic scattering, repulsive long range force, dispersion relation calcs. 8−25061
- $\bar{p}p$ total elastic cross sections, 0.69-2.43 GeV/c 8−12928
- $\bar{p}p$ total elastic cross sections, 0.69 to 2.43 GeV 8−25067
- $p^{\pm}p$, peripheral reaction model, large angle behaviour 8−442
- pp, 40-45 GeV, Regge anal. differential cross sections *(Russian)* 8−25081

proton radiative capture
- (p,γ), resonance broadening anal. of N in Ta 8−38918
- (p,γ) resonances, use in Dynamitron fault diagnosis 8−29671
- $^{27}Al(p,\gamma)^{28}Si$, $E_p=992$ keV resonance, γ-ray intensity standard 8−17472
- $^{12}C(p,\gamma)$, precise determ. of Q-value 8−17200
- $^{13}C(p,\gamma)$, ^{14}N DSA lifetimes determ. from exptl. stopping powers 8−17142
- $^{13}C(p,\gamma)$, 1701 keV resonance, ^{14}N 9.13 MeV state 8−41641
- $^{13}C(p,\gamma)$, Doppler shift attenuation anal., ^{14}N unbound states 8−25184
- $^{42}Ca(p,\gamma)^{43}Sc$, below 2.75 MeV, resons., γ-decay schemes and level energies 8−13072
- $^{65}Cu(p,\gamma)^{66}Zn$, 1.1-3.6 MeV, Wigner cusps 8−41719
- $^{19}F(p,\gamma)^{20}Ne$, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8−17191
- $^{15}N(p,\gamma)^{16}O$, anal. of ^{16}O giant dipole reson. struct. 8−4942
- $^{23}Na(p,\gamma)^{24}Mg$, ^{24}Mg T=2 state props. 8−8767
- $^{58}Ni(p,\gamma)^{59}Cu$, γ-decay of ^{59}Cu analogue resons. 8−13005
- $^{31}P(p,\gamma)^{32}S$, ang. distribs. of γ-rays from decay of ^{32}S reson. states 8−13085

proton scattering *see electron-proton scattering; kaon-proton scattering; lepton-nucleon scattering; photon-proton scattering; pion-proton scattering; proton-deuteron scattering; proton-nucleus scattering; proton-proton scattering*

proton spectra
- alpha-particle breakup on various nuclei at 140 MeV 8−46080
- atmosphere, secondary nucleon spectra, 2-component model *(Russian)* 8−41612
- high energy, emerging from 680 MeV synchrocyclotron shielding 8−17530
- odd-odd neutron deficient nuclei, spectra of delayed protons and α-particles in β^+ decay *(Russian)* 8−46034
- solar flare energy spectrum simulation from monoenergetic incident proton beam 8−12786
- d+A, 6.3 GeV/c, A=H, D, C, Al and Bi, inclusive spectra of fast p and d *(Russian)* 8−46075
- (e,e′p) reactions on $^{6,7}Li$, ^9Be, ^{10}B, 700 MeV, proton spectral functions, momentum distribs., DWIA anal. 8−41701
- $^{27}Al(\pi^{\pm},p)$, $(\pi^{\pm},d)$, E=100, 220 MeV p and d spectra meas. 8−648
- ^{32}Ar, isobaric analogue states via β-delayed protons 8−558
- $^{40}Ar+^{58}Ni$, deep inelastic collision at 280 MeV, fragment energy and spin 8−21599
- $^{11}B(\gamma,p)^{10}Be$, 18 to 31 MeV, photoproton spectra and ang. distrib., excited state transitions 8−13056
- $^{12}C+\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8−25239
- $^{54}Fe(p,p')$, cross sections and spectra, exciton model *(Russian)* 8−21536
- $^2H+\pi^+$, proton spectra, cross section, π. absorpt. mechs. 8−25239
- $^4He+\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8−25239
- $^4He(d,p)$, 6.8 , 7.8 MeV, continuous proton spectra obs. 8−37352
- $^{142}Nd(e,e'p)$, spectra and ang. distribs. meas., $T_>$ giant reson. anal. 8−13069
- $^{62}Ni+\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8−25239
- $^{62}Ni(\pi^{\pm},p),(\pi^{\pm},d)$, E=100, 220 MeV, p and d spectra meas. 8−648
- $^{36}S(d,p)$, 3.2 MeV, proton spectra meas., ^{37}S energy level scheme *(Russian)* 8−41733
- $^{181}Ta+\pi^{\pm}$, proton spectra, cross section, π. absorpt. mechs. 8−25239
- $^{47}Ti(\alpha,p)$, 15.35 MeV, level density parameters, statistical model anal. 8−13130
- $^{172}Yb(d,p)^{173}Yb$, 14 MeV, proton spectra and ang. distrib. meas. level struct. determ. 8−29482
- ^{90}Zr, breakup of alpha particles in nuclear field 8−46080

proton-surface impact *see ion-surface impact*

protonium *see protons*

protonosphere *see upper atmosphere*

protons
- *see also cosmic ray protons; delayed protons*
- antiprotonic atoms, X-ray transition energies, strong interaction and $\bar{p}$ mass meas. 8−25759
- Dirac form factor and QCD 8−45864
- magnetosphere, low energy electrons and protons obs. 8−36407
- proton-neutron mass difference, higher intermediate hadronic states 8−45920
- radiation belts, proton fluxes, critical levels in outer boundary 8−16246
- scaling behaviour of struct. functions in parton model 8−16988
- solar wind protons cooling, evidence from Mariner 2 data 8−40789
- strong gravity explanation of proton mass 8−12852
- teaching, from Compton effect to quarks, at., proton, and nucl. struct. 8−24596
- $\bar{p}$, parity determ. from ang. momentum anal. 8−4889
- $\bar{p}$ instability, implications for symm. big-bang cosmologies 8−41104

protons continued
- $\bar{p}$ lifetime, lower limit determ. 8−45968
- $\bar{p}$ mag. moment and mass determ. 8−45990

proximity effect
- Kondo alloys and supercond. proximity effect 8−19190
- Kondo alloys in supercond. proximity, localised bands 8−10613
- review *(French)* 8−2625
- Cu-V-Ga dil. alloys with V_3Ga particles, supercond. props. and microstruct. 8−39278
- Pb-Cd, electron tunnelling study 8−10616

pseudobinary semiconductors *see II-VI semiconductors; III-V semiconductors; III-VI semiconductors; IV-VI semiconductors; semiconductor materials*

pseudopotential methods
- alkali metal, atomic props., accuracy of description depenxence on pseudopotentials *(Russian)* 8−38997
- alkali metal anions, photodetachment cross-sections and multipole polarisabilities, extended asymptotic model 8−42028
- alkali metals, equation of state and vol. depend. of thermodynamic props., pseudopot. theory 8−18738
- alkali metals, lattice sp. ht. and thermal vibrs. 8−30768
- alkali metals and alloys, liq., internal energy, chem. pot., critical consts. 8−34422
- atomic dynamic polarisability, variational calcs. with mode pot. *(Russian)* 8−902
- binary alloy, electron theory of short range order 8−10390
- binary alloy, solid-liquid transition theory 8−6144
- binary alloys, and intermetallic cpds., struct. and stability, ab initio pseudopot. calcs. 8−34460
- chemical bonding in crystals, modern theories 8−2064
- completely orthogonalised plane wave method, model pseudopotentials *(Russian)* 8−34740
- covalent crystals, local Heine-Abarenkov model potential 8−42949
- diamond, surface electronic struct., self consistent pseudopotential calc. 8−47842
- form factor, analytic expression 8−10330
- hydrides, first-row, pseudopot. calcs. using FSGO 8−9062
- II-IV-V_2 semiconductors, electronic band struct., general model pseudopot. 8−39020
- liquid metal, conductivity calculation with regard for nonlinearity of electron-ion interaction screening *(Russian)* 8−43351
- localising pseudopotentials for local moments and certain virtual bound states 8−34959
- metal, d-band, generalized pseudopotential theory, density functional formulation 8−10389
- metal, electron-ion interaction model, appl. to K and Na props. 8−26486
- metal, free-electron-like, XPS lineshape asymmetries 8−14681
- metal, liquid, resistivity, thermoelectric power, Harrison nonlocal pseudopot. calcs. 8−23069
- metal, Mossbauer isomer shift, pseudopot.-Born-Oppenheimer theory development 8−2775
- metal, plasmon dispersion, effect of band struct., dielec. function calc. 8−26825
- metal, positron density distribution, temp. effects 8−47739
- metal, surface energy calc. in model of discrete positive charge *(Russian)* 8−38911
- metals, lattice dynamics and three body interaction 8−10139
- metals, simple, interion interaction and interion force constants, effective pots. in nonlocal pseudopot. method *(Russian)* 8−22684
- migration energies of point defects, in pure metals and dilute alloys, calc. 8−47572
- multivalley semiconductor, donor binding energies calc. 8−23041
- nearly free electron metal surface, at. chemisorption 8−14588
- noble metal, electron-ion interaction, model pseudopot. 8−34785
- nontransition metals, binary alloying tendencies 8−2261
- nontransition metals, calculated contribs. to elec. field gradients 8−39079
- semiconductor, dynamical effective charges, pseudopotential calc. 8−30881
- semiconductor band structure under high stress, nonperturbative calc. 8−10344
- semiconductor solid soln., bending parameters calc. by pseudopot. method 8−26813
- semiconductors, amorphous, chem. bonding, struct., pseudopot. theory *(German)* 8−30581
- short range atomic order, size effect in electron theory, static conc. waves approximation *(Russian)* 8−39049
- Simons-type model potentials, mol. calcs. appls. 8−5120
- solid solution, deform. interaction of interstitial atoms, pseudopot. calc. *(Russian)* 8−18636
- solitons, geometrical interpretation from generation of eqns. solvable by pseudopotentials 8−24684
- superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
- transition metals, local pseudopotential theory 8−30863
- valence-shell MO calc. with pseudopot. 8−907
- NN interaction, coupling const. singular points for approx. Bethe-Salpeter eqns. with a nonlocal pseudopotential 8−25062
- Ag, nonlocal model pseudopotential 8−14659
- α-Ag-Zn, atomic short-range order determ., X-ray scatt. and pseudopot. calc. 8−2067
- Al, monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
- Al, plasmon dispersion, effect of band struct., dielec. function calc. 8−26825
- Al, polycryst., anisotropy of plasmon dispersion, pseudopotential method 8−23039
- $Al_xGa_{1-x}As$, energy band struct. calc. 8−23019
- AlH, valence excited states, pot. curves 8−41973
- As, struct., pseudopotential method calcs., using untruncated pot. 8−18582
- Au, nonlocal model pseudopotential 8−14659
- BeO, F-centre exam., pseudopotential calc. 8−43328
- Bi, band struct., temp. and press. depend. 8−18955
- CaF_2, electronic energy bands calc. 8−34762
- CdF_2, electronic energy bands calc. 8−34762
- $CdIn_2S_4$ cubic spinel, electronic band struct. and chem. bonds 8−34768
- Cu, nonlocal model pseudopotential 8−14659
- Cu-Au, elec. resist., pseudopot. calc. *(Russian)* 8−2460

pseudopotential methods continued
- $Ga_{1-x}Al_xP$, bending parameters calc. by pseudopot. method 8−26813
- GaAs, energy bands and wavefunctions, localised orbital description 8−18942
- GaAs-GaSb, threshold energies for impact ionisation by electrons and holes 8−6390
- $GaAs_{1-x}P_x$, bending parameters calc. by pseudopot. method 8−26813
- GaP, localised states in presence of P vacancy, pseudopot. calc. 8−18992
- Ge, energy bands and wavefunctions, localised orbital description 8−18942
- Ge, surface electronic struct., self consistent pseudopotential calc. 8−47842
- Ge-GaAs (110) interface, relax., self-consistent pseudopotentials 8−30981
- H_2O, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- H_2S, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- Hg+Cs(K)(Na)(Rb), scatt. cross-sections, pseudopot. calcs. 8−9225
- K_3Sb, and Na_2KSb, photocathode materials, band struct., empirical pseudopotential calc. 8−10346
- Kr, 4p asymmetry parameter and cross section photoelectron energy depend. pseudopot. method 8−9130
- Li, binding energy and atomic radius calc., effect of nonlocalised charact. of pseudopot. *(Russian)* 8−18575
- Li, plasmon linewidth, k-dependent, anomalous behaviour explanation, interband transitions 8−47721
- Li_2, floating spherical Gaussian orbital, Hartree-Fock-Roothaan and pseudopot. calcs., comparison 8−46262
- LiH_2F hypothetical crystal, existence, total energy calc., pseudopot. calc. 8−2442
- Na, monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
- Na_3Sb, and Na_2KSb, photocathode materials, band struct., empirical pseudopotential calc. 8−10346
- Ni, chemisorption of O(S)(Se)(Te), orbital energy spectrum of chemisorbed electrons 8−2542
- Ni, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- $Ni(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
- O, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- Pb, liq., elec. resist., temp. depend., calc. 8−14701
- $Pd(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
- $Pt(CO)_4$, valence orbital energies, pseudopot. calcs. 8−37546
- S, pseudopotential calculations, parameter fitting scheme appls. 8−41928
- $(SN)_x$, electronic struct., X-ray and UV photoemission obs., OPW and pseudopot. calcs. 8−6832
- $(SN)_x$, electronic struct. and opt. props. 8−6256
- SO, pot. energy curves, pseudopot. multi-struct. valence bond calcs. 8−9094
- Se, trigonal, electronic struct., near metal transition, press. depend. 8−34758
- Si (111), with chemisorbed Al, electronic struct., self-consistent pseudopotential calc. 8−34880
- Si, energy bands and wavefunctions, localised orbital description 8−18942
- Si, lattice energy, pseudopotential calc. 8−23002
- SnS_2 (2H), band struct. press. depend. 8−43292
- SnS_2, band struct., effect of polytypism 8−43293
- Te, trigonal, electronic struct., near metal transition, press. depend. 8−34758
- V, electronic density of states, effective mass, electron-phonon interaction, Coulomb pseudopot. *(Russian)* 8−26804
- Zn-Al, dil., impurity quasi-particle lifetimes and pseudopotential form factor 8−47734
- ZnO, F-centre exam., pseudopotential calc. 8−43328
- ZnS, F-centre exam., pseudopotential calc. 8−43328
- ZnSb, band struct. calc. 8−39015

pseudoternary semiconductors *see ternary semiconductors*

psi mesons
- A dependence of inclusive distrib. in $Be(\pi^-, \Psi)$, $Cu(\pi^-, \Psi)$, $W(\pi^-, \Psi)$ *(Russian)* 8−45983
- charmonium, ψ and χ states, hyperfine struct. 8−12878
- charmonium, generation of spin depend. forces through scalar-vector admixture 8−33038
- charmonium, masses of 2P and higher levels, sum rules 8−4805
- charmonium, Todorov's quasipotential eqn., quark confinement 8−8593
- charmonium level struct., superheavy quarks, bound state spectroscopy 8−8614
- charmonium-like models, order of first energy levels 8−29311
- decays, QCD, inclusive hadronic annihilation of heavy quark-antiquark bound states 8−45866
- decays violating Zweig Iizuka rule, asymptotic freedom phenomenology 8−451
- hadronic collisions, ψ/J and ψ' prod., quark-antiquark annihilation, cascade process 8−25013
- hadronic decay, energy crisis interpretation, anomalous neutral component 8−41540
- hadronic prod. *(Chinese)* 8−8696
- leptonic decays, spectral-function sum rules 8−4857
- mass formula, SU(4) algebraic realisation *(Russian)* 8−45895
- PCAC and dual resonance amplitudes, old and new mesons, charm 8−45885
- phenomenology and quark confinement 8−29308
- photoproduction, two-gluon exchange model 8−21437
- quark model anal. of two-body hadronic decay 8−25040
- radiative decay, radial excitations and q^2 depend. in VDM 8−452
- radiative transitions anal. in nonrelativistic quark model 8−8607
- SU(8) symm. mag. moments of charmed vector bosons 8−4794
- two-body photonic decays, 16-plet mixings in SU(4) quark symm. 8−33062
- vector Ψ_h hadronic prod., b-quarks 8−8613
- C+p, 24 GeV, J/ψ prod. cross section 8−46055
- $(e^+d^- \rightarrow \text{hadrons})/(e^+e^- \rightarrow \mu^+\mu^-)$ cross sections ratio, differential dispersive anal., narrow resonances 8−37223

psi mesons continued
- e^-e^+ annihilation, >2 GeV, production of charmed particles and charged τ lepton, review 8−17006
- H+p, 24 GeV, J/ψ prod. cross section 8−46055
- $\pi N \rightarrow J/\psi+X$, 27 and 40 GeV, total (J/ψ) production cross sections on Cu target *(Russian)* 8−25249
- $\pi^- N \rightarrow J(\psi)+X$, 27 and 40 GeV/c total cross-section for Cu nucleus 8−25088
- $\pi^- N \rightarrow \mu^+\mu^-$+hadrons, 225 GeV, ψ and charm prod. 8−25092
- ψ, $\psi' \rightarrow \pi^+\pi^-$, K^+K^-, decay suppression, dimensionality based selection rule 8−33061
- $\psi(3772) \rightarrow DD$, $D^{0,7}$ masses, branching fractions 8−17009
- $\psi(3.1) \rightarrow f\omega$, $\psi(3.1) \rightarrow B\pi$, branching ratios meas. 8−17011
- $\psi(4.1) \rightarrow \psi(3.1)+\pi+\pi$, coloron model, quark composite struct. 8−29332
- $\psi(4.414)$, width anal. in quark model 8−17010
- $\psi \rightarrow \eta_c\gamma$, η_c hadronic decay, charmonium model 8−41502
- $\psi \rightarrow \eta_c\gamma$, quark-string model anal. 8−33065
- $\psi \rightarrow f^0\gamma$, $\psi \rightarrow \rho\pi$, branching ratios meas. 8−25043
- $\psi \rightarrow f\gamma$, $f'\gamma$, $\pi\pi\gamma$, $KK\gamma$, meas. using DASP detector at DORIS 8−45922
- ψ meson prod. by π^--mesons with momentum 43 GeV/sec in Be, Cu and W nuclei *(Russian)* 8−8863
- $\psi'(3.7) \rightarrow \psi\pi^0$, isospin violating decays 8−37205
- $\psi' \rightarrow \chi_j\gamma$, radiative decay widths of charmonium states, superconvergent sum rules 8−21422
- $\psi' \rightarrow \gamma\chi_{1,2}$, radiative decays of 2^{++}, 1^{++} mesons 8−21420
- $\psi''(3770)$ in cross section for $e^+e^- \rightarrow$hadrons 8−45934
- $\psi''(4.028) \rightarrow DD$, or DD^*+DD^* or D^*DD^*, strong decay theory, radial excitation of charmonium 8−12909
- Y (3.1), instantons and spin forces between massive quarks 8−37173
- W+p, 24 GeV, J/ψ prod. cross section 8−46055
- $\pi^- N \rightarrow J/\psi+X$, 43 GeV/c, cross-sections for W, Cu, Be targets 8−25089

PSK *see phase shift keying*

psychological optics *see vision*

psychology
- artificial sensory feedback system, stimulation freq. discriminability 8−44714
- duration subjective impression rel. to ambient noise 8−44554
- form recognition, scale invariant, in man and machines 8−40176
- noisy office work interruption and psychological effects 8−42492
- object perception criteria, information theory appl. 8−44444
- perception mechanisms, rel. to brain evoked pots. 8−11627
- punctuate pressure sensitivity rel. to skin surface temp., cutaneous cross-model interactions 8−3527
- visual pattern matching, human performance, spatial freq. anal. model 8−40177

PTC thermistors *see thermistors*

p.t.m. *see pulse time modulation*

pulsars
- *see also neutron stars; radiofrequency cosmic radiation*
- A0535+26, transient slow X-ray pulsar, spectrophotometric survey 8−4263
- binary star containing eruptive star assoc. with pulsar, gamma-ray source *(French)* 8−20913
- book, review of six years of work 8−8035
- CG 195+4 (Geminga) pulsating γ-ray source, neutron star models 8−4402
- charge-separated magnetospheres, props. 8−40981
- classification scheme 8−12262
- compact supernova remnants, possible γ-ray emission from pulsars 8−45435
- Crab pulsar, gravit. radiation revised estimate 8−32501
- Crab pulsar, relativistic particles injection into Crab Nebula 8−36678
- Cygnus X-3, cocooned X-ray binary pulsar model 8−36723
- discovery, structure, and physical props., general introduction 8−16450
- dispersion and Hα emission meas., limits on interstellar electron density and ionized gas filling factor 8−8078
- Fermi quantum crystals, melting curves low temp. anomalies 8−24757
- flux observations, long-term intensity and spectral vars. 8−4268
- force-free wind zone, stability 8−49468
- galactic distribution and evolution 8−4260
- galactic magnetic field scale and strength from pulsar data 8−28752
- gamma-ray emission, production and beaming 8−4266
- gamma-ray luminosity influence on pulsar models 8−4262
- gravitationally redshifted γ-rays, neutron star mass constraints 8−4274
- Hercules X-1, hard X-ray pulsation obs. 8−12293
- hollow-cone beam models *(Russian)* 8−16451
- interpulses, single-pole emission model 8−16449
- JP 1953+29, timing data anal., spinup/spindown 8−24522
- long-period pulsars, absence rel. to force-free mag. fields instabilities 8−49425
- magnetic field lines, behaviour in rot. system 8−20848
- magnetic polar cap region, hadronic photoabsorpt. and pair production 8−12261
- magnetospheres, axisymmetric, finite inertia and resistivity effects 8−24521
- magnetospheres, cosmic ray acceleration mechanisms *(Russian)* 8−16448
- magnetospheres, electron cap shape of rot. neutron stars with strong mag. field 8−12265
- magnetospheres, plasma co-rotation 8−12258
- multiple-ring structure in hollow-cone emission 8−12259
- neutrino and photon pair prod. in strong mag. field 8−407
- newly born pulsars with expanding dense envelopes, high energy neutrino sources 8−8034
- NP 0531+22, review of gamma ray obs. *(Russian)* 8−41097
- NP 0532, Crab pulsar, ang. size at 74 MHz 8−12260
- NP 0532, Crab pulsar, gravit. redshifted γ-rays, neutron star mass constraints 8−4274
- NP 0532, Crab pulsar, model, X-ray, optical and radio emission 8−4265
- NP 0532, Crab pulsar, nature of radiating particles *(Russian)* 8−12351
- NP 0532, Crab pulsar, pulsed X-ray emission obs. during lunar occultation 8−8032
- period derivatives, distrib. in sky rel. to existence of solar companion star 8−12198

pulsars continued
- phenomenological model, for coherent and incoherent radiation 8−40979
- polarisation fluctuations at 430 MHz with microsec. time resolution 8−16446
- potential drops above pulsar polar caps, nonneutral beam accel. 8−4267
- PSR 0531+21, Crab pulsar, light curve, 1973 to 1976 period *(Russian)* 8−12263
- PSR 0531+21, interplanetary scintillations at 74 MHz 8−36625
- PSR 0531+21 (Crab pulsar), pulsed γ-ray emission, COS-B obs. 8−8033
- PSR 0809+74, phase stability in drifting subpulse pattern 8−40980
- PSR 0833−45, Vela pulsar, HEAO-1 pointed obs. 8−7856
- PSR 0833-45, review of gamma-ray obs. *(Russian)* 8−41097
- PSR 0833-45 (Vela pulsar), pulsed γ-ray emission, COS-B obs. 8−8033
- PSR 0950+08, PSR 0531+21, high-energy pulsed gamma rays obs. 8−45346
- PSR 1133+16, high time resolution obs. of high freq. radio emission microstruct. 8−45348
- PSR 1133+16, pulse microstruct. direct. obs. at timescales down to 6 μs 8−28711
- PSR 1913+16, binary pulsar, appl. of bimetric gravit. theory 8−45347
- PSR 1913+16, binary pulsar, post-Newtonian timing effects 8−4261
- PSR 1913+16, Hulse-Taylor binary pulsar and gravitational spin precession 8−12264
- PSR 1919+21, interpulse radio emission at freqs. 16.7-38 MHz 8−16447
- PSR 1919+21, P_3 period temporal variability 8−36626
- PSR 2045−16, multiple-ring struct. in hollow-cone emission 8−12259
- PSR 2223+65, rel. to supernova-induced star form. in Cepheus OB3 assoc. 8−12306
- pulse width and period relations for various models 8−28714
- radio emission, possible mechanism 8−20847
- radio emission mechanism, model 8−12257
- radio emission mechanism model, by electron/positron-magnetosphere EM ineteraction 8−8036
- radio emission polarization at 3.5 m wavelength 8−28713
- relativistic streaming plasma, generalised Ohm's Law, pulsar magnetosphere relevance 8−9823
- review, cosmic gamma radiation, sources and detection 8−12059
- scintillation theory, mathematical anal. of physically thin screen 8−28501
- Smith's model, inconsistent with obs. 8−28712
- space velocities rel. to evolution 8−4264
- Sun, pulsation with 2^h40^m period, possible magnetospheric origin 8−7961
- superfluid dynamics, rotating, lab. expts. 8−49469
- supernova light curves, pulsar theory, dynamical effect and thermalisation of strong waves 8−8028
- supernova light curves rel. to existence of central pulsar 8−4256
- 3U 1626−67, X-ray pulsar as accreting neutron star in compact binary 8−49470
- ultrahigh-energy neutrinos production, fluxes and detect. techniques 8−49264
- ultrarelativistic electron-positron plasma, wave prod., rel. to pulsar radiation 8−20629
- Vela pulsar, assoc. extended X-ray source obs. 8−41095
- Vela pulsar, gravit. radiation revised estimate 8−32501
- X-ray pulsars, effect of vacuum birefringence on X-ray polarisation 8−4408

pulsatile flow
- *see also peristaltic flow*
- air flow, time-averaged stagnation pressure probe design 8−14116
- aortic coarctation distal flow profiles 8−44528
- aortic shear stress reduction by cardiac pacing 8−40239
- aortic valve opening, haemodynamics 8−20208
- arterial flow lipid transport model 8−44552
- bllod pulsatile viscous flow, O_2 transport to diseased coronary arteries of man 8−40220
- blood, particle paths and stasis in unsteady flow through bifurcation 8−20206
- blood analogue in curve tube, flow visualisation 8−44546
- blood flow in artery, math. model 8−31831
- blood flows, oscill. freq. effects in plane wavy conduit flows 8−20209
- blood pump, pulsatile, stabilisation of unsteady ball valve motion 8−44708
- blood pump, vortex diode used as outflow valve 8−44724
- capillary blood volume flow determ. by improved photoplethysmograph, Hemorheograph 8−31934
- duct flow in presence of orifice plate, discharge and press. drop coeffs. eval. 8−30306
- gas-solid mixture, pulsating flow, hydraulic resistance, heat transfer 8−38392
- jet, turbulent, plane, impinging on solid wall, spectral characts. of pulsations 8−9668
- laminar, velocity meas. for flow in 90° branch, appl. to atherogenesis 8−38277
- laminar flow in tubes, heat tranfer 8−30289
- laser velocimetry technique, for phase inhomogeneous medium, appl. to pulsed flow *(Russian)* 8−30375
- orifice meter, pulsating incompressible flow, anal. and expt. 8−34230
- polymeric liquid flow in circular tubes, flow enhancement, Goddard-Miller model 8−30324
- pressure pulsation in pipelines, resonant amplitudes 8−9646
- prosthetic aortic valves, press. drops under steady and pulsatile flow, in vitro meas. 8−44731
- renal branch unsteady blood flow simulation 8−27983
- roller pump for pulsatile blood flow 8−44721
- stenosis model, flow disorder distal to mild stenoses 8−44551
- stenosis model, turbulence development in pulsatile flow through partially occluded tubes 8−44531
- suction and wall injection effects on flow in a tube, Navier-Stokes eqns. 8−38403

pulse amplifiers
- parametric convertor type pulse amplifiers, AC Josephson effect appls. 8−19184

- **pulse amplitude analysers** *see pulse height analysers*
- **pulse amplitude modulation**
  - linear convertor, for acoustic emission signals 8−9512
  - telemetry, low power PAM/FM system for ventricular press. and cardiac dimension meas. 8−44747
- **pulse analysers**
  - *see also pulse height analysers*
  - digital differential pulse rate meter, nuclear plant radiation monitoring appl. 8−37451
  - Munich pulse shape discrimination cct., low energy performance 8−46233
  - pulse counter, four-function pocket calculator adaption, for teachers 8−12497
  - single channel analyser, temp. stability, resolution 8−33399
  - α-γ separation using pulse shape discrimination, trans-stilbene scintillator 8−13386
- **pulse circuits**
  - *see also demodulators; digital circuits; modulators; pulse generators; pulse shaping circuits*
  - counting circuit, in time-interval series meter 8−176
  - direct display of gas-gun projectile velocity 8−177
  - gating, medium speed, of Intensified Silicon Intensified Target (ISIT) tubes 8−12766
  - linear pulse selector for US investigs. 8−5623
  - rate recorder providing printed record 8−3644
  - spectroscopic light curve *(Russian)* 8−46740
  - standard signal transmission over long cables, using ESL ICs 8−5102
  - stroboscopic method for picosecond diagnostics of rapid processes 8−47159
  - synchroniser clock circuit, improves signal-to-noise quality of evoked response measurements 8−24155
  - time coder with variable channel width for time-of-flight expts. 8−33403
- **pulse-code modulation**
  - data transmission performance study in optical fibre communication system 8−38028
  - holography, binary digital hologram synthesis, PCM method 8−17876
  - LANDSAT multispectral sensor image adaptive coding techniques 8−45060
  - semiconductor laser direct PCM improvement by optical feedback 8−1287
  - GaAlAs DHS laser, direct modulated from 260 Mbit/s to 1.4 Gbit/s, monomode operation 8−46601
  - $Ga_{1-x}Al_xAs$:GaAs LED 640 mbit/s PCM optical fibre source, expt. 8−37998
  - GaAs-$Al_xGa_{1-x}As$ injection laser, direct modulation and spectral props. *(German)* 8−37921
- **pulse-code modulation links**
  - 9 km fibre-optic telephone transmission system 8−42435
  - 400Mb/s SELFOC fibre transmission system expt. 8−1419
  - optical fibre communication system numerical aperture optimisation *(German)* 8−38017
  - optical fibre transmissions of 100 Mb/s and 400 Mb/s PCM signals 8−1323
  - telephone carrier system, optical fibre cable development 8−9458
- **pulse control systems** *see sampled data systems*
- **pulse frequency modulation**
  - dielectric optical waveguide, chirp pulse transmission characts. 8−9438
  - heart natural pacemaker, modelling as pulse-freq. modulator 8−40135
- **pulse generators**
  - *see also multivibrators*
  - avalanche transistor pulser for fast-gated operation of microchannel plate image intensifiers 8−37527
  - calibrated electrical pulse production for meas. of electrical props. of conductors 8−8416
  - constant current electrosurgical generator, load independent 8−44684
  - current pulse generator, to direct prolonged burst of betatron-accelerated electrons onto target 8−5072
  - delayed-pulse generator, ten-channel 8−4634
  - electrostimulator, portable, for transcutaneous analgesia 8−36032
  - electrostimulator for leg muscles to correct defective walking 8−36051
  - electrostimulator for muscles, Stimul-1 8−36035
  - fusion reactor power supply using air powered fibre optic coupled pulser 8−13342
  - gas-discharge lamp, current pulse formation using thyristor keys *(Bulgarian)* 8−33795
  - gastrointestinal tract electrostimulator, Endoton-1 8−36033
  - high average power pulser, for Cu halide laser systems 8−5497
  - high-voltage pulse generator, controlled spark gaps 8−5965
  - infrared detector, pulsed LED source detects objects on a conveyor belt 8−45700
  - nanosecond pulse electron and bremsstrahlung generator 8−21308
  - nanosecond pulses, two-channel type generator 8−4652
  - nanosecond pulses with sharp leading edge 8−4651
  - NMR, two channel analogue pulse generator design 8−45665
  - physiological stimulator, rabbit heart stimulator, variable frequency/width and amplitude oscillator 8−31991
  - power systems for high energy gas laser 8−9390
  - random, physiological uses 8−24189
  - recirculating, meas. of acoustic surface wave velocity changes 8−5619
  - reversing rectangular pulse generator for transient electric birefringence 8−45657
  - sawtooth, IC cct. for monitoring scintillation counters *(German)* 8−25395
  - short-time measurement instruments calibration, checking appl. *(German)* 8−12728
  - steel surface HF inductive pulse hardening *(German)* 8−27687
  - synchrotron, Sirius, shaping of highly stable flat top in excitation current pulse of electromagnet 8−5075
  - Tonus 2M accelerator, high-voltage pulse generator of stored energy 135Kj 8−5067
  - transistor generator of square pulses for image convertor shutter control 8−4653
  - travelling wave excitation of H_2 laser discharge 8−9370
  - two-channel instrument for pulsed elec. discharge prod. *(Russian)* 8−1946
  - US pulse excitation method for solids 8−5624
  - versatile pulse generator and coupled fast signal averager for pulse-echo expts. 8−21188
- **pulse height analysers**
  - DC coupled single channel pulse height analyser, dynamic range 8−21825
  - dead time correction system using standard modules 8−17532
  - discriminator principle slow neutron counting 8−29717
  - loss-free counting, real time compensation of dead time and pile up losses 8−17465
  - miniature multichannel analyser with LED matrix display 8−25400
  - portable neutron spectrometer/kerma-rate meter, design, performance 8−33361
- **pulse modulation**
  - *see also demodulators; modulators; pulse amplitude modulation; pulse-code modulation; pulse frequency modulation; pulse time modulation*
  - laser pulse generation and modulation devices 8−25899
- **pulse motors** *see stepping motors*
- **pulse oscillators** *see pulse generators*
- **pulse position modulation**
  - data transmission performance study in optical fibre communication system 8−38028
  - interval modulation semiconductor laser communication system 8−9331
  - nonlinear image processing, binary pulse position encoding 8−29906
- **pulse repetition rate modulation** *see pulse frequency modulation*
- **pulse shaping circuits**
  - fast coincidence, with Ge(Li) detectors 8−41864
  - gamma camera/computer pulse-stretching interface 8−40380
  - high voltage microsec. pulse-forming network for CO_2 laser 8−5494
  - high-speed shaping device, for address control of laser beam deviation 8−5554
  - optimum filter responses for liq. Ar total absorpt. detectors 8−46215
  - scintilation spectrometer signal shaper-discriminator 8−33387
  - shaper amplifier for proportional chambers, logical microcircuits and high time resolution 8−5103
  - synchrotron, Sirius, shaping of highly stable flat top in excitation current pulse of electromagnet 8−5075
  - Van de Graaff accelerator subnanosecond pulsing using passive coaxial pulse shaper 8−46186
- **pulse time modulation**
  - *see also pulse position modulation; pulse width modulation*
  - optical fibre communication system field expt. 8−1424
- **pulse transformers**
  - HV power supply system of streamer chamber 8−5095
  - semiconductor laser pumping with combined pulse transformer 8−1255
  - signal coupling of semiconductor detector to cold resistance preamplifier through cable or delay-line transformer 8−33401
  - toroidal core pulse current transformers, pulse permeability and loss in Ni-Fe cores 8−43615
- **pulse width modulation**
  - temperature telemetry system for small animals, miniature CMOS 4-channel PWM design 8−44751
- **pulverised coal** *see pulverised fuels*
- **pulverised fuels**
  - *see also coal*
  - coal combustion, in combustion chambers of steam generators, digital simulation *(German)* 8−27758
- **pulverized fuels** *see pulverised fuels*
- **pumping** *see pumps*
- **pumping (optical)** *see optical pumping*
- **pumps**
  - *see also vacuum pumps*
  - axial piston pump, suction performance 8−8389
  - Baylor left ventricular bypass pump, recent experience 8−44718
  - blood, pressure servovalve control, moving coil system *(German)* 8−24182
  - blood pump, pulsatile, stabilisation of unsteady ball valve motion 8−44708
  - blood pump for completely implantable circulatory assist systems 8−44723
  - centrifugal, impeller flow, quasi two-dimens. method of singularities 8−46986
  - centrifugal blood pump for cardiac support 8−44709
  - closed system gas circulating pump without moving parts 8−180
  - conduction MHD pump with current leakage, equivalent circuit *(Russian)* 8−26346
  - contactless MHD pump with EM asymmetry, max. press. calc. *(Russian)* 8−26340
  - electroosmotic pump for regulated release of medicaments *(German)* 8−7518
  - glass circulating pump for gaseous mixtures 8−41292
  - induction MHD machine, integrated characts. *(Russian)* 8−26342
  - induction MHD pump channel, EM field and longit. boundary effect, 2-dimens. theory *(Russian)* 8−47188
  - induction pump, linear, cylindrical EM field distrib. *(Russian)* 8−5820
  - infusion pump, biological appl. 8−31987
  - left ventricular assist device, diaphragm-type, factors affecting pumping dynamics 8−44706
  - left ventricular assist device long-term expts., maintenance of efficient pump performance 8−44722
  - left ventricular assist mech. pump effectiveness in acute myocardial failure model 8−44719
  - liquid metal MHD pump, performance indices channel geometry *(Russian)* 8−5821
  - LMFBR, large EM induction pump for high-temp. appl. 8−17291
  - non-Newtonian fluids, Prandtl-Eyring law appl., jetstream pump parameters *(German)* 8−30331
  - perfusion, EM drive, features 8−7532
  - roller pump for pulsatile blood flow 8−44721
  - roller pumps, clinical, automatic safety shutdown 8−44720
  - thermal oscillating pump for nuclear powered artificial heart 8−20317
  - ventricle type blood pump, blood damage 8−44707
  - ^4He pumping lines, low press. safety value 8−32822
- **punched paper tape equipment** *see punched tape equipment*
- **punched tape equipment**
  - chronometric system using punched tape for star transit obs. *(Russian)* 8−4110
  - X-ray diffractometer data, automatic attachment for punching to tape 8−34385

Purkinje effect *see vision*
push pull amplifiers *see differential amplifiers*
push pull microphones *see microphones*
p.w.m. *see pulse width modulation*
pyroelectric devices
ceramic, high power continuous laser emission meas. appls. *(Russian)* 8−16845
differential calorimeter, for meas. of absorbed energy in laser-produced plasmas 8−5942
gamma-ray pulse calorimeter 8−860
IR pulse temporal contours obtained with pyroelec. detector 8−37056
leaf temp. meas., infrared thermometer method in connection with plant physiology *(Japanese)* 8−31993
millimetre wave detector using the pyroelectric effect of PVF_2 *(Japanese)* 8−8444
pyroferroelectric energy convertor under thermocycling 8−15102
radiation detector, lag correction network ccts. 8−288
radiometer, electrically calibrated, description 8−29140
radiometer/photometer appl., commercial devices survey and classification 8−16830
vidicon, ultrafast photography, with 10.6 μm radiation 8−38035
pyroelectricity
electrocaloric effect meas. apparatus 8−213
ferroelectric semiconductor, solid solution, phys. characts. nonlinearity near phase transition 8−43812
holographic grating recording, pyroelectric mechanism 8−42300
langbeinite-type crystals, phase transitions, dielec. props. obs. 8−6643
leaf epidermis of palm-like plant Encephalartos Villosus, anomalous behaviour 8−44755
literature fuide, 1976 to 1977, references, bibliography, authors list, key word index 8−43797
photovoltaic effect due to electron-phonon coupling 8−14757
poly(vinylidene fluoride) film, pyroelectric coefficient determ. using dielectric heating 8−35096
poly vinylidene fluoride, injection process nature during poling, rel. to pyroelectricity 8−19422
polyacrylonitrile, polaris., pyroelec., electret film, solar energy conversion *(Russian)* 8−39507
polymer film, pyroelectric coefficient determ. using dielectric heating 8−35096
polyvinylidene fluoride, poling by corona charging, pyroelec. effect 8−19423
primary coefficient, low temp. behaviour 8−39506
TGS, deuterated and undeuterated, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
TGS, effect of aniline in aqueous crystal growing soln. on physical props. 8−43810
TGS, growth from solution containing aniline, dielec. and pyroelec. props. 8−6639
TGS crystals, influence of domain struct. on pyroelec. props. 8−31159
tourmaline, struct. mechanisms 8−10850
triglycine fluoberyllate, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
uniaxial pyroelectric, spontaneous polarisation calc. from results of optical meas. 8−27162
vinylidene fluoride copolymer electret, charge and polarisation distribs. meas. 8−35081
$Ba_{1-x}Sr_xTiO_3$ ceramic pyroelec. responsivity, −140° to +160°C obs. 8−23405
$BaTiO_3$, controlled surface layers 8−48120
$Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8−3026
$BiFeO_3$, pyroelectric-antiferromag., magnetoelectric effect *(Russian)* 8−43625
CdS-Au structure, work function of {0001} faces of CdS, pyroelec. characts. 8−23164
Cu-Sb-S-I amorphous film formation and stimulated crystallisation, electrophysial props. *(Russian)* 8−30838
$LiClO_4.3H_2O$, absolute sign of piezoelec. d_{33} and pyroelectric p_3 coeffs. 8−43793
$LiClO_4.3H_2O$, pyroelec. and piezoelec. coeffs., struct. refinement 8−18602
$Li_2Gd_4\ (MoO_4)_7$, ferroelec. and paramag. props. 8−39517
$LiNbO_3$, laser induced optical damage, pyroelec. contrib., electrostatic obs. 8−37935
$Li_2SO_4.H_2O$, electrocaloric cooling effect, low temp. behaviour of primary pyroelectric coeff. 8−39506
$LiTaO_3$, primary pyroelec. effect, lowest order mode contrib. 8−15103
PbO, disordered photoconductor, dielec. props., temp. depend. anomalies 8−43765
PbO-GeO system, pyroelec. and TSC props. 8−43798
$Sn_2P_2S_6$, ferroelec. and pyroelec. props. meas. 8−35107
pyrolysis
azoethane, pyrolysis, master eqn. for rate coeff. 8−48612
elastomers, vacuum compatible, chem. character correl. with physical characts., review 8−24804
epoxy resin, pyrolysis products, anal. by MS-GC *(Japanese)* 8−35767
hydrocarbons, gaseous, pyrocarbon deposition, kinetic model *(German)* 8−23851
hydrocarbons, Ni-catalysed decomp., morphologies and growth mechanisms of carbons 8−35679
mean first-passage time, steady-state and equilib. rate consts. 8−35673
methane, pyrolysis, spiral growth of pyrolytic C *(German)* 8−42931
neopentane, steady state in flow pyrolysis, determ. individual rate consts.. 8−35650
polymers, pyrolysis-IR anal. 8−3404
propellant solid, pyrolysis craters due to laser pulse heating 8−23921
silane compounds prep. of pure and doped β-SiC 8−44018
waste reduction in controlled atmosphere 8−35658
AlH_3, photo-and thermochem. reactions, 200-350K, UV Induced local states 8−31667
$Al_2In_{12}S_{21}$, thermal decomposition 8−20016
Al_2O_3, high temp. gas phase equilib. formation enthalpy, dissoc., mass spectra 8−23925
$Al(OH)_3:Fe^{3+}$, thermal decomposition, EPR obs. 8−40047
B compounds, prep. of amorphous B, review, book contrib. 8−48358
CdS film, spray pyrolysis prep., elec. transport props. 8−2590
EuF_3, thermal stability in vacuum 8−7183
$GaNbO_4$ decomp. due to electron beam heating in electron microscope 8−35711
$La_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
pyrolysis continued
$Nd_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
$Pr_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
$S_2O_6F_2$, heating and laser excitation fluorosulphate radical prod. and spectrum 8−35647
Si, polycryst. film from low. temp. pyrolysis of SiH_4 8−31342
pyromagnetic effects *see magnetocaloric effects*
pyrometers
see also temperature measurement
chemical vapour deposition conditions, quick survey method 8−44019
digital pyrometry in solar furnace *(Japanese)* 8−32821
effective wavelength formula evaluation for total radiation pyrometer 8−41311
electro-optical pyrometer single-pulse calibration flash tube 8−12702
GATE aircraft radiation instrumentation, anal., IR irradiance meas. 8−32134
image quality in temp. meas. of nonisothermal objects 8−41312
International Practical Temperature Scale 1968, fixed point determination 8−41270
photoelectric, using non-cooled $Hg_{1-x}Cd_xTe$ detector, 0-700°C range *(Polish)* 8−41313
photographic, in aeroballistic range, track facilities of von Karman gas dynamics facility 8−37094
radiant heat flux portable direct reading measuring device, CERL flux-probe features 8−45633
ratio pyrometer, hot surface radiation flux measurements *(German)* 8−41310
remote temp. meas. of high-power radiation-generating equipment 8−24799
spectral radiances multiplicative comparator performance and realisation *(Japanese)* 8−8407
spectropyrometric unit, for vibr. relax. meas. in supersonic flow 8−9275
temperature meas. principles and appl. *(German)* 8−32819
wide range, temp. scale calc. 8−217
Bi-Sb film thermopiles for radiation pyrometry 8−214
Q *see Q-factor*
Q-factor
capacitive 1 MHz Q standards, calculable accuracy 8−21176
quartz crystal gravitation radiation antenna 8−16715
two-junction Josephson interferometer, reson. phenomena, anal. 8−47910
Q-factor measurement
acoustic resonator in finite-amplitude sound wave field 8−1469
solid dielectric props. meas. with superconducting resonators 8−21180
Q power factor *see Q-factor*
Q-switching
see also lasers
gamma-ray laser, conditions for laser threshold, use of polarized nuclei 8−37868
laser pulse generation and modulation devices 8−25899
optical Kerr effect modulator, for laser passive mode-locking and Q-switching 8−9403
pulse synchronization in Q-switched and mode-locking regime 8−5510
ruby laser, Q-switched, parameter depend. on ruby quality 8−46608
ruby Q-switched laser, photographic film calibration for energy meas. 8−5517
CO laser, electron-beam-controlled, short high-power pulse generation 8−25863
CO_2, laser, passive Q-switching by CH_3F 8−9402
CO_2 laser, passive Q-switching using heated CO_2 saturable absorber 8−25900
CO_2 laser, Q-switched, single rot. line-selection *(German)* 8−46562
$NH_4H_2PO_4$, total internal refl. diffr.-type modulator as laser cavity switch 8−5511
Nd:Glass laser, sub ns periodically Q-switched 8−17995
Nd:glass laser, with nonlinear absorber, pulsed Q switching 8−9400
Nd:YAG laser, mode self locking with combined Q-switching 8−1284
Nd:YAG laser, reduction of passive Q-switch output jitter 8−46648
Nd^{3+}:glass laser, Q-switching by exploding PbS film 8−42361
QC *see quality control*
quadratic programming
frictionless elastic contact problems, approximate soln. 8−16646
quadrupole crystal field interactions *see crystal hyperfine field interactions*
quadrupole lenses *see electron lenses; electrostatic lenses; magnetic lenses*
quadrupole mass analysers and filters *see mass spectrometer components and accessories*
quadrupole moments
see also atomic electric moment; molecular moments; nuclear electric moment; nuclear quadrupole resonance
^2H, quadrupole moment and percentage D state lower bounds 8−37286
quality control
see also reliability
acoustic emission detection technique, industrial NDT appl. *(Japanese)* 8−27721
cast stoneware, quality control, use of US methods 8−11490
casting defects, NDT 8−27690
holographic interferometry appl. *(French)* 8−42305
industrial ear protectors, standardisation of testing, current developments 8−22225
NDT, book 8−44340
nondestructive, magnetic inductive method appl. *(German)* 8−48581
optical element production start up, operational control optimisation 8−18078
planar diode characterisation using SEM with movable Faraday cup, illuminator and backscatt. diode detectors 8−21292
polyethylene ageing prediction, by isothermal differential scanning calorimetry 8−11485
radiochemical and chemical trace analysis, in environmental materials, reliability aspects 8−40106
radiographic control of MTR fuel production, use of X-ray paper 8−5001
refractory materials, thermal analysis appl. *(German)* 8−35337
semiconductor device characterisation using electron beam induced current technique, review 8−21302
steel, flocculation detectability factor in US inspection in quality control 8−3268
steel, tubes, helical welded, computerised US quality control 8−35601

quality control continued
- thermoplastic moulding quality assurance using holography and speckle photography 8−27720
- Si, surface potential spread rel. to chemical treatment *(Russian)* 8−11363
- ^{99m}Tc radiopharmaceuticals, rapid miniaturised chromatographic quality control procedures 8−28070

quality factor *see Q-factor*

quanticule theory of chemical binding *see bonds (chemical)*

quantisation
- boson field in neighbourhood of classical solution, quantisation by appl. of Bogolyubov's method 8−8566
- canonical Hamiltonian system, different quantisations and classical limits 8−8271
- canonical scalar field quantisation, higher derivative couplings, Lorentz invariance of scatt. operator 8−4526
- conformal symm. breaking, quantisation in curved space-time 8−41434
- covariant quantisation of quark binding string 8−4829
- covariant scheme of quantisation for one-soliton sector 8−8265
- deformation theory and quantisation, sympletic struct. 8−45493
- deformation theory and quantisation 8−45494
- Dirac bra-ket notation for second quantisation 8−41910
- Dirac monopole, relativistic theory, canonical quantisation 8−45517
- dual charged solution in curved space time, Dirac quantisation, SU(2)×U(1) gauge theory 8−12827
- dual string with internal spin, second quantisation 8−440
- dynamical group quantisation 8−4520
- education, waveguides, quantisation of radiant energy 8−36757
- electric charge quantisation in elementary matter, generalized quaternion struct. of general relativity 8−29013
- EM field without indefinite metric, relativistic invariance 8−8565
- ferromagnet, one-dimens., quasiclassical approach to many-magnon bound states *(Russian)* 8−23222
- gauge quantisation of Yang-Mills theory around classical solns. 8−29245
- geometric, representation spaces 8−36869
- geometric quantisation, pairing of polarisations 8−28974
- group-induced, in central mechanics problems 8−36866
- Hilbert space, operator of second quantization, classification of domains, Fock space 8−12606
- layered crystal, mag. quantisation investig. *(Russian)* 8−23054
- light-cone quantisation, massless propagators 8−8538
- linearly damped harmonic oscillator, quantisation 8−21068
- Liouville eqn. quantisation using correspondence principle and gauge invariance 8−4509
- Liouville generalised eqn. solns., density matrices 8−27739
- molecular crystal, second-quantisation representation of exciton states 8−23030
- path integral quantisation and cosmological particle prod. 8−12440
- periods on manifolds, quantisation, gauge, comments on Kiehn's work 8−8508
- postulate, operator functions 8−72
- QED, charge quantisation, vac. degeneracy in two dimens. 8−405
- Riemannian manifolds, quantisation in spaces of constant curvature 8−12602
- rotation quantisation in spherical coords. *(Russian)* 8−21012
- scalar field theory in lattice space, analogy to random walk 8−21325
- scalar-spinor instanton, systematic quantisation 8−21331
- scale-covariant operator field eqn. 8−32984
- Schrodinger-Infeld-Hull factorisation, quantisation condition, matrix elements and selection rules 8−41909
- Serre duality for polarised symplectic manifolds 8−29004
- Slavnov-'t Hooft identities in Mandelstam's formalism 8−45776
- soliton quantisation using Bogolyubov transformation 8−16695
- spin projection operators for fields of any spin *(Japanese)* 8−32733
- spin-3/2 field, Hamiltonian formulation and quantisation 8−8325
- spinor field quantisation, fermion-boson correspondence in quantum field theory 8−8496
- spinor field quantisation 8−45777
- supercritical reggeon field theory, classical kink state quantisation 8−16952
- supergauge theory, geometric aspects, broken gauge invariance 8−8506
- supergravity, covariant quantisation 8−41470
- supergravity, Hamiltonian formalism, quantisation and S-matrix 8−16972
- tensor fields, valency $\leqslant 5$, extension of Segal's rules 8−29003
- time quantisation, discrete space-time model 8−20999
- time quantisation, relation between proton mass and ρ-meson lifetime 8−76
- Yang-Mills theory, unconstrained temporal gauge 8−45790
- zero frequency mode contributions in soliton quantisation general scatt. amplitude 8−29234
- π prod. in pp, np, πp interactions, mass quantisation *(French)* 8−25059

quantitative analysis *see chemical analysis*

quantum beat spectra
- atomic hyperfine struct. quantum beats, intensity profile, ang. momentum theory graphical method 8−25497
- atomic light absorption, modulations derived semiclassically 8−25499
- microemulsion, H_2O-toluol-sodium dodecylsulphate-alcohol, diffusion coeff., light scatt. data 8−15722
- polystyrene coils, benzene soln., internal modes by photon beat 8−10905
- $^{40}Ar^+$, excited state polarisation transfer due to optical cascades 8−9238
- He I, $3p^3P$ level decay, zero field quantum beats 8−961

quantum beat spectroscopy
- Doppler-free laser spectroscopy seminar 8−302
- gamma radiation, recoil-free, quantum beats 8−43748

quantum chemistry
- *see also chemical reactions; orbital calculation methods; perturbation theory; potential energy surfaces for collision processes; pseudopotential methods; quantum statistical mechanics; quantum theory; reaction kinetics; wave functions*
- Clebsch-Gordan coefficients, chain $SU(2)\supset D_\infty'\supset D_4'\supset D_2'$ 8−17552

quantum counters *see photon counting*

quantum electrodynamics
- *see also electromagnetism*
- ε separation method in formulation of QED on lattice 8−41453

quantum electrodynamics continued
- $\eta\rightarrow\pi^+\pi^-\gamma$, one-loop approx. in quantum chiral theory 8−25041
- achiral molecule, laser induced circular differential scatt., QED anal. 8−46409
- angular momentum of scalar isodoublet in magnetic monopole field 8−41428
- asymptotic estimates QED 8−8564
- asymptotic freedom, zero charge, point charges in quantum electrodynamics *(Polish)* 8−45822
- atomic reson. fluoresc., QED calcs. 8−41995
- Bianchi type I anisotropic universe, quantum gravitational effects *(Russian)* 8−24588
- Borel singularities, effective one-loop Lagrangian in constant elec. field 8−16917
- boson field in neighbourhood of classical solution, quantisation by appl. of Bogolyubov's method 8−8566
- bound states in quantum nonrelativistic Coulomb systems 8−41452
- bremsstrahlung and pair prod. in Coulomb field 8−4811
- charge quantisation, vac. degeneracy in two dimens. 8−405
- charged linear harmonic oscillators, interaction between two one-dimensional oscillators 8−16963
- Cherenekov and Doppler effects, quantum theory paradoxes 8−45824
- Cherenkov radiation, momentum-energy Minkowski and Abraham tensors 8−45825
- Compton bound electron state scatt., binding and off-mass shell effects, relativistic anal. 8−17637
- Compton effect, multiple scatt., operator formalism, nonstationary electrons 8−12846
- Compton effect, multiple scatt. corrections, error bounds 8−16959
- Compton effective wavelength, high energy QED approach 8−37213
- Compton electron wavelength, determ. by cryogenic metrological technique 8−37165
- continuum Dirac electron, Coulomb field, simple asymptotic wave function 8−41455
- continuum QED, implementation of Gauss's law in $A_0=0$ gauge 8−41458
- cosmology, quantum effects, black and white holes 8−12441
- Coulomb and Landau gauges interpolation in Hilbert space of free QED 8−24987
- Coulomb spheroidal functions, integral eqns. and relations 8−409
- covariant method, for calc. of intense radiation resulting from charged particle motion *(Russian)* 8−33007
- current commutator anomaly, regularised dimensionally using hyperfunctions 8−12845
- cyclotron lines in Hercules X-1 spectrum, quantum theory of struct. and higher harmonics 8−20912
- Delbruck scattering, elastic scatt. of photons by Coulomb field 8−21541
- Dicke model, two-level atoms, phase transition 8−5442
- differential scattering theory, Raman scatt. of circularly polarised light, two chromophores model 8−9158
- differential scattering theory, Rayleigh scatt. of circularly polarised light, two chromophores model 8−9157
- dimensional regularisation and current commutators 8−12843
- Dirac electrons, moving in periodic mag. fields, one-photon emission 8−12844
- Dirac field in curved spacetime, geometrodynamical superHamiltonian and supermomentum 8−45518
- Dirac particle, charged scalar field, strong coupling theory 8−16976
- Dirac particle in mag. field, symmetry breaking by monopole singularities 8−16977
- Dirac type essentially self adjoint operators 8−16957
- Doppler and Cherenkov effects, quantum theory paradoxes 8−45824
- Dreel-Yan processes, gluon corrections 8−8597
- Dyson's perturbation theory analogue for processes with pair creating external field 8−4813
- effective potentials in gauge field theories containing scalar bosons 8−21330
- electron, anomalous magnetic moments, eighth order contrib. calcs., QED tests 8−45821
- electron, free, motion in uniform mag. and elec. fields, Schrodinger eqn. soln. 8−24985
- electron 8−37160
- electron anomalous magnetic moment, Pauli eqn. in crossed mag. electrostatic fields *(Russian)* 8−16962
- electron in external EM field, radiative corrections 8−41449
- electron in strong randomly rotating mag. field 8−37163
- electron mass, possibility of determ. from finite QED 8−12841
- electron propagator, Dyson-Schwinger eqn. solns. 8−24984
- electron self mass in semiclassical limit 8−33008
- electron with anomalous moments, motion in parallel elec. and mag. fields *(Russian)* 8−37161
- electron-positron field, interaction with classical static EM field 8−41445
- electrons in logarithmic pots., Dirac eqn. soln. 8−41448
- electrons in logarithmic pots., Schrodinger eqn. soln. 8−41447
- EM field without indefinite metric, relativistic invariance 8−8565
- Euclidean massless spin 0, spin 1/2 electrodynamics, Fredholm determinant zeros 8−24988
- external fields, interpretation as temp. 8−8562
- fermions, charged relativistic, semi-classical, two-body problem, new approach 8−29284
- fine-struct. const., Wyler's calc. anal. 8−37162
- Furry representation on null plane *(Russian)* 8−33012
- gauge covariant approx., Dyson-Schwinger eqns. i.r. behaviour 8−16918
- generalised Dicke model for matter interacting with EM field 8−5441
- Gordon decomposition and tidal interaction 8−8324
- harmonic oscillators, relativistic two-body interaction, exactly soluble system 8−16955
- heavy ion molecular collisions, QED test in strong elec. fields, pair creation 8−45829
- heavy leptons, existence in quantum theory 8−21363
- Higgs effect, supergravity and supersymm. massless QED 8−29268
- history of quantum field theory, search for unity 8−28904
- indefinite metric axioms, Markov property failure 8−41444
- IR regularisation of massless scalar free field in two dimens. space time, Lorentz expansion 8−12818
- Klein paradox and vacuum polarization 8−8329
- Kramers-Heisenberg dispersion formula, Dirac transformation generalisation 8−16960

quantum electrodynamics continued
- lattice Dirac eqn., spectral degeneracy as function of lattice shape 8−376
- lattice field theory Dirac eqn. 8−24924
- lepton wave packets produced by strong short-range potentials 8−45828
- Lorentz invariance of quantum field theory of electric and mag. charge 8−33010
- low energy e^6 Compton scatt. 8−45925
- magnetic charges, quantum strings and gauge invariance 8−33009
- magnetic fields $>10^{20}$ gauss, existence in astrophysical systems 8−4094
- many photon collective phenomena, finite QED formalism 8−9352
- massive photon magnetic bremsstrahlung *(Russian)* 8−41461
- massive Schwinger model, decay of metastable vacs. 8−24989
- massless QED, IR divergences 8−29285
- massless scalar QED, colour confinement model 8−33027
- ME-EM field model of free electron, determ. of electron parameters 8−29281
- ME-EM field model of free electron state 8−29280
- molecule, electric circ. dichroism, QED 8−37666
- muon mass 8−33011
- near mass shell IR singularities in QED 8−37164
- neutrino and photon pair prod. in strong mag. field 8−407
- neutrino wave equations in conformal space, Dirac theory 8−21364
- nonlinear Dirac equation, spinor solitons or bags 8−12817
- nonrelativistic, Kramers-Heisenberg dispersion formula 8−42015
- operator Schwinger term in zero-mass photon QED 8−41450
- particle creation or Hawking effect in nonstationary black holes 8−4278
- photon interference, quantum field theoretic description using QED methods 8−12464
- photon propagation in mag. field, radiative correction to polarisation operator *(Russian)* 8−8567
- photon-photon scatt. in strong mag. field, pair creation 8−4816
- plane wave, moving along mag. field, radiative effects 8−29283
- polarised electron bremsstrahlung γ-quanta from ultrarelativistic electrons in mag. field *(Russian)* 8−46502
- ponderomotive meter of EM energy, quantum features *(Russian)* 8−8273
- positronium, hyperfine interval, α^2 corrections, three-photon virtual annihilation contrib. 8−41451
- Poynting's theorem, nonrelativistic and 2-component spin, transition probability 8−24986
- pulsars, hadronic photoabsorpt. and pair production 8−12261
- QCD, energy levels of 1+1 dimensional lattice gauge theory 8−4828
- quark confinement criteria, QED_2 model with SU(n) flavour 8−45840
- quasipotential eqn., nonlocals in terms of retarded functions 8−29282
- radiation entropy estimation by weight functions 8−408
- radiative decays of fermions and photon mass 8−41456
- radiative polarisation in particle accelerators, review 8−33335
- relativistic beams, quantum spectroscopy *(Russian)* 8−33013
- relativistic particle in field of waves with non-zero proper mass *(Russian)* 8−21365
- relativistic scalar boson in Redmonds field, coherent states *(Russian)* 8−41460
- renormalisation group invariant charge and confinement 8−45791
- review, classical limit of QED 8−8563
- review, QED and general relativity, physics of strong fields 8−8561
- S-matrix theory, n-body potentials in QED and quantum gravity 8−24969
- scalar field, carrying quaternion charge, props. 8−4757
- scalar quantum electrodynamics on lattice as classical statistical mechanics 8−16956
- Schwartz's method and Goldstein's eigenvalue problem 8−4814
- Schwinger model, canonical surface formalism, axial anomaly, chiral symm. breaking 8−12816
- sine-Gordon massless quantum eqn. in 2 space time dimens. 8−32754
- soluble model, four-dimens. field theory of electrons, photons 8−41457
- space time *(Italian)* 8−12840
- spin-mass trajectories and QED in null plane, free field theories 8−29259
- strong gravity and Dirac numbers 8−21372
- strong quantised EM field, statistical description 8−16961
- subsidiary condition and local gauge transformations 8−4815
- supercritical nuclear composites, spontaneous vacuum decay 8−25235
- synchrotron radiation, quantum corrections to power spectrum 8−21362
- synchrotron radiation directed beam, possibility of obtaining from relativistic charge *(Russian)* 8−1139
- thermodynamic pot. at finite temp. and density, QED and QCD 8−8535
- thermodynamic potential in QED, path integral methods 8−41459
- undulators, spin effects during electron movement *(Russian)* 8−13652
- UV-stable fixed point behaviour in QED, expt. aspects 8−21367
- vacuum polarisation, influence on radiation propagation in plasma *(Russian)* 8−47100
- vacuum polarisation, test using heavy muonic atom X-ray meas. 8−29287
- vacuum polarisation in Fock space 8−41446
- vacuum polarization potential for two heavy ions, calc. in first order, numerical method 8−21594
- vacuum radiation in presence of Coulombic interaction 8−406
- vacuum stability problem 8−41454
- vacuum structure of indefinite-metric quantum field theory 8−45782
- vacuum-to-vacuum transition probability, with pair-producing external field *(Russian)* 8−12842
- validity test precision meas. of muonic 5-4 transitions in Pb and 4-3 transitions in Ba 8−33642
- vector mesons, effective electric charge and asymptotic freedom *(Russian)* 8−45827
- Yang-Mills theory, Regeisation of scalars and dual model struct. 8−16927
- zero charge and asymptotic freedom *(Hungarian)* 8−37159
- zero mass renormalisation and triangular anomalies 8−16915
- e scatt., in presence of intense EM field 8−33014
- e^+e^-, asymmetry of prod. by circularly polarised protons *(Russian)* 8−29286
- e^+e^- photoprod., radiative corrections calc. 8−45823
- e^+e^- prod., quantized magnetic field influence, equilib. *(Russian)* 8−4812

quantum electrodynamics continued
- e^+e^- prod. by p+Ne at 300 GeV/c, comparison with QED theory 8−8569
- e^+e^- prod. by photons in constant electromagnetic field in general relativity 8−8568
- e^+e^- production, intermediate energy, Coulomb correction to total cross section 8−21540
- μ, anomalous mag. moment, sixth order, photon-photon contrib. 8−16958
- μ atoms, vacuum polarisation, $\alpha(Z\alpha)^3$ correction to energy level shifts 8−21366
- p̄p nP bound states, black sphere model for linewidths 8−42252
- pp scatt., EM corrections, vacuum polarisation effect *(Japanese)* 8−17023
- π^0 emission by protons with anomalous mag. moment in const. EM field, Furry formalism *(Russian)* 8−410

quantum electronics *see quantum optics*

quantum field theory
- *see also axiomatic field theory; Bethe-Salpeter equation; dispersion relations; gauge field theory; Lee model; meson field theory; nonlinear field theory; quantisation; quantum field theory of elastic scattering; quantum field theory of interactions; Reggeon field theory; renormalisation; scaling phenomena; Schwinger source theory; unified field theories; Yang-Mills theory*
- θ model in quantum corrections to classical confinement 8−29297
- affine fields and operator formalism of augmented scalar fields 8−8272
- asymptotic field, fundamental props., Robinson-Greenberg theorem 8−45787
- Baxter model and scale invariant field theory 8−32764
- bibliography, probabilistic ideas in field theory and statistical mechanics 8−8230
- bilinear QFT, uniqueness connection between charge conjugation and statistics 8−37130
- black holes, Hawking's effect, quantum field theory applied in curved space-time 8−12268
- Borel summation of perturbation series 8−16683
- bound states of two dimens. O_n model at finite temps. 8−41409
- canonical scalar field quantisation, higher derivative couplings, Lorentz invariance of scatt. operator 8−4526
- causality condition in field theory with momentum space of const. curvature 8−395
- conformal symm. breaking, quantisation in curved space-time 8−41434
- conformal trace anomalies of stress-tensor 8−29023
- de Sitter groups SO(4,1) and SO(3,2), complex quaternions and spinor representations 8−36887
- de Sitter space, quantised fields 8−92
- Dirac particle+fixed magnetic monopole bound system, elec. and mag. dipole moments 8−24966
- Dirac particle creation by gravit. fields 8−33021
- disconnectedness problem in field theory model of NNπ system, three-body problem 8−29276
- energy eigenvalues lower bounds for quantum Hamiltonians in lattice field theories 8−45575
- Euclidean fermion-boson systems on lattice, appl. to field theory 8−45559
- Euclidean QFT, appl. of virial expansion derivation 8−37131
- Euclidean scalar field theory, asymptotic behaviour of Feynmann integrals 8−388
- exponential momentum-space growth, generalization of local commutativity 8−21013
- Fermi quantum fields, derived from Bose quantum fields, applications 8−36928
- fermion-boson correspondence in field theory, spinor field quantisation 8−8496
- Feynman path integrals, generalised meas. 8−384
- fibre bundle struct. of thermodynamic states 8−8370
- field embedding problem *(Russian)* 8−12828
- field theory, massless equations, first-order, conformally covariant 8−29265
- fluctuations in gravitational collapse and cosmology 8−49571
- frequency solutions of massive vector field eqns. in curved static space-time 8−36909
- froissarton coupling constant, s-channel unitarity *(Russian)* 8−45799
- Goldstone bosons in two dimens., ground state, IR divergences 8−12815
- Gross-Neveu model on lattice, bound state spectrum 8−29236
- Hamiltonian formalism for harmonic oscillators and free fields 8−29005
- Heisenberg eqns. of motion for spin-3/2 field with interactions 8−370
- high energy physics, conf., Schladming, Austria (Feb.-Mar., 1977) 8−8494
- history of quantum field theory, search for unity 8−28904
- indefinite-metric quantum field theory, vacuum struct. 8−45782
- invariant props. of n-point functions and functionals due to translationally invariant formal measure 8−45500
- Ising model, D=2, direct construction of quantum field operators 8−32773
- Killing tensor quantum nos. and conserved currents in curved space 8−29249
- Lagrange formulation of symm. theory of massive spin-3 fields 8−41423
- Lie groups, octonion/quaternion hypercomplex numbers, nine-vectors and real world 8−37151
- local QFT, higher symm. interpretation, spontaneous symm. breaking, quarks and flavours 8−16942
- magnon fields, finite temp. effective pot. methods, loop expansions 8−2640
- Markov systems of imprimitivity 8−8347
- mass scales, confinement, nonperturbative approach, self-consistent method 8−33033
- massive free spin-3 field, local quadratic Lagrangian density absence 8−369
- massless fields with continuous spin, quantisation 8−4525
- massless scalar free field, local von Neumann algebras 8−45778
- microcausality, lack of consistency with exponential growth in momentum representation 8−16931
- N-quantum approximation in Bronzan-Lee extended-source static model 8−8507
- nonlinear Klein Gordon eqns., localised nondissipative stationary solns., quantum droplets 8−12819

quantum field theory continued
nonlocal fields characterized by internal variables, geometrical theory 8−29014
nonzero mass, Lorentz (Poincare) transformation laws 8−37123
normal-product methods, functional formalism 8−29252
particle creation in generic external fields, particle definition 8−8498
particle limit to field theory, strong-coupling expansion 8−24940
perturbation theory, higher order, appls. to quantum mech. and field theory *(Russian)* 8−36886
pseudoparticles, conformal symm. Lagrangian models in four dimens. space 8−374
quasiclassical expansion and solitons 8−94
quaternion formulation of wave eqns. in curved space-time 8−366
relativistic, characterisation in terms of finitely many vac. expectation values 8−29001
relativistic, characterisation in terms of finitely many vac. expectation values 8−32731
relativistic factorised S-matrix in two-dimens., O(N) isotopic symm. 8−41432
relativistic Hamiltonian theory, high-energy representation 8−24980
relativistic QFT, boson transformation, extended objects 8−37140
relativistic quantum field theory of D=2 Ising model 8−21081
scale-covariant operator field eqn. 8−32984
Schwinger model, pseudoparticle configs., Dirac eqn., dynamical mass generation 8−32982
Schwinger model, reconstruction of Lowenstein-Swieca soln. from asymptotic field soln. 8−41411
spin half field theory in Rindler space, Green's functions 8−12826
spin projection operators for fields of any spin *(Japanese)* 8−32733
spinor field quantisation 8−45777
spontaneous symmetry breaking in chiral quantum field theory, covariant formulation 8−21347
superspace, effective potential calc. 8−16944
tensor field quantisation, valency ≤5, extension of Segal's rules 8−29003
Thirring and Schwinger spinor field models, correct Lorentz transformation formula 8−12837
tunnelling decay, classically stable state, local potential minimum 8−16693
two-dimensional pre-Schwinger model, operator soln. in asymptotic fields 8−29237
ultralocal static field theory with imaginary bare mass 8−8499
vacuum instability 8−41419
vector spherical harmonics of unit hyperboloid in Minkowski space 8−32732
von Neumann algebra, unbounded derivations and invariant states 8−45456
Wigner representation, gauge invariant, electrodynamics of scalar particles 8−29251
zero eigenvalues for quantum fluctuations, instanton, spontaneous breakdown of conformal symm. 8−12821
ψ and ψ′ decays violating Zweig Iizuka rule, asymptotic freedom phenomenology 8−451
^{209}Bi, effect of pairing modes in multiplet struct. 8−12973

quantum field theory of elastic scattering
see also elementary particle scattering; relativistic scattering theory
asymptotic bounds on derivatives of elast. scatt. amplitudes 8−12892
causality, generalized integral condition for S-matrix, reln. to algebraic approach 8−37150
chiral invariance for asymptotic momenta, elastic scatt. of hadrons, helicity amplitudes 8−4800
diffraction peak width, upper bound derivation 8−12831
dispersion relations with two substractions in frames of field localisable theories *(Russian)* 8−41433
elastic scattering, Sommerfeld poles and backward peaks 8−21357
finite nonpolynomial field theories, renormalisation group, scatt. amplitudes 8−16901
functional S-matrix, unitarity and causality in renormalised QFT 8−4793
impact-parameter group, realisation on cone functions *(Russian)* 8−45817
inverse scattering problem 8−363
overlapping function and scatt. amplitude phase connection *(Russian)* 8−41431
Reggeon field theory, ordered phase, Hamiltonian formulation, scatt. amplitude calc. 8−4807
total cross sections, upper bound 8−12839
ππ phase shifts, nonlinear σ model Pade calcs. 8−8695

quantum field theory of gravitation
see also elementary particle gravitational interactions; gravitons
axial anomaly for Majorana spin 3/2 loop with external gravitons in supergravity 8−8580
axial vector anomaly and index theorem 8−29293
back reaction of quantised field in gauge treatment of gravity 8−16711
Bianchi type I anisotropic universe, quantum gravitational effects *(Russian)* 8−24588
Bianchi type I universe, quantized scalar field 8−4549
black hole+heat bath, thermal equilib. possibility, thermal Green functions 8−12275
black holes, quantum processes, especially Hawking thermodynamic emission process 8−12284
black holes, quantum vacuum effects rel. to fall into another universe 8−32748
black holes, small, quantum mechanical approach 8−16453
black holes of strong gravity, identification with elementary particles 8−16973
Bondi-Metzner-Sachs group, lifting of projective representations 8−21028
canonical many-time quantisation of gravitation 8−8328
charge renormalisation constant in quantum gravity near two dimens. 8−41222
chronos principle and interactions of fields of spin 0 and 1 8−8286
conformal anomalies, off-mass-shell corrections 8−32749
cosmology, quantum effects, black and white holes 8−12441
coupling of O(2) supergravity with vector multiplets, Yang Mills field appl. 8−33020
covariant quantisation of gravitation 8−8327
de Sitter space, renormalisation by point-splitting 8−29035
Dirac's constraints, geometric approach *(Italian)* 8−21044

quantum field theory of gravitation continued
electrogravitational conversion cross sections in static EM background fields 8−24711
energy momentum tensor of massless scalar quantum field in Robertson-Walker universe 8−12635
Euclidean gravity, asymptotically flat self-dual solns. 8−45834
fermionic Goldstone-Higgs effect in (2+1) dimens. supergravity 8−29291
fictitious-particle vertex in quantum gravity 8−24720
fractional winding numbers and surface effects 8−8579
general relativity, path-integral formulation, DeWitt-Morette measures 8−123
general relativity conference, Trieste, Italy, 1975, July 8−8285
generalised spin structure 8−29036
geometric quantisation and general relativity 8−8288
Gordon decomposition and tidal interaction 8−8324
Higgs effect, supergravity and supersymm. massless QED 8−29268
Higgs scalar effects on gravity, Nambu Jona Lasinio type model 8−41467
Klein paradox and vacuum polarization 8−8329
Klein-Gordon system, gravit. equilib. 8−24719
locally flat space-time, quantised metric, spontaneous dilatation asymm. 8−16713
Mansouri-Chang gauge theory of gravitation, comparison with general relativity 8−36919
massive supergravity nonlinear realisation of orthosymplectic gauge symm., coupling to spin 1/2 spin 1 multiplet 8−33019
mixing of weak and gravit. interactions, massive gravitino 8−8578
particle creation and geometry 8−12442
particle creation in curved space-time, covariant treatment 8−12443
particle emission rates from nonrotating black hole 8−24718
path integral quantisation and cosmological particle prod. 8−12440
Pauli-Villars regularisation trace anomalies 8−45548
PCAC, dimensional derivation of gravitational correction 8−21371
renormalisation and 1/N expansion, graviton propagator calc. 8−8320
renormalisation of higher-derivative quantum gravity 8−8326
renormalised quantum stress tensor calc. by adiabatic regularisation in Robertson-Walker space times 8−32747
Robertson Walker universes, quantised gravit. wave perturbations 8−12636
Robertson-Walker universes, IR divergences 8−8323
S wave kinks of Dirac-Weyl eqn. 8−29292
S-matrix theory, n-body potentials in QED and quantum gravity 8−24969
singularities and rule of unanimity 8−4529
SO(8) extended supergravity 8−16970
sourceless, impossibility of geon analogues 8−361
space-time, geometric quantization theory appl., covariant field theory 8−12637
spin 3/2 field and Cartan's geometry 8−16712
spin-3/2 field, Hamiltonian formulation and quantisation 8−8325
spinor theory of general relativity, without elementary gravitons 8−8321
spontaneous origin of Newtons const., modified Einstein eqns., matter interactions in weak gravit. fields 8−12853
spontaneous particle creation leading to black hole evaporation 8−40986
spontaneous symm. breaking due to gravitational interaction 8−36918
stress tensor of conformally invariant field in conformally flat spacetime, axiomatic renormalisation 8−29034
strong gravity and Dirac numbers 8−21372
strong gravity explanation of proton mass 8−12852
strong-gravity solns. for Einstein's eqns. 8−24705
SU(N) conformal supergravity, gauge theories for extension 8−8577
supergauge theory, geometric aspects, broken gauge invariance 8−8506
supergravity, canonical formulation 8−29016
supergravity, covariant quantisation 8−41470
supergravity, Hamiltonian formalism, quantisation and S-matrix 8−16972
supergravity, Hamiltonian formulation 8−24722
supergravity, SU(4) invariant theory 8−41471
supergravity, supercurrent anomaly 8−29267
supergravity, superfield Lagrangian 8−41468
supergravity, superspace formulation, consistency checks 8−37170
supergravity, supersymmetric generalisation of differential geometry tensors 8−45546
supergravity and gravity as gauge theories on group manifold 8−41469
supergravity as gauge theory of supersymmetry 8−8576
superunified theories, geometry of gauge invariance 8−24723
tadpole diagrams, Ward identities, induced cosmological term in quantum gravity 8−125
thermal effects for accelerating observer in empty Minkowski space 8−8322
twister space, complex fibration, fibration structure deformation, Einstein vacuum eqns., Maxwell's eqns. 8−12854
unified theory of gravitation, particle masses, instantons 8−37168
unitary spin, colour and unified theory, consideration of many-dimensional space-time 8−8570
weak gravitational field, connection between Dirac and Dixon eqns. 8−124
Yang-Mills formulation, gravit. dynamics 8−24721
Yang-Mills gauge theory of gravity, gravit. field of spherically symm. matter distribs. 8−4773
Yang-Mills instantons, space-time topology 8−8522

quantum field theory of interactions
see also elementary particle coupling constants; elementary particle interactions; Feynman diagrams; quantum electrodynamics; quantum field theory of gravitation; quantum field theory of strong interactions; quantum field theory of weak interactions; vertex functions
γ^5-invariant eqns. for massive particle 8−29262
φ^4 scalar theory, mean field perturbation theory, path integral formulation 8−12803
$(\bar\psi\bar\varphi)\psi\varphi$ model field theory anomalous dimens., 1/N expansion 8−379
asymptotically free massless field theory, self-consistent β functions 8−16911
Bianchi-type I universe, causally connected DeWitt's two vacuum states 8−12608
boson-fermion interacting system, coherent states on Lie groups and evolution operator 8−36932
chaotic isospin zero state of one mode isovector field 8−12883

quantum field theory of interactions continued
charged Bose condensates in supercritical external fields, relativistic field theory 8−8766
chiral Lagrangian model, linear and nonlinear σ models, pion polarisabilities, Compton scatt. 8−21323
conformal invariance, two-point function of arbitrary spin 8−21316
continuous one-dimensional many-component Gibbs system with regular two-body interaction pot., transfer matrix 8−8342
coupling parameter trajectories 8−8519
dual string with internal spin, second quantisation 8−440
Dyson eqn., exact soln. for mean value of Green's function 8−4559
Friedmann universe, photon gas 8−4543
Gross-Neveu model, exact S-matrix theory 8−24937
instanton solutions for scalar isotensor fields and interacting isovector+gauge fields *(Russian)* 8−393
interacting Rarita-Schwinger field on light front 8−4786
inverse scattering problem 8−363
isovector scalar meson interaction, static source, variational method, coherent states 8−16921
$J^\mu J_\mu$, mean field perturbation theory, path integral formulation 8−12803
lattico Hamiltonian for arbitrary couplings, variational methods calcs. 8−16746
Lee model, V-V sector 8−24967
light-cone quantisation, massless propagators 8−8538
linear stochastic dynamic systems, appl. of Green's function method *(Russian)* 8−16722
localised classical solution for fermions+scalar bosons in field theory, Yukawa coupling const. 8−24928
Majorana-Weyl fields, development of unified models 8−33015
massless scalar and spinor field theory in curved space-time 8−21321
mean field perturbation theory, path integral formulation 8−12803
nonlinear scalar interactions, 1/N expansion 8−16903
nonlocal nonpolynomial interactions, strong coupling 8−21319
null plane theory of n-particles, two-time Green's function props. 8−93
particle-field Hamiltonians, sequences of transformations 8−24691
Penrose theory in particle physics 8−29321
plasma, two-component, third sum rule and local mean-field theory 8−5982
precocious scaling in field theories 8−8525
Reissner naked singularity, spontaneous pair creation 8−24990
renormalisable theories from nonrenormalisable interactions 8−383
Schwinger variational principle for bound states and scatt. problems 8−16932
series expansions, low and high temp., for quantum fields on lattice 8−29061
spontaneous symmetry breaking in interaction of scalar field with external vector field 8−8545
statistical mechanics, operator formulation 8−24734
SU(2)-flavour Schwinger model on the lattice, Hamiltonian lattice perturbation exam. 8−16747
two-dimensional massless Fermi field, symm. couplings 8−29228
two-dimensional model, pseudoparticles and massless fermions 8−24974
two-particle Green's functions, bound states and poles 8−16694
ep deep inelastic scatt., density matrix appl. to scaling props. 8−8673
ep scatt., deep inelastic, Lorentz invariant generalized functions, rel. to EM form factors 8−8544
μp deep inelastic scatt., charm effects, field theory anal. 8−21435

quantum field theory of strong interactions
see also elementary particle strong interactions
$\eta\to\pi^+\pi^-\gamma$, one-loop approx. in quantum chiral theory 8−25041
ACD off light-cone, transverse momentum cut-off 8−381
asymptotic freedom, zero charge, point charges in quantum electrodynamics *(Polish)* 8−45822
Borel singularities, effective one-loop Lagrangian in constant elec. field 8−16917
boson field in neighbourhood of classical solution, quantisation by appl. of Bogolyubov's method 8−8566
canonical $SU_4\times SU_4$ pseudoscalar meson matrix, nonlinear chiral Lagrangian 8−397
chiral properties of fermionic determinant in two-colour QCD, symm. breaking 8−25015
chromomagnetic and electromagnetic hyperfine interaction, charm meson spectrum 8−12879
cylindrical gauge field configurations, confinement in QCD 8−12870
Dashen-Frishman model free-field-like behaviour and singularity of Callan-Symanzik function 8−16928
deep inelastic lepton-hadron interactions, scaling deviations 8−32991
Drell-Yan formula in QCD, lepton pair prod. 8−33025
eikonal theory, interacting Pomeron production by retaining Feynman graphs 8−8633
Faddeev-Popov procedure and Gribov copies in gauge theories, QCD appl. 8−32979
fermion-pseudoparticle interactions, non-generation of quark masses 8−37175
gluon distrib. function, tests of QCD 8−45796
hadron+hadron elastic scatt., >100 GeV, asymptotic theorems review *(Czech)* 8−29357
hadron jets from quantum chromodynamics 8−25056
hadron plasma theory *(Russian)* 8−37148
heavy quarks, widths of neutral vector mesons 8−8602
history of quantum field theory, search for unity 8−28904
local operator products, gauge invariance and renormalisation 8−358
massive Schwinger model, decay of metastable vacs. 8−24989
meron configurations in two dimens. O(3) σ model 8−32983
multicolour QCD as dual resonance theory, mesons on rising Regge trajectories 8−16987
multilocal fields in relativisitic quantum field theory 8−37125
non-Abelian vortex-bond model of hadrons 8−4827
$O(N)\psi^4$ interaction, strong coupling limit, rel. to renormalizability of chiral field 8−386
P and T invariance in colour gauge theory of strong interactions 8−37153
parton model, asymptotically-free, $W^\pm$, Z^0, μ-pair prod. 8−12865
QCD, decays of heavy leptons and intermediate weak bosons 8−8524
QCD, E_7 model, quark and lepton assignments 8−8590
QCD, effective quark pot. in baryon reson. 8−16910

quantum field theory of strong interactions continued
QCD, energy of classical sources, finite confinement from Pade approximants 8−41478
QCD, expt. test 8−8601
QCD, inclusive hadronic annihilation of heavy quark-antiquark bound states, Y, ψ decays 8−45866
QCD, infrared, near-mass-shell, behaviour of non-Abelian gauge theories 8−24947
QCD, infrared behaviour, colour-singlet quark form factor 8−24948
QCD, IR struct. of quark-antiquark scatt. kernel, quark binding pot. 8−8588
QCD, long-range correl. in forward quark-quark scatt. 8−4779
QCD, massless two-dimens. model, operator soln., local colour SU(n) symm. 8−41480
QCD, Migdal's regularisation scheme, hadron struct. 8−4782
QCD, modified, exact global colour SU(3) symm., asymptotic freedom 8−41493
QCD, multicolour, series expansion for meson masses 8−21315
QCD, new quarks and hadrons 8−8591
QCD, parton and gluon distribs. 8−16981
QCD, parton transverse momentum distribution 8−29301
QCD, photoprod. of heavy quark flavours 8−21384
QCD, quantised electric flux tubes 8−45844
QCD, renormalisation group invariant charge and confinement 8−45791
QCD, review 8−37146
QCD, struct. functions, perturbation theory *(Russian)* 8−8595
QCD, three gluon jets as test 8−25001
QCD, two dimens., bound state eqns. on null planes, Hamiltonian approach 8−37137
QCD, two dimens., renormalisation group functions 8−29242
QCD, two dimens., with SU(N) gauge symm., $N\to\infty$ limit 8−41489
QCD, two dimens. light-like gauge formulation, hadronic reactions 8−21388
QCD, two-dimens., bare pomeron graph 8−4824
QCD, unconfined quarks and gluons 8−45850
QCD and particle-string variables 8−24939
QCD calc. of three-jet processes in leptoprod. and hadronic μ-pair prod. 8−21338
QCD gluon contribs. to large p_t reactions 8−41504
QCD in two colours, virtual quark-quark scatt. in pseudoparticle background 8−12823
QCD IR divergences exponentiation 8−41492
QCD on mass shell, Ward identities 8−16913
QCD theory prediction of jet structure in $e^+e^-\to$ hadrons 8−12920
quantum chromodynamics, field strength formulation 8−16924
quark bound states in field theory 8−25006
quark confinement, analyticity of parton model, QCD_2 calc. 8−41484
quark confinement for gluon generation 8−25008
quark confinement potential, infinite order metric multipole fields,theory 8−29295
quark hyperfine interactions in negative parity baryons, QCD 8−16984
quarks, observation, calcs. using relativistic quantum field theory 8−24933
relativistic generalisation of linearly rising pot. 8−4768
scalar field theory, solvable models of vac. polarisation 8−385
Schwinger model, canonical surface formalism, axial anomaly, chiral symm. breaking 8−12816
SU_3 symmetry breaking, dynamical 8−21346
thermodynamic pot. at finite temp. and density, QED and QCD 8−8535
e^+e^- annihilation, hadronic jet structs., QCD tests, max. directed momentum parameter 8−25057
e^+e^- annihilation, jet struct., test of QCD and quark-confining string 8−33040
η' mass and quark mass ratio 8−8584
NN scatt., high-energy, effect of anomalous mag. moments in quantum field theory 8−465
Nπ scatt., high-energy, effect of anomalous mag. moments in quantum field theory 8−465
ν deep inelastic scatt., four flavour quark model, asymptotic freedom 8−45905
ν-nucleus reactions, multimuon events, QCD predictions for associated prod. of charm 8−25034
$\pi N\to\gamma\pi N$, recoil corrections to static model, interaction current 8−25072
QCD, $\bar{q}$ polarisation in quark sea of proton 8−12867
τ particle properties, QCD type gauge theories, absence of $\tau^+\tau^-$ resonance in e^+e^- annihilation 8−37144
$Y\to$photons+gluons, QCD perturbation theory 8−33028

quantum field theory of weak interactions
see also elementary particle weak interactions; Weinberg model
asymptotically free theories of deep inelastic muon, and electron scatt. 8−21430
Dirac particle, charged scalar field, strong coupling theory 8−16976
Dirac particle in mag. field, symmetry breaking by monopole singularities 8−16977
gauge theories local operator products 8−12804
Higgs-Boson mass, weak interactions at very high energies 8−8540
history of quantum field theory, search for unity 8−28904
left-right-symmetric theory of weak interactions in unified gauge theory, constraints on phenomenology 8−21369
mixing of weak and gravit. interactions, massive gravitino 8−8578
pure leptonic weak interaction with induced shadow states, renormalisable theory 8−37136
renormalisable model on gauge group $SU(2)_l\times SU(2)_r\times U(1)$ 8−12855
review of weak interaction theory 8−4822
semileptonic neutral currents as higher order effects in Fermi-type charged current theory 8−41474
six-quark theory, weak interaction mixing 8−41475
$SU(2)\times U(1)$, gauge theory of weak interactions 8−21328
e-μ permutation symm., lepton number conservation in gauge theories 8−4777
ν-induced multilepton events, weak interaction model 8−41533
ν_μ mass limit in absence of muon-lepton-number conservation, unified gauge theories 8−21368
H parity violations, fundamental struct. of weak current, unified gauge theories 8−12849

quantum fluids
see also boson systems; fermion systems; liquid helium
hyper-netted chain eqn., Kohn-Sham theory derivation 8−47225
impurities, surface bound states, quantum and classical liquids 8−18859
relaxation, renormalized perturbation expansion in kinetic theory 8−21061
quantum generators (optical) *see lasers*
quantum mechanics *see quantum theory*
quantum numbers *see quantum theory*
quantum optics
see also photon counting
atom-evanescent wave interaction, exchanged momentum meas. *(French)* 8−37603
atomic engines, efficiency of coherent amplification 8−33717
bistability, cooperative effects and fluctuations 8−17885
black-body radiation field interaction with photoconductor, noise, Langevin method 8−30950
coherent multiphoton processes, effective two level hamiltonian 8−29921
coherent optical spectroscopy 8−1112
communication channels, statistical model, asymptotic relations 8−33687
communication theory, appl. of generalised quantum meas. theory 8−13668
cooperative resonance fluorescence, photon statistics and absorption spectrum 8−42311
coupled system, time depend. projection operator anal., classical gas and quantum systems 8−16720
Dicke model, two-level atoms, phase transition 8−5442
Dicke model with external fields, simple Green function approach, lack of phase transition 8−9353
generalised Dicke model for matter interacting with EM field 8−5441
intensity fluctuation spectrum, theory of registration *(Russian)* 8−1199
lecture on introduction to quantum optics 8−25843
lectures on interaction of radiation with condensed matter, Trieste, Italy (Jan.-March 1976) 8−27172
many photon collective phenomena, finite QED formalism 8−9352
many-level molecules, unitary dynamical symmetry for superadiance, classical limit 8−9355
many-mode optical fields, photon statistics 8−42310
molecules, large optical free induction decay, photon echoes 8−37945
moving atoms interacting with laser fields, self consistent approach to transport eqn. 8−42016
multi-level excitation theory, analytic approximations 8−29922
multilevel system, band type, excitation dynamics in laser field *(Russian)* 8−21980
multiparticle system, effects of powerful coherent radiation on spontaneous emission *(Russian)* 8−46554
N-level atoms, coherent dynamics, anal. solns. 8−22105
N-level atoms, coherent dynamics, numerical expts. 8−22104
N-level molecules, coherent dynamics, anal. solns. 8−22105
N-level molecules, coherent dynamics, numerical expts. 8−22104
N-level system in strong monochromatic field 8−29923
optical bistability, photon statistics and spectrum of transmitted light 8−46298
phase measurement anal., for microscopic radiation fields 8−17887
photoelectron statistics, book 8−25842
photon statistics change by one-photon and two-photon absorpt. 8−22103
population inversion, with freq. chirping, pulse shape depend. 8−17886
resonance light scattering, two level density matrix description 8−25840
single-beam two-photon absorbed light, off diagonal density matrix 8−30009
statistical theory of one-photon and two-photon processes, density matrix formulation 8−42313
three level medium, ultrashort pulse propag., transient processes 8−18024
three-level atom, multiphoton absorpt., finite bandwidth laser influence 8−25841
three-level atom system, distortionless optical pulse propag. 8−22179
three-level system, interaction with pump fields 8−33718
three-wave reson., self-induced transparency effect 8−33716
triple optical resonance, N-level system, N-1 photon reson., steady state level population calcs. 8−17888
two level atoms, method of separated optical fields 8−30008
two-(three-)level systems, steady and transient behaviour 8−1200
two-level atom, phase transition induced by laser field *(Russian)* 8−29924
two-level system, adiabatic rapid passage, narrow IR saturation resons., book contrib. 8−9419
two-level system, in nonstationary field, fluctuation and relax. props. 8−33715
two-photon absorption with coherent and partially coherent driving fields 8−5191
X-ray quantum statistics limited electrostatic imaging 8−7451
quantum solids
see also solid helium
Einstein-Kanzaki model of static and dynamic lattice relax. 8−34676
Fermi quantum crystals, melting curves low temp. anomalies rel. to neutron stars 8−24757
molecular crystal, quantum quadrupolar phase theory *(Russian)* 8−22929
nonlinear null vibrations *(Russian)* 8−6194
one-dimensional, solitary defectons 8−2332
translational symmetry spontaneous breakdown, quasi-averages and averages, phase transitions 8−30811
vacancy delocalisation, local phase stratification and impurity free region creation *(Russian)* 8−47637
H, metallic, Hartree-Fock and correlation energies 8−34674
quantum statistical mechanics
see also jellium; many-body problems; quantum fluids; quantum solids
A^4-phonon theory, free energy and phase transition 8−41257
atom+diatom, stochastic one-dimens. model 8−42159
black-body radiation field interaction with photoconductor, noise, Langevin method 8−30950
Boltzmann equation, quantum form, one-particle Γ_s-distrib. function 8−45579

quantum statistical mechanics continued
Bose fluid, degenerate, Lee and Yang formulation extension 8−45563
Bose fluid, degenerate, very low temp., equilib. props. 8−45564
Bose fluid, structure factor determ. 8−34667
Bose gas, spatially inhomogeneous, kinetics in presence of condensate 8−16730
boson, integrals of motion for δ-function interaction pot. *(Russian)* 8−21069
boson system, scaling equation of state, renormalisation group transformation 8−12643
boson-fermion interacting system, coherent states on Lie groups and evolution operator 8−36932
bound state spectra in φ^4 theory and Gross-Neveu model, temp. depend. 8−4770
canonical ensemble partition function, incorporation of long range electrostatic effects 8−21065
channelling, quantum theory, generated transport eqns. 8−10110
chemically reacting quantum gases, kinetic eqns. 8−19997
classical and quantum statistical mech., common Liouville space 8−32758
cluster expansion in statistical mechanics, S-matrix formulation *(German)* 8−41256
continuous one-dimensional many-component Gibbs system with regular two-body interaction pot., transfer matrix 8−8342
correlation inequalities hierarchy, relation to equilib. states 8−21064
counting processes valid for quantum point processes 8−21066
coupled system, time depend. projection operator anal., classical gas and quantum systems 8−16720
density matrix, coherent-state basis 8−21060
dissipative system, description, soln. of Liouville eqn. 8−16725
distinguishable quantum particles in one-dimens. box, continuous system, dynamics, phase transitions 8−32755
electron gas, self-diffusion (spin diffusion) coeff., proper connected diagram expansion 8−21067
excitons, condensation effects, review 8−2427
Fermi golden rule and Markov master eqns. 8−36935
Fermi quantum crystals, melting curves low temp. anomalies rel. to neutron stars 8−24757
Fermi quantum fields, derived from Bose quantum fields, applications 8−36928
fermion nonrelativistic, self-energy and inter-fermion Coulomb-Yukawa forces, quantum theory 8−29047
fermions, independent, 1-dimens. density-pot. rel., local density approx. 8−29045
fireballs, quantum-statistical chain decay, pion clusters 8−430
free energy, order-parameter expansion appl. to some phase transition model 8−43099
Friedmann universe, photon gas 8−4543
generalised two-level quantum dynamics, nonHamiltonian state evolution 8−36854
global thermodynanic stability and correlation inequalities 8−45560
Green's function defined in phase space, using Wigner operator eigenfunctions and eigenvalues 8−24728
harmonic oscillator, kinetic formulation for random pots. 8−32756
hyper-netted chain eqn., Kohn-Sham theory derivation 8−47225
information-theoretic, system in contact with heat reservoir, for teachers 8−36770
inhomogeneous fluids, quantum statistical mechanical eqns. 8−34414
irreversible conservative motion in generalised, two-level quantum dynamics 8−36927
Jastrow theory, momentum distrib. of boson and fermion systems 8−45561
lattice system equilib. states, semi-quantum, AF algebra 8−45576
lattice systems, metric space of interactions, grand canonical pressure, thermodynamic limit 8−12652
linear stochastic dynamic systems, appl. of Green's function method *(Russian)* 8−16722
linearly damped harmonic oscillator, quantisation 8−21068
Liouville dynamics for optimal stochastic phase-space representations of quantum mechanics 8−21062
many-boson absorption, nonreson. maximum 8−8343
many-fermion theory, expS or coupled cluster form 8−29048
Markovian eqns., transportation theory, using group theory 8−21063
Markovian processes 8−29049
mass degeneracy at fixed particle number, differential eqn. for bootstrap degeneracy 8−24732
master equation treatment of single reservoir limit 8−29050
matter formation, photon condensation, treatment using Bose-Einstein statistics 8−12435
measurement sequences, Everett interpretation 8−32707
nonequilibrium state, Langevin type eqns. applic. to linear response theory, scatt. cross section 8−16726
nonlinear, stochastic differential eqn., perturbation theory, projection operator method, statistical linearisation 8−41229
nonlinear hydrodynamical eqns., external fields, Einstein relations for kinetic coeffs. *(Russian)* 8−50
nonstationary systems, invariants and radiation 8−36929
open N-level system, algebras, condition for approach to equilibrium 8−16678
operator formulation of statistical mechanics 8−24734
parametric amplification and generation, quantum statistical properties 8−46717
particle displacement momenta, quantum equilib. distrib. in molecules and solids 8−32751
particle motion in a viscous medium 8−24731
phase space sampling approach, semiclassical statistical mech. 8−32753
plasma, hydrogenic, statistical mechs. of composite particles, projection technique 8−47090
position operators for relativistic non-interacting n-particle system 8−41182
pure quantum states, single system and ensemble interpretations 8−8340
pycnonuclear reactions, and pair correl. function in dense plasma 8−32445
quantum fluid relaxation, renormalised perturbation expansion in kinetic theory 8−21061
radiation field in flat parallelepiped, ideal photon gas eigenvalue spectrum 8−8344
relativistic quantum Hamiltonian for directly interacting particles 8−16729
relaxation processes, initial slips and transient effects, theory 8−24729

quantum statistical mechanics continued
- scattering and dynamics, classical and quantum statistical mechs., unified treatment 8−45522
- second virial coefficient from the scattering operator 8−24730
- semiclassical canonical density matrix, approx. semigroup props. 8−16723
- semiclassical wave functions, regular and irregular 8−20998
- semiconductor junctions, quantum statistical theory in thermal equilibrium 8−39197
- short-range asymptotic wave function method, appls. 8−24727
- SHRIMP energy lower bound model, derivation for translation-invariant many-fermion systems 8−29046
- sine-Gordon massless quantum eqn. in 2 space time dimens. 8−32754
- spin and pseudospin lattice systems, Green's functions diagrammatic technique 8−8355
- spin and pseudospin lattice systems, Green's functions diagrammatic technique, Pauli operators 8−8356
- spin system propagation properties study 8−12642
- stochastic Liouville equation for quantum-mechanical scatt. for particle in field of variable scatterers 8−140
- strong quantised EM field, statistical description 8−16961
- thermodynamic processes induced by coherent radiation 8−32752
- transfer coefficients of ultrarelativistic gas of elementary particles *(Russian)* 8−8635
- two-body scatt. T matrix in real-time formalism 8−41230
- uncorrelated jet model, quantum statistical correls., Bose-Einstein statistics, pion prod. 8−16992
- van der Waals eqn. of state theory generalised 8−38602
- WKB wave function, systems with many degrees of freedom, solitons and pseudoparticles 8−29255
- $K^+p \to K^+p2\pi^+2\pi^-$, 16 GeV/c, azimuthal correls., Bose Einstein symmetrization effects 8−37239
- φ^3 field theory in $6+\varepsilon$ dimensions, anomalous dimens. calc. 8−134
- H_2, liquid, perturbation theory and quantum effects, thermodynamic props. and quantum stat. corrections *(Russian)* 8−22867
- ^{4}He, liq., exchange effects on excitation spectrum 8−10236

quantum statistics *see quantum statistical mechanics*

quantum statistics of many-particle systems *see quantum statistical mechanics*

quantum theories of fluid structure
- hard sphere, semiclassical fluid, equilib. props., quantum corrections 8−18522
- hard-sphere fluid, eqn. of state, quantum corrections 8−34592
- hyper-netted chain eqn., Kohn-Sham theory derivation 8−47225
- inhomogeneous fluids, quantum statistical mechanical eqns. 8−34414
- van der Waals eqn. of state theory generalised 8−38602

quantum theory
- *see also Clebsch-Gordan coefficients; complementarity; correspondence principle; indeterminancy; perturbation theory; quantisation; quantum field theory; quantum theories of fluid structure; spin hamiltonians; wave mechanics*
- 3-j symbols, general set of relns. 8−41183
- 3j-coeff., symmetries 8−41181
- acoustic superradiance, quantum theory 8−10128
- adsorption of isolated adatoms 8−22957
- affine symplectic group, generating functions 8−41149
- angular momentum, Wigner operators in phase space 8−4511
- anharmonic oscillators, transition moments 8−12601
- anisotropic dispersive media, generalisation of Planck's law 8−18153
- anisotropic harmonic oscillator, accidental degeneracy of energy levels 8−8263
- anisotropic harmonic oscillator, n-dimens., accidental degeneracy, semidirect product representation 8−4506
- anisotropic harmonic oscillator group, quantum mech. representation 8−8262
- antimatter, defn. in quantum theory of perception 8−24674
- axiomatic quantum mechanics 8−12594
- axioms for nonrelativistic quantum mechanics 8−12595
- Bell's inequalities, generalised 8−12598
- Bell's theorem, generalisation 8−36860
- bibliography, probabilistic ideas in field theory and statistical mechanics 8−8230
- biorthonormal systems, Parserval's identity 8−16669
- black body monochomatic emissive power, fast calc. by nomograph 8−22257
- Bogolyubov-boson transform., coherent states 8−32715
- Borel summation of perturbation series 8−16683
- boson expansion method, appls. 8−36884
- bosons, bilinear Hamiltonian, diagonalisation methods 8−32716
- bound states, WKB approx. from Heisenberg matrix mechanics 8−32717
- bound three and four particle systems, two particle resonance poles and energy spectra 8−41204
- canonical description of solitary quantum decay 8−36881
- canonical Hamiltonian system, different quantisations and classical limits 8−8271
- canonical mechanics, admissible forms 8−16691
- canonical transformation framework, non-perturbative approach to effective interactions 8−12603
- Carter separable spacetimes, characteristaion 8−36867
- charged linear harmonic oscillators, interaction between two one-dimensional oscillators 8−16963
- closure approximation, appl. to perturbation theory, muon capture and pion electroproduction 8−16680
- coherent state representation of linear operators 8−16677
- collision theory integral, analytic determ. 8−28987
- collisional ionisation in intense laser field, quasimol. state reson., quantum mechanical anal. 8−33589
- combined algebra for classical and quantum mechanics 8−85
- communication channels, quantum 8−28998
- commutation superoperator of state, appl. to noncommutative statistics 8−28997
- commuting tensor operators, and state labelling problem for $SO(4) \supset P$ 8−28980
- completely integrable systems connected with semi-simple Lie algebras 8−12599
- conformal spinors, $O_{2,4}$ transformations in $E_{2,4}$, components obeying Dirac eqn. 8−45504
- conjugate momentum of ang. momentum modulus 8−16673
- continuous measurement 8−78

quantum theory continued
- cooling of quantum oscillator 8−32728
- covariance principle in quantum physics 8−4496
- covariant interactions of spinless particles, covariant Hamiltonian quantum mechs., local solns. 8−41186
- cranked harmonic oscillator pot., self-consistent condition 8−17122
- curved space path integral, quantal Lagrangian and Hamiltonian for harmonic oscillators system 8−41193
- damped quantum system, pseudostationary states, existence and props. 8−41177
- de Broglie wave packet, nondispersive 8−36858
- decaying states, using Kapur-Peierls and Siegert resonant states and extended Hellmann-Feynman theorem 8−4503
- delocalisation, organic chemistry courses 8−4426
- description of quantum mechanics, first kind states, local hidden variables 8−28990
- diffraction in quantum physics, formulation, representations, relativistic and high energy, mixed systems 8−36885
- Dirac eqn., Bunge-Kalnay position operator 8−36864
- Doppler-shifted photons, origin of increased energy explained by mechanics of source 8−28897
- double group theory, half-shell and two-level systems, rot. and half integral spin states 8−45447
- double well anharmonic oscillator, 1-d system, effect of fermions upon tunnelling 8−16689
- dynamical maps asymptotic behaviour for finite systems 8−73
- education, quantum mechanics and perturbation theory, perturbed harmonic oscillator *(Spanish)* 8−36786
- eigenvalues lower bounds for quantum Hamiltonians, classical limit of quantum theories 8−41200
- eigenvalues of matrix operator $S.\pi$ for spins 1/2, 1, 3/2, const. mag. field 8−32712
- Einstein equation dynamics modified by fourth derivative terms, radiation from charged test particles 8−41216
- Einstein locality, inequalities 8−36855
- Einstein paradox, time symm., photon polarisation in cascade transitions 8−21008
- Einstein Podolsky Rosen paradox, propagator theorem calc. 8−77
- elastic scatt., variationally optimised T matrices 8−74
- elementary particle classification, selection maps for quantum logics 8−29320
- energy dispersion relation in valence band of quantum pendulum, semiclassical calc. 8−41199
- energy levels, lower bounds determ. 8−16672
- energy states of finite square well pot. 8−32723
- equations of motion, deterministic model 8−24689
- Fermi gas, 1-D planar theory 8−45519
- Feynman path integrals, classical limit 8−12476
- Feynman path integrals, generalised meas. 8−384
- finite group representations, method of commuting operators *(Chinese)* 8−8257
- five-body equation, wave function treatment for binary partitions 8−16686
- foundations of quantum mechanics and uncertainty principle, book 8−29000
- frequencies, differences from classical freqs. *(Russian)* 8−4498
- Frohlich Hamiltonian without cut-off, self-adjointness and other properties 8−38995
- functional differentiation, heterogeneous, continuous, appl. to Feynman path integral 8−4504
- Galilean system quantisation 8−70
- Gelfand-Levitan eqn. and Korteweg-de Vries eqn. 8−32708
- generalised 3j symbols 8−36876
- generalised polarisabilities, new variational bounds 8−45502
- generalised two-level quantum dynamics, nonHamiltonian state evolution 8−36854
- generators of infinite direct products of unitary groups 8−24677
- geometric struct. of charged fields, Aharanov-Bohm effect 8−28994
- Green's function defined in phase space, using Wigner operator eigenfunctions and eigenvalues 8−24728
- ground state properties, energy level lower bounds, particle in mag. field and external pot. 8−8260
- group representations and appls., book 8−32652
- hadronic quantum numbers beyond charm as possible source of neutrino induced trimuons 8−12903
- harmonic oscillator brackets, derivation of new expression 8−20997
- harmonic oscillator relaxation, Gaussian identities 8−4524
- harmonic oscillators, time-dependent, exact invariant determ., direct method 8−12597
- hermitian operators, upper and lower bounds to eigenvalues, variational calcs. 8−36882
- hidden parameters problem, exptl. test *(Chinese)* 8−16676
- hydrogenic atom, nonrelativistic, linear response to external linear polarised EM wave 8−8258
- hypervirial relations, giving recurrence relations for radial matrix elements 8−4502
- information theory of quantum measurement 8−36863
- intermediate system lifetime in quantum mech. collisions 8−45521
- interpretation and conceptual basis 8−12588
- invariant props. of n-point functions and functionals due to translationally invariant formal measure 8−45500
- inverse power singular pot. with complex coupling const., phase shift 8−41176
- inverse scattering problem, N-soliton of eqn. $\sigma_{xt}=e^{\sigma}$ 8−8269
- inverse scattering transform, Wronskian technique, isospectral flow eqn. 8−8275
- inverse scattering transforms, Zakharov-Shabat and Schrodinger-type, connection 8−21006
- ion cyclotron resonance power absorption, quantum theoretical treatment 8−317
- isotropic harmonic oscillator, n-dimensional, noninvariance group 8−8264
- Jordan-Wigner representation of CAR algebra, boson expansions 8−36850
- K-matrix, off-shell 2-body scatt. with Woods-Saxon pot. 8−21002
- Lagrangian, objective interpretation 8−24686
- large-angle potential scattering in variable phase approach 8−91
- lattice structure of sublevels for pseudo-internal product *(Italian)* 8−12586
- Legendre Pade approximants, and appl. to pot. scatt. 8−28982

quantum theory continued
Legendre Pade approximants, convergence, to Coulomb and other scatt. amplitudes 8−28983
Liouville dynamics for optimal stochastic phase-space representations of quantum mechanics 8−21062
Lippman-Schwinger equation, soln. for n delta-shell pots. 8−41112
local two-body interaction, off-shell phase shift 8−45516
logical structures and hidden models in quantum theory 8−41190
many-body equilibrium configuration for one-dimens. problem, pair pots. 8−4513
mass and Pontecorvo oscillations of neutrinos using chronon concept in electron theory 8−36879
measurement sequences, Everett interpretation 8−32707
measurements, interactive computer program, for teaching 8−41113
microsystems, nondistributivity, empirical correctness 8−28989
molecular spectra, full quantum mechanical theory, mol. eigenstates generator coordinate method 8−21895
Moller operator, rel. to superoperator, algebraic proof 8−28977
momentum operator, in nonCartesian coords., for teaching 8−24620
momentum operator in curvilinear coordinates *(Russian)* 8−36862
motion group, completeness theorem 8−4519
multichannel quantum scatt., two-Hilbert space formulation 8−28986
multiple pot. scatt., soln. by finite iteration 8−28993
multiple scatt. of waves from lattice, theory 8−16697
multiple scattering with three-body forces 8−63
N-body scatt. in two-cluster region 8−28975
non-Abelian dyons, Nambu mechs. descript. 8−41490
nonadiabatic transition amplitudes, semiclassical calcs., adiabatic theorem in complex plane 8−20993
nonbijective canonical transformations, representation in quantum mechanics 8−45501
noncanonical operators, determ. of eqns. of motion from action principle 8−4515
nonlocal continuous potentials, theory of integral operators and eigenvalue anal. 8−8274
nonlocal models and QM comparison 8−4510
nonstandard model of two dimens. quantum system, axioms 8−28972
normal and anomalous intellectual activity classification, coherent quantum-wave brain model *(Russian)* 8−27922
nucleon-nucleon hard-core system, bound states and scatt., for teaching 8−41115
observables with continuous spectra, hidden variables problem 8−16690
on-shell three-body multiple scatering eqns. 8−28988
one-dimensional equation in method of phase functions *(Russian)* 8−45499
one-dimensional scatt. theory, stability of direct and inverse problems 8−4523
open N-level system, algebras, condition for approach to equilibrium 8−16678
operator construction, in Fock space 8−24688
operator ordering and perturbation expansion, path integral formalism 8−16682
particle dechannelling with phonon scatt. 8−18695
particle in rot. frames, current circulations lattice struct., rot. fluid 8−45498
particle penetration through multiple pot. barriers 8−36871
particle system in rot. frames, rigid flow impossibility 8−45497
particle trapped in rectangular potential, simple computing system, undergraduate expt. 8−28891
passive states and KMS states for general quantum systems 8−41178
Pauli spinor theory, axiomatic deduction 8−12593
permutation symmetry, geometrical approach 8−21001
perturbation theory, almost degenerate, partitioning type treatment 8−32701
perturbation theory, convergence props., energy series 8−80
perturbation theory, higher order, appls. to quantum mech. and field theory *(Russian)* 8−36886
perturbation theory for Green's functions, effective mass formalism 8−28915
perturbation theory within variation method 8−41180
perturbed eigenvalues, perturbation expansions and variational constraints 8−16670
perturbed ladder operator method, analytical determ. of generalised central field energies and wavefunctions 8−32704
phase space formulation of quantum mechs., linear transformations 8−45508
phase space functional integrals of quantum mechs., Hamiltonian quantization 8−41194
phase space path integrals, without limiting procedure 8−32718
philosophically different interpretations and their consequences *(Spanish)* 8−41202
photon interference, quantum field theoretic description using QED methods 8−12464
Poincare group, irreducible unitary representation, velocity operator 8−32713
Polish groups, splitting and representation groups 8−36874
position operators for relativistic non-interacting n-particle system 8−41182
positive-definite-matrix-conjugate vector, construction and constrained variation 8−8267
potential scatt., inverse problem at fixed energy 8−41203
prequantum bundles and projective Hilbert geometries 8−36799
projection of wave functions on states with definite ang. momentum 8−12590
pseudoparticle contrib. to energy spectrum of 1-D system, comparison with WKB result 8−4517
quadratic Hamiltonians, quadratic invariants and SU(n) symmetry group 8−36873
quantum radiation inelastic scatt., correlation functions and higher order coherence 8−32721
quantum radiation inelastic scatt., reduced field density operator 8−32722
quasiclassical approx. in scatt. problem, wave function representation by functional integral 8−87
quasipotential governing time evolution of projection of state-vector onto one-dimens. subspace 8−20988
radiation of relativistic channelled particles 8−22779
radius perturbation theory, appl. to NN system and pionic atoms 8−21007

quantum theory continued
recoupling coeff. and isoscalar factors, for chain of compact topological groups 8−20939
reduced mass for relativistic quantum-mechanical problems 8−4809
Regge pole theory, reasons for survival, review 8−24977
relativistic, curved space-time, generalised quaternion formulation 8−366
relativistic, localisation and causality 8−4514
relativistic, phase space formulation 8−36878
relativistic localisation and operator density current 8−32709
relativistic quantum mechanics, algebraic approach, nonrelativistic limit 8−41188
relativistic quantum theory, role of position 8−36852
Riemannian struct. on states of quantum-like system 8−67
scalar particles creation in isotropic universe, Feynman propagator behaviour 8−45445
scattering problem as eigenvalue problems 8−28971
scattering theory for Stark Hamiltonians involving long range pots. 8−41184
scattering theory of ⩾4 particles, on the unique soln. 8−21005
Schmidt orthogonalisation in the continuum 8−8266
Schrodinger equation and the accel.-gravity equivalence principle, for teaching 8−24614
self-mass of electron, eqn. of motion calc. 8−28995
semi-classical approach to elastic scatt. and direct reactions 8−32706
semiclassical energy levels, degeneracies 8−4500
semiclassical theory, phase space interpretation 8−20991
semiclassical wave functions, regular and irregular 8−20998
semiconductor doped surfaces, inversion layers, quantum model 8−30961
short-range long-range action dilemma *(Russian)* 8−16692
SO(n), Weyl coeff. 8−45503
soliton solutions, quantum expansion generalisation *(Chinese)* 8−24915
solitons geometrical interpretation, rigid body motion along helical space curves 8−24684
Sp(n,R) discrete series, harmonic oscill. eigenstates, nuclear collective model 8−71
spacetime code, quantum topology 8−36859
spin permutation group, representation matrices 8−28976
spinless particle many-body problem, multiconfigurational approx. 8−4518
spontaneous symmetry breaking and metastable state blocking, various appls. 8−45510
state vectors, second-type, observable consequences 8−69
stationary path integrals appl., bound state energies and wave functions 8−12587
statistical inference and quantum mech. meas., information theory 8−20990
statistical inference and quantum mech. meas. 8−36856
stochastic electrodynamics, derivation of quantum mechanics 8−36801
SU(N)⊃O(3), angular momenta multiplicities in system of N-dimensional harmonic oscillators 8−32702
superfluorescent decay, large time behaviour 8−46296
synchrotron radiation quantum corrections, second order effects 8−1136
tachyonic scalar waves in Schwarzschild space-time 8−45558
teaching, from Compton effect to quarks, at., proton, and nucl. struct. 8−24596
teaching *(Hungarian)* 8−36753
test using Bell-type inequality for nondicotomic observables 8−36865
third-order JWKB approximation method applic. to absolute continuity criteria derivation, approx. operators construction 8−12591
third-order JWKB approximation method applic. to absolute continuity criteria derivation, approx. operators and estimates 8−12592
three particle scatt. rates, double scatt., T-matrix singularities 8−32727
three-body problem, bound state and scatt. problems 8−16684
three-particle scatt. rates, disconnected T matrix singularity 8−32726
three-particle system, orthogonal projection 8−90
time dependent Hamiltonian, scale gauge transforms., adiabatic approx. principle, suitability for teaching 8−45506
total scattering cross sections for optical pots., quasiclassical calcs. 8−8270
traces of products of ang. mom. operators in spherical basis 8−32705
tunnelling, time dependent stochastic quantisation theory 8−41197
two spinless particles, scatt. amplitude and cross-section, relativistic correction *(Russian)* 8−36889
two-level quantum dynamics, representations of Kossakowski conditions 8−20989
two-potential formulae for rearrangement scattering 8−4512
uncertainty measure for compact Lie group, minimised for max. weight vectors 8−20996
uniqueness of number operators for certain symmetries 8−20987
unstable quantum states, time evolution, resolution of Zeno's paradox 8−8560
variational bounds to excited states from generalised Brillouin-Wigner eqn. 8−45507
von Neumann algebra for quantum model of single spin system 8−45459
von Neumann algebras, conditional expectation and commutativity 8−36789
vortices, quantised, ang. momentum, creation and significance 8−24675
wave-packet, position probability, classical and quantum spreading, for teaching 8−24606
Weisskopf Wigner formula derivation from Krolikowski Rzewuski eqn. for state vector 8−41175
Weyl relation, generalisation, props. 8−21003
Wigner's function, semiclassical mechanics in phase space 8−12600
Wigner's theorem generalisation, struct. of projection-valued states 8−36868
F_2+X→XF+F (X=Mu,H,D,T), isotope effects, quantum mech. and information theoretic calcs. 8−44360
o-H_2, solid FCC, orientational ordering, SCF approx. 8−2029
He atoms, S-state eigenfunctions, Konishita's expansion 8−16674

quantum theory of light *see quantum electrodynamics*

quantum theory of many-body problems *see many-body problems*

quark confinement
θ model in quantum corrections to classical confinement 8−29297
$(\varphi^3)_6$ theory, IR behaviour, gluon confinement mech., nonperturbative approach 8−24954

quark confinement continued
asymptotically free SU(2)×SU(2)×SU(4) model of unified interactions 8−16968
bag model, deformation energy, quark-antiquark separation 8−45851
bag model, hadronic deformation energy, two-nucleon interaction 8−45852
bag model, multibaryon states, SU(6) mass formulae 8−45848
bag model, quark 8−45921
bag model, quark-quark interaction anal. 8−33029
bag model, quark-sea percentage under constraint of quark-line rule 8−24998
bag model, spin-depend. struct. functions in deep inelastic scatt. 8−8589
bag model for hadrons, classical interpretation, solns. of Maxwell eqns. 8−37183
baryons, gluon exchange corrections in model with confining potentials 8−21379
binding, explained by strong gravity with cosmological const. 8−4820
bound states in field theory 8−25006
canonical field theory, quark binding 8−32994
canonical field theory, quark-binding 8−29264
canonical scaling in hadronic high-p_t processes, parton Fermi motion 8−45977
charge screening, extended model of hadrons 8−37179
charmonium, ψ and χ states, hyperfine struct. 8−12878
charmonium, generation of spin depend. forces through scalar-vector admixture 8−33038
charmonium, masses of 2P and higher levels, sum rules 8−4805
charmonium, Todorov's quasipotential eqn., quark confinement 8−8593
charmonium-like models, order of first energy levels 8−29311
classical quark confinement from general relativity 8−45842
classical quark matter, one dimens., Abelian approx. 8−41491
classical Yang-Mills point charges, interaction, rel. to quark confinement *(Russian)* 8−32995
colour SU(N) gauge theory 8−8592
coloured SU(3) scheme of three quark binding in baryons, mass formulae 8−12876
covariant quantisation of quark binding string 8−4829
current definition and nonconservation, geometrodynamics for quarks and hadrons 8−45809
Dirac particle, charged scalar field, strong coupling theory 8−16976
Dirac strings, monopoles, duality, triality 8−12864
Dreel-Yan processes, gluon corrections 8−8597
dual string theory, local currents *(Russian)* 8−25024
forces holding quarks inside other particles *(Polish)* 8−45843
gauge field theories, Hamiltonian formalism, quark confinement eqn. 8−41488
gluon generation 8−25008
hadron bags, interactions under strict quark-line rule 8−41495
hadron total cross sections in quark parton model 8−45859
harmonic confinement, relativistic approx. to meson spectrum 8−29303
heavy quark bound system, vibr. states 8−29300
Higgs bosons from two-gluon annihilation in pp collisions 8−41501
lattice algebra for light and heavy hadron constituents 8−16978
lattice approx. of gauge field theories 8−29225
lattice Yang-Mills theory, convergence of strong coupling expansion and linear pot. 8−45847
linear confining pot., soln. with combinatorics functions 8−32719
mass scales, confinement, nonperturbative approach, self-consistent method 8−33033
mass spectrum for integral isospin monopoles, bag model as high isospin limit 8−24935
massless scalar QED, colour confinement model 8−33027
meron pairs, quark confinement phase transition in SU(2) Yang- Mills quantum field theory 8−37174
meson model, quark-antiquark-gluon bound state 8−45877
meson resonance leptonic decay, quark confinement potential 8−41536
MIT bag model, first order formalism for scalar fields 8−16986
multipole fields of infinite order, indefinite metric 8−29295
non-Abelian vortex-bond model of hadrons 8−4827
parton transverse momentum dependence on longitudinal momentum 8−25016
QCD, effective quark pot. in baryon reson. 8−16910
QCD, energy of classical sources, finite confinement from Pade approximants 8−41478
QCD, modified, exact global colour SU(3) symm., asymptotic freedom 8−41493
QCD, three gluon jets as test 8−25001
QED$_2$ model with SU(n) flavour, quark confinement criteria 8−45840
quark antiquark pot. in QCD 8−4825
Regge trajectories families, S-matrix theory, nonrelativistic linear pot. quark binding model, comparison 8−33048
relativistic string with massive ends, dynamical eqns. 8−4826
scalar field theory in lattice space, analogy to random walk 8−21325
singularities in parton-hadron wave function needed for confinement 8−41484
string, quark confinement 8−25004
string dynamics in external field 8−8585
thermal props. of gauge fields and quark liberation 8−24936
two-body equal-time wave eqn., quark-antiquark system 8−32992
two-gluon annihilation of quark-antiquark pair *(Russian)* 8−45856
unified gauge theory with Abelian massless gluons, binding of fractionally charged quarks 8−29296
valence gluon admixture effect on hadron ground state spectrum *(Russian)* 8−45879
valence quark-parton transverse momentum distrib. 8−12862
vector meson leptonic decay and gluon condensate *(Russian)* 8−33060
Yang-Mills gauge theory, classical soln. in colour meson model 8−45780
e^+e^- annihilation, jet struct., test of QCD and quark-confining string 8−33040
$K_5^0\to\pi^0\pi^0$, MIT bag model 8−33066
ν deep inelastic scatt., four flavour quark model, asymptotic freedom 8−45905
p charge form factors, linear pot. model with gluon exchange 8−45873
p electroprod. struct. function and constituent-particle scatt. 8−45931
π struct., gauge model, confinement scheme 8−45841
ψ meson, phenomenology and quark confinement 8−29308
ψ meson spectroscopy, charmonium model, quark-confining string 8−8625

quark confinement continued
$qq\bar{q}\bar{q}$, suppressed decays, strings, bags, baryonium 8−21385
Y spectroscopy, asymptotic freedom 8−45865

quark models
see also colour model
$^3P_0$ generalised model, reln. to Melosh transform. 8−12885
$\Delta S=0$ weak hadron neutral current, quark parton model, νN and e^+e^- interactions 8−12859
$(\varphi^4)_4$ theory, semiclassical infrared emission processes 8−29257
additive quark model in quasi-two-body hadronic reactions, Δ and vector meson prods. relation 8−41494
additive quark parton model, hadronic fragmentation distribs. 8−8711
Adler-Weisberger relation and quark model 8−45849
asymptotically free gauge theories, scaling violations in leptoproduction 8−4769
asymptotically free theories of deep inelastic muon, and electron scatt. 8−21430
axion, implied by U(1) symm. 8−33037
axions, evidence against from ν reactor expts. 8−45904
b-quarks, possible obs. in $\bar{\nu}$ interactions, nonleptonic decays and vector Ψ_h hadronic prod. 8−8613
bag model, spin-depend. struct. functions in deep inelastic scatt. 8−8589
baryon mass spectrum anal. using quark shell model 8−4833
baryon model based on Dirac eqn. with confining pots., independent quark model 8−425
baryon nonleptonic decay pseudo-connected line diagrams 8−45918
baryon nonleptonic weak decay, SU(4)-20″-dominance 8−45917
baryon resonance decay, l-broken SU(6)$_w$ model equivalence to relativistic harmonic oscillator quark model 8−41546
baryon resonance decay, unified interactions in relativistic quark model 8−41547
baryonium, mass and selection rule, string model 8−29319
baryonium interaction, dual amplitudes 8−25022
baryonium spectrum classification based on duality and unitarity 8−45869
baryons, spin $1/2^+$, mag. moment sum rule, in SU$_3$ for u-, d- and c-quark sector 8−21428
bilocal fields for study of quantum corrections to dynamically broken symmetries 8−16985
Bose quarks, exciton model, exotic states anal. 8−16983
broken SU(6) parton model, spin depend struct. functions, deep inelastic lepton+nucleon appl. 8−428
Cabibbo angle, CP violation quark masses 8−33016
Cabibbo angle calc., SU(2)×SU(2)×U(1) gauge theory 8−4776
cascade models, bootstrap eqn. and diffusion eqn. 8−29317
causal model of quark fragmentation, charge retention in hadronic jet 8−29313
charge conjugation, signature, twists, of quark diagrams 8−29310
charge screening, extended model of hadrons 8−37179
charm particle prod. by photon-gluon fusion 8−45923
charm particles, review 8−17035
charm scheme of subhadronic constituents, weak decay processes 8−25012
charm-strange spin in SU$_3$ symm. for c-, s-, d-quark sector 8−37172
charmed axial vector meson prod. in e^+e^- annihilation, nonrelativistic quark model 8−25055
charmed baryon and antibaryon bound states 8−8608
charmed baryon prod. by neutrinos, quark-model calc. 8−45909
charmed baryons, dynamical group selection, SU(1.4) 8−37178
charmed meson decays and right handed currents 8−8662
charmed meson prod. in e^+e^- annihilation 8−8680
charmed meson prod. in quark exchange model 8−8600
charmed particle-antiparticle system, bound states near charm threshold 8−45857
charmed particles weak decays, generalised charge symm. 8−37184
charmed-meson decay, massive quark model 8−33067
charmonium level struct., superheavy quarks, bound state spectroscopy 8−8614
chiral invariance for asymptotic momenta, elastic scatt. of hadrons, helicity amplitudes 8−4800
chiral SU(4)⊗SU(4) symmetry breaking parameter, meson mass 8−12838
closed string as source of Yang-Mills field, gluon gauge field vortex 8−41413
coloured, quantum chromodynamics, asymptotic freedom, zero charge, point charges in quantum electrodynamics *(Polish)* 8−45822
coupling strength of meson-baryon interactions in u-, d- and c-quark sector 8−25011
CP violation, radiative symm.-breaking, fermion and Higgs boson masses 8−41435
current conservation and quark light-cone model 8−21386
deep inelastic lepton-nucleon scattering, quark cascade model, struct. functions 8−25051
dibaryonic six-quark states as possible model for deuteron 8−21378
diffractive dissociation processes enhancements, quark-gluon interpretation 8−45839
dimuon enhancement at 9.5 GeV, vector meson family with hidden 'beauty' *(Russian)* 8−33030
diquark clustering in baryon spectrum, $(56,1^-)$ and $(70,0^+)$ multiplets 8−41503
Drell-Yan model, hadroprod. of muon pairs 8−45872
dual quark pattern for multiplicities, inclusive distribs., in hadron or lepton induced reactions, quark jet universality 8−41476
effective gluon model description of inclusive meson prod. in $\pi^\pm p$ and pp collisions 8−8717
eight quark model, modified left-handed currents, ν reactions and e^+e^- annihilations 8−16982
electroproduction, spin-dependent, sum rules, test of relativistic constituent quarks 8−25050
entropy prod. in very early universe 8−32624
even-wave harmonic oscill. theory of baryon decay 8−45853
exotic baryon interpretation of narrow mass enhancement at 1360 MeV, diffr. dissociation 8−12888
exotic mesons and p-$\bar{p}$(e^+-e^-) annihilation 8−21393
extended quark model, large p_t hadron prod. 8−29342
fermion inelastic form factor, gauge theory, quark scatt. *(Russian)* 8−45883
five-quark model, spin-spin coupling 8−45876

quark models continued
flavour conservation, natural, in neutral weak currents, symm. $SU_2 \times U_1 \times U_1'$ model 8-12858
form factors of hadrons 8-21429
four-quark model, $SU_{2l} \times SU_{2r} \times U_1$ gauge group, Cabibbo angle and quark masses 8-25002
fragmentation products parity-odd correls., longit. polarisation 8-433
generalized quark-parton model study of σ_l/σ_t and large k_t 8-29306
Glashow-Weinberg theorem, neutral currents 8-8582
gluon model, large $P_\perp$ data anal. 8-8615
gluon-quark dynamics 8-25018
gluonic resonances in hadronic spectrum, scalar mesons, pomerons 8-21394
hadron, fragmentation from heavy quark partons 8-8603
hadron+nucleus interactions, yields of projectile fragments, quark model calcs., A-depend. 8-41499
hadron classification, quark model, SU(4) symmetry 8-12861
hadron distribs. in reactions with very heavy quarks 8-41486
hadron interactions, neutral heavy lepton detection probability 8-8612
hadron total cross sections, semiempirical formulae, three component model with SU(3) components 8-41600
hadron-hadron collisions, hard and soft processes in small p_t inclusive reactions 8-41599
hadron-hadron large p_t collision, weak interaction effects 8-21462
hadron-nucleus collisions, relation between low mass dimuon and meson prods., quark-antiquark interactions 8-41477
hadronic cross section strength, nonlinear unitarity eqn., internal symm. restriction 8-33042
hadronic quantum numbers beyond charm as possible source of neutrino induced trimuons 8-12903
hadrons, parton distribs. calc. 8-421
hadrons of absolute stability, quark mixing and discrete symm. considerations 8-33036
hard scattering models, large transverse particle prod., cross section constraints from opposite side rapidity distribs. 8-29360
hard scattering models comparison for large transverse momentum meson prod. 8-41498
heavy lepton model for rare μ and K decay modes 8-45898
heavy mesonic resonance prod. quark model *(Russian)* 8-45881
Higgs bosons from two-gluon annihilation in pp collisions 8-41501
high energy hadron-nucleus interactions, inclusive prod., quark-quark elastic scatt. model 8-45858
hypermomentum in hadron dynamics and gravit. 8-41487
hyperon hadronic decay, absolute magnitude and EM hyperfine splittings 8-17016
hyperon-nucleon elastic scatt., quark model with factorizability assumption, differential cross section 8-471
instantons and spin forces between massive quarks 8-37173
invariance groups in quark models, internal symms. and ghost symms. 8-25007
jet fragmentation universality in lepton processes 8-434
large p, hadron production, lowest subprocess model, two body reactions 8-4887
large transverse momentum hadron+hadron collisions, particle-jet correls., quark scatt. model 8-4883
lattice algebra for light and heavy hadron constituents 8-16978
left-handed quarks, phenomenology 8-21383
left-right-symm. unified theory of quarks and leptons 8-41466
lepton+hadron collisions, hadronic contributions to trimuon prod., quark+antiquark annihilation 8-41551
lepton-quark and space-time symmetry 8-16967
lightlike wave function and wave eqn. on null-plane using Bethe Salpeter eqn. 8-41412
localised classical solution for fermions+scalar bosons in field theory, Yukawa coupling const. 8-24928
low energy hadron dynamics with medium mass quarks 8-21390
magnetic field topology in particle physics, implications on quark model 8-8583
many-quark models, weak interactions *(Russian)* 8-33023
massive lepton pair prod., constituent interchange model 8-8611
meron pairs, quark confinement phase transition in SU(2) Yang-Mills quantum field theory 8-37174
meson jets from quark fragmentation, flavour, power counting rules at $x \to 1$ 8-37185
meson mass formula, quark line rule in u-, d-, and c-quark sector 8-8596
meson mass formulae in broken $SU(8)_w$ symmetry 8-37191
meson mass hierarchy, quark flavours 8-429
meson radiative decays 8-21419
meson spectroscopy, a review using quark models 8-25010
meson-meson inelastic collisions, Glauber multiple-quark scatt. model, quark-quark scatt. amplitudes 8-21459
meson-meson scattering, resonating group calcs., low energy limit 8-424
mixing of neutral leptons 8-4847
mixing of states containing heavy quarks 8-422
multilocal theory, relativistic mechanics of interacting particles 8-16638
multiparticle prod. in quark-parton model, Monte Carlo method 8-41607
multiparticle reactions, quark model predictions of η and η' prod. 8-423
N resonance electroproduction, helicity structure and quark motion effect 8-398
natural flavour conservation in neutral weak interactions, SU(5) and SO(10) unified models 8-4817
neutral current reactions, (V-A) model, mixing between ordinary and heavy leptons 8-41472
neutral currents and quark charge origin 8-21373
neutral mesons, quark flavour mixing 8-426
neutral transitions, vector-like weak currents, parity violation *(Russian)* 8-24995
non-Abelian dyons, Nambu mechs. descript. 8-41490
non-Abelian theories, struct. of leading IR divergences 8-4785
non-Abelian vortex-bond model of hadrons 8-4827
nonleptonic decay, lightlike chiral struct. of hadrons 8-17014
nonleptonic decays of ordinary and charmed hadrons, gauge model with right handed current 8-41545
nonrelativistic quark model, $\eta\eta'$ and $\omega\varphi$ mixing in meson decay 8-21423
nuclear collisions, hadron prod. in quark-parton model 8-12868

quark models continued
nuclear decays as test of elementary particle theory, review 8-21361
nuclear force from quark exchange 8-41648
nucleon production in quark parton model, e^+e^-, ep and large $p_\perp$ reactions 8-21391
Okubo Zweig Iizuk, quark line rule, consequences 8-25014
operator mixing in asymptotically free theories, deep inelastic scattering 8-37145
OZI rule violation, analyticity and duality 8-24978
paracharmonium states, corrections to two-gluon annihilation rates 8-33039
particle correlations in multiperipheral resonance prod. model, broken SU_3 theory 8-45891
parton transverse momentum dependence on longitudinal momentum 8-25016
Pati-Salam $SU(2)_l \times SU(2)_r \times SU(4)$, gauge-c 8-12851
Penrose theory in particle physics 8-29321
photoprod. of charged intermediate vector bosons 8-45855
photoprod. of heavy hadrons, peripheral and VMD models 8-33074
pomeron current model for diffraction dissociation 8-4843
pseudobaryons, narrow bound states of qq with $qq\bar{q}$ 8-45870
QCD, E_7 model, quark and lepton assignments 8-8590
QCD, energy levels of 1+1 dimensional lattice gauge theory 8-4828
quark mass differences in high energy collisions 8-45868
quark parton distribs. for deep inelastic scatt., calc. from 1-D Dirac box 8-45845
quark-gluon interaction in pN collisions, dimuon prod. at large transverse momenta 8-29355
quark-parton distributions model, large transverse momentum hadrons, logarithmic scale breaking 8-16989
quark-parton model, with scaling violations, large p_t processes anal. 8-45927
quark-quark scatt. models for Be+p at 400 GeV/c 8-46060
quark-string model, meson mass spectra 8-33065
quarkonium level spacings 8-8604
Reggeisation of meson trajectories quark-gluon gauge theories 8-25005
relativistic mechanics of two or three point particle systems 8-4481
scaling violations in deep inelastic lepton scatt., charm quark prod. 8-21436
semileptonic decay of charmed particles, formalism using helicity amplitudes 8-4852
single quark transition model, parity violating charmed hadron decays, current-current interaction 8-12907
six-quark model of quantum flavourdynamics, Cabibbo angle and quark masses 8-33017
six-quark theory, weak interaction mixing 8-41475
spectroscopy from bag and nonrelativistic pot. models 8-8594
spin structure of effective quark Hamiltonian, hyperfine splittings of charmonium 8-12871
strings, bags, baryoniums 8-29307
structure functions for hadrons, Drell-Yan model anal. of $pN \to l\bar{l}X$, $\pi N \to l\bar{l}X$, $eN \to eX$ 8-21476
structure functions of mesons in quark-parton model, appl. to hadron prod. in e^+e^- annihilation 8-41482
$SU(2) \otimes U(1)$ gauge group theory tests from neutral current phenomena 8-24992
$SU(3) \times U(1) \times U(1)$ model, suppression of flavour changing neutral currents 8-21350
$SU(3) \times U(1)$ gauge models, generalised mixing and CP violation in hadron decays 8-41473
SU(3) 27-plet mesons masses, existence of low-mass long lived exotics in quark model 8-33032
$SU(4) \times SU(4)$ current two point functions, meson decay consts. and bare quark masses from duality 8-8598
$SU(4) \otimes SU(4)$ broken chiral model, based on $SU(4) \supset SU(2) \otimes SU(2)$, Glashow-Weinberg model extension 8-12836
$SU(6) \times O(3)$ baryon multiplet, linear string model 8-8624
$SU(6) \times O(3)$ multiplet masses, relativistic quark model 8-8552
SU(6) exotic gauge model, lepton-quark symm., CP-violation and k^0 decay and $\mu \to e\gamma$ decay 8-12875
SU(6) model of weak interactions, neutral weak currents at high energy *(Russian)* 8-45836
SU(6) scheme of relativistic quark model, hadron electromag. and weak form factors 8-41500
SU(8) symm., mag. moments of charmed vector bosons 8-4794
supersymmetric sine-Gordon model and two-dimens. bag 8-21382
thermodynamical quark model, hadron prod. cross sections, boiling quark soup 8-420
three-component model extended, total cross sections 8-24999
two body reactions, spin system constraints, quark additivity, geometrical hypothesis 8-29309
two-gluon jets from $\Upsilon'(10.00)$ 8-29302
unified vectorlike gauge theory based on group SU(6) for quarks+leptons 8-4818
vac. struct. of two-dimens. Higgs model, quark pair prod. 8-29254
vector meson mass predictions, SU(3) formalism of S quark model 8-37177
vector mesons, two-body photonic decays, 16-plet mixings in SU(4) quark symm. 8-33062
weak charmed-baryon resonance prod., neutrino inclusive interactions, scaling behaviour 8-8645
weak interaction scheme, charmed hadrons expt. data, four flavour model explanation 8-45860
weak interaction theory, review 8-4822
weak interactions, renormalisable model on gauge group $SU(2) \times SU(2)_r \times U(1)$ 8-12855
weak interactions, vectorlike model with right handed mixing 8-416
weak production of charmed baryons by neutrinos, relativistic quark model 8-41496
A_1 meson in quark model and chiral symm. 8-12834
$c\bar{c}$ meson radiative decays, generalised VMD mechanism 8-8606
$\chi(3.45)$ resonance, time-like $c\bar{c}$ excitation 8-8599
d, six-quark model, form factors and struct. functions 8-45871
D and D^* prod. from e^+e^- annihilation, form factors and free quark model 8-37222
d in six-quark model, isobaric component determ. 8-21377
$D^+ \to K^0\pi^+$, $D^0 \to K^-\pi^+$, two body decays of charmed mesons, quark recombination scheme 8-37207
$\Delta(1236)$ production in νp reactions, multipole struct. of weak prod. by charged currents 8-29328

quark models continued
- Δ mass, three quarks bound state, variational method calcs. 8−21396
- $(e^+d^-\to\text{-hadrons})/(e^+e^-\to\mu^+\mu^-)$ cross sections ratio, differential dispersive anal., narrow resonances 8−37223
- e^-e^- annihilation, parton model, finite energy results 8−419
- $e^+e^-\to pX$, weak neutral current, polarisation effects, asymm. parameters *(Russian)* 8−459
- η_c prod. and hadronic decay, charmonium model 8−41502
- $\gamma_\nu N\to\pi^\pm X$, current fragmentation region, quark cascade model of deep inelastic lepton-nucleon scatt. 8−25052
- K charge radii, quark model relation 8−4835
- K electric charge radius determ. in nonrelativistic quark model 8−16990
- K^0, charge radius, quark models 8−45854
- KN scatt., Blankenbecler-Sugar multichannel eqn., $J={}^1/_2$ partial wave soln. 8−37230
- $K^-p\to\Lambda X$, 4.2 GeV/c, Λ polarisation, quark diagrams 8−45948
- N form factors, parton separation determ. 8−33026
- $\bar\nu$ anomalies and right-handed currents 8−8654
- ν deep inelastic scatt., four flavour quark model, asymptotic freedom 8−45905
- $\nu(\bar\nu)$ high-energy interactions, dimuon distrib. anal., quark-parton model 8−33056
- $\nu(\bar\nu)N\to l^-(l^+)X$, differential cross section in scaling limit, sea quark contribution 8−37196
- $\nu(\bar\nu)N\to\nu(\bar\nu)\pi+X$, determ. of neutral current coupling consts. 8−8649
- ν-induced multilepton events, weak interaction model 8−41533
- νN, $\bar\nu N$ interactions muon prod., quark model anal. 8−4850
- Ω^- decays and right-handed currents 8−17015
- $p+\text{nucleus}\to\mu^++\mu^-+\text{anything}$, 400 GeV, high-mass dimuon continuum 8−37344
- $\bar pp$, three-body annihilations, rel. to quark rearrangement model 8−21444
- pp elastic cross-section, multiple scatt. of quarks 8−4868
- $\bar pp\to\text{neutral meson}+\pi^+\pi^-$, or neutral meson$+\bar pp$, 7.2 GeV/c, quark model anal. 8−41561
- $pp\to\pi^0X$, one-gluon-exchange quark scatt. 8−8714
- φ meson, two-body hadronic decay, quark model 8−25040
- π, effective-bare quark mass distinction 8−12866
- π EM form factor, asymptotic behaviour in scale-invariant quark model 8−37211
- π electroprod., quark light cone current algebra 8−41556
- π inclusive electroproduction, quark-parton model comparison with expt. data 8−37218
- π^0 electroproduction, test of quark parton model 8−8672
- $\pi^-p\to\varphi\varphi n$, 22.6 GeV/c, cross section meas. 8−37242
- π^+p, inclusive yields, transverse spectra, of nonstrange mesons, direct π prod. 8−4886
- $\pi^\pm p$ and pp collisions, charged particle average multiplicities comparison, quark model *(Russian)* 8−17065
- $\pi^\pm$single particle distribs. in pp, πp collisions, transverse momentum, rapidity depend. hard scatt. models 8−29361
- $\psi(4.414)$, width anal. in quark model 8−17010
- ψ and χ mesons, radiative transitions anal. in nonrelativistic quark model 8−8607
- ψ meson, two-body hadronic decay, quark model 8−25040
- ψ photoproduction, two-gluon exchange model 8−21437
- ψ/J and ψ' production in hadronic collisions, quark-antiquark annihilation, cascade process 8−25013
- $q\bar q$ system, ${}^3S_1$ levels anal. 8−25003
- $q\bar q\bar q$, baryonium states, spectrum calc. in quark-gluon model 8−16991
- $qq\bar q\bar q$, suppressed decays, strings, bags, baryonium 8−21385
- Y(9.5), cascade-gluon model, bound state of heavy quarks 8−4834
- $\upsilon(9.5)$, prod. in e^+e^- annihilation, photoprod., decay modes, quark model 8−12877
- Y (9.5), heavy quark charge 8−37180
- Y mesons, level struct., masses, new quarkonium state 8−33031
- Y→photons+gluons, QCD perturbation theory 8−33028
- Y9.5 GeV dimuon resonance, evidence for fifth quark of 4.7 GeV 8−29312
- W-boson prod. cross sections and hadronic jets in pp and $\bar pp$ collisions 8−8707
- Be+hadron, 200 GeV, quark-quark scatt. model 8−45975
- Cu+p, dimuon prod., struct. in Y region near 9.5 GeV 8−17201
- Pt+p, dimuon prod., struct. in Y region near 9.5 GeV 8−17201

quarks
- *see also quark confinement; quark models*
- angular momentum group of four quarks 8−16980
- axial-vector-current divergences in constituent-quark basis 8−8557
- baryon mesonic decays, two quarks transition amplitude, baryons taken as symmetric three quark states 8−17013
- baryon-quark phase transition, asymptotic freedom studied using renormalised coupling constant 8−4830
- charge meas. from deep inelastic bremsstrahlung *(Russian)* 8−41555
- charmed quark mass 8−45991
- classical quark matter, one dimens., Abelian approx. 8−41491
- cosmic ray quarks, search by Sydney Univ. particle telescope 8−25388
- elementary particle physics, review 8−8493
- existence of quarks, monopoles, tachyons, etc., review of expts. 8−12872
- flavour-changing neutral-current process in gauge models and strong interactions 8−8541
- gauge theories, quark fragmentation 8−21340
- hadronic transitions between $q\bar q$ bound states, colour gauge field theory 8−37181
- Hagedorn's big-bang model, strongly degenerate heavy neutrino decay, free quark-baryon ratio 8−16589
- Han-Nambu, integrally charged quarks expt. search 8−25094
- local QFT, higher symm. interpretation, spontaneous symm. breaking, quarks and flavours 8−16942
- observation, calcs. using relativistic quantum field theory 8−24933
- observation of fractional charges on Nb ball, exptl. reliability 8−12666
- PCAC, chiral anomalies and quark masses 8−8556
- QCD, long-range correl. in forward quark-quark scatt. 8−4779
- QCD, new quarks and hadrons 8−8591
- quantum electrodynamics review *(Hungarian)* 8−37159
- quark-antiquark pars, role within hadron, analogy with superconductivity theory 8−37176
- relativistic quark gas, ground-state energy 8−8537
- search for quarks in matter 8−488

quarks continued
- $SU(2)_l\times SU(2)_r\times U(1)$ gauge model for weak/EM interactions, u-d quarks mass difference 8−12850
- $SU(2)\times U(1)$ gauge model, eigenvalue condition for Weinberg mixing angle, new leptons and quarks 8−41463
- SU(4) symmetry, meson-quark interactions, mag. moments *(Russian)* 8−45804
- superconducting quark matter, asymptotically high density 8−12863
- teaching, from Compton effect to quarks, at., proton, and nucl. struct. 8−24596
- unified model, mesons and numbers of quarks and leptons 8−21370
- weak hadronic $\Delta S=0$ baryon-π amplitudes, Melosh transformation 8−12857
- η' mass and quark mass ratio 8−8584
- ψ and ψ' decays violating Zweig Iizuka rule, asymptotic freedom phenomenology 8−451
- $\bar q$ polarisation in quark sea of proton, QCD anal. 8−12867
- H-quark interaction, var. method calcs. 8−37771
- W ions, fractionally charged, search 8−29083

quartz
- amethyst large cryst. growth from hydrothermal fluoride soln. 8−11098
- atmospheric dust, imaginary refr. index rel. to particle size 8−7763
- beach sand, spectral reflectance/grain size relationship 8−16005
- circular quartz resonators, parameter calc. with energy trapping *(Russian)* 8−30141
- colour centre form. by UV irrad., afterglow, thermolum. and EPR obs. 8−10047
- cristobalite transform. kinetics 8−11223
- crystal, influence of tabs thickness on resonating props. 8−18140
- crystal gravitational radiation antenna, Q factor 8−16715
- digital quartz crystal thermometer principle and technical parameters *(Polish)* 8−24791
- dissociated 'a' dislocations, TEM exam. 8−47379
- etching in HF, theory 8−27666
- Faraday effect in transducer material, comparison with glass 8−48149
- ferruginous quartzites of Ukrainian shield, magnetic props. at high press. and temp. *(Russian)* 8−15999
- fibres, polar orientation, stereospecific twisting 8−42930
- fibres crossed in air, mol. attraction meas. as function of dist. 8−13566
- filter resonators with energy trapping, optimum design 8−32663
- fission track dating, grains from Oklo uranium ore deposit 8−20555
- frequency spectrum determ. for cryst., new method 8−23402
- fused, picosecond-pulse optical breakdown, direct obs. of dynamics 8−6629
- fused, waveguide struct. form. by H_2^+ ion irrad. 8−18072
- glass, effect of boundary refl. and selectivity of optical characts. on radiative-conductive heat transfer 8−1554
- glass, hydroxyl-free, for low-loss fibre waveguides, γ-irrad. effects 8−13773
- glass, thin layer, interaction with gas-discharge plasma *(Russian)* 8−14178
- glass-ceramic second-order microstresses 8−27468
- growth layers on natural quartz microcryst. faces, electron microscope obs. 8−14634
- growth rate from soln., depend. of mech. Q 8−9978
- Gruneisen constants for optical modes, neutron irrad. and press. effects, α-phase obs. *(Russian)* 8−22815
- handedness determination for electron diffr. convergent beam patterns 8−34498
- hydrothermal crystallization at 250°C and 15 kbar, mechanisms 8−49014
- hydrothermally grown single crystals, real struct. investig. of rhombohedral faces *(German)* 8−2348
- ion-implanted layers, total X-ray reflection investig. of clustering 8−6081
- light scattering by crushed quartz particles in water 8−40565
- lunar impact structures, peak shock press., X-ray diffr. investig. 8−7002
- natural and synthetic, 3400 cm^{-1} IR spectra fine struct., H impurities 8−43910
- neutron irradiated, thermal spikes 8−38757
- neutron irradiated α-phase and quartz glass, struct., neutron diffr. meas. 8−22769
- optical fibre, hollow, with liquid core, stimulated Raman scatt. 8−30087
- optical SHG with surface plasmons 8−18008
- phase transition, α-β, struct. aspects, light scatt. *(Russian)* 8−47521
- phonon-polariton modes for freq. chirped optical pulse compression 8−46689
- photoelectric and photoluminescent props. in fundamental absorpt. region 8−39596
- pleochroic amethyst, optical absorpt. of d^4 ion Fe^{4+} 8−15201
- podzols, quartz grains surface texture, SEM study 8−36151
- position annihilation radiation, two-dimensional ang. correlation, momentum density meas. 8−10331
- powdered, hydrothermal reactivity *(Japanese)* 8−23938
- pulsed RF radiation produced by scratching *(Russian)* 8−19607
- quantitative X-ray anal., standardisation, milling effect on degree of disorder *(German)* 8−11176
- quartz:Co^{2+}, far IR absorption spectra, effect of phonons *(French)* 8−31186
- quartz:Ge, optical and piezoelectric props., ang. distrib. *(Russian)* 8−23404
- quartz, isentropic compression by ultrastrong mag. field *(Russian)* 8−47468
- quartzite, shock compressed, vel. of sound meas. 8−10123
- radiation effects, comparison of different radiations 8−26596
- Raman spectral lines of α-phase, radiation and temp.-induced changes in width and intensity 8−2859
- Raman spectrum, piezospectroscopic behaviour, for α-phase 8−35138
- resonator, for thin film thickness monitor 8−11116
- sand, pilot tests of acoustic device for dressing 8−7271
- sand from Lasko Polje, determ. of Th, U, and K from spectrometry of natural γ-activity 8−20408
- SAW propagation, temp. coeffs., piezoelectric coupling *(French)* 8−35093
- square wave grating with μm dimensions, reactive sputter etching 8−33921
- structural transitions, optical SHG and γ-ray diffr. results 8−14459

quartz continued
substrate, slightly rough, ellipsometric meas. of water film thickness, error estimation 8−32856
surface polariton dispersion of Au film coated α-quartz 8−48249
surface waves, perturbation anal. of attenuation and dispersion 8−47653
surfaces joined by optical contact, spectral absorpt. of water layer 8−46852
synthetic, connection between lattice deform. and coloration pattern 8−10930
synthetic piezoelectric quartz, precision meas. of elastic characts. 8−6638
thermoluminescence, glow curves and spectral characts., γ-ray effects 8−2927
thickness monitor, low temp. film thickness meas. 8−41275
thickness monitor nonlinearity for vac. deposited film meas. 8−29091
time dependent phonon irrad. of detector area from pulsed incoherent phonon radiator 8−38790
twin boundaries, phase transformations and domain structures *(French)* 8−27509
US shear wave attenuation, 9.4 GHz, AC-,BC-cut, 15-35K 8−26627
X-ray spectra, correlation between cryst. perfection and refl. intensity for analyser cryst. 8−48259
y-cut, impact, appl. of transverse-displacement interferometer 8−12747
SiO_2 bricks, quartz estimation using IR spectra 8−48718
SiO_2:Ag, fused, crystalline, luminescence and colour centre props. 8−10954
β-SiO_2-MgO reaction, diffusion controlled 8−6882

quartz resonators *see crystal resonators*

quasars
see also BL Lacertae-type objects; cosmology; galaxies; radiofrequency cosmic radiation; stars
1 mm continuum emission, obs. 8−36720
absolute magnitude correlation with ejected gas velocities 8−28839
absorption line features of Fe II and Mg II 8−16559
absorption line spectra, accidental redshift system estimation 8−16562
absorption spectra, effects of intervening galaxies 8−16561
absorption spectra in QSOs, line shape analysis 8−36718
absorption systems in high redshift QSOs 8−28843
active nuclei, role of UV obs. *(Italian)* 8−32577
active nuclei contrib. to diffuse X-ray background 8−36733
angular diameter-redhsift test for large redshift objects 8−28841
angular diameter-redshift relation for matter and radiation filled universes 8−20917
AO0827+25, absorpt. lines in optical spectrum 8−4390
astrometric reference frame, ALSEP-quasar differential very long baseline interferometry technique 8−45245
black hole model of quasar-like objects, appl. to IR and optical emission 8−20905
bright optical PG quasars, radio emission at 2.7 and 8.1 GHz 8−45424
bright QSOs, linear polarization survey 8−41077
3C 147, radio struct. determ. by multi-element very long baseline interferometry 8−4391
3C 232 spectrum, Ca II absorpt. lines due to galaxy (NGC 3067) 8−36719
3C 273, IR polarisation obs. 8−4360
3C 273, light curve interpretation 8−8143
3C 273, UV spectrophotometry 8−12401
3C 273, UV spectrum, 1200-1700 Å, cosmological implications 8−45425
3C 273 jet, imaging polarimetry 8−41076
3C 279, variable quasi-stellar source, IR and visible polarimetry and photometry 8−16528
3C 286, radio absorpt. line obs. and appl. to cosmological deceleration meas. 8−20902
3C 303, double radiosource, radio struct. and optical field 8−16519
3C 345, compact radiosource obs. 8−12399
3C 345, VLBI obs. of circular polarizations at 8 GHz 8−41075
4C 39.25, compact radiosource obs. 8−12399
3 C and 4C catalogues quasars, obs. with Cambridge 5 km telescope at 5 GHz 8−12391
3C radiosources, systematic optical identification 8−36709
clustering and pairing, theory 8−16564
colliding-cloud system, struct. and spectrum and relationship to QSOs 8−28836
compact double radio sources, relativistic blast-wave model for superlight motion 8−28807
compositions, C/Si, Al/Si and Fe/Mg abundance ratios 8−20903
cosmological evolution of extragalactic radiosources 8−28799
3CR identifications 8−28825
double radio source structures, form. and superluminal expansion 8−8141
emission line objects from Curtis Schmidt thin prism survey, second list 8−28537
emission line redshift distrib. gaps, trend analysis 8−45423
emission spectra, photoionisation anal. 8−16560
emission-line objects in Curtis Schmidt thin prism survey, third list 8−28538
ESO 113-IG45, galaxy and/or quasar, spectrum, photometry and struct. 8−28782
ESO 113-IG 45, interacting galaxy, Type 1 Seyfert spiral with bright central quasar 8−8126
faint emission line quasar candidates 8−8146
faint quasars, spectroscopy and props. of CTIO 4 metre survey 8−32592
flat spectrum quasars, rel. to faint radio source counts at 5 GHz 8−32588
galaxy-quasar associations, search using Jodrell Bank 966 MHz survey 8−24566
galaxy-quasar pairs and surface density of quasars 8−12404
gas and high energy particle interactions, B line search 8−4388
high-redshift quasars from CTIO survey 8−4389
Hubble diagrams for brightest quasars 8−28845
intergalactic absorption, rel. to Dirac cosmology and microwave background 8−8176
jets, models and current-carrying beams 8−49313
large redshift quasi-stellar radio sources, angular dia.-redshift test 8−24565
Lemaitre Universes, Jeans instability 8−12445

quasars continued
low-redshift quasars, optical struct. 8−32596
M87 jet, imaging polarimetry 8−41076
magnitude-redshift relation for matter and radiation filled universes 8−20917
millimetre temps. of planets, galactic and extragalactic sources 8−28556
millimetre-wave emission, 90 GHz obs. 8−16548
models of radiogalaxies and quasars 8−16557
Molonglo radiosource catalogues MC2 and MC3, optical identifications, 11^h28^m to 17^h00^m right ascensions 8−20900
Molonglo radiosources optical counterparts, spectrophotometric obs. 8−4375
MR2251−178, X-ray QSO discovery, 2 Ariel 2251−179 optical counterpart 8−24567
near NGC 7714−7715, peculiar pair of galaxies, discovery of two quasars 8−28835
nonuniform radial distrib. regardless of redshift 8−32593
NRAO 512, VLBI obs. of circular polarizations at 8 GHz 8−41075
NRAO 5 GHz and 4C catalogues, optical spectra and redshifts 8−8145
Ohio radio sources, optical identification using radio and optical positions meas. by Texas interferometers 8−28808
optical and radio props. rel. to identifications of 3CR sources 8−28830
optical monitoring, three-colour photographic photometry of BL Lacertae 8−16525
optical quasars, radio and optical obs., redshifts, luminosity function 8−49552
optical variability, survey of objects from 17-22^h RA 8−41079
PHL 1070, spectrum of quasar and surrounding halo 8−28771
PKS 0237−23, absorpt. spectrum obs., absorpt. lines origin 8−41074
PKS 0237−23, Lymanα/Hα intensity ratio from IR obs. 8−41078
polarised compact radio sources, physical conditions 8−4384
Q0453−423, absorption line spectrum 8−8144
Q2227.6−3928, highest redshift quasar from Tololo deep survey 8−12403
Q2228.1−4033, high redshift quasar from Tololo deep survey 8−12403
Q 0002−422, QSO with $z_{abs} \ll z_{em}$ 8−16565
QSO identifications from Molonglo radio survey 8−28842
QSO redshift data, statistical 8−32598
QSOs, optical and radio props. 8−28829
QSOs 1548+056, 1721+343, 1722+33, historical light curves 8−32594
QSOs and Seyfert galaxies, He I lines in spectra 8−36717
QSOs possible assoc. with radio galaxies and rich clusters of galaxies 8−8142
radio emission from optically selected quasars, search at 1415 MHz 8−20904
radio polarization of quasars with optical absorption spectra 8−12405
radiosources from 13th part of Parkes 2700 MHz survey, optical identifications 8−20901
red shifts, anal. for randomness 8−12400
red-shift hypothesis implies Earth-centred universe 8−16563
redshift and 3 GHz radio magnitude correl. 8−45422
redshift data, cosmological interpretation using V/V_{max} test 8−28844
redshifts, ln(1+z) periodicity 8−12406
rotation measure, intergalactic contrib. 8−20906
southern Parkes radiosources, redshift obs. 8−20899
southern quasars and quasar candidates, UBV photometry 8−32595
space distrib. of high-luminosity quasars 8−8147
spectra, profiles and redshifts of broad lines 8−16566
spectrophotometric survey of radiogalaxies and quasars 8−28828
stellar debris clouds, in quasars and related objects 8−32597
structure of quasars from 5C2 survey 8−28837
submillimetre photometry 8−4353
superluminal expansion, appl. of ang. appearance of white hole 8−45352
4U 0241+62, identification with QSO or Seyfert nuclei-like object 8−16572
variable radio sources, obs. at 0.95 and 1.65 cm wavelength 8−16552
visual magnitudes rel. to radio luminosity of components *(Chinese)* 8−28840
WSRT deep surveys, identifications 8−28826
X-ray emission from radio quasars, deep search by Ariel V 8−12402
young galaxies and quasars, review 8−32582
Fe II emission obs., spectrophotometry 8−4347
H I and Mg II absorpt. lines obs. in QSOs 8−28838
Mg II 2934 Å emission in QSOs, possible identification 8−41073

quasi-particles
see also excitons; helicons; magnons; phonons; plasmons; polaritons; polarons; rotons; solitons
atomic and mol. systems, breakdown of quasiparticle picture, inner valence electrons 8−5112
correlation functions, time and temperature, calc. method with quasiparticle appls. *(Russian)* 8−12641
fermion systems, quasipartic renormalisation of memory function approach for response functions 8−8345
long superconducting bridges with variable thickness, Josephson effects 8−14897
metal, quasiparticle bands, cond. electron mixing with impurity d(f) ions *(Russian)* 8−10409
quarks as quasiparticles of bound states *(Russian)* 8−25009
Schrodinger equation for quasi-particles with variable effective mass *(Russian)* 8−4497
superconducting film, gap enhancement due to microwave irradiation 8−14892
superconductor, 2-dimens. fluctuation-induced cond. above crit. temp. 8−10608
superconductor nonequilibrium state, large quasiparticle injection from external current source 8−10614
superconductor-normal-superconductor film struct., quasiparticle scatt. and current-volt. characts. 8−10615
^{164}Er, populated via $^{150}Nd(^{18}O,4n)^{164}Er$, quasineutron $i_{13/2}$ bands 8−37257
^3He, liq., longitudinal zero-sound dispersion, thermal cond., and Landau F_2 8−2327
^3He, superfluid, A phase, theory of sound propag. 8−38896
^3He-^4He, liq., excitation spectrum and quasiparticle interactions, perturbation theory 8−10250

quasi-particles continued
^{3}He-^{4}He dilute solns., number density calc. 8−43205
^{3}He-He II mixture, dil., weak bound state for ^{3}He quasiparticles 8−22925
Pb, film, first order transition due to quasiparticle injection 8−23208
Sn, thin film, supercond., acoustic wave absorpt., quasiparticle distrib. 8−10603
Zn-Al, dil., impurity quasi-particle lifetimes and pseudopotential form factor 8−47734

quasi-stellar objects *see quasars*

quasi-stellar sources *see quasars*

quasimolecules
alkali-inert gas system, mol. band profiles of induced dipole transitions 8−42135
collisional ionisation in intense laser field, quasimol. state reson., quantum mechanical anal. 8−33589
formation in heavy ion collisions, X-ray radiation *(Russian)* 8−33568
heavy collision systems, vacancy prod. in strongly bound quasimol. states, impact parameter depend. 8−22003
heavy ion collisions, molecular-orbital X-rays yield 8−13587
heavy ion collisions, rotational transitions, effect of spin-orbit coupling 8−13573
heavy-ion collision, quasimolecular L X-rays, relativistic self-consistent correlation diagram 8−5247
inert gas binary mixture, unlike mol. force consts. from viscosity data, thermal cond. 8−33565
ion+atom slow collision, atomic excitation by quasimolecular orbital rot. coupling, uniform Airy approx. 8−25644
molecule excited state lifetimes time-resolved spectra 8−17704
relaxation times in intermediate quasimolecules 8−42170
single-electron atom+single-electron ion (atom), exchange splitting at large separation 8−46480
superheavy, electronic states, spectroscopy 8−37706
superheavy quasimolecules, inner-shell ionisation, scaling behaviour 8−25691
van der Waals molecules, mol. fluoresc., vibr. predissoc. model 8−42120
variational calcs., 1 s σ orbitals 8−37707
Ar_2, collision-induced Raman spectrum, absolute cross sections 8−46349
Ar_2, collision-induced Raman scatt., polarisability anisotropy 8−46350
Ar_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
$BeAr^+$, long range pot., pot. inversion method 8−21992
(Br,Zr) system, 1 s σ orbital, variational calc. 8−37707
BrF_2^--, $BrFCl^-$-, $BrCl_2^-$, inert gas cpds., localised MOs and bonding nature 8−9061
$^{12}C+^{16}O$, 12.8 to 18.2 MeV, reactions and inelastic scatt., resonance anomalies due to quasimol. states 8−4955
ClF_2^--, ClF_4^--, ClF_6^--, inert gas cpds., localised MOs and bonding nature 8−9061
ClF_n-, ClF_n^+-, ClF_n^--, inert gas cpds., n=1-6, localised MOs and bonding nature 8−9061
Ge+Ge, quasimolecular K X-ray anisotropy and ang. distrib. 8−1073
(H,H) system, 1 s σ orbital, variational calc. 8−37707
H_2-inert gas, bound complex form., anisotropic intermol. pot., IR spectra anal. 8−37634
H_2Ar, van der Waals complexes, lifetimes calcs. 8−13564
$H_2^*+H_2$, van der Waals mols., mol. fluoresc., vibr. predissoc. model 8−42120
He_2, electronic and rot. energy relax., reactive collisions by isotope selective excitation 8−33541
He_2, molecular spectrum and structure, singlet Π states $4p\pi$-$9p\pi$ 8−42080
He_2, vibr.-rot. interaction factor 8−42036
$HeCrCl_2O_2$, vibr. predissoc., spectroscopic origin identification appl. 8−5239
$He(He_2)+Ar$, metastable destruction rates 8−37728
HeI_2, rot. fluoresc. spectra, nonlinear equilib. struct. 8−37672
$He_2(^3\Sigma_u)+Ne(Ar)(N_2)(CO)(C_2)(CH_4)$, excitation transfer reaction rates 8−5332
$(^3He)_3$, quantum exchange effects in Lennard-Jones 12-6 pot. 8−1117
$^4He_2+^4He$, zero-energy, Faddeev-unitary pole expansion theory 8−37572
$^4He_3$, bound states, Faddeev-unitary pole expansion theory 8−37572
$He_2(2^3\Sigma_u^+)+He_2(Ne)$, reaction rate consts. meas. in afterglow 8−7173
Kr_2, collision-induced Raman spectra, absolute cross sections 8−46351
Kr_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
KrX, (X=He, Ne, Ar, Xe), VUV absorpt., van der Waals mols. props. 8−13513
Kr_2^*, form. and UV fluoresc. under monochromatic excitation and collision processes 8−9237
NO^*+NO, van der Waals mols. in mol. fluoresc., vibr. predissoc. model 8−42120
NaAr, $X^2\Sigma$, $A^2\Pi$ and $B^2\Sigma$ state, ab initio CI calcs. 8−9085
NaNe, van der Waals mol., form., laser spectroscopy 8−29797
$(O_2)_2$, van der Waals mol., WKB vibr. eigenvalues 8−33498
O(Se)(S)+inert gas, ^1S-^1D collision-induced transitions 8−33588
Pb-Pb quasimolecular states, inner shell ionis. spectra during form. 8−33592
Pb+Pb quasimolecules ab initio calc. of K X-ray spectra 8−21941
U+Pb, K-vacancy form., rot. coupling effect in quasimol. L-shell 8−25692
Xe_2, collision-induced Raman spectra, absolute cross sections 8−46351
Xe_2, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
Xe_2^+, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
XeF, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
XeF^+ form. by Xe^++NF_3 reaction 8−27737
XeX, (X=He, Ne, Ar, Kr), VUV absorpt., van der Waals mols. props. 8−13513
Xe_2^*, form. and UV fluoresc. under monochromatic excitation and collision processes 8−9237

quench hardening
steel, medium C, static and dynamic stress effect on hardenability and grain growth *(Korean)* 8−35404
steel, ultrahigh strength, near-threshold fatigue crack propagation, load cycle and cyclic strength effects 8−11331
Al_2O_3, effect of quenching hardening on mech. strength, for various quenching mediums *(German)* 8−35403
NaCl:X (X=Ca, Sr, Ba, Mg, K, Li, Tl, Ag), impurity conc. effect on mech. and elec. props. 8−47469

quenching (optical) *see radiation quenching*

quenching (thermal)
see also quench hardening
alloy, binary, quenched, computer simulation of cluster dynamics of two dimensional model systems 8−31434
alloy, binary, theory for initial stage of grain growth and unmixing kinetics 8−19714
alloy, quenched, binary, time evolution, computer simulation of three-dimensional model system 8−31433
alloy solidification, kinetic model, appl. to liquisol quenching 8−44116
amorphous structure, computer simulation 8−30541
brass, crystal structure and morphology of thin needle-like martensite 8−31425
cylindrical specimens in underheated media, calc. of heat transfer during quenching *(Russian)* 8−39821
Elinvar, Curie point, magnetisation and susceptibility, heat treatment effects *(Russian)* 8−47973
glass formation, Taylor wire prod. by rapid quenching 8−44045
HBT, liq. cryst., phase transitions, quenching effects obs. 8−22833
ion bombardment induced amorphisation, energy spike generation and quenching processes 8−47448
luminescent screens, resolution determ. with thermal quenching 8−21131
metal, vacancy defect mobilities and binding energies obtained from annealing studies 8−47325
metallic glass Taylor wire prod. by rapid quenching 8−44045
metallic glasses, prep., characterization, review struct., formation, electronic, mag. and mechanical props., review 8−3074
Ni, high purity 8−48432
piston and anvil liquisol apparatus, electronic device design 8−23905
polyethylene, high density, crystallisation struct. revealed by solvent extraction 8−42922
polymer solution, ZSP-1 8−23739
polystyrene, isotactic, normal vibrational anal. 8−43869
spinodal decomposition, light scattering, depend. on method of quench 8−18782
spray cooling technique 8−23738
steel, 18 Kh2N4MA, grain size effect on mech. props. 8−44207
steel, 30N9K4, effects of Mo, V, and N on grain growth, tempering, hardenability, strength and toughness 8−44202
steel, 4340, quenched, tempered, and austempered, effect of plastic strain followed by ageing on elastic limit 8−31446
steel, alloy, 300M, fracture toughness and strength, effect of heat treatment on microstruct. 8−15436
steel, alloy, nonmartensitic decomposition of austenite, fracture strength of high tempered products *(Russian)* 8−11304
steel, and alloy, fatigue strength improvement 8−44153
steel, austenitic, alloyed with N, decomposition of solid solution 8−23712
steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
steel, austenitic, martensitic transform., mechanism and kinetics, TEM, X-ray and optical obs. *(Rumanian)* 8−19746
steel, austenitic, phase transform to pearlite and martensite, kinetics, stresses due to quenching, anal. *(Japanese)* 8−27508
steel, austenitic Mn, existence of carbide M_5C_2 phase, electron microdiffr. analysis *(Russian)* 8−23727
steel, austenitic stainless, cavitation erosion resistance, martensitic transform. effect *(Russian)* 8−35524
steel, austenitic stainless, stabilized, creep improvement, effect of B precipitation and hyperquenching *(French)* 8−23784
steel, austenitic type 110G13L, preliminary strengthening inheritance, exam. 8−44137
steel, C, quenched and tempered, ductility, effect of hydrostatic press. 8−44190
steel, C-Mn-(Cr), structural changes during stress cycling after heat treatment and cold rolling *(Russian)* 8−19787
steel, C-Ni-Cr (0.6, 1, 1 wt.%), grain boundary segregation of S, N, P, As, Sb and Bi *(Japanese)* 8−15405
steel, carburised, alloying effect on props., mathematical-statistical determ. 8−19794
steel, cementite migration in temp. gradient 8−44151
steel, commercial C, stress corrosion cracking susceptibility in liquid NH_3 *(Japanese)* 8−11411
steel, complex alloy, exam. of temper brittleness 8−44209
steel, Cr, high C, in situ transform. of cementite to M_7C_3 and internal defects of M_7C_3 by tempering 8−31412
steel, Cr (13 wt.%), tempered, quenched, fatigue resistance in corrosive medium *(French)* 8−23870
steel, Cr-Mn, unstable austenite, martensitic transform., effect of alloying, heat treatment, and deform. 8−19751
steel, Cr-Mo (9,1 wt.%), austenitized in $\gamma+\delta$ phase field, secondary hardening and tempering 8−11247
steel, fatigue strength of 30 KhGSNA, 12 KhN3A, effect of friction in abrasive medium after hardening 8−35507
steel, ferritic martensitic, effect of ductility of second phase on ductile fracture 8−19847
steel, H_2 effect on yield 8−15474
steel, hardened and casecarburized, fatigue crack initiation, propag. and termination, notch depth effects *(Japanese)* 8−7022
steel, high Ni (19 wt.%), thermal stabilisation of austenite 8−15397
steel, high speed, wear resistance of white layer formed by vacuum oil quenching *(Japanese)* 8−11336
steel, high speed M2, charact. of solidification struct. within dendritic core 8−27504
steel, high speed tool rapidly quenched, exam. of solidification struct. 8−39758
steel, lath martensite, elastic interaction of H_2 with precipitates 8−3129
steel, low alloy, 18KhMVTCh, corrosion cracking resistance in sulphide environments *(Russian)* 8−31571

quenching (thermal) continued
steel, low alloy, radiation embrittlement, heat treatment effects 8–19893
steel, low C, low alloy, Mossbauer study of retain austenite 8–48434
steel, low C, quenched, struct. and props. after plastic deform. and tempering 8–23734
steel, martensitic, Cr-Co-Ni-Mo, notch toughness, rel. to sensitivity to stress conc. 8–31532
steel, martensitic, low C wire, strain tempering by rapid heating *(Japanese)* 8–31428
steel, martensitic, tempered, C and low alloy, hardness, effect of alloying additions 8–27629
steel, medium strength plate, quenched and tempered, fracture toughness in ductile-brittle range 8–7036
steel, middle and low C, clad plate, inhomogeneity and residual stresses, heat treatment effects *(Japanese)* 8–6955
steel, mild, yield strength and fracture toughness, microstruct. effect, heat treatment 8–27615
steel, Mn-C (1, 0.1 wt.%) strip, hot rolled, P effect on mech. props. 8–27532
steel, quench ageing effect of Mn content on C and N precipitation and mech. props. *(German)* 8–31409
steel, quenched, martensite, tensile and compressive deform. resist. *(Russian)* 8–19819
steel, Si-Mn-Cr-C (1.1, 0.9, 1.0, 0.29 wt.%) 30KhGSA, heat treatment effect on strength and toughness 8–15437
steel, tufftrided, S15CK smooth specimens, fatigue strength, strengthening mechanisms *(Japanese)* 8–27609
steel, type 27KhGSNL, castings, exam. of cracks due to treatment 8–44205
steel, ultrahigh strength, Si addition and retain austenite effect on SCC, quenched and tempered 8–48567
steel 40 KhSN2MVF, chemical micro-inhomogeneity recovery during thermal working *(Russian)* 8–15442
steel 40Kh, notch sensitivity under cyclic impact loads 8–3220
steel M16C, low C, natural discrete microlamellar composite *(Russian)* 8–39810
steel N22, crack movement rate during cyclic deform., internal microstress effects 8–3225
steel VNS-2, damping capacity, magnetomechanical, phase transform. effects 8–31445
steel-cast Fe cam-roller pair, wear resistance after strengthening treatment *(Russian)* 8–31542
steels, Cr and Cr-Ni-Mo refining effect on low cycle fatigue strength, resistance to hydrogen embrittlement 8–44208
steels, low C S25C, medium C S45C, Cr-Mo SMC3, statistical fatigue props. eval., heat-to-heat variations 8–7048
transition metal alloys, domain struct. of diffuse ω-phase formed in quenching, 1D model 8–27523
Ag chalcogenides, single-phase, preparation 8–35293
Ag-Cu (50 at.%), splat-cooled, struct. of γ' extended solid solution 8–3147
Ag-Sn alloys containing Au, splat cooled ribbons, electron microscope exam. 8–39987
Al alloy 2024-T3, work hardening in surface layers and bulk during fatigue 8–48428
Al, quenched, diffusion solution for point defects in stress field, steady state and transient 8–30780
Al, quenched, positron annihilation study, vacancy clustering 8–27348
Al, quenched, vacancy-Fe interactions 8–47412
Al, quenched-in lattice defects, Mossbauer anal. of associated ^{57}Co 8–39820
Al, rigidity modulus, neutron irrad. and quenched, point defects 8–27546
Al, vacancy annihilation to non-uniformly distributed dislocations 8–6096
γ'-Al-Ag (15 wt.%), dislocation splitting mechanism, cessation above critical temp. 8–26572
$Al-Al_2Cu$, aligned eutectic, precipitation, TEM and microhardness meas. 8–27529
Al-Cr (0.1 wt.%), exam. of pre precip. behaviour, by elec. resistivity meas. and TEM exam. 8–48406
Al-Cu-Sn (3.4, 0.28 wt.%), Mossbauer anal. of Sn behaviour during ageing 8–31431
Al-Fe (0.02 at.%), rapidly quenched, ^{57}Fe Mossbauer spectrum associated with vacancy 8–23378
Al-Li, alloy, ageing, δ'-phase precip., effect of quenching conditions *(Russian)* 8–19761
Al-Li alloy, thermal anal. of precipitation 8–15417
Al-Zn (40 wt.%), mechanical properties after thermal cycling 8–3150
Al-Zn eutectoid, superplastic, fracture, electron microscope obs. 8–31533
Au, quenched and annealed, conduction electron scattering 8–47774
Au, stacking fault tetrahedra, critical nucleation temp. 8–26581
Au-Ge, liquid quenched, exam. of phase decomposition 8–48371
Au_3Si, room temp. dissociation 8–35672
$CaO-Al_2O_3-SiO_2$ melt, at 1723 to 1823K, determ. of inter diffusivities matrix 8–43161
Cu chalcogenides, single-phase, preparation 8–35293
Cu-Al (15 at.%), vacancy migration, and short range ordering, comparison of exp. results with theory 8–47356
Cu-Al alloy, vacancy formation energy, determ., using new method, elect. cond. meas. 8–47345
Cu-Nb composite superconductor produced by rapid quenching 8–48351
Cu-Nb-Sn dil. alloys containing Nb_3Sn precipitates, superconductivity 8–43507
Cu-Ni-Cr (28, 2.8 wt.%), spinodal alloy, microstruct. and tensile props. 8–39858
Cu-Ni-Sn, thermal decomposition after prior cold work 8–15427
Cu-Sb alloy, splat-quenched, energy dispersive X-ray diffr. 8–23728
Cu-Ti, lattice parameter change during ageing *(Japanese)* 8–35411
Cu-Zr, vapour quenching prod. (thermal evaporation and r.f. sputtering), amorphous film for electron microscopy 8–6851
$Cu_3Al-Al_2O_3$ dispersion hardenend, short range order, quenching effect on yield stresS 8–35399
Fe, cast, steel cam-roller pair, wear resistance strengthening treatment *(Russian)* 8–31542
Fe, H_2 effect on yield 8–15474
α-Fe, influence of C and ZrH_2 on static and cyclic creep behaviour 8–39856

quenching (thermal) continued
Fe-(Ni)(Si)-C, cast, spheroidal graphite, metallography of solidification 8–19737
Fe-Al (15 at.%), short range order form. kinetics *(Russian)* 8–3146
Fe-Al (51 at.%), crystal vacancies, dilatometric and field ion microscopy exam. 8–47346
Fe-B metallic glasses, density, mech. and thermal props. 8–31432
Fe-C-Si alloy, lattice parameters of cementite after quenching 8–11198
Fe-Co, equiatomic, atomic order, Mossbauer study *(French)* 8–27135
Fe-Co-Cr, Cr effect on struct. of ordering 8–35407
Fe-Co(Al), B_2 superlattices, point defect investigations 8–47357
Fe-Cr-C alloys, equilibrium partition coeffs. for ferrite/liquid, austenite/liquid 8–39744
Fe-Mn-C (11.5, 0.2 to 1.6 wt.%), water quenched, effect of C on phase composition, abrasion, plasticity *(Russian)* 8–35445
Fe-Mn-Cr-C (20, 4, 0.5 wt.%), hyperquenched and predeformed, mech. props. *(French)* 8–23786
Fe-Ni, influence of hydrogen press. on temp. of martensitic transform. *(Russian)* 8–27514
Fe-Ta alloy, mech. drawn and aged, exam. of electrical resistivity, hardness, microstruct., and mag. props. *(Japanese)* 8–48545
Fe_3Al, vacancy conc. and ordering conc. 8–18639
Ga_2O_3:Mg(Zr) single crystals, quenched, ionic and elec. props. 8–30922
$Ga_2O_3-R_2O_3:Nd^{3+}$ glass, prep., characts., X-ray diffr., absorpt. and thermal anal. obs. *(French)* 8–19704
Gd-Co-B system, phase composition, struct., phase equilibria 8–35355
Ge, fast and slow quenching defects 8–39052
Ge-Te, exam. of new compound, using light microscopy and X-ray diffr. exam. 8–48383
In-Sb-Bi system, solid solns., solubility limits, microhardness, microstruct. investig. 8–35368
KCl, doped, elec. conductivity and optical absorpt., quenching from 750°C 8–2289
KCl, pure and Pb^{2+}-doped, X-irrad., quenching effects on thermal glow curves 8–27333
$KCl:Sn^{2+}$, thermally stimulated space charge decay 8–48111
La-Re-B, annealed and quenched, X-ray structural and phase anal. 8–11207
Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8–44146
MgO:Li, $[Li]^0$ defect, high temp. and ionisation induced effects 8–34509
Mo-Re, solid soln., dislocation internal friction *(Russian)* 8–23748
NaCl:Ca, precipitate form., transform. after annealing, critical flow stress 8–38848
$NaCl:Sn^{2+}$, thermally stimulated space charge decay 8–48111
$(Nb,Ti)N_x$, metastable supercond. phase, effects of rapid quenching on transition temp. 8–2611
Ni, H diffusion in H_2 quenched sample, elec. resist. recovery 8–2299
Ni, quenched vacancies, effect of oxidation *(French)* 8–27686
Ni-Al (6.05 wt.%), prediction and meas. of precipitate number density 8–19756
Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8–35496
$Ni_{100-x}B_x$, rapidly quenched, mag. moment, temp. and comp. depend. 8–47957
$Ni_{40}Fe_{40}B_{20}$ glass alloy, rapidly quenched, explosive welding to A516-70 steel and to itself 8–39954
Pb, vacancy and divacancy props., exam. via quenching and annealing 8–47343
p-Si:B, Fe, 0.45 eV majority carrier trapping level after quenching 8–18990
Si-C-O-Ar, high temp. plasma, prod. quenching mol. dynamics simulation 8–39711
Sn molten drops, gas evolution on quenching 8–39818
Sn-Bi alloy, splat-quenched, energy dispersive X-ray diffr. 8–23728
Ti alloy, VT22, thermomechanical treatment, effects on struct. and props. *(Russian)* 8–19785
Ti alloy VT23, quenched decomposition of metastable phases during heating *(Russian)* 8–15432
Ti alloys, domain struct. of diffuse ω-phase formed in quenching, 1D model 8–27523
Ti-Al-Cr-Mo-U, alloy VT22, phase composition and fatigue strength 8–3219
Ti-Al-Mo-V (8, 1, 1 wt. %), stress corrosion cracking and slow strain rate H_2 embrittlement 8–48569
Ti-alloy, VTZ-1 and VT8, decomposition of metastable phases, effect of plastic deform. *(Russian)* 8–39770
Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8–3153
Ti_3Al-(Nb), ordering transform. and mech. props. 8–31402
$Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8–11292
TiC-steel composite, effect of method of Cr additions on props. 8–15341
U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8–23729
V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8–30576
V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8–30576
VC, metastable supercond. phase, effects of rapid quenching on transition temp. 8–2611
V_2O_5, water in noncryst. solid, quenching of molten V_2O_5 *(French)* 8–42912
V_3Ti, metastable supercond. phase, effects of rapid quenching on transition temp. 8–2611
W, vacancy-defect clustering, due to annealing and quenching, TEM and elec. cond. exam. 8–47344
Y-Re-B, annealed, and quenched X-ray structural and phase anal. 8–11207
$Y_2O_3-Fe_2O_3$ systems, solid-phase reacts., $Y_3Fe_5O_{12}$ form. 8–44062
ZnSe MIS diode, blue electrolum., heat treatment effects 8–19569
$ZnTe-Ga_2Te_3$, phase diagram 8–35360
Zr alloys, domain struct. of diffuse ω-phase formed in quenching, 1D model 8–27523
Zr-Mo(-Al) (3, 1 wt.%), β-phase stability 8–39742
Zr-Sn-Mo (6, 1 wt.%), creep and creep rupture 8–23778

- **queueing theory**
  - coronary care unit equipment failure finding and prediction 8−44648
  - Markovian queueing system central limit theorem 8−32658
- **queuing theory** *see queueing theory*
- **R and D management** *see research and development management*
- **R-centres**
  - radiation damage tetragonal R2 centre, optical and EPR spectra 8−2888
  - CaF$_2$, additively coloured, new type of F$_3$-centre, absorption bands obs. 8−35172
  - CaS phosphor, deep capture centres obs. 8−10951
  - n-GaAs, intrinsic luminescence intensity, effect of 0.94, 1.0, 1.2 and 1.3 eV radiative centres 8−23517
  - KCl, F$_3$-centre quartet state, IR emission spectra 8−43930
  - KCl, luminesc. excitation spectra of F-aggregate centres, 400-900 nm. *(Russian)* 8−10980
  - NaCl, F$_3$-centre quartet state, IR emission spectra 8−43930
  - NaCl plates, γ-irrad., optical absorption spectra, hologram recording samples 8−17878
  - ZnS phosphor, deep capture centres obs. 8−10951
- **R waves** *see Rayleigh waves*
- **Racah coefficients** *see angular momentum theory*
- **radar**
  - *see also Doppler effect; optical radar*
  - historical development, effects on advance of astronomy 8−36471
  - MF/HF backscatter radar for sea surface meas. *(Japanese)* 8−16210
  - ocean surface, radar echoes of second order from waves, first inversion 8−49032
  - optical folded spectrum processor, signal demodulation and radar processing appls. 8−5429
  - symposium, London (Oct. 1977) 8−24395
- **radar antennas**
  - echosonde antennas, echo carrier freqs. and antenna dimensions rel. to performance 8−1474
  - side-looking airborne radar, Earth surface remote sensing appl. 8−20561
- **radar applications**
  - active microwave sensing *(Japanese)* 8−16213
  - active microwave sensing of Earth surface *(Japanese)* 8−16214
  - aerosol measurements with calibrated two- and three-freq. lidars 8−36334
  - airborne lidar, continuous long-distance system, flight tests *(German)* 8−36338
  - airborne lidar, multidisciplinary, planned operation 8−36335
  - atmosphere observations at Kingston, Jamaica, using lidar system 8−36284
  - borehole radar exploration in coal seams 8−28235
  - containerisation of heavy lidar system for environmental protection control 8−36336
  - Doppler radar, wind profiles meas. compared with rawinsonde balloons meas. 8−44916
  - geophysical prospecting by pseudobaseband pulse radar 8−24398
  - iceberg sounding by impulse radar 8−24388
  - ionosphere measurement 8−49225
  - mapping of rainfall by radar 8−24397
  - meteorology, radar echo systems for upper midwestern U.S., analysis 8−16183
  - ocean surface currents mapped by coastal HF radar system 8−28351
  - ocean waves, synthetic aperture radar imaging, focusing effects 8−40555
  - rainfall estimate using S-band radar during cyclonic storm, Calcutta 8−32157
  - remote sensing, tetrahedral scan for tri-Doppler radar 8−16184
  - river management operational system development using weather radar 8−40718
  - sea state and wind sensing by HF skywave radar 8−24396
  - severe storm warning using Doppler radar 8−49148
  - side-looking airborne radar, Earth surface remote sensing appl. 8−20561
  - squall lines, radar obs. during GATE 8−20474
  - subsoil exploration, role of electronics *(Spanish)* 8−20552
  - synthetic aperture radar, sea ice/lake L-band imagery computer processing 8−36311
  - thunderstorm classification, automated data acquisition and analysis 8−7772
  - tornadoes probing with pulse Doppler radar 8−20558
  - VHF coherent radar sounding of lower atmosphere 8−28281
  - weather radar data transmission using VHF satellite links, expt. 8−20569
  - wind, strong shear obs. using pulse compression radar 8−32193
  - wind profile determ. X-band solid-state radar system 8−12028
- **radar cross-sections**
  - Gulf Stream roughness var. from radar cross section obs. 8−36194
  - scattering properties of arbitrarily shaped lossy dielectric bodies of revolution 8−22072
- **radar displays**
  - *see also cathode ray tube displays; fluorescent screens*
  - mapping of rainfall by radar 8−24397
- **radar echo areas** *see radar cross-sections*
- **radar interference**
  - VHF echoes from equatorial E-region irregularities, sudden disappearance 8−40738
- **radar measurement**
  - acoustic-microwave Doppler radar system, wind and wind shear meas. at Dulles Airport 8−32233
  - Arctic sea ice, layered struct. study by radar sounding *(Russian)* 8−16023
  - auroral electrojet, Chatanika radar meas. compared with Anchorage VHF backscatt. obs. 8−12048
  - hailstorms, Switzerland, time-resolved hailstone size distrib. and radar struct. 8−49109
  - HF oblique radar obs. of plasma instabilities in equatorial electrojet over Africa 8−49205
  - HF radio acoustic sounder, atm. wind and temp. remote meas. 8−32235
  - iceberg sounding by impulse radar 8−24388
  - lidar, simultaneous nighttime meas. of Na and K abundances 8−36239
  - mapping of rainfall by radar 8−24397
- **radar measurement** continued
  - Mars, surface slopes, roughness and reflectivity, radar obs. during 1975 opposition 8−45254
  - meteors, echo drift deceleration 8−36538
  - meteors, head echo heights 8−36537
  - ocean waveheight nondirectional spectrum from inversion of HF sea-echo Doppler spectrum 8−16203
  - rain slant path attenuation statistics prediction at various locations 8−24344
  - sea surface signal interpretation and energy transfer calc. 8−28241
  - sea surface using MF/HF backscatter radar *(Japanese)* 8−16210
  - Venus surface, geologic interpretation of new radar obs. 8−20666
  - waves in lower stratosphere, radar meas. 8−44917
  - wind measurements in Arctic troposphere and stratosphere 8−49172
  - wind profiles, comparison of Doppler radar and rawinsonde balloons meas. 8−44916
- **radar stations**
  - meteorological acoustic (MARS) and EM wave scattering studies 8−32210
- **radar systems**
  - Doppler, digital phasemeter optimal threshold determ. meteorological meas. appl. *(Russian)* 8−20560
  - meteorology, radar echo systems for upper midwestern U.S., analysis 8−16183
  - pulse compression radar, appl. to strong wind shear obs. 8−32193
- **radar telescopes** *see radiotelescopes*
- **radar theory**
  - cylinders in translational motion, Fourier spectrum evaluation 8−9300
  - general relativity, gauge field theory 8−36897
  - microwave sea backscatter intermittency at extreme grazing angles, model 8−24307
  - scattering from turbulent cylindrical plasma, model 8−22512
  - synthetic aperture imaging of ocean wave, focusing effects 8−40555
- **radarscopes** *see radar displays*
- **radiance** *see brightness*
- **radiation**
  - *see also atmospheric radiation; beta-rays; cathode rays; electromagnetic waves; heat radiation; radiation effects; radiative transfer; stellar radiation*
  - ionising radiation, SI units introduction in Hungary aspects *(Hungarian)* 8−8379
- **radiation belts**
  - *see also atmospheric electron precipitation; atmospheric proton precipitation*
  - electrons precipitation, struct. of loss cone 8−40774
  - energetic electrons in plasmasphere, distrib. function parameters 8−4035
  - high-energy electrons, behaviour during reson. interaction with geomag. pulsations 8−28422
  - leakage protons, meas. of spacecraft-produced neutron fluxes on Skylab 8−28486
  - outer, electron vars. during substorm 8−40767
  - outer, fast electrons long-term vars. 8−49226
  - outer belt behaviour after 1971 December 17 magnetic storm 8−16248
  - outer zone electrons, evidence for very weak pitch angle diffusion 8−28399
  - proton fluxes, critical levels in outer boundary of radiation belts 8−16246
  - protonosphere, coupling fluxes from phase and group path meas. of VLF whistlers 8−49234
  - protonosphere-ionosphere, plasma fluxes, ATS-6 obs. 8−28409
  - protonospheric replenishment after geomagnetic storm 8−28452
  - protons, cross-sections for (p,xn) reactions 8−28504
  - radiation belts trapped electrons structure, effects of man-made VLF waves 8−45150
  - ring current electrons, 1-30 Hz waves generation near plasmapause by reson. instability 8−49235
  - South Atlantic Anomaly spatial shift 8−28449
  - trapped electrons, energies above 100 MeV, produced by primary cosmic rays 8−36409
  - trapped particles, accel. by magnetosphere macroscopic elec. fields 8−49238
  - trapped photoelectrons and secondary electrons in mid-latitude plasmasphere 8−16244
  - He$^+$, He^{2+}, nonadiabatic behaviour during quiet time conditions, theory and obs. 8−45158
- **radiation biology** *see biological effects of radiation*
- **radiation chemistry**
  - *see also chemical effects of nuclear reactions and scattering; photolysis; radiochemistry; radiolysis*
  - alcohol dehydrogenases, yeast and horse-liver, radiation chem. evidence for differences in amino acid composition 8−40116
  - alkaline glass: tryptophan (tyrosine), γ-irrad., electron traps, stimulated luminesc. 8−11536
  - allyl free radical decay, in irrad. polyethylene, const. diffusion controlled rate const. 8−15651
  - α-aminoisobutyric acid, cryst., γ-irrad., cation radicals, ESR obs., SCF-MO-INDO calcs. 8−11537
  - anthracene, γ-irrad., radical pairs EPR detection 8−31664
  - anthracene, radiation-induced topotactic conversion from di-para-anthracene, low temp. TEM obs. 8−35710
  - benzene, γ-irrad., radical pairs EPR detection 8−31664
  - benzene, fluoresc. quenching by pulsed proton irrad. of cyclohexane soln. 8−5270
  - beta-decay, chem. and biological consequences 8−28018
  - biological photochemical and photophys. processes, conf., New Delhi, India, (Jan.' 72) 8−11694
  - 5-bromodeoxyuridine, single cryst., X-irrad. at 77K, C$_{5'}$-centred deoxyribose radical 8−20032
  - 5-chlorodeoxyuridine, single cryst., X-irrad. at 77K, C$_{5'}$-centred deoxyribose radical 8−20032
  - chondromucoprotein, effects of ^{60}Co γ-irrad. 8−7400
  - coumarin, aqueous solution, fast neutron irrad., dosimetry appl. 8−44613
  - cytosine, cryst., electron damage, electron microscope study 8−22762
  - cytosine monohydrate, single cryst., γ-irrad., ion radical recomb., EPR 8−15776
  - dimethyl sulfone, X-irrad. cryst., ESR spectrum 8−3351

radiation chemistry continued
  DNA, γ-irrad., 2-deoxy-D-erythro-pentonic acid isolation from alkali-labile site 8−20144
  DNA, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
  DNA hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
  enantiomeric compounds, optical purity, prod. by β-decay 8−40459
  ethanol, semiquantitative model for electron conc.-dose depend. in glassy matrix 8−20034
  Fricke dosimeter, influence of methanol and t-butanol on ferric yield 8−11736
  G-value, dependence on scavenger conc., theory 8−20038
  glycyl anion radical, in α-glycine cryst., struct., ESR obs. 8−33530
  dGMP γ-irrad. in frozen soln., free radical form., computer EPR spectra anal. 8−31774
  hydrocarbon liq., effect of mol. struct., temp. and elec. field on electron mobility 8−2535
  inositol, X-irrad., radical form. detection by ESR and ENDOR, oxidation process 8−27797
  liquids, electron scavenging and ion recomb. processes, 3-dimens. continuous time random walk model 8−7216
  methanol, solvated electron lifetime and reaction with hydroxymethyl radical, dose and base effects 8−20043
  methanol, solvated electron yield and spur decay following electron irrad. 8−20042
  6-methylmercaptopurine riboside, 4 MeV electron irrad., 77K radicals form., EPR obs. 8−39405
  naphthalene, γ-irrad., radical pairs EPR detection 8−31664
  neutron-gamma absorption, in blanket region of fusion reactor, chem. appls. 8−5021
  non-radical processes, exptl. method for elucidation 8−27802
  L-phenylalanine.HCl, X-ray induced radical form. 8−48755
  phthalocyanine, cryst., electron damage, electron microscope study 8−22762
  polyethylene, cross linking by energy rich radiation, mech. and elec. props. *(German)* 8−20035
  polyethylene, deform. mechanism, γ-irrad. induced cross-linking effects 8−15469
  polyethylene, irradiated, far IR spectrum rel. to crystallinity 8−27216
  polyethylene terephthalate, irradiated with radiations with linear energy losses, peculiarities in chemical etching 8−39934
  polymer, charged particle detecp., graft-and-dye method 8−17520
  polymer track detector, form. of heavy ion latent tracks 8−17522
  polymethacrylates degradation obs., due to UV, gamma-ray, and electron beam irrad. 8−27795
  polynucleotide hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
  polynucleotides, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
  positronium formation in polar liquids, unsolvated electron effects 8−17826
  1-propanol, electron traps, prestabilised electron relax. model 8−27803
  purine, powder, γ-irrad., dose-response curves 8−7215
  pyrene-naphthalene complex radical cation, in γ-irrad. glass, visible spectrum obs. 8−44385
  pyrimidine powder, γ-irrad., dose-response curves 8−7215
  pyrrole, free radicals produced by X-irrad. and decay of tritium atom, EPR study 8−48676
  radical pair recombination kinetics, low conc. in solid matrix, 1, 2 and 3 dimens. 8−27793
  review of present status, future trends and applic. *(Japanese)* 8−31659
  succinamic acid, X-irrad., primitive radn. damage, ESR, ENDOR 8−3352
  thymine fragment damage retained in DNA polynucleotide chain after γ irrad. in aerated soln. 8−31773
  toluene in ethanol-d_0-d_1, dry electron scavenging efficiency, isotope effect on electron localisation 8−27784
  trypsin, in suspension, radical form. and inactivation after Γ-irrad. 8−3564
  l-valine, cryst., electron damage, electron microscope study 8−22762
  zeolites, Y-type, EPR triplet assignment, NO_3^{2-} vs. H_2O^- 8−11534
  2-chlorothiophene, σ^* anion radical, prod., ESR spectrum assignment 8−11539
  $Cl_2^-+HO_2$, reaction in pulse irrad. aq. soln. containing Fe^{2+} and Cl^- 8−20036
  $CsAsF_6$:BiF_6^-, gamma irrad., BiF_6^{2-} prod., EPR meas. 8−19329
  D, stabilised in low temp. frozen aqueous acidic solns., two-proton forbidden transitions, EPR meas. 8−27804
  1,6-di-(N-carbazolyl)-2,4 hexadiin, cryst. struct., luminesc., γ-ray polymerisation 8−18629
  $GaNbO_4$ decomp. due to electron beam heating in electron microscope 8−35711
  $GaNbO_4$, electron beam induced decomp., high resolution lattice imaging obs. 8−6161
  KBr, NO_3^- centre form. by γ-bombardment in air *(Russian)* 8−31668
  KCl, NO_3^- centre form. by γ-bombardment in air *(Russian)* 8−31668
  $Mu+F_2 \rightarrow MuF+F$, 300 to 400K in N_2 moderator, reaction rate determ., tunnelling 8−48682
  N_2, radiation chem., primary neutral dissoc. excitation, isotopic exchange mechanism 8−48670
  O_2+hydrated electron, rate const., Arrhenius parameters 8−20041

radiation counters *see counters*

radiation damage *see radiation effects*

radiation detection and measurement
  see also alpha-particle detection and measurement; beta-ray detection and measurement; gamma-ray detection and measurement; hyperon detection and measurement; meson detection and measurement; muon detection and measurement; neutron detection and measurement; proton detection and measurement; radioactivity measurement
  balloon born cosmic ray electron detectors, curious random counting statistics, electric circuit 8−17540
  bubble chambers, elastic events separation, appl. to $p\bar{p}$ interactions at 5.7 GeV/c 8−13379
  channel electron multipliers, microchannel plates, props., development, appls. 8−46221
  charge plunger technique, nuclear lifetime meas. 8−29698
  charged particles prod. by neutrons, detection system 8−29712
  composite exponential decay curve anal. 8−46241

radiation detection and measurement continued
  computer-based data acquisition system for multi-station teaching laboratory 8−4446
  cosmic ray high energy interactions in emulsion stack combined with ionisation calorimeter 8−49263
  direct reading pen dosimeters, radiation exposure meas. aspects *(German)* 8−5050
  dosimeter, aq. coumarin soln. response to high LET radiation from $^{10}B(,n\alpha)^7Li$ reaction 8−24149
  electron detection efficiency of phosphate glass channel multiplier 8−41898
  energy deposition measurement by thin film resistors 8−29719
  fission fragments with high KE, mass separation based on TOF spectra 8−46209
  fuel reprocessing plant instrumentation for internat. safeguards 8−721
  high energy physics, appl. of solid state nuclear track detector, emulsion technique 8−17501
  laboratory course at Purdue University 8−4443
  legislation in West Germany, standards aspects *(German)* 8−5049
  loss-free counting, real time compensation of dead time and pile-up losses 8−17465
  multichannel plate, detectors, operation, struct., performance characts. 8−12758
  multiplicity measurements, statistical algorithm 8−29721
  nuclear radiation characteristics, mathematical programming methods to obtain internal estimates 8−5105
  nuclear resonances prod. in (γ,π^-p) reacts. 8−877
  optimum design of expts. on exponential absorpt. statistical errors anal. 8−885
  plastic detectors, calib., heavy cosmic ray charge distrib. 8−17500
  polycarbonate foils, detection of low energy ^4He, ^{12}C, ^{14}N, ^{16}O ions, etching props. 8−13391
  positron camera, cylindrical, multilayer hybrid computed tomographic system, $Bi_4Ge_3O_{12}$ scintillation crysts. 8−48876
  pulse shaper, fast coincidence, with Ge(Li) detectors 8−41864
  semiconductor detectors, spectroscopy and applied phys. appls. 8−46218
  spectra unfolding code COOLC 8−5090
  spontaneous fission fragment detection in on-line system of ionisation chambers 8−46226
  statistics of counting equipment, choosing goodness-of-fit test 8−46238
  tandem accelerators and nuclear phys. conf. 8−13349
  X-ray recording focusing spectrograph for laser plasma 8−1891
  Si surface-barrier detector in lava or teflon housing, production 8−17481

radiation detectors *see particle detectors*

radiation dosimetry *see dosimetry*

radiation effects
  see also acoustic wave effects; alpha-particle effects; beta-ray effects; biological effects of radiation; deuteron effects; electron beam effects; gamma-ray effects; hyperon effects; ion beam effects; laser beam effects; meson effects; neutron effects; proton effects; radiation chemistry; radiation hardening; voids (solid); X-ray effects
  alkali halide crystals, radiation damage review, impurities and colour centers *(German)* 8−10086
  alkali halides, defect form., model of excitonic mechanism 8−38696
  alloys, irradiated, effect of defect trapping and solute segregation, on defect recombination rates and void swelling 8−47369
  BWR radioactive corrosion products behaviour 8−21661
  cascades, validity of energy partitioning 8−43056
  conf., nucl. and space radiation effects, Williamsburg, USA (July, 1977) 8−26594
  diamond, irradiated, optical spectrum 8−6719
  dielectric, radiation induced currents and cond. 8−30927
  education, undergraduate course evaluation on radiation and the environment 8−1
  FCC lattice, computer simulation of low energy displacement cascade 8−47367
  first wall of thermonuclear reactor, diffusive action of radiation *(Russian)* 8−29639
  fusion materials development, appl. of simulation expts. 8−46167
  glass track detectors, NaO_2-SiO_2, phosphate, quartz glasses, nuclear phys. spectrometric appls., track diameter 8−17466
  high-silica fibre-optic waveguide, sensitivity to low-dose radiation *(German)* 8−33869
  ICTR walls, thermal response and stress problems 8−813
  ionic crystals, electronic excitation decay into radiation defects, review 8−47420
  ionic crystals, spatial separation of components of primary radiation defect pairs 8−14376
  LMFBR reactor materials, simulation of void swelling and radiation-induced creep 8−8907
  metal, diffusion, radiation effects 8−47555
  metal, irrad., self-interstitial type defects, combined single-double alignment channelling backscatt. 8−34561
  metal swelling, max. point on temp. scale rel. to point defect generation *(Russian)* 8−38751
  metals, radiation damage, FIM and atom probe FIM expts., review 8−35623
  MIS structure, RF annealing method for removing radiation damage 8−39224
  Mossbauer resonance, obs. through Coulomb excitation, effect of thermal spike 8−27132
  nuclear power plants, radiation exposure and protection 8−25301
  nuclear reactor, corrosion product reduction program 8−21665
  nuclear reactor pellet-cladding interaction induced by radiation-induced dilation, mech. anal. 8−13302
  O-ring compounds, resistance to heat and ionizing radiation 8−29584
  optical waveguides, low loss, transient radiation effects, Cherenkov radiation, absorpt., in fibres 8−30055
  particle transport, stochastic theory, appl. to radiation damage cascades 8−153
  photodetector optimisation for radiation environments 8−29158
  polymethacrylates degradation obs., for PMMA, PBMA, PMA and PMA AN under UV irrad. 8−27795
  power reactors, coolant circuit contamination 8−21666
  pulsed irradiation, annealing and accumulation of defects 8−47419
  quantum diffusion in crystals, radiation enhancement conditions 8−47607

radiation effects continued
semiconductor, influence of electronic excitation on atom displacement 8–2158
semiconductor, irradiated, Hall mobility, dark and photo-conductivity calc. 8–47835
semiconductor, radiation damaged, residual defects rel. to back reaction annealing kinetics 8–3161
silicate glasses:Cu$^+$, effect of UV irrad., absorption bands 8–31222
stainless steel, 316, long term radioactivity minimisation 8–772
steel, stainless, sigma phase stability and irradiation effect 8–11200
thermostatic air chamber, influence of radiation *(Japanese)* 8–37007
THTR fuel element, irradiation testing in DRAGON reactor *(German)* 8–25295
Tokamak fusion reactor, effects of blanket-shield penetration on performance 8–21765
void swelling simulation in reactor materials 8–8906
Ag, production and annealing of radiation defects 8–47362
Ag-^{112}In, dil., ^{112}In nucl. alignment, radiation damage, γ-ray spectra 8–19398
Ag-Zn(Cd), production and annealing of radiation defects 8–47362
Al$_2$O$_3$ gate insulator, low temp. radiation response 8–26960
Al$_2$O$_3$, thermoluminescence, optical bleaching/stimulation effects following irrad. 8–43940
Au foil, radiation damage from sputtering by fission fragments 8–2968
CaSO$_4$:Dy, TLD during irrad. by γ-rays, X-rays, electrons, ambient atm. effect 8–19578
Fe, radiation induced defects, annealing exam. using channelling tech. 8–47316
Fe$_3$Al, computer simulation of energy dissipation from near threshold knock-ons 8–30666
GaAs:Cr, effect of light on EPR centres 8–10767
Ge γ-ray detectors, material props., appls., radiation damage 8–13392
HgCdTe, radiation effects on low-temp. carrier recombination lifetimes, photocond. meas. 8–6400
KBr(I): O^{2-}(S^{2-})(Se^{2-})(Te^{2-}), low temperature photochemistry on chalcogen vacancy centres 8–18641
KCl, F- and H-centre production by nonradiative decay of self-trapped exciton 8–23042
LiB$_4$O$_7$, thermoluminescent dosimeters, high dose characteristic 8–35966
LiF, thermoluminescent dosimeters, high dose characteristic 8–35966
MnF$_2$, photochemical introduced radiation damage 8–2161
Mo alloy, TZM, long term radioactivity minimisation 8–772
Mo, fission fragment bombardment, channelling effects *(Russian)* 8–38762
Mo, irrad.-induced voids and dislocations, annealing, theory *(Russian)* 8–47418
RbMnF$_3$, photochemical introduced radiation damage 8–2161
Si, defect prod. by GeV muons, thermally stimulated current technique 8–5099
SiO$_2$ film on Si, irradiation behaviour anal. 8–26957
SiO$_2$ glass, low press. plasma treatment, paramag. defect form. *(German)* 8–23341
SiO$_2$-Si interface of hardened MOS capacitors, radiation effects 8–26958
W-Re, sigma phase stability and irradiation effects 8–11200
Zr-H system, δ and ε phases, neutron irrad., radiation swelling investigation 8–18685

radiation hardening
fast reactor materials, fast neutron damage 8–10093
graphite, irradiated ultimate tensile bending and compressive strength charact. 8–15479
hardened irradiated metal, flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8–34538
LWR materials, pressure boundary problems, corrosion, cracking and radiation embrittlement props. 8–46142
steel, by focused laser beam *(Russian)* 8–27670
steel, irradiation by neutrons, damage function for mech. props. 8–13228
Al-Mg-Cu-Si-Cr (1,2.7,0.6,0.2wt.%), laser shock hardening of weld zones 8–39800
Al-Mg-Mn-Cr (4, 0.45, 0.15 wt.%), laser shock hardening of weld zones, exam. 8–39800
Nb, radiation hardening and yield strength correlations for 16 MeV H$^+$ and (D,T) neutron effects 8–14389
Ni, radiation hardening and yield strength correlations for 16 MeV H$^+$ and (D,T) neutron effects 8–14389
V, radiation hardening and plastic instability *(Russian)* 8–39842
V-Zr-C, radiation hardening and plastic instability *(Russian)* 8–39842

radiation hardening (electronics)
analogue fibre optic data link, hardened, construction and analysis 8–30057
coherent laser detection system, radiation effects analysis 8–30056
MOS devices, irradiated, low-temp. appl. 8–26961

radiation injuries *see biological effects of radiation*

radiation monitoring
see also dosimetry
adjustable single-fibre connector and output monitor *(German)* 8–38011
aerosol, radioactive charging, transient mean particle charge 8–23973
air traffic radiation safety, high-altitude 8–44620
airborne and liquid releases from nuclear facilities, systems 8–37450
biological and ecological samples *(French)* 8–5052
breached element location from mixture of Xe tags, MIXTAG code 8–33274
cholesteric liquid crystal thermo-optical monitor, for nonionising radiation 8–11742
dose equivalent measuring instrument for rapid use in mixed radiation fields 8–15901
dose measurement, beta and photon, for radiation protection purposes 8–15908
dosimeter, pocket-sized electronic system 8–5100
electret ionisation chamber dosimeter for long-term personnel monitoring 8–21810
environmental γ flux meas. method using NaI(Tl) scintillation counter and photomultiplier 8–21786
environmental gamma radiation in Norway, population doses 8–11745
ERDA nuclear plants, radiation levels in environmental vicinity 8–9002

radiation monitoring continued
fission reactor, breached fuel element diagnosis, use of fractional release ratio ^{137}Cs to ^{131}I 8–21713
fission reactor, containment leak rate test duration time, acceptability of eight hour test 8–21700
fission reactor fuel, gamma-ray spectrometric determ. of fission product activity and activity ratios 8–37430
gamma alarm device, portable, with audible/visual warnings 8–8390
gamma-ray natural flux spectral distribution, analytical approx. 8–815
gaseous reactor wastes, dispersal forecasting *(French)* 8–8995
geothermal steam, ^{222}Rn emanations, rel. to seismic activity 8–11832
graduate educational program to prepare science majors for career in radiation health physics 8–4427
naturally occurring radioactive sources, external environmental radiation levels 8–9001
naturally occurring radionuclides in building materials, estimation and control of population dose 8–9000
nuclear fuel motion measurement, HCDA simulation, time resolved coded aperture imaging system 8–45764
nuclear plant, off-site emergency monitoring systems 8–46178
nuclear plants, digital differential pulse rate meter 8–37451
nuclear power plant, digital systems 8–816
nuclear power plant, radiation monitoring systems, review 8–33292
nuclear power station, personnel dosimetry and access monitoring by process computers *(German, English)* 8–17440
nuclear power station, US metalwork flaw detection system *(Russian)* 8–25302
nuclear power station stack effluents, radiation monitoring 8–46179
offshore environmental monitoring program for proposed nuclear power plant in Islote, Puerto Rico 8–11917
PBF, temp. sensitivity of Co self-powered neutron detectors under PWR conditions 8–33275
personnel dosimeters based on film badges and TLDs, appl. *(Russian)* 8–20293
personnel dosimetric control in Hungary *(Russian)* 8–20292
personnel dosimetry, automatic film-badge reading system 8–40335
pion$^-$, sensitivity of personnel monitoring film 8–28079
power station, personnel dosimetry monitoring, use of evaluation device for rod and process computer *(German, English)* 8–17441
programmes at Point Lepreau nuclear power station 8–29552
proton beam 70 GeV, for Protvino Inst. neutrino expts., characts. 8–37475
proton spectra, high energy, emerging from 680 MeV synchrocyclotron shielding 8–17530
pulse shape discrimination for alpha-gamma separation with trans-stilbene 8–13386
PWR, Oconee, occupational exposures, radiation levels and waste levels during operation 8–21726
RA reactor fuel, gamma-spectrometric determ. of fission product activity ratio 8–33269
radionuclide migration in seawater and marine sediments *(French)* 8–11916
radionuclide transfer to crops and agricultural products *(French)* 8–8996
soil residual contamination levels and decommissioning nuclear facilities, radiological criteria 8–11747
solid-state nuclear track detectors, development and use for reactor phys. expts. 8–41886
tissue equiv. medium, simultaneous meas. of neutron and gamma ray spectra 8–5058
troposphere, ^{3}H in water vapour, rel. to reactor release detect. 8–11988
USA diplomatic courier radiation exposures 8–28078
working level survey meter 3R-WL, meas. of α-particles from ^{218}Po and ^{214}Po 8–25330
Ge on-line, hyperpure detector, radiation monitoring system 8–37493
Ge(Li) system for low level radioactive gas monitoring 8–9038
Ge(Li) upward looking dip-stick type spectrom., in-situ environmental γ-ray meas. 8–37480
^{129}I$_2$ radioisotope detection in nuclear fuel cycle, intracavity selective absorpt. analysis 8–46182
^{85}Kr concentration in atmosphere over USSR (1971-1975) 8–37453
^{210}Pb from nucl. explosions in environment 8–21774
Pu-Am survey instrument, β-α-γ-X-ray scintillation detect. probe 8–33376
^{222}Rn daughters, meas. of low conc. in air 8–28308
U, in porcelain dentures, rapid anal. by delayed fission neutron method 8–15907
U mill tailings, meas. of surface Rn flux, effect of moisture content 8–5056

radiation monitors *see radiation monitoring*

radiation patterns, antenna *see antenna radiation patterns*

radiation pressure
see also acoustic streaming
acoustic longitudinal wave propag., theory, radiation press. problems appl. 8–25998
artificial satellite with ecliptic plane orbit, solar radiation orbit perturbation 8–4088
EM wave absorption/scatt. in moving layer, energy and momentum conservation 8–25775
laser-plasma interactions, effects of pressure 8–38540
microwave irradiated materials, rel. to acoustic signal generation 8–24095
optical radiation pressure in dispersive medium, photon momentum, drag 8–33666
optical radiation pressure meas. in dispersive media refractive index depend. 8–33665
plasma waveguide, ion acoustic wave, excited by EM rad. press. 8–26298
Pleiades, radiation press. rel. to filamentary struct. of refl. nebulosity 8–8082
Rayleigh and Langevin radiation press. magnitude calc., longit. wave propag. theory appl. 8–25999
rigidly rotating star, influence of nonsphericity and radiation press. on moment of inertia 8–28658
solar, effects on interplanetary dust grains 8–20730
stellar expanding envelopes, radiative forces 8–28659
transparent hollow sphere, radiation pressure in cylindrical beam *(French)* 8–29896
H plasma hemispheric layer total radiation calc. *(Russian)* 8–34278

radiation protection
see also radiation monitoring
air traffic radiation safety, high-altitude 8−44620
ANS annual meeting, 1977 8−663
Atmospheric Release Advisory Capability, 1977 update 8−49127
biological protection in water-moderated, water-cooled nucl. reactors 8−818
bronchopulmonary lavage 8−15910
cables insulated with Al_2O_3 and MgO, resistance to high-temp. and intense gamma radiation 8−25332
CANDU reactors, Atomic Energy of Canada report to Royal Commission on Electric Power Planning 8−25312
coal power station fly-ash and slag, natural radioactivity meas. 8−17442
commercial reactor, control rod material behaviour 8−8918
derived standards, Euratom directive and ICRP recommendations 8−35969
dosimeter calibration using radiochromic dye film dosimeter, radiation sterilizing, processing industries appl. 8−40330
education, undergraduate course evaluation on radiation and the environment 8−1
EM non-ionising radiation, influence of quality on bioeffects, exposure standards 8−44558
eye shield for use during carotid angiography 8−44615
fallout gamma radiation, effectiveness of soil as shielding 8−5059
FBR, neutron shielding, integral expt. and data correlation 8−5057
fifth international conference on reactor shielding, review 8−29599
filter testing, Winfrith, double automatic Pollak counter 8−33301
gamma alarm device, portable, with audible/visual warnings 8−8390
GCFR, Pu fuelled, fission products and secondary gamma-ray spectra 8−676
graduate educational program to prepare science majors for career in radiation health physics 8−4427
high-level waste management systems in Germany, risk analysis 8−17354
high-speed cassette film fogging and shielding 8−8460
hot laboratory design and construction *(Japanese)* 8−29623
HWR, accident prevention, effect on environment 8−29613
HWR, safety research and development 8−29614
information centre on radiation shielding, international technology resource 8−17543
ionisation smoke detectors, risks to humans 8−15909
KS-150 reactor, radial shielding model, neutron and γ-ray spectra meas. *(Slovak)* 8−21624
laser fusion blanket, neutronics and photonics 8−5025
leakage radiation meas., effective energy determ. 8−28089
legislation in West Germany, standards aspects *(German)* 8−5049
LMFBR, intermediate Na activation, Monte Carlo anal. 8−4997
LMFBR unirradiated assemblies, shipping containers 8−723
lung lavage for removal of inhaled radioactive particles, review 8−3618
LWR, effect of small pipe weld types on personnel exposure 8−4996
magnetostatic shield fabrication 8−5053
marine radioecology, radiobiological protection aspects *(French)* 8−11744
medical diagnostic X-rays, effects, risks and protection, review 8−3591
medical regulations and standards in France *(French)* 8−48897
microwave radiation, emission and exposure standards 8−44619
microwave radiation safety, meas. and instrumentation 8−44618
monitoring beta and photon radiations to ICRP recommendations 8−15908
Monte Carlo shielding calcs., biased selection of particle flight directions as variance resolution technique 8−29653
neutron field in fast reactor, spectral charact. *(Japanese)* 8−46222
neutron shutter for cyclotron facility 8−21794
neutron-nucleus reactions, double differential cross-section, analytic expression 8−8825
noise dose criteria for setting hearing loss risk estimates for industrial noise 8−1504
nuclear engineering, optimisation of radiation protection, cost, risk *(Czech)* 8−33295
nuclear facilities, forecasting of environmental impact *(French)* 8−8994
nuclear power plants, radiation exposure and protection 8−25301
nuclear power programme radioactive waste management 8−13258
nuclear reactor, corrosion product reduction program 8−21665
nuclear reactor shutdown system reliability, effect of operator performance 8−29611
nuclear vessels, probabilistic model for assessment of collision likelihood 8−5063
particle accelerators, cost optimization of structural design of radiation shielding 8−17443
permissible dose estimation based on biological risk 8−40352
personnel dosimetric control in Hungary *(Russian)* 8−20292
personnel radiation minimisation in nuclear power plants 8−21663
PWR, evaluation of environmental and in-plant effects of T recycle and build-up 8−33273
PWR, occupational radiation exposure 8−21664
PWR, Oconee, occupational exposures, radiation levels and waste levels during operation 8−21726
quality factor, proposal for revision 8−28091
radiobiological effects of low doses, implications for radiological protection 8−15867
reactor accidents, struct. shielding against gamma-ray sources, dose reduction factors 8−13251
reactor coolant, automated system for radioiodine anal. 8−35768
reference Japanese man *(Japanese)* 8−35968
RF radiation levels in urban areas 8−40351
safety device for gamma ray source containers 8−5051
SI units and ICRP recommendations 8−5054
space station, radiation protection design considerations for man in geosynchronous orbits 8−28096
spent reactor fuel, risk analysis of alternatives from reactor pool until final disposal 8−17355
stainless steel, type 316, neutron induced charged particle spectra 8−5024
surface coating, adsorpt. of Cs ions on constituent materials 8−23843
tandem, nuclear safety facility at Daresbury, shielding methods for insulators, ICs, other components 8−33318
thermoluminescent dosimeter monitoring post, concrete shielding to reduce background 8−817

radiation protection continued
thyroid protection during radioiodine-labelled pharmaceutical administration, computer simulation 8−44616
Tokamak divertor slot design to enhance mag. shielding 8−5028
Tokamak fusion reactor, effects of blanket-shield penetration on performance 8−21765
transport of nuclear material, especially nuclear fuel *(German)* 8−25314
Varian Clinac 4 MeV linear accelerator, radiation from U collimators, and shielding 8−24135
vitrified high-level radioactive waste, associated hazards 8−13259
working level survey meter 3R-WL, meas. of α-particles from ^{218}Po and ^{214}Po 8−25330
X-ray production equipment, USA safety standard 8−29223
X-ray tube thermal monitoring system, LOADIX, features 8−3658
^{241}Am source ingestion, case report 8−28088
Ba plaster, X-ray absorption coefficients, from 100 to 400 keV 8−31283
$^{59}Co+n$, calc. using pre-equil. statistical model code GNASH 8−4946
Cs sputter source, T beam prod. 8−29684
I, A=123 to 135, derived air concs. annual limits 8−31909
I, radioactive, adsorption on charcoal filter, safety evaluation *(Japanese)* 8−33267
^{125}I accidental inhalation, bioassay and thyroid monitoring results 8−24151
Pb shield, effects of thickness and geometry var. on neutron spectra 8−33300
Pt self-powered detector, neutron sensitivity calc. 8−37449
Pu fuel research facility for advanced LMFBR fuel *(Japanese)* 8−29624
^{90}Sr, leaching behaviour in cement composites 8−37416
T control by glove box containment at fusion reactor plant 8−46169
T health effects during normal and off normal release in CTR's 8−774
T sputter cone ion source for Minnesota MP Tandem, installation 8−29683
U(VI) removal from rat body by DTPA, DTPP, EDDIP, decontamination efficiency 8−44617
Zn radionuclide dosimetry standards and crit. organs 8−35961

radiation quenching
acetaldehyde+CO_2, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
acridizinium ion, fluoresc. quenching by external heavy atom, via charge-transfer complex 8−42112
alcohol solutions, fluoresc. damping curves in reson. quenching by one-photon counting method 8−10978
9-aminoacridine fluorescence quenching method of chloroplast membrane proton gradient and osmotic vol. determ. 8−28143
anthracene, pure and doped, singlet exciton diffusion lengths, fluoresc. quenching by dye 8−43923
anthrone, 533 nm excited state absorpt. kinetic, triplet quenching solvent, internal conversion, vibr. relax. 8−21935
aromatic hydrocarbons, aqueous micellar soln., triplet state room temp. phosphoresc., hydrophillic quenchers 8−9181
bacteriochlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
benzene, fluoresc. quenching by pulsed proton irrad. of cyclohexane soln. 8−5270
benzene triplet state, self quenching, effect on naphthalene internal conversion rate estimate 8−25586
biomembrane, distance meas. by radiationless energy transfer, transition probabilities 8−24187
carbocyanine dyes, triplet state quenching by nitroxyl radical, charge transfer complexing 8−25585
chlorofluorocarbene, ($^1A''$) state, radiative lifetime, quenching rate, press. depend., laser-induced fluoresc. obs. 8−5259
chlorophyll, transfer of electronic excitation energy from monomer to dimer *(Russian)* 8−27289
chlorophyll a, stimulated fluoresc. and fluoresc. quenching, pump photon density 8−27895
complex molecule solutions, stimulated emission, light quenching *(Russian)* 8−33735
dichlorocarbene, $^1B_1$ state, radiative lifetime, quenching rate, press. depend., laser-induced fluoresc. obs. 8−5259
9,10-dimethylanthracene, conc. solns., fluoresc. quenching by anthracene and derivatives 8−17711
9,10-dimethylanthracene derivative, intramol. fluoresc. quenching, attached CBr_3 groups 8−42113
dye soln., quenched, laser action *(Russian)* 8−25873
dye solutions, light-induced quenching of spontaneous and stimulated emission *(Russian)* 8−27290
fluorescence, quenching meas. of pesticide uptake into membranes 8−7323
glycerine solutions, fluoresc. damping curves in reson. quenching by one-photon counting method 8−10978
liquid scintillation system ^{32}P Cherenkov effect detect. efficiency meas. using ^{60}Co external source 8−25387
methyl thiyl radical, emission spectrum, collisional quenching 8−13543
9-methylanthracene, in acetylcellulose foil, time-depend. fluoresc. anisotropy, crit. transfer distance *(German)* 8−21964
molecular fluorescence, transient effects, kinetics 8−40022
naphthalene fluorescence by biacetyl, effect of viscosity 8−29810
2-naphthalensulphonate, fluoresc. and phosphoresc., external heavy atom effect 8−29812
naphthylamines, excited state pK_a* values, proton-induced fluorescence quenching 8−21958
β-naphthylmethyl amine, solvent-induced intramol. exciplex fluoresc. 8−25592
NQR scanning spectrometer, improved super-regenerative oscillator and quench generator 8−8429
oxalyl fluoride, radiative and nonradiative transitions, self-quenching, unimol. dissoc. 8−17708
phthalocyanine, X-metal-free in polyvinylacetate, elec. field induced fluoresc. quenching, carrier photogeneration 8−48207
polycyclic aromatic hydrocarbons, alternant and nonalternant, fluoresc. quenching by nitro cpds. *(German)* 8−21967
polyethylene terephthalate, photoexcited, thermoluminescence field quenching 8−43942
polystyrene, electron trap depth distribs., thermolum. data 8−11002
porphyrin solns., quenching of excited states by nitro-cpds., donor-acceptor interactions 8−2899

radiation quenching continued
- proteins, UV irradiated, luminesc. quenching, EPR and absorpt. spectra 8–15768
- pyrene, micellar solns., fluoresc. quenching 8–25588
- pyrene-h_{10}, -d_{10}, dual fluoresc. quenching by O_2 and NO 8–5266
- pyrene-N,N-dimethylaniline heteroexcimer systems, micellar solns., fluoresc., photoinduced electron transfer 8–25590
- rhodamine 6G, in methanol, fluoresc. lifetime meas. 8–29811
- rubrene, excited singlets, O quenching, singlet O formation 8–27792
- semiconductor, quenching of luminesc. by charged defects 8–23531
- solution, electronic excitation energy transfer between like mols. *(German)* 8–21965
- solution, luminescence quenching due to approaching particles transferring energy *(Russian)* 8–43933
- solutions, containing quenching agents, emission spectra, temp. effects *(Russian)* 8–15227
- TMPD, 2,2,4-trimethylpentane, fluoresc. quenching by elec. field, above photoionis. threshold 8–33539
- TMPD, fluoresc. in nonpolar organic liqs. for excitation energies above and below photoionis. threshold 8–1018
- triethylamine, gas (soln.), fluoresc. quenching by 'inert' perfluoromethylcyclohexane 8–46438
- uniaxial crystal, macroscopic exciton luminesc. characts., high reabsorption conditions 8–19545
- xanthione, solns., triplet state quenching by ground state xanthione 8–42180
- Ar_2F^*, radiative lifetimes, quenching rate consts., emission spectra 8–46577
- $Ar(^3P_{0,2})+N_2$, rate consts. and $N_2(C)$:$N_2(B)$ branching ratio 8–5327
- As $4p^3(^4S_{3/2})$, collisional quenching 8–33464
- BrF, fluoresc. decay lifetimes and quenching cross-sections for excited $B^3\Pi(0^+)$ states 8–1030
- $Br(4^2P_{1/2})+CO_2(COS)(CS_2)$, electronic to vibrational energy transfer rates 8–29839
- Cs+X, (X=N_2, H_2, He, Ar, Xe), collisional relax. and population quenching of Cs 8–25467
- DF, IR chemiluminesc. quenching, (V-V) and (V-T, R) energy transfer rates 8–20018
- DF, IR chemiluminesc. quenching, (V-V) energy transfer rates 8–20019
- Eu^{2+} activated phosphors, luminesc. efficiency, temp. and high pressure 8–23508
- GaAs:Cr, single cryst., optical quenching spectrum, disappearance of stationary high-field domain 8–47830
- Ge $4p^2(^1S_0)$, collisional quenching 8–33463
- H (2s) elec. field-quenched radiation polaris., Bethe-Lamb theory justification 8–17603
- H, metastable quenching, subsequent photoionis., polarised proton prod. *(Russian)* 8–46202
- $HCl(\nu=1,2)+O(^3P_g)$, reaction and deactivation, laser-induced fluoresc. obs. 8–35669
- $H_2(E,F^1\Sigma_g^+)$,+$He(H_2)$, quenching rates, IR fluoresc. obs. 8–37698
- HF, IR chemiluminesc. quenching, (V-V) and (V-T, R) energy transfer rates 8–20018
- HF, IR chemiluminesc. quenching, (V-V) energy transfer rates 8–20019
- $H(2S)+H_2(N_2)(NH_3)$(acetone)(methanol), collisional quenching, mass spectral obs. 8–25685
- H(2S)+inert gas, collisional quenching, mass spectral obs. 8–25685
- He+water (cyanomethane), afterglow, excitation and quenching reactions, optical pumping 8–35690
- $He(2^3S_1)+Hg_0\rightarrow He_0+Hg^++e$, in afterglow, rate const. meas. 8–17785
- $He(2^3S_1)$+Na(K)(Rb)(Cs), Penning ionis. in stationary afterglow 8–42184
- $He(5^3D)$+He, collisional quenching probability, 2-250 mtorr 8–25679
- Hg, 6^3P_0 and 6^3P_1 states, relax. effects. 8–5272
- Hg (metastable), quenching const. in He afterglow, by slow electrons *(Russian)* 8–29848
- $Hg(6^3P_2)$+Hg, aligned metastable ats., longitudinal and transverse relax. times, simultaneous meas. 8–13585
- I metastable atoms prod. from He-I_2, quenching rate const. by I_2 mols. 8–13691
- ICl, IF, fluoresc. decay lifetimes and quenching cross-sections for excited $B^3\Pi(0^+)$ states 8–1030
- $I(5^2P_{1/2})$, time-resolved reson. fluoresc., quenching rate coeffs. 8–25466
- $K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8–2901
- KI, intrinsic luminesc. quenching, by X-ray induced coloration 8–19539
- Kr I, saturated absorpt. profile of 557 nm line, collision effects 8–9121
- KrF, laser, e-beam pumped Kr-F_2 mixtures, form. and quenching processes 8–42322
- KrF^*, bound-free emission spectra, simulation 8–29806
- KrF^*, dominant quenching mechanism, in gas laser 8–33730
- N_2, $(C^3\Pi_u)$ state, radiative lifetime, collisional quenching, pulse radiolysis meas. 8–29813
- N_2+Cs, collisional relax. and population quenching of Cs 8–25467
- N_2+I_2, $(A^3\Sigma_u^+)$ state quenching 8–13580
- NO+formaldehyde(-d_2), laser beam-induced free radical reactions, quenching 8–44387
- NO_2, fluoresc. quenching mechanism 8–25599
- $N_2^*+SO_2$, quenching of vibr. excited N_2, photoionis. detect. technique 8–46388
- $Nd_xLa_{1-x}P_5O_{14}$, Nd^{3+} stoichiometric materials, luminesc., conc. quenching 8–27315
- Ne^*+X, (X=Ar, Kr, Xe, H_2, CO, HCl, F_2Cl_2, NF_3, N_2F_4, N_2O), quenching rate const. for metastable $Ne(^3P_2)$, flowing afterglow 8–46295
- $O_2(^1\Delta_g)+O_2$, deactivation rate const. meas. 8–5262
- RbI, intrinsic luminesc. quenching, by X-ray induced coloration 8–19539
- S_2, fluoresc. quenching by He, Ar, Xe, N_2, S_2, CF_4, C_2F_6, fluoresc. lifetimes 8–46386
- SO_2 $(^3B_1)$, phosphorescent lifetimes, press. saturation effect on quenching by CO_2, CO, N_2 8–1017
- SO_2, fluoresc. and photosensitised phosphoresc. of biacetyl, quenching and triplet theory transfer 8–25608
- $Se(4^1D_2)$ atoms, electronically excited, direct obs., quenching by inert gases 8–25461

radiation quenching continued
- $Si^*+He(H_2)(N_2)(O_2)(Cl_2)(CO)(NO)(C_2H_2)(C_2H_4)$, collisional quenching, reson. line absorpt. expt. 8–46297
- $Si(3p^2(^1S_0))+He(SiCl_4)(O_2)(N_2O)$, attenuation of reson. radiation, time-resolved kinetic obs. 8–5329
- UF_6, electronically excited, laser-induced time-resolved emission, self-quenching 8–42114
- UF_6, electronically excited, emission quenching by organic mols. 8–42115
- UF_6, electronically excited, emission quenching by inorganic mols. 8–42116
- UO_2^{2+} in aq. solns., luminescence quenching by metal ions 8–39588
- UO_2^{2+} in aq. solns., luminescence quenching by H_2O mols. 8–39589
- XeF^*, lifetime and collisional quenching meas., XeF_2 photolysis 8–33545
- ZnS, self-activated, IR sensitivity 8–6742
- ZnS:Ag,Sm, recomb. centre interaction, luminesc. quenching 8–10946
- ZnS:Cu phosphor, electric field quenching of photoluminesc. and flash-like rise in luminesc. 8–2911
- ZnS-CdS:Tm,Ni, recomb. centre interaction, luminesc. quenching 8–10946

radiation therapy
- 27.12 MHz selective heating of cutaneous tumours 8–24179
- accuracy, errors in patient set-up 8–11726
- arc technique for total-body irrad. by 42 MV betatron 8–24134
- betatron, 25 MeV, fast neutron component and patient dose 8–3592
- biophysical dose planning expts. 8–15879
- breast treatment with tangential fields using 4 MV X-rays, superficial doses 8–11740
- build-up effect with ^{60}Co radiation and fast electrons *(German)* 8–20271
- cancer therapy facility, microprocessor based control system 8–40398
- cancer X-ray sensitivity increased by 434 MHz EM irradiation 8–24180
- Clinac 4 skin sparing improvement using leaded glass electron filters 8–31885
- Clinac-18, satellite digital display 8–3599
- compensation filter for chest portals 8–31887
- conference, Las Vegas, USA, (Apr. 77) 8–3583
- cutaneous telanagiectasia after electron beam radiation, dose-time relationships 8–3552
- dermatology, photobiologic phenomena 8–35909
- dermatology investigation and therapy with dye lasers 8–35910
- dose-response relationships, appl. of logistic regression model 8–11724
- dosimeter, for routine meas. with X-ray therapy equipment between 10 and 250 kV 8–28084
- dosimetry, absorbed dose calc. corrections for tissue inhomogeneity 8–3610
- dosimetry, rel. to recurrence rate discrepancies between centres 8–7426
- dosimetry in accordance with section 13 of X-ray regulations using TLD *(German)* 8–20289
- dosimetry using Si diode detectors, energy compensating shield development 8–24142
- electron collimation system for use with electron cones of Varian Clinac 18 accelerator 8–11725
- electron dosimetry below 50 MeV, Monte Carlo calcs. 8–7453
- electron dosimetry in tissue equiv. phantoms 8–7454
- endoscopic laser coagulator with recirculating gas-jet assist 8–48867
- fast neutron beam build-up and depth-dose characts. 8–28072
- fast neutron therapy beam intercomparison using mouse testes as biological test system 8–20225
- fast neutron therapy beam prod. by 26 MeV protons on Be, dose meas. 8–28054
- field overlap, clinical complications phys. and technical considerations 8–11741
- gastric lesion bleeding control using lasers, comparison of Ar and Nd laser damage 8–48831
- heavy particle microdosimetric data with high intensity beams, pion appl. 8–40331
- heavy particle radiations appl. *(French)* 8–48890
- high energy particle therapy of cancer *(Japanese)* 8–31897
- hyperthermia dosage definition form in vitro thermal cytotoxicity data 8–24178
- International Microwave Symposium, San Diego, Calif., USA (June 1977) 8–5478
- interstitial radiotherapy of tongue, improved afterloading technique 8–35922
- kidney transplant patients, effect of local irrad. on acute rejection process 8–24117
- laryngo-pharynx, British Institute of Radiology fractionation study 8–44584
- laser, endoscopic Ar ion laser photocoagulator for bleeding digestive lesions 8–40287
- laser, endoscopic photocoagulation in human digestive tract using Ar ion laser *(German)* 8–35915
- laser, tumour irradiation, immunological processes *(German)* 8–40242
- laser applications in otology, review 8–48860
- laser beam operation in surgery and treatment, safety 8–35903
- laser iridectomy, energy required, hazards and techniques 8–11713
- laser irradiation healing of wounds *(German)* 8–35918
- laser radiation effects on wound healing, immunological aspects *(German)* 8–35917
- laser therapy in lower female genital tract disease medical and engineering problems 8–48865
- laser therapy of skin defects using Ar ion laser *(German)* 8–35916
- lasers in medicine, appls. and equipment development 8–48862
- linear accelerator calibration using Si diode detector, high-energy photon dosimetry 8–24143
- linear attenuation coefficients of biological materials, extrapolation from diagnostic energies to megavolt range 8–24145
- lymphocytes irrad. in vitro, effect of radiotherapy on mitogenic response to phytohaemagglutinin 8–24100
- malignant melanoma treatment near optic disc using small ^{60}Co beams 8–35929
- medulloblastoma treatment technique and radiation dosimetry 8–35926
- melanomas, effect of clinical irrad. regimes on human malignant tumours grown in athymic mice 8–24101

radiation therapy continued
meningioma irradiation, prototype circumscribed tumour for planning high-dose brain irrad. 8−35925
Mevatron 20, compact high-output linear accelerator 8−28035
microwave diathermy, circularly polarised direct contact applicator design and performance 8−7531
microwave diathermy direct-contact applicators, comparative heating patterns 8−40286
microwave Gaussian beam launcher, focal region field aberrations 8−44580
microwaves, direct-contact heating of dielec. encapsulated mouse tumour using dual-beam TEM applicator 8−40245
monitoring using $C^{15}O$ and $^{15}O_2$ steady state imaging 8−40298
multiple murine tumours, simultaneous microwave irradiation bolusing technique 8−7422
neutron beam dosimetry, prod. by Be(p,n) and Li(p,n) reactions with 26, 35 and 45 MeV protons 8−28083
neutron beams prod. by protons and deuterons on Be and Li, dosimetry 8−24141
neutron capture therapy of cancer in mice, long range effects, dose effect 8−48877
neutron radiotherapy, 14 MeV, skin-sparing, effect of metal sheets 8−35923
neutron radiotherapy beam, photon dose fraction meas. 8−3605
neutron spectra from d and p bombardment of thick Li targets 8−28049
neutron spectra from d bombardment of Be and D 8−40319
neutron spectral meas. in intense photon field of high-energy X-ray therapy machine 8−24133
neutron therapy vs. existing therapy techniques in Switzerland, cost-benefit anal. 8−11718
neutrons, 14 MeV, thermal neutron distrib. in bone in paraffin phantom, Au wire activation meas. 8−3616
nuclear therapy, survey *(French)* 8−48889
ophthalmological treatment with photocoagulation systems *(Croatian)* 8−44581
paediatric malignancies, set-up and treatment techniques 8−35927
pelvic radiation portal reproduction, errors 8−35928
photochemotherapy of psoriasis vulgaris and mycosis fungoides 8−35908
$pion^-$, dynamic rangeshifter for modifying depth-dose distribs. 8−3595
$pion^-$ beam dosimetry, LAMPF 8−3606
$pion^-$ peak expansion to range of depths useful in radiotherapy, chromosome aberration meas. 8−20243
pion radiotherapy, review *(Japanese)* 8−40321
prescribed schedule non-compliance clinical significance 8−11723
prior immobilisation and positioning, pion therapy expt. 8−31886
purpose and technology, radiotherapy department planning 8−28034
rat metastatic growth effect of local tumour hyperthermia 8−24115
renal blocking, use of diagnostic US to determine renal size and position 8−31874
rotation therapy, automatic var. of field size and dose rate 8−11720
sensitometry, review 8−20260
sidelight using laser cross-hair image 8−35939
simulator, use of therapy accelerator 8−3581
small-animal microwave induced hyperthermia development system 8−11715
supervoltage beam films, optimisation 8−3580
telecobalt collimators, design principles 8−15888
tissue response to multiple small dose fractions 8−15865
tissue-maximum ratio expression fitted to Varian Clinac-6 and Clinac-4 accelerators 8−24148
tissue-maximum ratios for high-energy X-rays 8−3609
track detector direct dosimetry in fast neutron beams 8−20277
treatment planning, computational anal. and dosimetric evaluation of commercial irregular-fields computer program 8−24147
treatment planning and follow-up of superficial tumours, US B-scan appl. 8−11721
treatment planning in ^{60}Co radiotherapy using computerised tomography techniques 8−35964
tumour blood flow changes due to microwave hyperthermia 8−24116
underdosing due to lack of electronic equilib. in upper respiratory air cavities, 10 MV X-irrad. 8−11739
US ophthalmological diagnostics and therapy *(Croatian)* 8−44570
Varian 6 MV CLINAC-6X accelerator, beam characts. 8−3582
Varian Clinac 4 MeV linear accelerator, radiation from U collimators, and shielding 8−24135
wedged field characteristics for Clinac-18 10 MV X-rays 8−3608
whole-body computerised tomography appl. *(German)* 8−35945
π^- beams, direct track detector dosimetry 8−20281
^{252}Cf for interstitial radiotherapy implantations, clinical study 8−11722
^{252}Cf, use for brachytherapy 8−20272
^{60}Co axial depth dose empirical formula 8−35965
^{60}Co beam lateral profile model 8−28085
^{60}Co teletherapy build-up dose meas. using $FeSO_4$-benzoic acid-xylenol orange dosimeter 8−28081
^{60}Co teletherapy split fields, symm. and asymm., dosimetry 8−3611
^{60}Co, use of electron filters to improve buildup characts. of large fields 8−3612
^{125}I therapy, RBE of soft X-rays 8−7405
^{131}I thyroid therapy, estimating doses recorded by personnel dosimeters 8−15891
^{177}Lu organ distribution in mouse 8−48879
Si diode neutron detector for meas. near high-energy accelerator, photon and electron response 8−35963

radiative corrections
"radiative corrections" is distinguished in use from "electromagnetic corrections" by application to atomic and molecular spectra
see also electromagnetic corrections; radiative shifts
Dreel-Yan processes, gluon corrections 8−8597
electron in external EM field, radiative corrections 8−41449
non-relativistic limit, physical interpretations of electron radiative corrections 8−37567
H-like ions, one-photon decay rates, general theory of radiative corrections 8−46282
Li, ^2S ground state calc. using Hylleraas-type wavefunctions 8−33418

radiative lifetimes
acetaldehyde+CO_2, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229

radiative lifetimes continued
alkali isoelectronic series, transition probabilities, oscill. strengths, lifetimes, branching ratios 8−33470
anthracene, pure and d_n, PMMA soln., triplet lifetimes, 77-300K 8−25594
anthracene, spectral evidence for green incipient dimers after photooxidation and photodimerisation 8−15687
atomic lifetime technique, laser ablation and selective excitation spectroscopy 8−17824
atoms, distortions of decay curves in delayed coincidence techniques 8−17620
atoms and molecules, cascade-free determ., using modulated or deflected CW dye laser 8−25754
azoalkanes, fluoresc., solvent isotope effect 8−25591
Ba I, lifetime meas. of Rydberg states in 6snd $^1D_2$ series 8−33472
diatomic isovalent sequence, free-mol. electronic transition intensity consts., systematics 8−42137
4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
dihalogenoacetylene radical cations, $C_2X_2^+$, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17679
diphenylketyl radical, fluoresc. lifetime and quantum yield, organic matrix, 77-130K 8−42110
C_{2v}-formaldehyde, Tamm-Dancoff approx., relativistic correction, vertical excitation energy, radiative lifetimes 8−9090
halogenoacetylene radical cations, C_2HX^+, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17678
7-hydroxycoumarine, one- and two-photon absorption, fluoresc. obs. 8−46407
inert gases, from collision induced absorption spectra, IR line broadening 8−33554
long optical lifetimes meas., distortion effects 8−9276
molecular ions, radiative lifetimes, threshold electron-phonon coincidence meas. 8−13550
molecule excited state lifetimes time-resolved spectra 8−17704
molecules (molecular ions), lifetimes and branching ratios 8−17725
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
rhodamine 6G, in methanol, fluoresc. lifetime meas. 8−29811
rhodamine 6G+BBOT donor-acceptor system, intermol. electronic energy transfer 8−17702
Rydberg atoms, Stark ang. momentum transfer, hydrogenic model 8−17606
xanthione, solns., triplet state quenching by ground state xanthione 8−42180
Ag I, resonance level, radiative lifetime, dye laser excitation 8−46300
Al I, resonance level, radiative lifetime, dye laser excitation 8−46300
Al^{7+}, $2s2p^3$ terms, mean lives, from beam-foil spectra 8−37601
α-Al_2O_3:V^{3+}, near IR spectra, line lifetime, 2, 10, 77K 8−10972
Ar, lifetimes of L and LM vacancy states, X-ray emission linewidth 8−17621
Ar^{x+}, high resolution spectroscopy of prompt and metastable decaying levels 8−33462
Ar_2F^*, radiative lifetimes, quenching rate consts., emission spectra 8−46577
Ba II resonance level lifetime meas. by pulsed laser excitation of ion beam 8−25480
CH_2 radical, fluoresc. induced by laser 588.9-595.6 nm, $(a^1A_1-X^3B_1)$ energy separation 8−42121
CO, fluorescence, lifetime meas. for rot. levels of (0,0) band, $A^1\pi$ to $X^1\Sigma^+$ transition 8−29808
CO_2, from collision induced absorption spectra, IR line broadening 8−33554
CO_2^+, radiative lifetimes, threshold electron-phonon coincidence meas. 8−13550
Ca, atoms and ions, radiative lifetimes of excited states *(Russian)* 8−13472
CaF_2:Ho^{3+}, fluoresc., relative intensities, lifetimes 8−27296
Cl^+, laser levels, radiative lifetimes meas. 8−42330
ClCF radical in solid Ar, emission and excitation spectra, vibr. anal. 8−9164
Cn free radical, $B^2\Sigma^+$ state lifetime, photon-photon cascade meas. 8−5273
Cr, radiative lifetimes, laser ablation and selective excitation spectroscopy 8−17824
Cs, cascade-free radiative lifetime, modulated or deflected CW dye laser method determ. 8−25754
Cu^{18+}, Na-like, low-lying levels, radiative lifetimes, f-values obs. 8−25482
H_2, from collision induced absorption spectra, IR line broadening 8−33554
$H_2(E,F^1\Sigma_g^+)$, two-photon excitation, cross section, radiative lifetime, quenching rate, IR fluoresc. obs. 8−37698
$H_2(c^3\pi_u)$, theoretical radiative lifetime, from mag. dipole, elec. quadrupole interaction 8−33553
He I, 4^1F and 5^1F lifetimes 8−37599
HgBr, B→X transition radiative lifetime, charge transfer model 8−17719
$HgBr_2$, UV absorpt. cross-sections of vapour 8−25554
HgCl, B→X transition radiative lifetime, charge transfer model 8−17719
HgI, B→X transition radiative lifetime, charge transfer model 8−17719
HgI_2, UV absorpt. cross-sections of vapour 8−25554
I_2, dynamic friction coeff. meas. by saturation spectroscopy, radiative lifetimes 8−18368
I_2, in CCl_4 and cyclohexane solns., higher vibr. levels, dephasing lifetimes, from reson. Raman spectrum 8−42068
$IBr(B^3\pi_0^+)$, lifetimes determ. from time resolved fluoresc. 8−46385
Kr, fluoresc. lifetimes, time resolved VUV spectra 8−17601
KrF^* radiative lifetime, pulsed photolysis obs. 8−29819
La^+, cascade free lifetime meas., beam-laser method 8−17618
Li_2, $A^1\Sigma_u^+$-$X^1\Sigma_g^+$ band system transition dipole moments and radiative lifetimes, model pot. calcs. 8−9160
Li_2, radiative lifetimes of $B^1\Pi_u$ states, model pot. calcs. 8−46397
Mg^{6+}, $2s2p^3$ terms, mean lives, from beam-foil spectra 8−37601
Mo^{13+}, energy levels for transition probabilities, oscillator strengths, rad. lifetimes 8−17589
N, high Rydberg states, radiative decay rates, TOF meas 8−46302
N_2, $(C^3\Pi_u)$ state, radiative lifetime, collisional quenching, pulse radiolysis meas. 8−29813

radiative lifetimes continued

N_2O^+, fluoresc. and dissociation lifetimes of vibr. excited states 8−42108
Na, reson. light scatt., theory of correl. meas. 8−42014
Na+N_2, collisional deactivation of Na excited states, time resolved fluoresc. 8−42197
Ne^{4+}, $2s2p^3$ terms, mean lives, from beam-foil spectra 8−37601
O_2, lifetimes and reactivity in aq. micellar system 8−46398
O_2, singlet state lifetime in D_2O soln., decay of micellar system 8−46301
O_2^+, radiative lifetimes and UV spectra, $b^4\Sigma_g$-$a^4\Pi_u$, $A^2\Pi_u$-$X^2\Pi_g$ transitions 8−17724
^{85}Rb, $5^2P_{3/2}$ state, Hanle effect *(French)* 8−42018
S_2, fluoresc. quenching by He, Ar, Xe, N_2, S_2, CF_4, C_2F_6, fluoresc. lifetimes 8−46386
Si V, VI, beam-foil meas. of lifetimes, 500 to 1300 Å 8−9118
SnX_2 (X=Cl, Br, I), UV absorpt. cross-sections of vapour 8−25554
Sr II, resonance level lifetime meas. by pulsed laser excitation of ion beam 8−25480
TiO, ($C^3\Delta$-$X^3\Delta$) system, radiative lifetimes, oscillator strengths, flame spectroscopy 8−42136
Xe, fluoresc. lifetimes, time resolved VUV spectra 8−17601
Zn, triplet state lifetimes, (4s6s), (4s5d), (4s6d) configs. *(French)* 8−5175

radiative shifts

No entries

radiative transfer

absorbing-emitting media, integro-differential energy eqn. soln., validity range of differential approx. 8−5644
anisotropic dispersive media, generalisation of Planck's law 8−18153
Arctic summertime stratus clouds, solar radiation pyranometric meas. 8−32165
atmosphere, aerosol optical scatt. thickness from daytime sky UV light polarisation 8−20517
atmosphere, cloud effects on satellite upwelling radiances 8−32227
atmosphere, IR transmissivities for H_2O vapour, CO_2 and O_3 8−11998
atmosphere, new formula relating optical parameters *(Russian)* 8−11999
atmosphere, O_3 9.6 μm band radiance calc., excitation processes 8−36350
atmosphere, radiation attenuation spectral struct., depend. on atmospheric surface layer turbidity *(Russian)* 8−44997
atmosphere, transfer of auroral O I (989 Å) and O I (1027 Å) 8−28367
atmosphere thermal radiation, effect of hailstones on spectral depend. in 0.86 to 17 cm range *(Russian)* 8−36222
attenuating medium, basic internal characts. of radiation field 8−1555
boundary layer, radiation-flow field interactions with injection of absorbing gas 8−5826
η Carinae, spherical circumstellar dust shell model, radiative transfer 8−36577
cavity, single-mode photon emission/radiation, Gibbs vs. information theoretic entropies 8−16765
Chahine relaxation method extension to radiative transfer eqn. inversion 8−7794
channels, internal radiative transfer *(Russian)* 8−38330
classical novae, photospheric props. of optically thick winds 8−24516
closely packed media, difference eqn. 8−12654
comoving-frame transfer eqn. in spherically symmetric flows, soln. for multilevel atoms 8−28499
compact X-ray sources, Comptonisation of Fe X-ray spectral features 8−20908
complex heat exchange, radiant and convective components meas. method 8−32809
convective-radiative equilibrium, numerical soln. 8−32164
cylinder row systems, variation of heat transfer characteristics with number of rows 8−9552
cylindrical media, numerical method for soln. to transfer eqn. 8−5642
delta-M method, radiative flux calcs. for asymm. phase functions 8−32338
diatomic gas, vibr. nonequilib. radiation, master eqn. approxs. 8−33496
diatomic gas, vibr. nonequilib. radiation 8−33495
drop, diffusional evap. in EM radiation field 8−43112
early B-type stars atmospheres, LTE line blanketing by UV lines using accurate damping consts. 8−16419
Earth's atmosphere, IR transfer and CO_2, statistical model 8−26024
Earth atmosphere, plane-parallel model appls. to multiple scattered radiation problems *(Russian)* 8−36275
Earth atmosphere non-LTE radiative transfer in 15 μm CO_2 band *(Russian)* 8−36341
eclipsing binaries, linearised limb-darkening coeffs. for light curves anal. 8−49480
Eddington approx. range of validity 8−12086
emission frequencies simulation from angle-dependent partial freq. redistribs. 8−32333
emitting-absorbing-scattering layer, radiative transfer anal. using effective absorptivity 8−5827
explosions in radiating stars, similarity solns. 8−32443
flame radiation, in IR porous perforated gas radiators 8−3335
frequency redistribution, general law for noncoherent radiation scatt. 8−24746
frequency redistribution in externally excited medium, Monte Carlo method 8−20628
furnace, gas fired, radiative heat transfer 8−1557
furnace, internally fired, radiative transfer 8−5643
galactic centre, radiation model, dust grains heating by O-stars and K-giants 8−36697
grey cavity, apparent emission and absorpt. factors *(French)* 8−30168
grey medium between concentric cylinders, 2 dimens. radiative equilib. 8−42523
HCDA, radiological consequences, attenuation due to radiative cooling 8−13296
heat radiation, two-dimens. isotropic scatt. in semiinfinite medium 8−42521
heat transfer integral theory with anisotropic scatt. and general boundary conditions 8−32339
hollow functions of a source in radiation gasdynamics 8−9554
homogeneous semiinfinite atmosphere, radiation field calc. 8−7876
hot plasma, X-ray emission and radiative transfer effect 8−36451

radiative transfer continued

inhomogeneous cosmic masers, numerical calcs. of saturation behaviour 8−20898
intensity distribution inside absorbing-isotropically scatt. semiinfinite medium 8−32335
interstellar CS, numerical solns. to radiative transfer and statistical equilib. eqns. 8−12319
interstellar dark clouds, anisotropic scatt. and formaldehyde lifetimes 8−8080
interstellar spherically symmetric radially moving clouds, spectral line shapes 8−20865
invariant imbedding method for multiple scatt. calc. Venus CO_2 lines appl. 8−4095
IR sources, effect of multiple grain components on radiation transfer and 10 micron silicate feature 8−36659
isotropically scatt. finite medium, approx. soln. 8−1553
isotropically scattering semiinfinite medium, two-dimens. radiative transfer expansions 8−42522
Jupiter, thermal structure from IR spectral meas., filtered iterative inversion method 8−7918lic
laminar convection in forced upflow, with radiative transfer 8−47064
light, polarized, radiative transfer eqns., adjoint Monte Carlo treatment 8−37799
line photons, equality of mean escape probability and mean net radiative bracket 8−40815
metal cone, vaporisation, solution by wave front method 8−5640
methane, shock-tube oxidation, equilibrium and nonequilibrium radiation emission 8−27760
molecular medium, IR transfer, complex absorpt. coeff., statistical model 8−26024
Monte Carlo method, ang. biasing of collision process in multigroup calcs. 8−4975
multizone system with isotropic scatt. 8−5643
non-LTE transfer, asymptotic expansion for small ε 8−16287
non-LTE transfer, rapidly convergent iterative method for Wiener-Hopf integral eqns. 8−12089
nonequilibrium ionised radiating gas flow over blunt bodies 8−9727
nuclear reactor, GCFR and LMFBR, thermal radiation effects on subassembly wall failure 8−8938
O-type stars winds and coronae, radiative transfer rel. to Hα line profile 8−40947
ocean, optical properties, one parameter characterisation for remote sensing 8−7644
particulate multiple-scatt. medium, radiance prod. by laser beams 8−9325
plane layer, effect of boundary refl. and selectivity of optical characts. on radiative-conductive heat transfer 8−1554
plane-parallel scattering absorbing media, approximate method for radiative transfer 8−37805
planetary atmosphere, Markov chain formalism 8−36447
planetary atmospheres, azimuth-independ. multiple scatt. with rough surface 8−12085
planetary nebulae, geometry effects on H Lyman α form. 8−20871
plate, radiant, heating by high temp. gas flow *(Russian)* 8−18154
polarization transfer eqn. in inhomogeneous magnetized plasma, solns. 8−28506
polluted urban planetary boundary layer 8−7708
radiative-conductive heat transfer in plane-parallel layer 8−22256
radiative-conductive heat transfer in slab, steady-state problem 8−38181
radio galaxies, polarised radiation transfer in magnetoactive plasma 8−24564
radioline series decrement for atomic levels with high quantum numbers *(Russian)* 8−28497
rarefied gas, convective heat transfer coeff. and surface emissivity, effect of degree of vac. 8−1693
reflection nebulae, multiple scatt., Monte Carlo approach 8−12320
reflection nebulae, scatt. multiplicity 8−12323
reflection nebulae, with embedded illuminating stars, multiple scatt. 8−12322
reflection nebulae, with foreground stars, multiple scatt. 8−12321
relativistic Maxwellian electrons, moment generated radiative transfer functions 8−24747
scattering functions, adding and invariant imbedding eqns. in matrix notation 8−24745
scattering medium, transfer eqn. for layer with extended scattering indicatrix *(Russian)* 8−40660
semiinfinite atmosphere, isotropically scatt., radiation field calc. *(Russian)* 8−28496
shock layer in gas, spectral lines calc. 8−5641
shock wave incident on wall, thermal radiation effects 8−5823
sky radiance during total solar eclipse, model 8−40652
Sobolev method, generalisation for flows with nonlocal radiative coupling 8−28500
solar atmosphere, scatt. effects on quiet Sun emission at freqs. <200 MHz 8−4183
solar non-isothermal atmosphere, linear hydrodynamical eqns. coupling with radiative transfer 8−20794
solar photosphere, radiative transfer calcs. rel. to north-south brightness asymmetry 8−45303
solar spectral lines, Stokes profiles appl. to vector mag. fields determ. 8−28611
sonic wave propagation, thermally conducting and radiating gases 8−42679
spectral lines, radiative transfer in reson. multiplet lines 8−24460
spectral models, applicability, radiative gas dynamics 8−14100
stellar atmospheres, coherent scatt. 8−28667
stellar atmospheres, H continua from radiative shock 8−40918
stellar atmospheres, non-LTE line form. in presence of mag. field 8−7871
stellar atmospheres with spherical symmetry, conservative Milne problem 8−49312
stellar expanding envelopes, radiative forces 8−28659
stratosphere and mesosphere, review 8−49105
strong shock with radiation near stellar surface 8−32442
transpiration-cooled system, thermal response in radiative and convective environment 8−32323
turbulent suspension, combined radiative and convective heat transfer 8−9724
two-dimensional radiative transfer, planar geometry theory 8−40810

radiative transfer continued
urban planetary boundary layer, pollution effects on thermal struct. and dispersion 8–11986
W Ursae Majoris stars, effects of photospheric convection on source function 8–49478
vegetation reflectivity, effect on atmospheric radiance and polarisation 8–40650
Venus atmosphere, interpretation of weak absorpt. lines 8–24481
Voigt function, partial differential equations, for stellar atm. line profile calcs. 8–28507
C^-, free-free transitions, continuous absorpt. estimation 8–9098
CO_2 15 μ band radiant energy inflow in disturbed LTE *(Russian)* 8–40657
O I emission resonance triplet lines form. in solar spectrum 8–24504

radicals, free *see free radicals*

radio applications
see also radioastronomy; radiocommunication; radionavigation
atomic clocks synchronisation, VLBI obs. 8–29092
auroral ionosphere, radio investigations via VHF bistatic Doppler system 8–28387

radio broadcasting
RF radiation levels in urban areas 8–40351
time dissemination for public requirements and communication systems, Canada 8–41284

radio equipment
see also antennas; loudspeakers; transceivers
Hungarian developments, BEAG activities 8–46860

radio links
see also microwave links; radiocommunication
ionospheric radiowave propagation conditions at decimetre wavelength 8–45136

radio receivers
see also superheterodyne receivers
planetary LF radio emission meas., used in Voyager spacecraft mission 8–4075
uncooled millimeter wave receiver for radioastronomical observations *(Swedish)* 8–24461
VHF/UHF, remote frequency measurement appl. *(German)* 8–4631

radio relay systems *see radio links*

radio studios
Broadcasting House, SDR, Stuttgart, sound engineering planning *(German)* 8–1512

radio systems
VHF bistatic Doppler system, for radio investigations of auroral ionosphere 8–28387

radio transceivers *see transceivers*

radio transmitters
see also radiosondes
radio buoy for tracking oil slicks 8–45034
RF energy absorpt. of simulated body material using portable transmitters 8–44614

radioactive age determination *see radioactive dating*

radioactive chemical analysis
see also radiochemistry
autoionography of beta-emitting radionuclides distrib. on thin-layer chromatograms 8–20126
automotive exhaust gas catalysts, radiometric determ. of Pt and Pd attrition 8–31740
autoradiography and soft laser scanning in radioisotope work, appl. to metabolic studies 8–3576
coal power station fly-ash and slag, natural radioactivity meas. 8–17442
determ. in coastal sediments and seawater, activity ratios, disequilib. 8–27851
domestic coal, radiometric method for determ. of heating value, rel. to moisture content 8–20111
insulin, radioimmunoassay, improvement in precision and accuracy of commercial kit 8–48884
mica, fissionable element impurities, nature and distrib., fission track method 8–44436
NRX and process effluents, gamma ray spectrometric anal. 8–29656
radiogas chromatography, software package for data collection and processing 8–20086
radiopharmaceutical purity determ., adaptation of multichannel scalar device for radiochromatogram scanning 8–48894
Ranney wells waters, interconnection with River Sava determ. by environmental T meas. 8–20447
reactor coolant, automated system for radioiodine anal. 8–35768
soil, fissionable element impurities, nature and distrib., fission track method 8–44436
β-ray quantitative microautoradiograhy, by X-ray emission microanal. 8–20545
^{14}C dating using electrostatic accelerators and negative ions 8–32917
^{14}C direct detection at natural concs. by mass spectrometry, for dating 8–32916
^{36}Cl, Cherenkov counting using Teflon vials 8–858
^{3}H in aqueous samples, single solvent cocktail for liq. scintillation counting 8–856
^{3}H in water, low-level meas., inter-laboratory comparison 8–44888
Hg ores, determ. of Hg content using ^{57}Co isotope and scintillation counter 8–20539
^{131}I determination in vegetation, ashing procedure 8–15930
^{131}I, low level detection in milk rel. to population dose 8–31911
^{32}P, Cherenkov counting using Teflon vials 8–858
^{231}Pa, determ. in coastal sediments and seawater, activity ratios, disequilib. 8–27851
Pu, alpha-energy and mass analyses, using single sample mount 8–15744
^{241}Pu concentrations in Swedish reindeer lichens, radiochem. anal. 8–15912
^{99m}Tc radiopharmaceuticals, rapid miniaturised chromatographic quality control procedures 8–28070
Th, prospecting method, using Ra accumulation in animal thyroid glands, anal. 8–27853
U, in porcelain dentures, rapid anal. by delayed fission neutron method 8–15907

radioactive chemical analysis continued
U ores, dusts and mill tailings, simultaneous determ. of ^{238}U, ^{234}U, ^{230}Th, ^{226}Ra, and ^{210}Pb 8–15736
U, prospecting method, using Ra accumulation in animal thyroid glands, anal. 8–27853

radioactive dating
see also Earth age
Archaean basic and ultrabasic volcanics Sm-Nd dating 8–11848
bone, inclusions as source of error in radiocarbon dating 8–346
chlorite, fission track annealing and age determ. 8–36307
cosmic ray induced neutron background sources rel. to ^{14}C dating 8–40781
decay constants in geochronology and cosmochronology, IUGS Subcommission convention 8–28189
deep-sea cores, ^{231}Pa dating via ^{227}Th counting 8–32238
Dhajala meteorite, unequilibrated H3 chondrite, K-Ar and cosmic ray exposure ages 8–32425
excess ^{230}Th dating of Late Brunhes geomag. polarity episodes 8–11797
fission track dating of Himalayan muscovites, Nepal, and U conc. estimation 8–40524
galactic cosmic rays, age derived from ^{10}Be abundance 8–12060
Himalayan muscovites, fission track dating 8–3736
hornblende and biotite, ^{40}Ar/^{39}Ar ages across Georgia Inner Piedmont, rel. to tectonothermal history 8–48990
lunar KREEP-basalt formation ages determ. 8–32372
Mamontova Gore silt, Siberia, radiocarbon dates and late Quaternary nonglacial stratigraphy 8–44819
Marydale Formation, Kheis Group, South Africa, Rb-Sr age 8–32088
meteorites, excess K-Ar ages prediction in presolar grains 8–28761
Midway volcano, Hawaiian volcanic chain, age determ. 8–32041
nepheline syenite, dating, Rb-Sr internal isochron, ^{39}Ar-^{40}Ar plateau age methods *(French)* 8–32031
Nordlinger Ries giant meteorite impact crater, K-Ar and fission track dating 8–28236
Pacific Ocean sediments, ^{10}Be dating compared with palaeomagnetic ages 8–32058
quartz, grains, fission track dating, Oklo uranium ore deposit 8–20555
Quaternary loess deposits of Banks Peninsula, New Zealand, radiocarbon dating 8–24271
Sahara plateau, petrographic and radiometric dating *(Italian)* 8–7595
sediment age determination, ^{210}Pb, plastic nuclear track detector 8–20554
sediments, α-spectrometric dating method, using ^{210}Po 8–28350
St. Mesmin brecciated chondrite, noble gases, K-Ar ages and irradiation history 8–28593
Sudbury Ni Irruptive and Superior Province granites, ages 8–36126
zircons from Early Precambrian rocks of W.Greenland and Minnesota River Valley, U-Pb ages 8–11845
Ar-K isotopic dilution method for absolute age determ. *(Rumanian)* 8–20562
^{40}Ar excess identification by ^{40}Ar/^{39}Ar age spectrum technique, comments 8–32237
^{14}C absolute dating using low altitude European tree-ring calibration 8–16195
^{14}C age errors for recent deposits with fluvially transported charcoal 8–36172
^{14}C analysis of soil, dating 8–36299
^{14}C and T meas. of groundwater in Eaton River Basin and Mirabel area, Quebec 8–28249
^{14}C dating using electrostatic accelerators and negative ions 8–32917
^{14}C direct detection at natural concs. by mass spectrometry, for dating 8–32916
^{210}Pb dating, results from Lake Ipea and Lough Erne sediment cores 8–28202
^{210}Pb technique for marine heavy metal sedimentation rate determ. 8–32063
Rb-Sr ages of early Archean supracrustal rocks and Amitsoq gneisses Isua, Greenland 8–16013
Rb-Sr method, Rb and Sr separation from potash salts by ion exchange *(German)* 8–23940
^{87}Rb, decay constant determ., Rb-Sr dating appl. 8–29424
Sm-Nd, isotopic investigations of Isua supracrustals and implications for mantle evolution 8–36129
^{230}Th-^{234}U dating of calcite speleothems, interglacial chronology of Rocky and Mackenzie Mountains 8–36120
U-Pb ages of crystalline rocks, Burlington Peninsula, Newfoundland, Fleur de Lys metamorphism age 8–28188

radioactive decay periods
electronic analogue, demonstration apparatus circuit 8–41122
highly excited nuclei, lifetime *(Russian)* 8–29430
superheavy elements, stability rel. to Moon primaeval melting 8–24478
superheavy nuclei, alpha half-lives, alpha particle struct. effects 8–17158
superheavy nuclei, lifetime, theoretical prediction of nonoccurrence in nature 8–662
^{101}Ag, $T_{1/2}$ meas., decay scheme, ^{101}Pd levels 8–37311
^{46}Ar decay, gamma-ray spectra meas., half-life determ. 8–21513
^{12}B, β-ray branching and $T_{1/2}$ 8–41674
^{47}Cr, β-decay GT matrix elements, $T_{1/2}$ 8–557
^{55}Cr, half-life determ. 8–4915
^{124}Cs, β-decay, ^{124}Xe level struct. 8–13033
^{252}Es, half-life, γ-ray decay obs. 8–4914
^{51}Fe, β-decay GT matrix elements, $T_{1/2}$ 8–557
^{180}Hg, $T_{1/2}$=3s decay chain, on-line γ-ray spectroscopy 8–13034
^{170}Ho $β^-$-decay, $T_{1/2}$ meas., ^{170}Er level struct. 8–41675
^{181}Ir, γ-ray spectra, half-life, decay scheme 8–41672
^{40}K, decay consts. for use in geochronology and cosmochronology 8–28189
^{52}Mn half-life meas. 8–17152
Mo, A=103-5, half-lives and γ-ray energies of short-lived isotopes following ^{235}U fission 8–17137
^{12}N, β-ray branching and $T_{1/2}$ 8–41674
^{92}Nb, half life determ. by gamma spectroscopy, comparison of ^{92}Nb, ^{94}Nb activities and abundances 8–29423
^{55}Ni, β-decay GT matrix elements, $T_{1/2}$ 8–557
^{196}Os, $T_{1/2}$ and partial decay scheme 8–21527
^{111}Pd^{g,m}, γ-ray decay, ^{111g}Pd half-life, ^{111}Ag levels and decay 8–541
^{152}Pm decay, β and γ rays, spins, half lives, ^{152}Sm levels 8–542

radioactive decay periods continued
^{232}Pu, fission barrier determ., from β-delayed fission 8−29518
^{237}Pu , half-life determ. by gamma counting in NaI(Tl) 8−8775
^{242}Pu, half-life meas. 8−17154
^{87}Rb, decay constant determ., Rb-Sr dating appl. 8−29424
^{87}Rb, decay consts. for use in geochronology and cosmochronology 8−28189
^{109}Rh, half-life and decay props. 8−25154
^{117m}Sn, half-life and γ-ray intensities 8−4916
^{232}Th, α-decay half-life, liq. scintillator expt. for students 8−12496
^{232}Th, decay consts. for use in geochronology and cosmochronology 8−28189
^{238}U, ^{235}U, decay consts. for use in geochronology and cosmochronology 8−28189
^{54}V, β-decay scheme and $T_{1/2}$ determ. 8−21528
^{55}V β-decay scheme and $T_{1/2}$ determ., mass excess meas. 8−21528
$_{126}^{228}$X, primordial and other nuclei, shell model calc. 8−8752
Yb, A=153-158, neutron deficient isotopes, daughter products, α-decay, halflives 8−21533

radioactive decay schemes
see also nuclear energy levels
A=198 nuclei, struct., level props., decay, review 8−17077
A=214 nuclei, struct. info., energy levels, spin, parity, decay 8−17078
A=218 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17079
A=222 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17080
A=234 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17081
A=238 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17082
A=242 nuclei, nuclear struct. info., energy levels, spin, parity, decay 8−17083
A=53 nuclei, struct., level props., ENSDF data 8−17076
data sheets for A=184 nuclei 8−12948
data sheets for A=231, 235, 239 nuclei 8−12949
^{101}Ag, $T_{1/2}$ meas., decay scheme, ^{101}Pd levels 8−37311
^{111}Ag^{m}→^{111}Cd decay 8−541
^{113}Ag, 5.3 h decay scheme, ^{113}Cd level scheme 8−46028
^{115}Ag, 20 min decay scheme, ^{115}Cd level scheme 8−46029
Ce isotopes, neutron rich, decay properties 8−13032
^{63}Co from ^{64}Ni(n,d), 14.3 MeV 8−46053
^{64}Co from ^{64}Ni(n,p), 14.3 MeV 8−46053
^{124}Cs, β-decay, ^{124}Xe level struct. 8−13033
^{124}Cs, EC and β^{+}-decay, exam. of Xe nuclear level struct. 8−21498
^{126}Cs, EC and β^{+}-decay, exam. of Xe nuclear level struct. 8−21498
^{52}Fe→^{52}Mn^{m}→^{52}Cr, γ-ray spectra, ^{52}Cr levels 8−21529
^{61}Fe from ^{64}Ni(n,α), 14.3 MeV 8−46053
^{180}Hg, $T_{1/2}$=3s decay chain, on-line γ-ray spectroscopy 8−13034
^{170}Ho β^{-}-decay, $T_{1/2}$ meas., ^{170}Er level struct. 8−41675
^{181}Ir, γ-ray spectra, half-life, decay scheme 8−41672
^{52}Mn^{g}→^{52}Cr, γ-ray spectra and ^{52}Cr levels 8−21529
^{177}Os→^{177}Re decay scheme, lower excited states of ^{177}Re obs. 8−17145
^{179}Os→^{179}Re decay scheme, lower excited states of ^{179}Re obs. 8−17145
^{194}Os beta decay, X-ray/gamma relative intensities, L_1 subshell yields 8−4919
^{196}Os, $T_{1/2}$ and partial decay scheme 8−21527
^{146}Pr→^{146}Nd, decay scheme and energy levels, log ft values 8−4912
^{182}Re, cryonuclear physics for radioactive decay studies *(Dutch)* 8−29416
^{83m}Se, decay scheme refinement, ^{83}Br levels 8−17147
^{145}Sm, electron capture decay to ^{145}Pm, γ-transition decay rate and intensities 8−13030
^{94}Tc→^{94}Mo, level spins and multipole mixing ratios from γ-γ correlation meas. 8−21517
^{163}Tm, β-decay, ^{163}Er excited state obs. 8−17146
^{232}U→^{212}Pb decay chain, obs. of collective states fed by weak α-transitions 8−8786
^{235}U α decay and ^{231}Th β decay, γ-radiation study, energy level scheme *(Russian)* 8−17160
^{52}V→^{52}Cr, γ-ray spectra and ^{52}Cr levels 8−21529
^{54}V, β-decay scheme and $T_{1/2}$ determ. 8−21528
^{55}V β-decay scheme and $T_{1/2}$ determ., mass excess meas. 8−21528
^{127}Xe decay, absolute gamma-ray intensities 8−548
^{88}Y solution, standardisation using efficiency extrapolation method, β-γ coincidence meas. 8−21832

radioactive lifetimes *see radioactive decay periods*

radioactive sources
see also radioisotopes
activity calculation from counting rates in single and coincidence photopeak 8−13371
beta sources, depth dose distribs. in varous materials 8−17462
isotopic generator, medical and non-medical appl. *(Spanish)* 8−15922
preparation for 4πβ-γ coincidence counting using $AlCl_3$ 8−838
X-ray fluorescence analysis, radioisotope sources, development, characts. 8−15741
Am-Be neutron probe, underestimation of radiation exposure by film badges 8−15900
^{241}Am, for preionisation of pulsed gas lasers 8−29963
^{241}Am source ingestion, case report 8−28088
^{198}Au, redetermination of γ-ray standards between 0.1 and 1.0 MeV 8−37472
^{76}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
^{77}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
^{11}C isotopes, production and transport system 8−46200
^{109}Cd nuclear transformation rate meas. using 4π proportional counter 8−21826
^{252}Cf for interstitial radiotherapy implantations, clinical study 8−11722
^{252}Cf source with high emission, n and γ dosimetry, safety *(Czech)* 8−33296
^{60}Co, exposure-rate calibration of small radioactive sources 8−41881
^{60}Co external source on liq. scintillation system for ^{32}P Cherenkov effect detect. efficiency meas. 8−25387
^{134}Cs, standardisation (1977) AECL 8−25371
^{137}Cs, exposure-rate calibration of small radioactive sources 8−41881

radioactive sources continued
^{137}Cs-^{137m}Ba generator, for nucl. medicine, preparation by ion exchange chromatography 8−28071
^{153}Gd, use in tissue lipid content analysis by photon absorpt. 8−28041
^{172}Hf production, recovery and purification for nucl. medicine use as ^{172}Lu generator 8−48893
^{166m}Ho, relative intensities of gamma-rays 8−46201
^{a}I, A=121, 123 and 125, cyclotron prod. by ^{127}I(p,xn)Xe→(β)→I reactions, yield curves 8−44611
^{123}I, carrier-free, prod. from ^{127}I(p,5n)^{123}Xe using in-beam collection of ^{123}Xe 8−44610
^{123}I two-crystal coincidence counting 8−13394
^{192}Ir, redetermination of γ-ray standards between 0.1 and 1.0 MeV 8−37472
^{79}Kr production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
^{172}Lu generator, ^{172}Hf production, recovery and purification for nucl. medicine use 8−48893
^{63}Ni, for thickness determ. of supported metallic films 8−22989
^{242}Pu preparation by EM isotope separation, for use as α-spectrometry and mass spectrometry tracer 8−9011
^{226}Ra, exposure-rate calibration of small radioactive sources 8−41881
^{228}Ra-Be (α,n) source, neutron spectrum calc. from angular distrib. and cross-section data 8−41882
Rb neutron deficient radioisotope selective production in (α,xn) reacts. *(Croatian)* 8−44608
^{181}Ta, 6.2 keV level, Mossbauer spectroscopy, source prep. 8−25373

radioactive tracers
aerosol, radioactive charging, transient mean particle charge 8−23973
air pollution and ventilation appls., review 8−28306
autoradiography and soft laser scanning in radioisotope work, appl. to metabolic studies 8−3576
beta-decay in labelled molecule, chem. and biological consequences 8−11541
bone imaging radiopharmaceutical local accumulation model 8−24127
cerebral blood flow determination, computer assisted method for multi-exponential curve fitting 8−20246
cerebral blood flow meas. by radioisotope clearance, radiation scattering effect 8−3600
cholesterol transmembrane movement in human erythrocytes, radioactive tracer expt. 8−3459
diffusion meas. in liq., closed capillary method 8−14491
dilution method for discharge meas. in pipes 8−30396
groundwater flow, investig., using In-EDTA tracer and neutron activation anal. 8−11921
life sciences appl. 8−15882
lung ventilation regional and whole, math. model for radioactive tracer studies 8−20249
organ blood flow determ. using radioactive microsphere technique, PDP-11 interactive program 8−20247
ovum movement measurement in rabbit oviduct using radioactive surrogate and CdTe detector 8−36087
particulate matter dynamics in industrial manufacturing processes, appl. of radiotracer techniques 8−41398
plume diffusion at Rancho Seco Generating Station, LIDAR obs. 8−11991
polymer powder coatings, water permeability eval. by radioactive tracers *(Czech)* 8−11362
radioisotope applications in agriculture, hydrology, medicine industry etc., booklet 8−35947
soil samples, meas. trace radionuclide L X-ray detection 8−49020
stearic acid monolayers on HCl subsoln., surface diffusion by ^{14}C-tracer 8−34679
α-AgI, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
^{11}C-1-aminocyclopentane carboxylic acid, tumour location, clinical trials with single photon detect. 8−31895
CaO-SiO_2-Fe_xO system, liq., steel making slag, Ca and Fe tracer diffusivities, O_2 press. depend. 8−38863
^{47}Ca, simultaneous in vivo determ. of Ca and P effective absorpt. in rat 8−48882
^{18}F-5-fluorouracil distrib. in tumour-bearing mice and rats 8−48878
^{125}I-serum albumin, convective and diffusive transport through rabbit aortic tissue 8−44482
^{127}I prod., life sciences appl. 8−15882
^{131}I-Hippuran transit times in kidney, renogram deconvolution 8−40317
In-EDTA tracer, for groundwater flow investig., neutron activation anal. 8−11921
^{81m}Kr, continuous carotid infusion for assessment of regional cerebral blood flow 8−20254
^{22}NaCl, tracer diffusion meas. in aq. NaCl soln., closed capillary method 8−14491
^{32}P, simultaneous in vivo determ. of Ca and P effective absorpt. in rat 8−48882
^{210}Pb, use as heavy metal tracer in Susquehanna River system 8−49046
^{242}Pu preparation by EM isotope separation, for use as α-spectrometry and mass spectrometry tracer 8−9011
$RbAg_4I_5$, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
SO_2 air pollution deposition to pine forest, meas. method 8−20508
^{35}S, effect on solubility of $BaSO_4$ in water 8−43126
T, in Pacific Ocean, source function for transport models 8−32122
^{99m}Tc radiopharmaceuticals, rapid miniaturised chromatographic quality control procedures 8−28070
^{99m}Tc-glucoheptonate, use in brain tumour detect. 8−20253
^{99m}Tc-pyridoxal-phenylalanine evaluation as hepatobiliary imaging agent 8−31893
^{99m}Tc-pyridoxal-phenylalanine evaluation as hepatobiliary imaging agent 8−31894
$^{99m}TcO_4$, radiation damage to mouse testis cells 8−24103
^{133}Xe in cerebral blood flow noninvasive regional meas. and computer analysis 8−35948
^{133}Xe washout curve discriminant analysis for lower extremity vascular impairment 8−35949
$ZrH_mCe_n(PO_4)_2.XH_2O$, cryst., self-diffusion of Ce^{3+} ions 8−34648
α-$ZrH_{0.74}La_{0.42}(PO_4)_2.4.6H_2O$ cryst., self-diffusion of La^{3+} ions 8−34648

radioactive waste
see also fission reactor materials; fusion reactor materials; materials handling; radioactivity; waste disposal
actinides, fast reactor recycle as waste management alternative, performance calcs. 8−13269
airborne and liquid releases from nuclear facilities, radiation monitoring systems 8−37450
atmospheric radioactivity inside buildings, absorbed dose estimation *(Spanish)* 8−8998
beneficial utilisation, programmes in 1977 8−8950
BWR, Brunswick Steam Electric Plant, radwaste system operating experience 8−17392
BWR, radioactive waste management 8−17389
BWR high density fuel storage 8−726
BWR irradiated fuel channel disposal 8−21730
calcined waste solid spillage, recovery of U, erosion in solids transport system 8−13264
calcining facility, remote maintenance equipment 8−13263
CANDU, energy, water, tritium budgets for Perch Lake 1975 8−29563
CANDU wastes, disposal options in Canada 8−41826
coal power station fly-ash and slag, natural radioactivity meas. 8−17442
coastal breezes, dispersive, monostatic acoustic sounding system *(French)* 8−7683
conditining and storage costs estimation *(Italian)* 8−25303
conference, Chattanooga, Tennessee, USA, August 1977 8−17266
CTR central power station waste management 8−773
disposal, economic considerations, transportation, land burial and containers 8−17393
disposal, national programmes, aspects 8−697
disposal, public acceptance 8−41824
disposal by nuclear incineration, CEGB Research Division report 8−46145
disposal of high-level and long-lived waste 8−29610
disposal options, modelling studies 8−41830
Dresden-1 chemical cleaning, radioactive waste treatment 8−17394
dry spent fuel cask handling system and transport 8−17348
dry storage pit for radioactive sources 8−13248
ex-vessel storage tank design and fabrication for CRBRP 8−17347
fast reactor fuel element regeneration by gas-fluoride method, highly active waste product behaviour 8−37425
FFTF fuel storage facility design 8−715
fission waste storage in glass and salt *(Dutch)* 8−29587
fuel reprocessing plant instrumentation for internat. safeguards 8−721
fuel storage, close spaced racks 8−728
fusion power reactor waste management 8−21766
gas permselective membranes, irrad. effects on permeation and separation performances 8−29591
gaseous reactor wastes, dispersal forecasting *(French)* 8−8995
geologic formations, radionuclide migration 8−4994
geological and ocean nuclear waste disposal programme in UK 8−41829
glass, corrosion and devitrification, trace element anal. by neutron activation, rel. to ancient samples 8−12801
hazard indices for nuclear high-level waste in underground repository, rel. to naturally occurring toxic minerals 8−15913
heat source for steam prod. in nucl. waste boiler 8−41838
high level, disposal in deep-sea bed, New Zealand 8−705
high-level radioactive waste, ultimate disposal on seabed, rel. to oceanographic circulation 8−13273
high-level radioactive waste disposal on seabed following reprocessing, feasibility study 8−13271
high-level tritiated aqueous waste, immobilization in polymer-impregnated concrete 8−13265
high-level vitrified waste, risk anal. of repository in geologic salt formation 8−17362
high-level waste management systems in Germany, risk analysis 8−17354
high-level waste solidification plant, contribs. to risk evaluation 8−17356
high-level-waste disposal on ocean floor, prospects of international cooperation 8−13272
HTGR, Peach Bottom, decommissioning and component removal 8−21756
large fuel reprocessing plant, anticipated chem. emissions 8−5004
large pools for spent fuel, LUSH code cf with design methods for struct. load calc. 8−17337
large-scale nuclear power station safety consideration 8−8961
laundry waste treatment system 8−17338
leaching of solidified radioactive waste, rel. to diffusivity const. 8−5055
liquid discharge, radionuclide isotopic anal. *(Spanish)* 8−13250
liquid high level waste solidification 8−21669
LMFBR, elimination of transuranium elements by neutron absorpt. 8−29628
LMFBR spent fuel transportation 8−711
LMRBR spent fuel shipping casks, subcriticality design 8−706
long-lived fission product waste transmutation by spallation and neutron reactions using linear accelerator 8−13268
long-term risk assessment of waste disposed in geologic formation 8−17361
low level radioactive liquid wastes, chem. treatment, clay numerals, cation exchange capacity 8−33270
low- and intermediate-level waste, risk anal. of road transport in Netherlands 8−17359
low-level burial site, radionuclide migration model 8−21671
low-level waste burial facility at West Valley, correl. of water accumulation to operating practices 8−13266
low-level waste burial facility at West Valley, remedial work for trench water accumulation 8−13267
LWR, commercial, volume reduction system design and operation 8−21699
LWR fuel fabrication plant, cost of controlling inorganic chemical releases 8−5003
LWR spent fuel transportation 8−724
LWR waste management, cf. fusion plant 8−773
management at Point Lepreau nuclear power station 8−29600
management schemes, criteria for assessing societal, moral and political implications 8−13270

radioactive waste continued
methylradioiodide, catalytic trapping by beds of impregnated charcoal 8−21681
national waste terminal storage program waste packaging criteria 8−708
natural fission reactors, at Oklo (Gabon), origin hypotheses *(Dutch)* 8−33261
nitrate solutions, highly active, precipitation of Mo compounds during evaporation 8−37426
NRX and process effluents, gamma ray spectrometric anal. 8−29656
nuclear fuel reprocessing technology status, large plants 8−21735
nuclear power programme radioactive waste management 8−13258
nuclear power station stack effluents, radiation monitoring 8−46179
nuclear waste disposal R & D programmes by OECD countries 8−41823
nuclear waste incineration for destroying actinides, costs and risks 8−41825
nuclear waste isolation plant design studies in USA 8−46151
nuclear waste management problem, R&D efforts 8−4991
nuclear waste management research, UKAEA programme for Iran 8−4992
oxyanions, in nuclear waste materials, laser Raman spectrometric determ. 8−35743
programme in W.Germany *(German)* 8−8954
PWR, Oconee, occupational exposures, radiation levels and waste levels during operation 8−21726
PWR, two-unit, modification feasibility for radwaste volume reduction equipment 8−17395
PWR radwaste systems design, factoring operating experience 8−17390
radioactive, programme in Switzerland *(German)* 8−8953
radionuclide conc. rel. to residence time in marine sediments near Maine Nuclear Power Reactor 8−49021
radionuclide migration in seawater and marine sediments *(French)* 8−11916
radionuclide transfer in terrestrial animals 8−24152
radionuclide transfer to crops and agricultural products *(French)* 8−8996
rare gas separation, using cell with two membranse of differing permeability 8−29590
risk analysis for management system, safe design 8−17351
risk assessment for potential accidental releases from nuclear fuel cycle operations 8−17353
risk estimation, evaluation, and management 8−17350
safe nuclear waste disposal route, Swedish utilities design 8−41827
salt mine waste disposal, experience in West Germany 8−41828
spent fuel elements storage in large pools, seismic load anal. 8−17400
spent fuel pools, regulatory aspects of structural evaluation for high-density storage 8−21727
spent fuel storage, high-density, economic evaluation of alternatives 8−21732
spent fuel storage, remote underwater rack removal and installation 8−21729
spent fuel storage, structural design problems with backfitting fuel racks to existing pools 8−21728
spent fuel storage 8−714
spent fuel storage basins 8−725
spent fuel storage in USA 8−713
spent fuel storage racks, decontamination and disposal 8−21731
spent fuel transportation R and D in ERDA 8−710
spent nuclear fuel storage in HI-CAP high-capacity fuel rack, design considerations 8−17349
spent reactor fuel, risk analysis of alternatives from reactor pool until final disposal 8−17355
storage and disposal, development in Hungary *(Hungarian)* 8−13249
storage of spent nuclear fuel, design studies, cost estimates 8−29615
transport of nuclear material, especially nuclear fuel *(German)* 8−25314
transportation containers, struct. technology programs 8−707
transportation of nuclear waste material, risk analysis 8−17357
transportation regulations 8−709
transportation status at fuel cycle end 8−712
treatment and storage, use of ceramic encapsulation process, based on powder metallurgy *(German)* 8−33281
USA, comparison of military and civilian inventories 8−4995
Vermont Yankee radwaste system 8−17391
vitrified high-level radioactive waste, associated hazards 8−13259
vitrified high-level radioactive waste, rail transportation, fault tree anal. and accidental release 8−17358
vitrified high-level waste, calcs. of radioactivity release due to leaching in final disposal 8−17360
volume reduction and solidification systems, economics 8−17396
water, low-level, ^{60}Co removal by ferric hydroxide coagulation-flocculation, improvement using diethyldithiocarbamate 8−37415
Westinghouse high-density spent fuel rack design 8−727
Zircaloy hulls, conversion to zirconate ion exchange materials for waste stabilisation 8−702
^{241}Am sorption on USA subsoils from differing weathering intensity areas, ^{241}Am, ^{237}Np and ^{99}Tc 8−16014
Cs, A=134, 137, distrib. in Peach Bottom HTGR primary coolant circuit 8−13275
Cs, contamination in water, removal agent efficiencies *(Slovak)* 8−24319
$CsAlSiO_4$, prep. and X-ray characterisation 8−39728
^{137}Cs, distrib. in fuel elements of Peach Bottom HTGR 8−13274
^{137}Cs transmutation in fussion reactor imploding liner blanket 8−17420
H isotope removal from flowing Ar, U and Ce as hydriding materials 8−17438
I radioactive waste, solidification in conrete, leach rates 8−703
^{85}Kr conc. determ. at high pressures using β-ray count, CaF_2 scintillation counter activated with Eu 8−13385
^{237}Np, neutron activation anal., determ. of small amounts in solns. containing U, Pu and fission prod. 8−21682
^{237}Np, sorption on USA subsoils from differing weathering intensity areas 8−16014
^{90}Sr, leaching behaviour in cement composites 8−37416
^{90}Sr, transmutation in fusion reactor imploding liner blanket 8−17420
T control by glove box containment at fusion reactor plant 8−46169
T meas. with electrolytic enrichment cell and reduction system 8−20128

radioactive waste continued
T removal from inert gases, feasibility of chemical getter beds 8−41861
^{99}Tc sorption on USA subsoils from differing weathering intensity areas 8−16014
U, recovery in slags containing calcium and magnesium *(Spanish)* 8−8955

radioactivity
see also alpha decay; atmospheric radioactivity; beta-decay; radioactive decay periods; radioactive decay schemes; radioactive sources; radioactive tracers; radioactivity measurement; radiochemistry; spontaneous fission
cosmic ray nuclei, electron capture decay rel. to time delay between nucleosynthesis and accel. 8−28455
cryonuclear physics for radioactive decay and neutron+nucleus reaction studies *(Dutch)* 8−29416
determ. in coastal sediments and seawater, activity ratios, disequilib. 8−27851
education, undergraduate course evaluation on radiation and the environment 8−1
energy release, half life, radioactivity's early puzzles 8−13001
Lake sediment radioactivity, mixing by benthic organisms 8−16060
Moon, orbital gamma-ray data rel. to large-scale lunar problems 8−12123
Moon, superheavy elements radioactivity rel. to primaeval melting 8−24478
nuclear decay chains, abundances evaluation method 8−45216
reactor decay heat uncertainties estimate 8−25263
supernovae, Type I, radioactive excitation source rel. to interpretation of spectra 8−49467
teaching, dice games to illustrate probability 8−12515
^{231}Pa, determ. in coastal sediments and seawater, activity ratios, disequilib. 8−27851

radioactivity measurement
see also radioactivity measuring apparatus
airborne and liquid releases from nuclear facilities, monitoring systems 8−37450
autoradiography and soft laser scanning in radioisotope work, appl. to metabolic studies 8−3576
biological and ecological samples *(French)* 8−5052
bone-seeking radionuclide skeletal burden determ. from in vivo scintillation meas. of head 8−15915
bulk sample gamma-ray assay, equipment specification 8−24158
CANDU, energy, water, tritium budgets for Perch Lake 1975 8−29563
coal power station fly-ash and slag, natural radioactivity meas. 8−17442
counting small sample of radioactive atoms 8−17535
cumulative sum charts, for background count rate monitoring 8−29718
filter testing, Winfrith, double automatic Pollak counter 8−33301
geometry factors, for teaching expts. 8−12471
hybrid spark chamber for radioisotope distrib. meas. 8−46227
internal-gas radioactivity-counting with pure H$_2$S as counting gas 8−854
mineral prospecting, thermoluminescence radiation dosimetry appl. 8−32244
nosetip recession meas. using implanted radioactive sources, error analysis 8−16272
NRX and process effluents, gamma ray spectrometric anal. 8−29656
radiometric exploration meas. standardisation advantages and methods 8−28325
soil samples, meas. trace radionuclide L X-ray detection 8−49020
source activity calculation from counting rates in single and coincidence photopeaks 8−13371
spectral radiation detectors, calibration and error anal. 8−46177
superheavy elements, synthesis and identification 8−46239
whole-body counter for meas. of radionuclides in large dogs 8−11786
^{14}C-NaHCO$_3$ solution liq. scintillation counting, prevention of radiocarbon loss 8−21811
^{3}H in aqueous samples, single solvent cocktail for liq. scintillation counting 8−856
^{3}H in water, low-level meas., inter-laboratory comparison 8−44888
^{123}I uptake in thyroid, correction for thyroid depth 8−11728
^{131}I determination in vegetation, ashing procedure 8−15930
^{131}I, low level detection in milk rel. to population dose 8−31911
^{147}Pm, in-vivo measurement by phoswich detector 8−28087
Pu, alpha-energy and mass analyses, using single sample mount 8−15744
Pu inventory verification at ANL, IAEA safeguards 8−821
Rn aerosols in uranium mine *(French)* 8−32195
Rn dosimetry using plastic nuclear track detectors 8−33298
Rn, meas. with electronic cups, U exploration appl. 8−7781
^{222}Rn concentrations in water, rapid meas. with commercial liq. scintillation counter 8−28339
^{222}Rn daughter conc., meas. sensitivity computer optimisation 8−49126
^{222}Rn daughters, meas. of low conc. in air 8−28308
^{222}Rn short lived decay products in air, collection efficiency of Whatman GF/A filter 8−20526
T enrichment in water by electrolysis for low-level T activity meas. 8−17536
T in water, meas. with electrolytic enrichment cell and reduction system 8−20128
U stored in lung, meas. using NaI and solid-state detectors 8−28090
U$_3$O$_8$, ^{235}U enriched aerosol, characterisation by solid state track recorders 8−17538
^{236}U activity meas. in UO$_2$ mineral deposit *(Spanish)* 8−44822

radioactivity measuring apparatus
FUNGI, radon meas. with fast response 8−46216
nitrocellulose, radiography of geological specimens for determ. of α- and fission-activity 8−20540
on-line monitor for α-emitting aerosols 8−46236
Pollak counter, aerosol leakage, filter testing 8−33301
proportional flow counter, for high-temp. gas radiochromatography 8−44420
reactor coolant, automated system for radioiodine anal. 8−35768
Whatman GF/A filter, collection efficiency for ^{222}Rn short lived decay products in air 8−20526
Pu-Am survey instrument, β-α-γ-X-ray scintillation detect. probe 8−33376

radioactivity protection *see radiation protection*

radioastronomical observations
see also radiosources (astronomical)
1.35 cm radiogranulation, optical identification with chromospheric network pattern *(Russian)* 8−40897
Abell 478, cluster of galaxies, X-ray and radio obs. 8−8133
Abell clusters, search for radio sources 8−12379
Abell clusters of galaxies, interferometric obs. of radiosources 8−4380
Abell clusters of galaxies, radio survey at 11.1 cm wavelength 8−20897
AFCRL 618, thermal radio emission from young planetary nebula 8−12343
amateurs' contributions, solar activities obs. *(Italian)* 8−7887
AO 0235+164, BL Lacertae object, radio halo obs. 8−4386
AO 0235+164, Lacertid, optical and radio absorption line systems 8−16520
aperture synthesis observations, tropospheric H$_2$O vapour irregularities effects on seeing 8−24339
Barnard 213 NW, rotation and vel. structure rel. to parent nebula 8−41007
3C111, new very large radioenergy source in core of radio galaxy *(German)* 8−16558
5C9 survey of radiosources, 214 objects 8−16312
4C 03.59, BL Lacertae object, radio halo obs. 8−4386
3C 10, 3C 58, H I distrib. small scale struct. 8−45383
3C 123, brightness and polarisation distrib. at 3.7 and 6 cm wavelength 8−4340
3C 147, quasar, radio struct. determ. by multi-element very long baseline interferometry 8−4391
3C 286, quasar, radio absorpt. line obs. and appl. to cosmological deceleration mea. 8−20902
3C 303, double radiosource, radio struct. and optical field 8−16519
3C 31, multifreq. radio obs. of galaxy with jets and peculiar spectra 8−16533
3C 326, very large radio galaxy, multifreq. obs. 8−28810
3C 345, quasar, compact radiosource obs. 8−12399
4C 39.25, quasar, compact radiosource obs. 8−12399
3C 427.1, brightness and polarisation distrib. at 3.7 and 6 cm wavelength 8−4340
5C 6 survey of 292 radiosources 8−24471
5C 7 survey of 271 radiosources 8−24471
6C survey at 151 MHz, prospects 8−28813
YZ Canis Majoris, flare star, coordinated X-ray, optical and radio obs. 8−8012
VY Canis Majoris, OH masers very long baseline interferometric obs. 8−36712
Cassiopeia A, absolute radio spectrum 8−8090
Cassiopeia A, radio emission evolution, freq. dependence *(Russian)* 8−4387
Cassiopeia A, supernova remnant, 38 MHz flux density meas. 8−12344
R Cassiopeiae, Mira variable, vel. struct. in SiO maser spectrum 8−12248
Centaurus A (NGC 5128), radio and X-ray var. of nucleus 8−36711
Cepheus OB3 association, star form. in mol. cloud complex 8−28750
o Ceti (Mira), variable 2.6 mm CO emission obs. 8−12241
UV Ceti-type flare stars, simultaneous 1420 MHz and optical obs. of flares 8−49464
Circinus X-1, distance from H I absorpt. obs. 8−12413
Circinus X-1 (3U 1516−56), obs. of optical and radio counterpart 8−12414
close binary stars, radio survey at 6 cm wavelength 8−32510
clusters of galaxies, obs. of radio sources 8−12397
Comet Kohler (1977m), OH 1667 MHz line absorption detection 8−4152
Comet West (1975n), microwave continuum radiation obs. 8−16349
Comet West (1975n), search for CH RF emission 8−20735
compact H II regions, review of radio obs. 8−16507
compact H II regions near Type I OH maser sources, obs. 8−8094
compact radiosources in and near bright galaxies 8−49548
cosmic blackbody radiation, anisotropy detect. 8−4415
cosmological information from new types of radio obs. 8−28872
Crab Nebula, flux density at 1.8 mm *(Russian)* 8−32558
Crab Nebula, struct. at 327 MHz from occultation obs. 8−12339
CRL 2688, bipolar nebula, search for OH emission 8−41016
CRL 437, microwave spectral line profiles, rotation effects 8−45426
Culgoora-3 list of 2045 radiosources, obs. at 160 MHz 8−20655
χ Cygni, Mira variable star, variable 2.6 mm CO emission obs. 8−12241
V645 Cygni (CRL 2789), bipolar nebula, O-type exciting star 8−4392
γ Cygni SNR, ang. diameter from 1.4 GHz aperture synthesis obs. 8−4328
Cygnus A, 99 GHz obs. of components and central source 8−41069
Cygnus X region, riddle of γ Cygni radio source resolved 8−28809
dark clouds, NH$_3$ survey 8−49507
decameter wavelength spectrum of quiet Sun 8−7966
30 Doradus, absorpt. by foreground H I in LMC 8−24541
double radiosource near NGC 2823 elliptical galaxy 8−24562
dust cloud complex in Taurus, radio obs. of fragmentation and localised multiple vel. components 8−4308
extended radiosource 1400+162, BL Lacertae object in group of galaxies 8−4339
extragalactic objects, 1 mm continuum obs. 8−36720
extragalactic radiosources, integrated linear polarisation meas. 8−4381
extragalactic sources, obs. with Cambridge 5 km telescope at 5 GHz 8−12391
extragalactic sources, statistical props. of compact features as function of flux density 8−41071
extragalactic sources with strong millimetre wave emission, 90 GHz obs. 8−16548
faint extragalactic radio sources, counts estimate at 5 GHz 8−32588
flare stars, nature of nearby radiosources 8−12388
G0.7-0.0 (Sagittarius B2), struct. and He abundance 8−45380
G127.1+0.5, remarkable supernova remnant centred on very compact radiosource 8−16555
G55.7+3.4, shell source, high resolution obs. at 610 and 1415 MHz 8−8140
G74.9+1.2, supernova remnant, distance estimate from H I absorpt. line meas. 8−28765

radioastronomical observations continued
galactic, nonthermal emission in 0.25-9.18 MHz range, RAE 2 lunar satellite obs. 8−45398
galactic centre, ang. size for compact radio source 8−28779
galactic centre direction, low-freq. radio recomb. lines studies 8−32589
galactic centre region, H I 21 cm line survey 8−12361
galactic disc emission at 4 cm wavelength, large-scale and small-scale cloud structs. 8−28795
galactic H I absorption spectra in direction of extragalactic radiosources 8−24541
galactic H II large scale distrib., recomb. line surveys 8−16539
galactic H II regions, aperture synthesis obs., quick look survey 8−12329
galactic magnetic field from radio polarisation obs. 8−24547
galactic magnetic field from radioastronomy obs. 8−24548
galactic magnetic field scale and strength from pulsar data 8−28752
galactic nebulae, obs. at 5 GHz 8−4327
galaxies, early-type, H I obs. 8−45401
galaxies, warped H I layers 8−16543
galaxies in Abell clusters, Westerbork aperture synthesis obs. 8−12360
galaxies primordial protoclusters, search for H I emission at Z=3.33 and (4.92) 8−41066
globular clusters, $^{12}C^{16}O$ emission, unsuccessful search at 2.6 mm wavelength 8−41000
Green Bank surveys at 1400 MHz 8−28543
GT 0236+610, position and LS I +61°303 as optical counterpart 8−36568
GT 0236+610 radio counterpart for γ-ray source CG 135+1 8−24560
GX 13+1 (3U 1811-17), search for radio emission 8−41081
GX 17+2 (3U 1813-14), radio and optical identification 8−45428
GX 17+2 (3U 1813-14), search for radio emission 8−41081
head-tail radio galaxies velocities with respect to intracluster medium 8−49516
Heile's Cloud 2 at SHF cyanohexatriyne detection 8−41018
HR 1099, flare activity observed at 2.8 cm wavelength 8−36590
HR 1099, flare emission at 2.8 cm (1978 February) 8−32476
HR 1099, radio flux vars. obs. and optical ephemeris 8−36641
HR 8752, G-type supergiant, obs. of associated radio source 8−40942
IC 1318 b and c, H_2CO absorpt. 8−16484
IC 1795, HF C I recomb. line emission obs. 8−28748
intergalactic hot gas in distant richness class 4 clusters of galaxres, detection 8−12369
interplanetary plasma, scintillation obs. of solar wind 8−49279
interplanetary scintillation, m wavelength, bispectral anal. 8−12153
interplanetary scintillation obs. and solar wind vel. meas. 8−49278
interplanetary scintillations, dispersion anal. of solar wind vel. 8−7852
interstellar, SO, millimetre wave emission obs. 8−24535
interstellar ^{30}SiO detect. in Orion Nebula and Sagittarius B2 8−8097
interstellar CO^+, HCN^+, HNC^+, and CN^+ ions, radio search 8−24534
interstellar CO, out-of-plane survey at 115 GHz 8−12334
interstellar DCO^+ and electron density in dark clouds 8−12336
interstellar DNC, detect. at 152.6 GHz in NGC 1333, 2264, Orion A and L134 dark cloud 8−4334
interstellar ethyl cyanide, mm wave emission line detect. in OMC-1 and Sagittarius B2 8−12317
interstellar HNO, radio detect. in Sagittarius B2 and NGC 2024 8−8098
interstellar methanol masers, search for microwave emission 8−32543
interstellar molecular complexes in Orion 8−4310
interstellar N_2D^+, radio detect. 8−16492
interstellar NH_2D, detect. in Kleinmann-Low Nebula 8−20881
interstellar NH_2D, microwave detect. in Sagittarius B2 8−20880
interstellar OH and formaldehyde absorpt. in Cassiopeia A direction, obs. 8−45381
interstellar S_2, upper limits on abundance in mol. clouds 8−28738
intersteller CH, radio obs. 8−28751
IR sources and CO emission from late-type giants, molecular envelopes and planetary nebula origin 8−40940
IR stars, search for 18 cm OH emission 8−8026
IR stars, search for OH 18 cm emission 8−40949
IRC +10216, detection of vibrationally excited CO at 114 GHz from C star 8−40941
JP 1953+29, timing data anal., spinup/spindown 8−24522
Jupiter, 11 cm radiation Stokes parameters meas. 8−12141
Jupiter, drift rates of S-bursts 8−36492
Jupiter, methane emission at 76 GHz correl. with decameter activity 8−4140
Jupiter decametric radio emission, S-bursts dynamic spectra 8−20722
Jupiter S-bursts, obs., assoc. with Io, and origin 8−36499
Kepler's supernova remnant, struct. at 327 MHz from occultation obs. 8−12339
Kleinmann-Low nebula, ^{12}CO line profile rel. to radially moving cloud model 8−20865
AR Lacertae, RS Canum Venaticorum type star, VLA obs. 8−8054
BL Lacertae object 0109+22, optical and radio props. 8−32567
long-period variables, CO and SiO millimetre line emission obs. rel. to circumstellar shell props. 8−49423
low-frequency variable radio sources, search for microarcsecond struct. 8−16550
Lynds 673 nebula, radiosource obs. at 3.5 and 4 mm *(Russian)* 8−32557
M101 companion galaxies, integral props. from H I meas. 8−49532
M13, search for faint nearby radiosources 8−32531
M17 (NGC 6618), 21 cm obs. of components and structure of H II region 8−49508
M1-78, emission nebula, 15.4 GHz struct. 8−41025
M1-92, bipolar nebula, OH emission obs. 8−41016
M31, CO partial radial distrib. meas. 8−8117
M31, gas-to-dust ratio determ. 8−8120
M31, H I in outer regions 8−16532
M31, high-resolution H I obs., spectra and major axis rel. plots 8−41057
M31, radio emission obs. at 102.5 MHz *(Russian)* 8−49512
M33, radiocontinuum emission obs. at 14850 MHz 8−28783
M3-99, bipolar nebula, search for OH emission 8−41016
M53, search for faint nearby radiosources 8−32531
M81-82 system, 2.7 GHz continuum survey of intergalactic gas stream 8−36691
M82, 87.2 GHz continuum obs., Ne abundance 8−41042
M82, nature of radio recomb. lines in extragalactic sources 8−45418

radioastronomical observations continued
M 81, CO emission upper limits 8−36693
M- and S-type stars, detect. of 7 mm SiO maser sources 8−4215
Maffei 2, CO emission obs. 8−16530
Magellanic dwarf irregular galaxies, gas distrib., motions and dynamics 8−36690
Mars, surface roughness from Arecibo radar obs. 8−28565
Mars, surface slopes, roughness and reflectivity, radar obs. during 1975 opposition 8−45254
Mars, Viking radio occultation meas. of atmosphere and topography 8−20687
meteor radar obs. at Ondrejov and Dushanbe 8−20760
meteors, head echo heights 8−36537
meteors, radar echo drift deceleration 8−36538
methane, first detection in interstellar medium at 76 GHz 8−16503
microwave background fluctuations, search for Universe primeval perturbs. *(Russian)* 8−36734
millimetre temps. of planets, galactic and extragalactic sources 8−28556
Mira variables, discovery of 7 new SiO maser sources 8−32467
molecular cloud assoc. with NGC 7023, CO obs. at 2.7 mm wavelength 8−41008
molecular cloud complex assoc. with bright rim near VY Canis Majoris, CO obs. 8−24536
molecular clouds, H I and CO obs. comparison 8−24538
Molonglo radio source surveys at 408 MHz 8−28541
monopulse signals, omnidirectional search, probable origin 8−24563
NGC 1052, H I detect. in elliptical galaxy 8−41041
NGC 1068, 87.2 GHz continuum obs., Ne abundance 8−41042
NGC 1275, Seyfert galaxy, radio and optical variability of nucleus 8−28793
NGC 1499 (California Nebula), CO obs. along ionisation front 8−24537
NGC 1851, globular cluster, H I detect., 21 cm line obs. 8−45368
NGC 2024, HF C I recomb. line emission obs. 8−28748
NGC 2024 (W12), 21 cm obs. of components and structure of H II region 8−49508
NGC 2237 (Rosette Nebula), H II region obs. in absorption at 12.6 and 25 MHz *(Russian)* 8−41024
NGC 2264, open cluster, CH radio obs. 8−28751
NGC 253, 87.2 GHz continuum obs., Ne abundance 8−41042
NGC 253, H_2O emission detection at 22.235 GHz 8−16534
NGC 281, H II region, CO and H_2O obs. 8−28740
NGC 3079, peculiar edge-on spiral galaxy, 2.7 and 8.1 GHz obs. 8−36692
NGC 3448, optical and H I 21 cm line obs., peculiar nucleus 8−36696
NGC 4248, galaxy, H I obs. 8−4358
NGC 4278, elliptical galaxy, H I detect. 8−4342
NGC 4490/4485, interacting galaxy pair, 2.7 and 8.1 GHz obs. 8−36692
NGC 4636, elliptical galaxy, H I emission detect. 8−32570
NGC 4636, elliptical galaxy, H I large-scale distrib. 8−45400
NGC 6034 radio tail galaxy in Hercules cluster, Westerbork obs. at 0.6, 1.4 and 5 GHz 8−36706
NGC 6251, elliptical galaxy, nuclear jet radio obs. 8−41059
NGC 6251, very large radio galaxy with exceptional jet 8−12394
NGC 6334, CO detailed struct. in mol. cloud complex 8−4324
NGC 6822, galaxy, CO emission upper limits 8−36693
NGC 6822, irregular galaxy, interferometer study of H I assoc. with optical core 8−20889
NGC 7331/Stephan's Quintet area, obs. at 1421 MHz 8−12392
NGC 7822, bright-rimmed mol. cloud, CO obs., heat sources 8−36664
NGC 7822 (W 1), supernova remnant, 2.8 and 6 cm wavelength obs. 8−4383
NGC 891, edge-on disc galaxy, radio continuum obs. 8−28786
noise storms and bursts, preliminary results from Mark II Nancay radioheliograph 8−28517
NP 0532, Crab pulsar, ang. size at 74 MHz 8−12260
Ohio sources, optical identification using radio and optical positions meas. by Texas interferometers 8−28808
ρ Ophiuchi dark cloud, atomic and mol. obs. 8−41013
ρ Ophiuchi dark cloud, C II and S II regions obs. 8−49500
optical quasars, radio and optical obs., redshifts, luminosity function 8−49552
Orion A, SiO and H_2O maser obs. 8−8085
Orion H_2O masers, matter outflow in star formation last stages 8−8091
Orion Molecular Cloud 1, cyanoacetylene emission obs. 8−4322
Orion Nebula, C recomb. line mapping 8−20866
Orion Nebula, temp. gradients, obs. and model 8−8077
Orion region, struct. in radiocontinuum 8−49549
α Orionis, CO and SiO millimetre line emission search rel. to circumstellar shell props. 8−49423
Parkes 2700 MHz survey of radiosources, 13th part, 404 objects 8−20656
Parsamyan 21, bipolar nebula, search for OH emission 8−41016
S Persei, supergiant 22 GHz H_2O maser emission temporal var. 8−49461
Phobos, mass from Viking Orbiter radio tracking data, density estimate 8−32380
Phobos, mass from Viking Orbiter radio tracking data 8−32379
planetary nebulae, electron temps. from radio continuum obs. 8−41027
planets, astrometric and radiometric methods, tests of general relativity 8−45552
planets, H_2O 1.35 cm line obs. 8−20664
PSR 0531+21, interplanetary scintillations at 74 MHz 8−36625
PSR 0809+74, pulsar, phase stability in drifting subpulse pattern 8−40980
PSR 1133+16, high time resolution obs. of high freq. radio emission microstruct. 8−45348
PSR 1133+16, pulse microstruct. direct. obs. at timescales down to 6 μs 8−28711
PSR 1919+21, interpulse radio emission at freqs. 16.7-38 MHz 8−16447
PSR 1919+21, P_3 period temporal variability 8−36626
PSR 2045−16, multiple-ring struct. in hollow-cone emission 8−12259
pulsars, flux obs., long-term intensity and spectral vars. 8−4268
pulsars, polarization at 3.5 m wavelength 8−28713
ξ Puppis, radio emission obs. at 2 cm 8−40969
Puppis A supernova remnant, optical and radio comparison 8−28760

radioastronomical observations continued
Quadrantids, overdense radio meteors, stream maxima position var. with meteor magnitude 8−12161
quasar-galaxy associations, search using Jodrell Bank 966 Hz survey 8−24566
quasars, bright optical PG objects, radio emission at 2.7 and 8.1 GHz 8−45424
quasars, optically selected, search for radio emission 8−20904
quasars 3C 345 and NRAO 512, VLBI obs. of circular polarizations at 8 GHz 8−41075
quasars from 5C2 survey, struct. 8−28837
quiet Sun, obs. at metre and decametre wavelengths 8−4184
radio stars, positions for extragalactic reference frame 8−16278
radiosources, catalogue of 347 sources obs. at 610 MHz, source parameters, identifications 8−40838
S106 and S235, aperture synthesis of H II regions, star form. regions 8−36672
S140 molecular cloud, energetics, mol. line data, temp., density, abundances 8−36650
S159, H II region, CH obs. 8−28751
S255, molecular cloud, molecular line, radio continuum and IR data 8−8087
S-bursts, obs. at 32 MHz 8−36498
HM Sagittae, emission-line variable star, radio emission detect. 8−28706
Sagittarius A region, 8.2 mm obs. 8−28794
Sagittarius B2, recomb. lines obs. rel. to He abundance problem 8−49496
Sagittarius dwarf irregular galaxy, H I obs. 8−20887
Saturn, radio emission flux density at 102.5 MHz, upper limit meas. *(Russian)* 8−4146
Saturn, ring brightness temp. meas. at 8 mm wavelength 8−36502
Saturn, ring particle composition and size distrib. from radar obs. 8−36501
Shostak high-velocity cloud, H I obs. 8−32575
sky survey at 8085 MHz of 0.181 steradians, 64 sources, identifications, spectral indices 8−40836
SO -alaxies, radio and IR photometry 8−16531
solar corona, Helios 1 Faraday rot. expt. results 8−20790
solar corona, radio emission fluctuations 8−45311
solar corona, stereo obs. 8−49419
solar corona, Viking radio occultation obs. at 1976 Mars solar conjunction 8−20789
solar corona probing, Helios 1 and 2 occultations, S-band time delay meas. 8−20791
solar coronal holes, radio and EUV meas. of temp. distrib. and electron density *(Russian)* 8−16378
solar filament, study of transition sheath from radio obs. 8−28619
solar filaments, multifreq. obs. at centimetre wavelengths 8−28602
solar fine structure radio emission in 20-30 MHz range *(Russian)* 8−16383
solar flare magnetic fields and microwave burst spectra 8−7970
solar microwave burst, 1976 March 28, superimposed 4.7 s periodic oscills. 8−7972
solar noise storms, correl. with particular photospheric mag. structs. 8−4185
solar noise storms, spectrum and position at decametre wavelengths 8−28622
solar plasma EM wave propag., observations using Mars-2 and Mars-7 probes 8−49345
solar quiescent prominence, obs. at 8 mm during 1975 May 11 eclipse 8−7977
solar radio bursts, evidence for dense non-potential magnetic flux tubes in corona 8−28615
solar radio bursts of drifting pairs type, results of obs. near 25 and 12.5 MHz 8−24502
solar S-component, local sources emission directivity, spectral study 8−24500
solar total intensity and circular polarization struct. at 21 cm 8−7957
solar type II bursts with reverse frequency drift 8−7978
solar type II radio burst, 1973, May 3, fine struct. 8−24501
solar type III and type I-like decametric emission in coronal mag. arch 8−12179
solar type III burst, stereoscopic direction finding meas., second harmonic emission 8−45312
solar type III radio bursts, fundamental and harmonic, circular polarisation, 24-220 MHz *(Russian)* 8−16384
solar type III radio bursts, interplanetary baseline obs. 8−20808
solar type V radio bursts, VHF obs. 8−28639
solar wind, meas. of second moment field 8−16369
solar wind, radial depend. of props. from Helios 1/2 and Pioneer 10/11 scatt. expts. 8−28595
souce surveys at 5 GHz at NRAO and MPIfR 8−28817
southern extragalactic sources, obs. with Fleurs synthesis telescope 8−4385
spiral galaxies, in Coma cluster, nuclear radio emission upper limits 8−8107
sporadic meteors, sunrise effect on persistent radar echoes 8−20759
star formation 8−32565
steep-spectrum sources, possible LF variables, 410 MHz fine struct., interplanetary scintillation obs. 8−41068
stellar H_2O masers, detect. of new sources 8−32466
Sun, decimetric type IV narrow-band burst with fine structure 8−36546
Sun, Torun Observatory 127 MHz data since 1958, survey *(Polish)* 8−36549
Sun, type III bursts, drift rate rel. to polarization at 237 MHz 8−36545
Sun, type-II bursts, LF and MF obs. by Prognoz satellites 8−16375
supernova remnants, CO emission obs. 8−8071
Taurus HL-1, small H I velocity bridge, 21 cm obs. 8−28755
UTRAO 335-380 MHz survey, interim report 8−28815
variable extragalactic sources with flat spectra, structure 8−28811
variable radio sources, obs. at 0.95 and 1.65 cm wavelength 8−16552
variable radiosource obs. at 13 cm *(Russian)* 8−32591
variable stars, long-period, SiO maser emission obs. 8−4225
variable stars with long periods, radial and expansion vels. from SiO line at 86.8 GHz 8−40956
γ^2 Velorum, radio emission obs. at 2 cm 8−40969
Venus, delay time and Doppler freq. correction in radar obs. 8−7897

radioastronomical observations continued
Venus, Mariner 10 radio occultation obs., pressure-temp. profiles 8−28563
Venus daytime ionosphere, two freq. radioscopy results from Venera 9 and (Venera 10) 8−4129
Venus motion, numerical theory using radar, optical and Venera satellite obs. data 8−16325
Venus surface, geologic interpretation of new radar obs. 8−20666
Viking landers radio tracking data, lander location, Mars ephemeris and solar system parameters 8−20685
Viking mission, radio science investigations 8−20684
Virgo A (M87), 1.3 cm obs. 8−49550
W31 region, compact far IR source assoc. with G10.6−0.4, early stage of stellar evolution 8−49504
W33, recomb. lines as evidence for cool H II region with mass flow 8−49501
W35, W43, H II regions, low-freq. radio recomb. lines studies 8−32589
W3(OH), H_2O emission vars. *(Russian)* 8−16556
W3(OH), H_2O vapour maser turn-on in H II region 8−36677
W3(OH), NH_3 emission and absorption at 23 GHz 8−36714
W3/W4/W5 region, 1420 MHz continuum survey 8−16497
W44, supernova remnant, associated molecular cloud obs. 8−8079
W48, 18 cm obs. of OH source 8−28812
W48, H II region, H 85α recomb. lines obs. 8−28762
W51, detect. of impact broadening of recomb. line 8−28741
W 51 region, possible detect. of Na I 17 cm hyperfine emission 8−8139
Westerbork radiosource surveys at 610 and 1415 MHz 8−28542
young SNRs, search for radio emission at 3.7 and 11 cm 8−40972
III Zw 2, radio outburst, 14.5 GHz flux density increase of type I Seyfert compact galaxy 8−12373
II Zw 40, 70, 71, CO emission upper limits 8−36693
CO distribution in galactic equatorial plane, 115 GHz obs. 8−36689
CO in the inner Galaxy 8−8072
H I, nonplanar, assoc. with Perseus spiral arm, 21 cm obs. 8−16489
H I absorpt. by high vel. clouds at low galactic latits. 8−49506
H I and Mg II absorpt. lines obs. in QSOs and BL Lacertae objects 8−28838
H I clouds, search in radio galaxies and intergalactic space 8−12316
H I in region $348^\circ \leq l \leq 12^\circ$, $+3^\circ \leq b \leq +17^\circ$, 21 cm obs. 8−45377
H I regions, comparison of 21 cm obs. with UV and optical absorpt. line meas. 8−24532
H I search in galaxy clusters 8−49544
H II regions, galactic, comparative study of high-radiofrequency and far IR obs. 8−49497
H II regions assoc. with optical nebula K3-50, 15 GHz obs. 8−16554
H II regions in Perseus Arm, high-resolution radio maps 8−32549
H II regions near OH 43.79-0.13 and OH 48.61+0.02, radio obs. 8−36669
H_2O maser emission from external galaxies, detects. 8−45417
H_2O maser sources in W3, accurate positions 8−4332
H_2O masers, accurate interferometric positions at 1.35 cm 8−45374
H_2O sources in Galaxy, sites of newly formed OB stars 8−12390
H300 α recombination line obs. towards galactic centre 8−20873
NH_3 emission obs. from galactic regions 8−28780
OH 18 cm lines obs. towards interstellar dust clouds 8−4318
OH large-scale sky survey at 1612 MHz 8−32358
OH masers in direction of H_2O masers, new discoveries 8−12393
OH masers in Orion Nebula, obs. 8−16493
OH/IR Type II sources, radial diameters from 1612 MHz OH line obs. 8−36713
OH/IR unidentified Type II stars, galactic distrib. and kinematics from 1612 MHz survey 8−49450

radioastronomical techniques
acousto-optical high-resolution radiospectrometer, mm wave astronomy appls. 8−4109
ALSEP-quasar differential very long baseline interferometry, for lunar position meas. 8−45245
antenna calibration, radioastronomical methods, standard sources *(Russian)* 8−4103
HELIOS command antenna, correction factors for main transmission axis determining *(German)* 8−4116
historical account and development trends *(Italian)* 8−12095
J^2 supersynthesis of circular aperture 8−40835
Josephson point contact detector, high-sensitivity, for 1.5 to 2 mm waves 8−4106
phaseless aperture synthesis, technique 8−32353
radiotelescope gravitational astigmatism meas. 8−45222
real-time very-long-baseline interferometry using communications satellite 8−24469
sources two-dimensional radio brightness reconstruction, maximum entropy technique 8−28534
Sun activity and radiocommunication implications, historical account and predictions *(Italian)* 8−24496
supernova radio pulses, searches and possible sensitivity improvements 8−40975
uncooled millimeter wave receiver charact. *(Swedish)* 8−24461
VLBI, appl. to determ. of struct. of flat spectrum radio sources 8−16549
VLBI applications to geodynamics and astrometry *(Russian)* 8−32357
Voyager radio science experiment 8−24430
Voyager spacecraft, receiver for measuring LF planetary radio emissions 8−4075
H II regions, clumping factor meas. technique 8−20870

radioastronomy
see also pulsars; quasars; radiofrequency cosmic radiation; radiosources (astronomical); radiotelescopes; solar radiofrequency radiation
absolute flux density scale in 10-180 MHz range 8−28814
aperture synthesis observations, tropospheric H_2O vapour irregularities effects on seeing 8−24339
Bologna survey at 408 MHz, statistical analysis 8−28816
brief survey *(Swedish)* 8−24589
6C survey at 151 MHz, prospects 8−28813
circular waveguide system for large antenna array 8−24465
communication with civilisation around other stars 8−16314
Cosmic Background Explorer Satellite, IR and mm wave techniques 8−49344
cosmological aspects, IAU Symposium 74 (Cambridge, England, 16-20 Aug. 1976) 8−28871

radioastronomy continued
extraterrestrial civilisation radiocommunication, efficiency of signals associated with natural phenomena *(Russian)* 8−40842
extraterrestrial intelligence, antenna concepts for interstellar search systems 8−28545
fundamental astrometry rel. to celestial mechanics and radioastronomy *(German)* 8−45200
Green Bank surveys at 1400 MHz 8−28543
historical account and development trends *(Italian)* 8−12095
interstellar communication, timing strategy 8−16313
microwave detection of interstellar methane, SiH_4 and GeH_4, possibilities 8−41020
Molonglo radio source surveys at 408 MHz 8−28541
Nova Cygni 1975, synchrosignal for extraterrestrial civilizations 8−28546
optical reconstruction from projections via circular harmonic expansion 8−42286
polarization of quasars with optical absorption spectra 8−12405
Rao Observatory in Sweden, history and current research *(Swedish)* 8−28513
receiver design, 408 MHz band, 30 MHz IF freq., amplifier noise disc *(Italian)* 8−45234
solar stereo radioastronomy 8−49419
UTRAO 335-380 MHz survey, interim report 8−28815
Viking landers radio tracking data, lander location, Mars ephemeris and solar system parameters 8−20685
Viking mission, radio science investigations 8−20684
Voyager planetary radioastronomy experiment 8−24433
Westerbork radiosource surveys at 610 and 1415 MHz 8−28542
NH^+, interstellar radioastronomical freq. prediction at 13625 MHz 8−24544

radiocarbon dating *see radioactive dating*

radiochemistry
see also radioactive chemical analysis; radioactive tracers
alkanes, tritiated, fragmentation by β-decay, dissoc. of daughter species 8−31669
beta-decay, chem. and biological consequences 8−28018
beta-decay in labelled molecule, chem. and biological consequences 8−11541
geological samples, multielement anal. by sequential instrumental and radiochem. neutron activation 8−7798
hot laboratories, post irrad. work, trends and prospects 8−41844
orchard leaf, multielement anal. by sequential instrumental and radiochem. neutron activation 8−7798
positronium formation, quenching and inhibition in Ag and Cd salt solns. 8−15690
pyrrole, free radicals produced by X-irrad. and decay of tritium atom, EPR study 8−48676
recoil tritium reactions with cis- and trans-1, 2-dichloroethylene 8−3360
sulphonated cool, gamma radiation breakdown 8−693
tetrahydro-2-methylfuran glass, γ-irrad., spin trapping of radicals by BNB, EPR obs. 8−10776
uranyl acetate solns., radiocolloidal and pseudoradiocolloidal state 8−44390
^{60}Co, in radioactive waste water, improved removal using diethyldithiocarbamate 8−37415
^{253}Es, separation and α-spectra identification following neutron irradiation of Cf 8−17435
$^{18}F+H_2$, nuclear recoil reaction, steady state hot atom kinetic theory calc., rate coeffs. 8−35712
Fe, proton bombardment, stable nuclide form. and separation 8−20045
HF+T hot atoms, energy loss 8−15691
$H^*+\text{chloroform-d}_1 \rightarrow HD+CCl_3$, hot atom reaction, threshold energy meas. 8−44356
^{172}Hf production, recovery and purification for nucl. medicine use as ^{172}Lu generator 8−48893
^{123}I production in cyclotron by $^{124}Te(p,2n)^{123}I$, improved targetry and radiochem. 8−28064
^{124}I production in cyclotron by $^{124}Te(p,n)^{124}I$, improved targetry and radiochem. 8−28064
$^{115}In(\gamma,\gamma')^{115m}In$, appearance energies of In complex cpds. determ. 8−8794
$Mu+F_2 \rightarrow MuF+F$, 300 to 400K in N_2 moderator, reaction rate determ., tunnelling 8−48682
^{15}O, recoils from $^{16}O(n,2n)^{15}O$, labelled mol. O_2 form. 8−3359
^{232}Th, induced fission in natural systems, radiochem. obs. 8−4966
^{238}U (μ^-,f), fission product mass distrib., fission probability, radiochem. investigation 8−29514

radiocommunication
see also radio links
extraterrestrial civilisation, efficiency of signals associated with natural phenomena *(Russian)* 8−40842

radiocrystallography *see X-ray crystallography*

radiofrequency and microwave spectra of diatomic inorganic molecules
see also nuclear magnetic resonance; paramagnetic resonance
microwave radiation, kinetic theory of interaction with diatomic gas, j=0, j=1 transitions 8−9750
BaO, mm wave spectrum, spectroscopic consts. 8−37629
CN, radical, $X^2\Sigma^+$ ground state, microwave absorpt. spectrum 8−17657
CN^+, interstellar, rot. transitions rest freqs. and radio search 8−24534
CO, microwave spectral line profiles, rotation effects in CRL 437 peculiar IR source 8−45426
CO^+, interstellar, rot. transitions rest. freqs. and radio search 8−24534
CuCl, hyperfine struct., microwave rot. spectrum obs. 8−21917
O_2, microwave absorpt. at high-press., 9, 23 and 60 GHz 8−13490
OH, maser emission from OH/IR sources 8−16432
OH, vibr. ground-state, MFS, rot. spectra and electronic band anal. 8−5206
$^{32}S_2$, magnetic-dipole transitions and upper limits in interstellar mol. clouds 8−28738
SiO, maser emission from OH/IR sources 8−16432
SrO, mm wave spectrum, spectroscopic consts. 8−37629

radiofrequency and microwave spectra of organic molecules and substances
see also nuclear magnetic resonance; paramagnetic resonance
acetyl cyanide-d_1, microwave spectra, r_s, r_0-struct. 8−13491
aminoacetonitrile, microwave rot. spectrum, quadrupole hyperfine struct. 8−17658

radiofrequency and microwave spectra of organic molecules and substances continued
bicyclo[3.1.0]hex-2-ene, microwave spectra, rot. consts., ring struct. and config. 8−42041
bicyclo[3.1.0]hexane, zero-point average struct., microwave spectra and electron diffraction 8−25738
bromoacetylene, microwave spectrum, dipole moment 8−17660
bromomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
bromotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8−37766
cis-butene-1, microwave rot. spectrum, centrifugal distortion effects, rot. consts. 8−9137
chloromethane-d_2, microwave spectrum, rot. consts. 8−9140
chlorotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8−37766
1-cyano-1,3-cyclopentadiene, microwave spectrum, rot. consts., dipole moment 8−42043
cyanohexatriyne detection in Heile's Cloud 2 at SHF 8−41018
cyanomethane, collisional rot.-line widths and shifts, microwave region 8−25619
diethylcarbonate, liq., alkoxy group internal torsion, extended microwave/far IR anal. 8−19457
dimethylallene, excited states, microwave spectrum and strong Coriolis coupling 8−9141
dimethylcarbonate, liq., alkoxy group internal torsion, extended microwave/far IR anal. 8−19457
dimethylphosphine, microwave spectra, internal rot. barrier 8−5205
dioxirane, form. in O_3+ethylene reaction, identification by microwave spectra 8−15659
ethylchloride, d_0-d_5, microwave spectra, elec. field gradient tensor at Cl nucleus *(German)* 8−46325
o-fluoroaniline, conformation by microwave spectroscopy, rot. consts. 8−9144
formaldehyde, mol. beam, vel. meas. by Doppler effect on RF spectrum splitting *(French)* 8−13627
formyl chloride, rot. Zeeman effect of low-J transitions 8−25519
formyl radical-d_0,-d_1, microwave spectroscopy, high field Zeeman effect 8−37631
1-haloalkanes, microwave spectra, conformation 8−21913
iodomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
iodomethane, collisional rot.-line widths and shifts, microwave region 8−25619
3-iodopropene, microwave spectra, rot. consts. and HFS 8−975
iodotrifluoromethane, mol. struct., electron diffr., microwave spectra, CNDO/2 calcs. 8−37766
maleic anhydride, struct., DRM microwave spectra, isotope shifts 8−21918
methyl iodide, rot. microwave spectra, nucl. quadrupole, spin-rot. and nucl. shielding tensors 8−42040
methylene ketene, microwave spectrum, rot. and centrifugal distortion consts., dipole moment 8−17659
monothioformic acid, cis-, trans-rotamers, rot. spectrum, force consts. and isotopically substituted struct. 8−9145
pyridine, and -d_1, microwave spectra, mol. struct., rot. consts. 8−25517
s-trans-3-pyridinecarbaldehyde, microwave spectrum, assignments 8−21912
selenoketene, formation, microwave spectrum, struct. determ. 8−25515
selenoketene, microwave spectra, 26.5-40 GHz, mol. config., bond angle and length 8−46322
N-sulphinylaniline, microwave rot. spectra, torsional freq., dipole moment and internal rot. barrier 8−973
symmetric top mol., overlapping press. broadening, nonreson. microwave absorpt. line radii 8−17662
tetracyclo[3.2.0.0^{2,7}.0^{4,6}]heptan-3-one, microwave spectrum and effect of cyclopropyl-carbonyl group interactions on dipole moment 8−9138
thioacetic acid, −d_1, principle axis method anal. of microwave spectra 8−9139
thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8−25520
trans-propargyl amine, microwave spectra, dipole moments and struct., isotopic species 8−974
1,2,4-trifluorobenzene, microwave spectrum, dipole moment and centrifugal distortion constants 8−37630
vinyl isocyanate, conformers, geometrical and electronic structures, microwave spectra 8−9142
chloromethane, collisional rot.-line widths and shifts, microwave region 8−25619
OCS, collisional rot.-line widths and shifts, microwave region 8−25619

radiofrequency and microwave spectra of polyatomic inorganic molecules
see also nuclear magnetic resonance; paramagnetic resonance
collisional line broadening of microwave spectra, semiclassical theory 8−29776
symmetric top mol., overlapping press. broadening, nonreson. microwave absorpt. line radii 8−17662
$AsCl_3$, 100 to 200 GHz spectra, mol. struct., harmonic force field 8−42042
AsF_3, millimetre rot. spectra, vibr. excited states, anharmonic force field 8−33502
$COCl_2$, microwave spectra, 24-154 GHz, rot. and centrifugal distortion consts. 8−46324
HCN, laser plasma, microwave spectra of excited vibr. states 8−17656
HCN laser processes, mm. and submm. microwave spectroscopy 8−13685
HCN^+, interstellar, rot. transitions rest. freqs. and radio search 8−24534
HCN-HF, dimer, rot. transition intensity, dissoc. energy determ. 8−46323
HCN+HCN, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
HF-HCl, H bonding , struct., mol. beam-elec. reson. spectra 8−29777
HNC^+, interstellar, rot. transitions rest freqs. and radio search 8−24534
HNCO, a-type rot. spectrum in excited bending states, rot. consts. 8−21915
HNCO. microwave and RF spectra, b-type rot. transitions 8−21914
HNCS, microwave transitions 8−9143

radiofrequency and microwave spectra of polyatomic inorganic molecules continued
  HNSi, structures and microwave freqs. calcs. rel. to interstellar emission lines 8−36648
  H_2O emission detection in galaxy NGC 253 at 22.235 GHz 8−16534
  H_2O, maser emission from OH/IR sources 8−16432
  H_2O, maser emission from stellar sources, bright IR star monitoring at 2.7 μm 8−16433
  H_2O maser emission from supergiant star S Persei, 22 GHz variability 8−49461
  HSiN, structures and microwave freqs. calcs. rel. to interstellar emission lines 8−36648
  $HSiO^+$, $HOSi^+$, rot. consts. and rot. transition freqs. 8−37541
  ICN, microwave spectrum, mag. hyperfine struct., I nucl. shielding tensor 8−17661
  N_2D^+, lab. rest frequencies 8−1102
  NH_3, linewidth parameter $\Delta\nu$/p for the J=13, K=13 inversion line *(French)* 8−42131
  $^{15}NH_3$, inversion doublets, T_1 and T_2 M depend. 8−13489
  NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8−25518
  OCS, microwave spectra, rot. Q-band *(Polish)* 8−29866
  $OCS+CO_2$, collisional line broadening of microwave spectra, semiclassical theory 8−29776
  $OCS+CO_2(H_2)(N_2)(OCS)$, collisional line broadening of microwave spectra, semiclassical theory, calcs. 8−25516
  OH, maser emission from stellar sources, bright IR star monitoring at 2.7 μm 8−16433
  $SO_2+H_2O(N_2)(SO_2)$, linewidths, intensities, isotope shifts, 91.5-95.5 GHz 8−42044
  $SiH_3{}^{81}Br$, high resolution rot. microwave spectrum, 8-40 GHz, mol. consts. 8−21916
  $(SiH_3)_2S$, rot. consts., internal rot. parameters, anal. of microwave spectra 8−46316
  SiO, maser emission from stellar sources, bright IR star monitoring at 2.7 μm 8−16433

radiofrequency cosmic radiation
  see also pulsars; quasars; radioastronomy
  background radiation, ray aberration large-scale anisotropy 8−24576
  cosmic blackbody radiation, anisotropy detect. 8−4415
  cosmological constant, broken gauge theories and 3K black-body radiation 8−28870
  galactic, nonthermal emission in 0.25-9.18 MHz range, RAE 2 lunar satellite obs. 8−45398
  galactic disc emission at 4 cm wavelength, large-scale and small-scale cloud structs. 8−28795
  galactic halo low-frequency radio emission, diffusion models 8−12433
  galactic synchrotron radiation, rel. to mag. field configurations 8−20884
  IR limit on fine-scale anisotropy 8−28863
  microwave background, effects of unborn clusters of galaxies 8−8131
  microwave background, generation in tepid early universe 8−20919
  microwave background, rel. to Dirac cosmology 8−8176
  microwave background, universal anisotropy limits and He production 8−36737
  microwave background at z=40, transparency of dust grains 8−28869
  microwave background fluctuations, search for Universe primeval perturbs. *(Russian)* 8−36734
  microwave background fluctuations, universal anisotropy and gravit. waves 8−28866
  microwave background fluctuations due to intergalactic gas secondary ionization *(Russian)* 8−36736
  microwave background fluctuations rel. to galaxy and cluster formation 8−28865
  microwave background fluctuations rel. to Universe entropy perturbs. *(Russian)* 8−36735
  microwave background obs. in direction of clusters of galaxies, cool ionized gas mass limit 8−41098
  microwave background radiation, Compton scatt. by gas in galaxy clusters 8−24575
  microwave background radiation isotropy and spectral distrib. as test of Dirac cosmologies 8−49570
  microwave background spectrum, survey of results 8−28864
  monopulse signals, omnidirectional search, probable origin 8−24563
  nonthermal galactic radio background rel. to secondary electrons and positrons in interstellar clouds 8−49527
  Planck's constant cosmological var. upper limit from microwave background radiation spectrum 8−12434
  review, cosmic gamma radiation, sources and detection 8−12059
  sudden cosmic noise absorpt., solar Zenith angle depend. 8−12047

radiofrequency heaters *see radiofrequency heating*

radiofrequency heating
  27.12 MHz selective heating of cutaneous tumours 8−24179
  biological models, induction of focal hyperthermia by RF radiation and EM fields 8−40244
  electrosurgical instrumentation review 8−44680
  hyperthermia dosage definition form in vitro thermal cytotoxicity data 8−24178
  hyperthermia techniques in cancer management, clinical appls. 8−44682
  microwave, effect on dog thyroid gland at 2.45 GHz 8−31854
  microwave diathermy, circularly polarised direct contact applicator design and performance 8−7531
  microwave diathermy direct-contact applicators, comparative heating patterns 8−40286
  microwave enzyme inactivation system, electronic control to reduce dose variability 8−40285
  microwave whole-body dosimetry in small animals, effect of body mass and exposure geometry 8−40348
  microwaves, direct-contact heating of dielec. encapsulated mouse tumour using dual-beam TEM applicator 8−40245
  microwaves, meas. of energy absorbed by biological systems by anal. of heating and cooling data 8−40343
  microwaves, meas. of energy absorbed by biological systems by Dewar-flask calorimetry 8−40344
  multiple murine tumours, simultaneous microwave irradiation bolusing technique 8−7422

radiofrequency heating continued
  small-animal microwave induced hyperthermia development system 8−11715
  tissue microwave heating models, surface cooling and blood flow effects 8−7388

radiofrequency interference
  see also atmospherics; radar interference; whistlers
  cardiac pacemaker RF susceptibility tests 8−48935
  radiotelescope observations, sporadic pulses originating in Earth's atmosphere *(Russian)* 8−24411
  SEASAT-A satellite intersystem interference minimisation 8−49294
  sweepers in HF and VHF bands 8−16231

radiofrequency spectra of diatomic inorganic molecules *see radiofrequency and microwave spectra of diatomic inorganic molecules*

radiofrequency spectra of inorganic solids
  see also nuclear magnetic resonance; paramagnetic resonance
  No entries

radiofrequency spectra of organic molecules and substances *see radiofrequency and microwave spectra of organic molecules and substances*

radiofrequency spectra of polyatomic inorganic molecules *see radiofrequency and microwave spectra of polyatomic inorganic molecules*

radiofrequency spectrometers
  see also magnetic resonance spectrometers
  acousto-optical high-resolution radiospectrometer, mm wave astronomy appls. 8−4109
  grating spectrometer for mm waves 8−12768
  superheterodyne UHF ESR spectrometer for 0.04-4.2K operation 8−257

radiofrequency spectroscopy
  see also nuclear magnetic resonance; radiofrequency spectrometers
  antenna calibration, radioastronomical methods, standard sources *(Russian)* 8−4103
  difference NMR spectroscopy, reference lineshape adjusted, expts. 8−17693
  difference NMR spectroscopy, reference lineshape adjusted, theory 8−25561
  ENDOR, negative enhancement and phase shift 8−39445
  NMR, frequency sweep nonlinearity, meas. and correction 8−24836
  NMR spectroscopy, ^1H, automatic PMR spectra interpretation system 8−32840
  positive ions, RF spectroscopy, using optical pumping, review 8−1107
  saturation transfer EPR spectroscopy, source modulation, mol. reorientation effects 8−41339

radiofrequency sputtering
  alumina film, RF sputtered, stability 8−22993
  inline production magnetron sputtering 8−3048
  mass spectometric analysis of RF reactive sputtering reaction mechanism *(Japanese)* 8−19665
  moving deposition mode of magnetron sputtering *(German)* 8−39690
  optical film, production by RF cosputtering of dielectrics, and optical props. 8−6849
  oxide, tracer diffusion obs., RF sputtering as microsectioning technique 8−14499
  Permalloy film preparation 8−3044
  Al_2O_3, film form. by reactive HF sputtering with voltage bias 8−3045
  Al_2O_3, sputter deposited, struct. and heat treatment charact. 8−15307
  $Bi_{12}TiO_{20}$, RF sputtered epitaxial film on $Bi_{12}GeO_{20}$, for optical waveguiding 8−9462
  CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
  Cu-Zr, vapour quenching prod. (thermal evaporation and r.f. sputtering), amorphous film for electron microscopy 8−6851
  Gd-Co alloy, sputtered film, mag. props. determ. *(Chinese)* 8−2714
  In_2O_3:Sn film, RF sputtered, effect of O_2 press. during deposition on props. 8−19664
  $Kr.2SiO_2$, props. of vitreous deposits 8−22664
  Nb-Ni, amorphous, synthesis by vapour quenching, and struct. 8−11111
  Ni films on Si single cyrstal, pseudodiffusion of Ni in Si 8−2396
  $Pb_xSn_{1-x}Te$, RF sputtered films, struct., lattice parameter, stoichiometric comp., RHEED 8−38975
  $Pb(Zr,Ti)O_3$ film, by RF sputtering in PbO vapour 8−39689
  Si:P, RF sputtered polycryst. film, MOS compatibility 8−6455
  Si-SiO_2 interfaces, thin film homogeneity improvement using mag. quadrupole field, expt. *(Croatian)* 8−48316
  SiO_2, film form. by reactive HF sputtering with voltage bias 8−3045
  Ta_2O_5, film form. by reactive HF sputtering with voltage bias 8−3045
  ZnO deposition for metal-ZnO-SiO_2-Si struct., SAW appl., fabrication related deterioration 8−14829
  ZnO piezoelec. film, fabrication and appl. *(Japanese)* 8−23616
  ZnS, RF sputtered film, stoichiometry, chem. comp. 8−34727

radiogalaxies *see galaxies; radiosources (astronomical)*

radiogoniometers *see goniometers*

radiographs (x-ray photography) *see radiography*

radiography
  see also neutron radiography; nondestructive testing; radioisotope scanning and imaging; scanning radiography
  angiography, indocyanine green fluoresc. spectrum in blood and other solvents 8−28057
  angiography, standardised general and cerebral under automatic exposure control 8−24121
  angiography, validity of computer simulation of blood vessel imaging 8−3594
  Angioskop multidirectional examination unit 8−28039
  autoionography of beta-emitting radionuclides distrib. on thin-layer chromatograms 8−20126
  automatic reading systems, radiography, automatic reading systems, estimation of performance time 8−40005
  autoradiography, increasing detect. power of type M nucl. emulsion gel 8−20269
  autoradiography and soft laser scanning in radioisotope work, appl. to metabolic studies 8−3576
  autoradiography combined with SEM for cell topography obs. 8−24212
  autoradiography of serial sections, method for holding electron microscope grids 8−20331
  biomedical mobile X-ray unit, Mobil XR 8−24122
  bone distribution profile, healing process obs. appl. 8−15890

radiography continued
  bone mineral measurement using EMI scanner vs. densitometry 8−24119
  breast examination by radiography, thermography and US, reviews *(French)* 8−7472
  breast examination methods including radiography, thermography and cytology, review 8−3656
  breast radiography, foreign body diagnosis *(French)* 8−7432
  cardiac catheterization laboratory sensitometric system application and clinical evaluation 8−20263
  cardiovascular radiopaque marker tracking algorithm 8−40329
  carotid angiography, eye shield 8−44615
  cellulose nitrate emulsion for α-particle track relocalisation 8−17480
  cellulose nitrate layer, α-particle autoradiography 8−17499
  cerebral angiography, cortical pO_2 and K^+ dynamics rel. to contrast agent neurotoxicity 8−35954
  cerebral angiography, evaluation of Contrac injector 8−40293
  charged particle detection by photographic recording systems, appls. 8−17527
  chest radiograph texture anal. model 8−40323
  chest X-ray rib extraction algorithm for pneumoconiosis detect. 8−31904
  chest X-rays, coal miners, small opacities computer anal. 8−40324
  cine-radiography in peripheral arteriography 8−24123
  cineradiography, with continuous X-ray source 8−44341
  cineurethrocystography, gonad dose 8−35956
  computerised tomography performance phantom optimisation 8−48892
  coronary arteriography, current techniques and equipment 8−35940
  defect radiographs, method and apparatus for automatic decoding 8−40002
  diagnostic instrument calibration, energy depend. of correction factors for Victoreen 666 Survey System 8−3596
  diagnostic system compatible with DHEW standards 8−7445
  diagnostic X-ray exposure meas., energy depend. of correction factors for Victoreen 570 Condenser R-meters 8−3597
  diazotype imaging film, continuous tone, for duplicating of radiographs 8−32911
  differential energy absorpt. X-ray cassette, radiographic image contrast enhancement 8−20264
  diffusion of $^{241}Am^{3+}$ ions in ion-exchange membrane, autoradiographic method 8−35721
  digestive tract diagnosis, X-ray dose to patient and radiologist *(German)* 8−28086
  electrophotographic imaging using high purity Al_2O_3 8−35936
  epoxy resin based tissue substitutes for radiography studies 8−7424
  extra-fast shutter, for soft X-ray photography *(French)* 8−41397
  F 8−48585
  flash radiography, high energy, for dynamic NDT 8−15624
  G 8−48588
  graphite composite aircraft structures, flaw detection by US methods 8−44288
  grid control X-ray tube, diagnostic quality improvements 8−11733
  grid for elimination of scatter, zig-zag design 8−3598
  gyroscopic X-ray television apparatus for clinical studies 8−15883
  high voltage electron microscope autoradiography, HeLa cells 8−36077
  high-resolution X-ray TV system and video recorder for medical work 8−24120
  high-speed cassette film fogging and shielding 8−8460
  high-speed cineradiography, of projectiles 8−41395
  hybrid optical-digital radiography system for lung disease detection 8−11753
  image enhancement and anal. system, digital computer eval. 8−27708
  image information content and patient exposure 8−35935
  image intensifier fluorography with fast exposure technique 8−31900
  image intensifier with 14 inch input field, clinical experience 8−31899
  image quality and patient exposure 8−28060
  image transmission system response rel. to X-ray diagnosis 8−35941
  industrial X-ray film information processing methods *(German)* 8−15637
  ionography, optimisation of design parameters 8−31888
  ionography sealed chamber system, optically projected X-ray charge images 8−4748
  isodose curves in water phantom due to diagnostic quality X-rays 8−15892
  laser fusion pellets, microradiographic characterization 8−745
  left ventricular ejection fraction determ., comparison of three radionuclide techniques with contrast angiography 8−31889
  light radiography, strengthening covers, rare earth oxysulphides *(French)* 8−41396
  low dose, intensified minification camera 8−20262
  lung translation, rot. and strain calc. from roentgen-videographically recorded marker displacements 8−31843
  mammographic X-ray screen sensitivity and resolution 8−7449
  mammography, backscatt. factors, var. with field diameter and half-value layer 8−3593
  mammography, comparison of film and xerography methods in early diagnosis *(German)* 8−35946
  mammography, method for reducing radiation exposure and improving image quality 8−31901
  mammography, picture quality test *(German)* 8−20270
  mammography modalities, advantages and limitations *(French)* 8−7430
  mammography X-ray exposure meas., Baldwin-Farmer chamber response 8−28040
  mass testing of hollow cylindrical parts, radiation field use 8−48597
  medical, solns. for film and data handling in large diagnostic departments 8−40294
  medical diagnosis, problems anal. 8−31903
  medical diagnosis, sensitometry, review 8−20260
  medical diagnosis, working places incorporating Medicor equipment 8−35942
  medical diagnostic decision making and image quality 8−28059
  medical diagnostic X-rays, effects, risks and protection, review 8−3591
  medical X-ray diagnostics, NDT impetus, novel techniques *(German)* 8−7146
  medical X-ray exposure survey, performance characts. of integrating ion chambers 8−853
  microchannel plate X-ray image intensifier, image resolution 8−35937
  microdensitometer temporal reponse, MTF determ. 8−32904
  minerals, radiography of geological specimens for determ. of α- and fission-activity 8−20540

radiography continued
  Neuroscope, for multiprojectional isocentric fluoroscopy and angiography 8−40292
  noise equivalent parameters, in general medical radiography 8−28058
  nuclear emulsions, recording possibilities in electron microscopic autoradiography conditions 8−17489
  paediatric radioluscent bone length meas. 8−48891
  penetrameter cassette calibration to 400 kV and extra-focal radiation effects in X-ray tube filtration meas. 8−20242
  perforating rods, length reduction at high impact velocities, X-ray studies 8−40016
  phosphates, U content, α-ray autoradiography, fluorimetry, estimation 8−20414
  photographic noise in data processing by coherent light *(Italian)* 8−22088
  pipeline inspection, welding flaw detect., NDT 8−19984
  pneumoconiosis of coal-workers, optical-digital system for pattern recognition 8−40389
  polycrystals, deformed, particle sizes and mean square strains *(German)* 8−3284
  proton, fluorescent intensification screen+photographic film combination, response, radiography appl. 8−20268
  pulmonary venous pressure estimation from routine chest radiographs using hybrid optical-electronic system 8−44657
  pulsed X-ray radiography, precise control of linear electron accelerator *(Japanese)* 8−35944
  radioisotope measuring convertor, parameter calc., thickness monitoring appl. *(Russian)* 8−25403
  random pulse train processing by linear filter *(Russian)* 8−46518
  rare earth phosphor intensifying screen speed gain 8−7447
  screen sharpness quantum noise depend. 8−20261
  screen-film system comparisons, fluoresc. X-ray source 8−24132
  sensitivity and detail visibility 8−44286
  site training 8−25329
  solid state electrophotographic imaging with ionic dielectric X-ray receptors 8−16899
  source coding of X-ray pictures for compact storage or fast transmission 8−40310
  spectra and angular distrib. meas. of scattered X-radiation *(German)* 8−7148
  steel 40 KhSN2MVF, chemical micro-inhomogeneity recovery during thermal working *(Russian)* 8−15442
  supervoltage beam films for radiotherapy 8−3580
  thermoluminescent, improved resolution image storage panel 8−16898
  thickness meas., destructive and nondestructive methods compared *(French)* 8−15611
  thrombophlebitis patients, venographic, impedance and Doppler US findings 8−48919
  thrombosis detection by US, plethysmography and phlebography 8−7435
  total unsharpness analysis 8−11730
  transmission of X-ray pictures over voice grade telephone channels 8−44607
  transmission X-radiographic development trends *(German)* 8−15636
  urology, universal room using Uro Diagnost 8−31902
  weld testing between tubes and tube-plates in heat exchangers *(German)* 8−7151
  X-ray film processing 8−27707
  X-ray image intensifier freq.-contrast charact. curves determ. 8−7427
  X-ray paper use in radiographic control of MTR fuel production 8−5001
  X-ray photographs, CCTV transmission, TV camera operation *(Hungarian)* 8−21306
  X-ray production equipment, USA safety standard 8−29223
  X-ray quantum statistics limited electrostatic imaging 8−7451
  X-ray tube thermal monitoring system, LOADIX, features 8−3658
  X-rays, spatially modulated, pattern recognition 8−45761
  xeromammography, technique and advantages *(French)* 8−7431
  xeromammography exposure timing 8−40291
  xeroradiography, for teaching 8−45449
  β-ray quantitative microautoradiograhy, by X-ray emission microanal. 8−20545
  BaFCl:Eu X-ray intensifying screen 8−11735
  $CaWO_4$ and rare-earth X-ray intensifying screen sensitivity to scattered radiation 8−7450
  iu hollow charge jet, density meas. by light radiography *(French)* 8−44344
  Fe, water sorption visualisation using THO and autoradiography 8−26761
  H embrittlement in metals, local detection by T autoradiography 8−3439
  LaOBr:Tb phosphor X-ray mottle reduction by multilayer screen construction 8−4756
  PbO, binder layer, properties of radiographic system 8−21238

radioisotope scanning and imaging
  see also scanning radiography
  acoustic neuroma diagnosis, contrib. of radioisotope axial tomography 8−28045
  adrenal uptake measurements, operator-independ. background subtraction method 8−7429
  albumin macroaggregates labelled with radioisotopes for clot detect. 8−7438
  Anger rectilinear tomographic scanner 8−20257
  Anger scintillation cameras, state-of-the-art in suitable photomultiplier tubes 8−40304
  annular coded-aperture images, decoding techniques 8−37818
  axial tomography by half back-projection 8−28056
  bone blood flow determ., comparative study of $^{99m}TcO_4$ and ^{131}I-iodo-antipyrine 8−28046
  bone imaging radiopharmaceutical local accumulation model 8−24127
  bone rectilinear scanning, differentiation between metastases and degenerative spinal disease 8−44585
  bone scan quality vs. time between dose and scan 8−3585
  bone scanning, improved quantitative method 8−24125
  brain, radioisotopic activity, 4-dimens. reconstruction using 200-element detector array of Ge 8−11732
  brain tumour detection using ^{99m}Tc-glucoheptonate radiotracer 8−20253
  cameras, resolution, sensitivity and efficiency *(Spanish)* 8−7428

radioisotope scanning and imaging continued
cardiac output regional distrib., non-invasive determ. using ^{201}Tl 8−31890
cardiac scan computer-aided anal., using ECG gate 8−40328
cerebral regional blood flow assessment by continuous carotid infusion of ^{81m}Kr 8−20254
Cleon imager, clinical evaluation 8−24128
coded aperture imaging, analogical deconvolution *(French)* 8−35943
coded aperture imaging, signal to quantum noise ratio 8−37122
coded aperture imaging of gamma-ray sources, class of near perfect coded apertures 8−40300
coded aperture imaging with uniformly redundant arrays 8−37812
collimator design and fabrication, Pb hexagonal multihole type 8−11717
computed tomography, method for γ attenuation correction, reconstruction algorithm 8−40307
computed tomography, review 8−44599
computer assisted data processing and display methods, intercomparison using math. tumour 8−15886
computer assisted ring detector positron camera system for brain reconstruction tomography 8−40306
computer systems, buyer's guide to current performance and future promise 8−48883
computerised data processing *(Hungarian)* 8−35933
digital scan resolution enhancement, processing algorithm 8−15887
dosimetry of radiopharmaceuticals 8−35967
ECG-gated scintigraphy, appl. to studies of heart 8−7440
ECG-gated scintillation probe meas. of left ventricular vol. 8−31891
ECG-triggered scintigraphy of intracardiac space 8−28033
eight-sensor low-energy γ topograph *(Russian)* 8−35932
equipment and methods in nucl. medicine *(French)* 8−48888
excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
facial bone scanning by emission tomography 8−31892
femoral head disease radionuclide uptake patterns 8−28042
flood field nonuniformity 8−48885
Fresnel zone plate aperture for γ-ray imaging system, digital modelling 8−7442
gamma camera, electronically collimated, for single gamma emission computed tomography 8−44603
gamma camera oscilloscope display, performance meas., computer simulation 8−7425
gamma camera performance comparison 8−44595
gamma camera-computer systems for rapid dynamic imaging studies 8−44598
gamma camera/computer pulse-stretching interface 8−40380
gamma-camera adaptive gating device for heart synchronisation 8−31898
GT-2 gamma scanner, improvement, neurosurgery appl. 8−11719
heart shunt diagnostics by radioisotope angiography, anal. by PASD computer program 8−20250
hepatic lesion visualisation improvement with upright views 8−24129
hepatic scintiangiography, patient positioning techniques 8−20259
human body tomography using computerised pattern recnogition *(Japanese)* 8−3603
hybrid scanner, design of detector and collimators 8−7423
image processing, tracer kinetics, nuclear medicine, cardiology appls. 8−48873
image processing and synthesis in radiology and nucl. medicine *(German)* 8−40325
image reconstruction, projection completion methods 8−42285
image reconstruction from hollow and truncated projections, theory 8−24912
instrumentation trends in nucl. medicine 8−44594
intraocular fluid dynamics meas. by minicomputer-based system 8−24130
ischaemia index using peak diastolic dV/dt of heart chambers from ECG-gated radiocardiogram 8−44602
large field scintillation gamma cameras, performance characts. 8−7441
left ventricular ejection fraction determ., comparison of three radionuclide techniques with contrast angiography 8−31889
left ventricular parameter meas., noninvasive radioisotope images with digital prefiltering and boundary detection 8−48887
lung scintiphotography with dry aerosol, generation and delivery system 8−24126
lung ventilation regional and whole, math. model for radioactive tracer studies 8−20249
lung ventilation studies with ^{133}Xe, patient dose 8−24146
magnifier/rotator for enhanced image visualisation 8−15889
MTF calculation, modified FORTRAN program 8−25807
MWPC positron camera, 3-D iterative reconstruction method 8−40302
myocardial imaging with ^{201}Tl, exptl. model for anal. of myocardial and background components 8−11727
myocardial infarct size computerised quantification from ^{201}Tl scintigrams 8−44601
myocardial regional perfusion, tomographic scintigraphy 8−3584
nonlinear digital filtering *(Japanese)* 8−35930
nonlinear image processing methods 8−48874
oesophagus dynamic study, modified scintigraphic technique 8−28044
pancreatic scanning agents, comparison of four ^{75}Se-labelled amino acids 8−35921
planar positron cameras, 3-D reconstruction using Fourier deconvolution of generalised tomograms 8−40295
positron camera, $Bi_4Ge_3O_{12}$ as potential scintillation detector 8−3586
positron camera, cylindrical, multilayer hybrid computed tomographic system, $Bi_4Ge_3O_{12}$ scintillation crysts. 8−48876
positron camera for brain imaging, appl. and charact. *(Swedish)* 8−28032
positron camera proportional chamber, Fourier deconvolution technique 8−40297
positron computerised tomographic scanning, radionuclide conc. determ. 8−3587
positron emission transverse tomograph, PETT IV 8−40299
positron focused tomogram object reconstruction 8−40314
positron image reconstruction in nuclear medicine, three-dimens., fast iterative method 8−7443
positron imaging instrumentation for physiological functions 8−24196
positron imaging system using annihilation coincidence detection, model, design, performance 8−40303
positron ring, 280-crystal, design and construction for 3D imaging 8−28063

radioisotope scanning and imaging continued
pressurised Xe-filled multiwire proportional chamber for radionuclide imaging 8−48871
pulmonary and recirculation parameter identifiability following sequential bolus inputs of ^{133}Xe 8−44605
radiocardiogram parameter identification *(Slovene)* 8−44586
radiocardiograph equipment TESLA NRG 724, description 8−28062
radiocardiography, parameter estimation for left ventricular ejection and valvular regurgitant fraction determ. 8−48886
radioiodine-labelled pharmaceutical administration, optimal thyroid radiation protection, computer simulation 8−44616
rectilinear scanner, large crystal, improved focused uptake probe 8−28053
rectilinear scanning, error due to radionuclide decay 8−3590
renography, role of midi-maxi computer interaction 8−7476
renography, using ^{99m}Tc-DTPA and scintillation camera 8−20256
renography with electronically assisted kidney localisation 8−11716
rheumatoid arthritic activity quantitative evaluation with ^{99m}Tc-HEDP 8−20255
scan-rescan process anal. using dynamic programming *(Japanese)* 8−3602
scintigram preprocessing and display by microcomputer *(Hungarian)* 8−15881
scintigraphy in paediatrics *(French)* 8−44590
scintigraphy of human organs, digital image anal. 8−20251
scintillation cameras, large-field-of-view 8−44596
Searle Pho/Con tomographic multiplane scanner, tomographic plane separation and detector distance determ. 8−20258
sensitometry, review 8−20260
shadow casting of volume objects 8−48872
therapy monitoring using C^{15}O and $^{15}O_2$ steady state imaging 8−40298
three dimensional gamma-ray imaging using scintillation camera, expt. 8−11734
three-dimensional scintigram processing algorithm 8−7446
thromboembolic disease diagnosis, review 8−7434
thrombus detection radiopharmaceuticals, selection, prep. and evaluation 8−11731
thyroid ^{123}I uptake meas., correction for thyroid depth 8−11728
thyroid $^{99m}TcO_2$ uptake meas., gamma camera method 8−20244
tomoscanner, low cost 8−40313
venography for investigation of thromboembolic phenomena 8−7439
ventilation studies, ^{127}Xe distrib. in lungs 8−44606
ventriculography with slant hole collimator 8−3588
whole-body counter, shadow-shielded, for detection, identification, and localisation of incorporated radionuclides *(German, English)* 8−20266
whole-body counter in vivo calibrations for quantitative retention estimation 8−3579
whole-body imaging methods and devices, comparison 8−44597
zone plate camera longit. tomogram digital processing, computer simulation 8−40311
^{76}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
^{77}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
C^{15}O, steady state imaging as therapy monitor 8−40298
^{11}C-1-aminocyclopentane carboxylic acid, tumour location, clinical trials with single photon detect. 8−31895
CdTe detectors, international workshop 8−41887
^{18}F production and yield from $^{16}O(^3He,p)^{18}F$ reaction in water 8−28065
Ge camera, 2-detector, 512 element high purity prototype 8−40301
Ge detectors array, collimated, computer-driven scanning bed, clinical appls., tomography 8−40309
HgI_2 detectors, international workshop 8−41887
HgI_2, energy response to ^{137}Cs photons, appl. to medical imaging 8−44592
^{123}I, prod. and use in nucl. medicine diagnosis *(German)* 8−28061
^{123}I-fibrinogen scintigraphy for thrombosis detect. 8−7437
^{177}Lu organ distribution in mouse 8−48879
Na(Tl), circular ring transaxial positron camera, coinc. electronics 8−31953
$^{15}O_2$, steady state imaging as therapy monitor 8−40298
^{75}Se-Na-selenite distrib. in human body, and organ doses 8−48880
Si(Li) detector probe with RFT radiation meas. unit for diagnosis of intraocular tumours *(German, English)* 8−20265
^{99m}Tc labelled lung imaging agent quality control, labelling of macroaggregated albumin 8−28069
^{99m}Tc-EHDP accumulation in canine tibia, meas. method 8−20245
^{99m}Tc-pyridoxal-phenylalanine evaluation as hepatobiliary imaging agent 8−31893
^{99m}Tc-pyridoxal-phenylalanine evaluation as hepatobiliary imaging agent 8−31894
^{133}Xe gas dispenser for lung ventilation studies 8−28068
^{133}Xe trapping and re-use system for nucl. medicine 8−28051
^{62}Zn production and bleomycin labelling, excitation function for $^{60}Ni(\alpha,2n)^{62}Zn$ 8−28067

radioisotope separation *see isotope separation*

radioisotopes
see also radioisotope scanning and imaging
applications in agriculture, hydrology, medicine industry etc., booklet 8−35947
cyclotron production for diagnostic medical research appls. *(French)* 8−48895
excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
identification and mass determination, using SAMPO programme with IDENT subroutine 8−48731
isobar nuclear reaction products separation in on-line separators *(German)* 8−33291
marine sediments, radionuclide conc. rel. to residence time near Maine Nuclear Power Reactor 8−49021
medical diagnosis appls. *(French)* 8−48888
methylradioiodide, catalytic trapping by beds of impregnated charcoal 8−21681
naturally occurring radionuclides in building materials, estimation and control of population dose 8−9000
nuclear weapons testing, radionuclide distributions in oceans and marine sediments 8−13344

radioisotopes continued
optical waveguide materials, radioisotope methods and neutron activation anal. appls. 8−7286
radiopharmaceutical preparation and injection, dose to hands 8−20276
radiopharmaceutical purity determ., adaptation of multichannel scalar device for radiochromatogram scanning 8−48894
thrombus detection radiopharmaceuticals, selection, prep. and evaluation 8−11731
tube wall thickness gauge, radioisotopic, description 8−44310
^{26}Al, use in meas. Mn nodule growth rate 8−40537
Am, transport through skin, role of diffusion 8−20158
^{241}Am III retention and distrib. in neonatal beagle 8−28094
^{241}Am sorption on USA subsoils from differing weathering intensity areas, ^{241}Am, ^{237}Np and ^{99}Tc 8−16014
^{41}Ar, near-stack reactor effluent dispersion studies by SF_6 tracer method 8−11992
^{140}Ba, airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
^{10}Be, use in meas. Mn nodule growth rate 8−40537
^{76}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
^{77}Br production, excitation functions for neutron deficient isotope form. via high-energy d-Br reactions 8−44609
^{14}C direct detection at natural concs. by mass spectrometry, for dating 8−32916
^{14}C liquid scintillation counting using thick-walled vials 8−857
^{14}C released to atmosphere as CO_2, population dosimetry 8−35958
^{14}C-$NaHCO_3$ solution liq. scintillation counting, prevention of radiocarbon loss 8−21811
^{47}Ca, bone imaging radiopharmaceutical local accumulation model 8−24127
^{144}Ce gastrointestinal absorpt. and distrib. in suckling pig 8−15942
^{252}Cf, use for brachytherapy 8−20272
^{36}Cl, Cherenkov counting using Teflon vials 8−858
^{60}Co behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
^{60}Co, in radioactive waste water, improved removal using diethyldithiocarbamate 8−37415
^{60}Co, long-term retention in Indian workers, dose commitment 8−35960
^{60}Co, transfer from irrigation water to crops and agricultural products *(French)* 8−8996
Cs dynamics in herons inhabiting contaminated reservoir system 8−28092
Cs, transport through skin, role of diffusion 8−20158
^{134}Cs behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
^{137}Cs accumulation in rat liver, effects of altered thyroid states 8−24136
^{137}Cs deposition on plate glass surface, contamination *(Japanese)* 8−29654
^{137}Cs excretion in urine vs. total excreta following continuous intake of ^{137}Cs in fall-out 8−20294
^{137}Cs, long-term retention in Indian workers, dose commitment 8−35960
^{137}Cs movement and loss in small lake 8−24317
^{137}Cs removal from ocean waters, adsorpt. on hydrated MnO 8−3822
^{137}Cs, transfer from irrigation water to crops and agricultural products *(French)* 8−8996
^{64}Cu, simultaneous prod. with ^{67}Cu and ^{67}Ga, and bleomycin labelling with ^{67}Cu or ^{64}Cu 8−28066
^{67}Cu, simultaneous prod. with ^{64}Cu and ^{67}Ga, and bleomycin labelling with ^{67}Cu or ^{64}Cu 8−28066
^{18}F, bone imaging radiopharmaceutical local accumulation model 8−24127
^{18}F production and yield from $^{16}O(^{3}He,p)^{18}F$ reaction in water 8−28065
^{18}F-5-fluorouracil distrib. in tumour-bearing mice and rats 8−48878
^{59}Fe uptake in normal and splenectomised rats, marrow dose estimation, 1000 kVp X-irrad. 8−15894
^{67}Ga, prod. for medical uses using Ruder Boskovic Institute cyclotron 8−20273
^{67}Ga, simultaneous prod. with ^{64}Cu and ^{67}Cu 8−28066
^{172}Hf production, recovery and purification for nucl. medicine use as ^{172}Lu generator 8−48893
I, A=123 to 135, derived air concs. annual limits 8−31909
I, adsorption on charcoal filter, safety evaluation *(Japanese)* 8−33267
I-labelled pharmaceutical administration, thyroid protection, computer simulation 8−44616
^{a}I, A=121, 123 and 125, cyclotron prod. by $^{127}I(p,xn)Xe \rightarrow (\beta) \rightarrow I$ reactions, yield curves 8−44611
^{123}I, carrier-free, prod. from $^{127}I(p,5n)^{123}Xe$ using in-beam collection of ^{123}Xe 8−44610
^{123}I, prod. and use in nucl. medicine diagnosis *(German)* 8−28061
^{123}I production in cyclotron by $^{124}Te(p,2n)^{123}I$, improved targetry and radiochem. 8−28064
^{123}I uptake in thyroid, correction for thyroid depth 8−11728
^{123}I-fibrinogen scintigraphy for thrombosis detect. 8−7437
^{124}I production in cyclotron by $^{124}Te(p,n)^{124}I$, improved targetry and radiochem. 8−28064
^{125}I accidental inhalation, bioassay and thyroid monitoring results 8−24151
^{125}I gamma ray effects on Vicia faba roots, comparison with ^{182}Ta 8−48832
^{125}I in partially blocked thyroid of rats, testis damage 8−3565
^{125}I-fibrinogen uptake test for detect. of deep vein thrombosis, review of current practice 8−7436
$^{129}I_2$ detection in nuclear fuel cycle, intracavity selective absorpt. analysis 8−46182
^{131}I, airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
^{131}I determination in vegetation, ashing procedure 8−15930
^{131}I, in vivo whole-body counter calibration for quantiative retention estimation 8−3579
^{131}I, long-term retention in Indian workers, dose commitment 8−35960
^{131}I, low level detection in milk rel. to population dose 8−31911
^{131}I thyroid therapy, estimating doses recorded by personnel dosimeters 8−15891
^{131}I-iodo-antipyrine in bone blood flow determ., comparison with $^{99m}TcO_4$ 8−28046

radioisotopes continued
^{111}In metabolic fate in rat 8−48881
^{113m}In intravenous injection meas. of placental blood flow 8−28043
^{77}Kr carrier-free isotope prod. by (p,xn) reactions on natural Br 8−29678
^{79}Kr, kinetics after inhalation in man, rel. to internal dosimetry calcs. 8−28073
^{85}Kr, beta dose to crit. human tumour sites 8−28074
^{85}Kr concentration in atmosphere over USSR (1971-1975) 8−37453
^{85}Kr extraction, occupational doses in gas liquefaction industry 8−15905
^{172}Lu generator, ^{172}Hf production, recovery and purification for nucl. medicine use 8−48893
^{177}Lu organ distribution in mouse 8−48879
^{54}Mn, transfer from irrigation water to crops and agricultural products *(French)* 8−8996
^{99}Mo, airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
^{23}Na, transfer from irrigation water to crops and agricultural products *(French)* 8−8996
^{237}Np, sorption on USA subsoils from differing weathering intensity areas 8−16014
^{239}Np, airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
^{15}O production, non-linear behaviour of gas targets 8−25361
^{32}P, Cherenkov counting using Teflon vials 8−858
^{32}P Cherenkov effect detect. efficiency determ. by ^{60}Co external source on liq. scintillation system 8−25387
^{210}Pb, ^{210}Po, concs., physico-chem. states and residence times in marine and estuarine waters 8−11913
^{210}Pb determination in U ores, dusts and mill tailings 8−15736
Pu, air concs. near Rocky Flats, $^{239+240}$Pu 8−16150
Pu distribution in Ohio soils, local and stratospheric sources 8−16015
Pu, industrial effluent, behaviour and transport in Great Miami River, Ohio 8−16061
^{239}Pu alpha particles, internal source microdosimetry 8−3615
$^{239}PuO_2$, in vivo solubility in rat lung 8−28093
^{241}Pu bone distribution, high resolution autoradiography 8−7399
^{241}Pu concentrations in Swedish reindeer lichens, radiochem. anal. 8−15912
^{242}Pu preparation by EM isotope separation, for use as α-spectrometry and mass spectrometry tracer 8−9011
^{226}Ra determination in U ores, dusts and mill tailings 8−15736
Rb neutron deficient radioisotope selective production in (α,xn) reacts. *(Croatian)* 8−44608
^{81}Rb production, non-linear behaviour of gas targets 8−25361
^{81}Rb/^{81m}Kr, prod. for medical uses using Ruder Boskovic Institute cyclotron 8−20273
^{222}Rn daughters, meas. of low conc. in air 8−28308
^{222}Rn short-lived daughter population exposure in Great Britain 8−35970
^{75}Se-Na-selenite distrib. in human body, and organ doses 8−48880
^{75}Se-amino acids, comparison of four pancreatic scanning agents 8−35921
Sn, photoactivation by 42 MeV bremsstrahlung, gamma transition energies and line intensities 8−13057
Sr isotope excretion in man, comparison of stable Sr, ^{85}Sr and ^{90}Sr 8−24153
Sr, transport through skin, role of diffusion 8−20158
^{89}Sr behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
^{89}Sr distribution between bound and free forms, in vitro meas. of rat soft tissue 8−28095
^{90}Sr, balance in man, effect of P intake 8−15911
^{90}Sr, leaching behaviour in cement composites 8−37416
^{90}Sr removal from ocean waters, adsorpt. on hydrated MnO 8−3822
^{90}Sr, transfer from irrigation water to crops and agricultural products *(French)* 8−8996
^{182}Ta gamma ray effects on Vicia faba roots, comparison with ^{125}I 8−48832
^{99}Tc sorption on USA subsoils from differing weathering intensity areas 8−16014
^{99m}Tc labelled lung imaging agent quality control, labelling of macroaggregated albumin 8−28069
^{99m}Tc radiopharmaceuticals, rapid miniaturised chromatographic quality control procedures 8−28070
^{99m}Tc-DTPA scintillation camera renography 8−20256
^{99m}Tc-HEDP, quantitative evaluation of rheumatoid arthritic activity 8−20255
^{99m}Tc-S colloid uptake patterns in femoral head disease 8−28042
^{99m}Tc-pyrophosphate uptake patterns in femoral head disease 8−28042
$^{99m}TcO_4$ in bone blood flow determ., comparison with ^{131}I-iodo-antipyrine 8−28046
^{230}Th determination in U ores, dusts and mill tailings 8−15736
^{201}Tl myocardial imaging, exptl. model for anal. of myocardial and background components 8−11727
^{201}Tl, non-invasive determ. of regional distrib. of cardiac output 8−31890
Tn alpha particle etch pits in CA80-15 and LR-115 cellulose nitrate track detectors 8−855
U, simultaneous determ. of ^{238}U, ^{234}U, ^{230}Th, ^{226}Ra and ^{210}Pb in U ores, dusts and mill tailings 8−15736
UO_2, equilib. conc. of fission products, ^{235}U induced fission and ^{238}U spontaneous fission *(Spanish)* 8−44823
UO_2, equilib. conc. of fission products, calc. comparison with expt. values *(Spanish)* 8−44824
^{236}U activity meas. in UO_2 mineral deposit *(Spanish)* 8−44822
^{123}Xe production in $^{127}I(p,xn)$ and $^{127}I(p,pxn)$ reactions 8−594
^{125}Xe production for medical use by ^{3}He bombardment of natural Te 8−3604
^{127}Xe distribution in lungs during ventilation studies 8−44606
^{133}Xe gas dispenser for lung ventilation studies 8−28068
^{133}Xe intravenous injection meas. of placental blood flow 8−28043
^{133}Xe trapping and re-use system for nucl. medicine 8−28051
Zn radionuclide dosimetry standards and crit. organs 8−35961
^{62}Zn production and bleomycin labelling, excitation function for $^{60}Ni(\alpha,2n)^{62}Zn$ 8−28067
^{65}Zn behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
^{65}Zn, transfer from irrigation water to crops and agricultural products *(French)* 8−8996

radiology

- *see also patient diagnosis; patient treatment; radiation therapy; radioisotope scanning and imaging*
- biotelemetry of glomerular filtration rate in man by external detection of DTPA-(Sn)-^{99}Tc^{m} with CdTe 8−44591
- cerebral blood flow meas. by radioisotope clearance, radiation scattering effect 8−3600
- cerebral regional blood flow meas. by ^{133}Xe inhalation, anal. method comparison 8−44604
- Compton scatter tissue densitometry, calc. of single and multiple scatter photon fluences 8−28048
- computer monitoring system appl. 8−7466
- history of applications of nucl. physics to medicine *(French)* 8−45453
- image processing and synthesis in radiology and nucl. medicine *(German)* 8−40325
- image reconstruction, projection completions methods, computational examples 8−46524
- imaging system line spread function and MTF determ., effect of finite slit 8−24118
- instrumentation, new industrial contributions, review 8−31924
- insulin, radioimmunoassay, improvement in precision and accuracy of commercial kit 8−48884
- liver fat content determ. by photon scatt. technique 8−24124
- mixed-oxide fuel fabrication plant, large commercial, accident radiological risk assessment 8−17401
- muscle blood flow meas. by ^{133}Xe clearance, CdTe semicond. detector system 8−40305
- nuclear medicine, diagnosis appls., equipment and methods *(French)* 8−48888
- nuclear medicine computer systems, buyer's guide to current performance and future promise 8−48883
- nuclear medicine instrumentation trends 8−44594
- nuclear physics appl. to life sciences 8−15882
- nuclear science, nuclear power systems, confs., San Francisco, USA, 19-21 Oct. 1977 8−33304
- placental blood flow evaluation, comparison of ^{113m}In and ^{133}Xe intravenous injection methods 8−28043
- public health aspects of radiation 8−35895
- radioiodine-labelled pharmaceutical administration, optimal thyroid radiation protection, computer simulation 8−44616
- radioisotope applications in agriculture, hydrology, medicine industry etc., booklet 8−35947
- radioisotope production, non-linear behaviour of gas targets 8−25361
- radioisotope production in cyclotron for diagnostic medical research appls. *(French)* 8−48895
- radioisotopes, simultaneous prod. of ^{67}Cu, ^{64}Cu and ^{67}Ga and bleomycin labelling with ^{67}Cu or ^{64}Cu 8−28066
- radiopharmaceutical preparation and injection, dose to hands 8−20276
- radiopharmaceutical purity determ., adaptation of multichannel scalar device for radiochromatogram scanning 8−48894
- radiopharmaceuticals in diagnosis, patient dose 8−35967
- radioprotection, medical regulations and standards in France *(French)* 8−48897
- radiotelemetry pill for biomedical meas. of ionising radiation using HgI_2 detector 8−40318
- renogram deconvolution, Hippuran transit times in kidney 8−40317
- spectral radiation detectors, calibration and error anal. 8−46177
- sterilisation facility, in Medicor Works' Debrecen Factory of Surgical Instruments, test dosimetry 8−40336
- teaching, slide console 8−4435
- thyroid $^{99m}TcO_2$ uptake meas., gamma camera method 8−20244
- X-ray image intensifier freq.-contrast charact. curves determ. 8−7427
- HgI_2 in vivo medical probe, DC and pulse counting meas. 8−44593
- HgI_2 miniature probes for in-vivo medical appls., fabrication, spectroscopic evaluation 8−40308
- ^{123}I production in cyclotron by ^{124}Te(p,2n)^{123}I, improved targetry and radiochem. 8−28064
- ^{124}I production in cyclotron by ^{124}Te(p,n)^{124}I, improved targetry and radiochem. 8−28064
- ^{125}I-fibrinogen uptake test for detect. of deep vein thrombosis, review of current practice 8−7436
- ^{111}In metabolic fate in rat 8−48881
- ^{99m}Tc-EHDP accumulation in canine tibia, meas. method 8−20245
- ^{133}Xe gas dispenser for lung ventilation studies 8−28068

radiolysis

- D-amino acid oxidase, crit. residues, pulse radiolysis and inactivation study 8−27897
- amino acids, aq. solns. EPR of spin-trapped radicals, hydrated electron reactions 8−27796
- aromatic hydrocarbons, singlet energies, correlation with anion radical protonation 8−40064
- benzene, γ-radiolysis, phenyl radical intermediate, spin trapping, EPR 8−7218
- bilirubin, aq. soln., pulse radiolysis 8−48761
- brom phenol blue aqueous soln., irradiation induced discolouring as dose meas. 8−41866
- chloroform-n-hexane, liq. mixture, radiolysis, mechanism, rate consts. 8−20039
- 1-chloropropane, formation of chlorohexanes by ion-mol. reactions in radiolysis 8−27802
- concanavalin A-carbohydrate interactions, implication of protein aromatic amino acids, radiolysis 8−40110
- cytochrome c-phospholipid interaction, studied by pulse radiolysis 8−48746
- fibrinogen solution, effect of scavengers on radiation-susceptible sites 8−11701
- haemoglobin+CO reaction kinetics, using various regimes of photolytic illum. 8−48753
- lactate dehydrogenase+free radicals, reactions, pulse radiolysis 8−7214
- nitro compounds in cyclohexane, electron attachment reaction rates from pulse radiolysis 8−31663
- β-nitrostyrene free anionic polymerisation during electron radiolysis, primary reactions 8−44378
- peroxidase, low-temperature radioreduction, MCD and absorpt. spectra 8−31763
- polydextran, γ-irrad. frozen gel, electron trapping, EPR and optical obs. 8−20030
- polynucleotides, single-stranded, reaction of O_2 with radiation-induced free radicals 8−48759

radiolysis continued

- polynucleotides poly(A+U), double-stranded, radiolysis in presence of O_2 8−48760
- pulse radiolysis, var. temp. cell housing 8−27794
- quantum mechanical kinetics problems, averaging principle appls. 8−19995
- radicals, radiolytically produced, CIDEP 8−13534
- toluene-1-hexene(1-pentene), radiolysis at 77K, fluoresc., energy transfer processes 8−20037
- tryptophyl peptides, pulse radiolysis, hydrated electron reaction 8−48679
- Ar, electron pulse radiolysis, 2p levels formation and decay kinetics 8−31665
- CO_2-$H_2O(D_2O)$-mineral oils, radiolysis products form. in nucl. reactor 8−689
- Kr, electron pulse radiolysis, 2p levels formation and decay kinetics 8−31665
- MnF_2, radiation damage, energy transfer, radiolysis, effect of defect centres 8−2161
- N_2, ($C^3\Pi_u$) state, radiative lifetime, collisional quenching, pulse radiolysis meas. 8−29813
- $NaClO_3$ trapped O species in irradiated samples, low-temp. X-ray photoelectron spectroscopy 8−27799
- Ne, electron pulse radiolysis, 2p levels formation and decay kinetics 8−31665
- $RbMnF_3$, radiation damage, energy transfer, radiolysis, effect of defect centres 8−2161
- SeO_2, free radicals, pulse radiolysis obs. 8−20040
- Xe, electron pulse radiolysis, 2p levels formation and decay kinetics 8−31665

radiometers

- *see also infrared detectors; microwave detectors*
- atmospheric attenuation meas. for satellite link system *(Czech)* 8−36351
- atmospheric O_3 monitoring with IR heterodyne radiometer 8−16216
- ball radiometer, calib. of radiant flux sensors 8−282
- detector type, commercial devices survey and classification 8−16830
- Earth resources, remote sensing by Skylab microwave radiometer 8−16273
- IR and mm wave techniques, for Cosmic Background Explorer Satellite 8−49344
- IR emission meas. of atm. and targets 8−4681
- IR heterodyne radiometer using tunable diode laser local oscillator 8−267
- IR modulation radiometer using Zn-doped Si S-diode 8−4694
- IR radiometer objective lens, optimal refr. index 8−29137
- IR radiometers, on Viking orbiters 8−20612
- Josephson point contact detector, high-sensitivity, for 1.5 to 2 mm band, radioastronomical obs. appl. 8−4106
- Meteosat imaging payload, functional aspects 8−36424
- Meteosat spacecraft, elec./mech. configurations 8−36423
- microwave, passive, airborne imaging for soil moisture meas. 8−36310
- modulation radiometer, portable instrum. for SHF atmospheric sounding *(Russian)* 8−49159
- null radiometer scheme for photodetector noise power spectrum density meas. 8−21197
- quasi-optical radiometer receiver design 8−8447
- radiation balance microwave thermograph for industrial and medical appls. 8−45621
- radiometers, hemispherical soft dome net type, recirculating purging system 8−3984
- satellite-borne IR scanning radiometer obs. of stratosphere, optimum field view and spacing 8−16201
- selective modulation radiometer for gaseous pollutant remote sensing *(French)* 8−20550
- thermocouple output signal calc. for cylindrical receiver *(German)* 8−41305
- thermovision system, AGA 680, calibration procedure to extend versatility 8−4680

radiometry

- *see also radiometers*
- 3 mm wavelength scattering and emission characteristics of natural media 8−3770
- aerial radiometric data modelling program 8−46237
- atmosphere, ground-based radiometry in O_2 5 mm absorpt. band for temp. inversion detect. *(Russian)* 8−11963
- atmospheric noise measurement at 30 GHz, ATS-6 satellite link appl. *(Dutch)* 8−7742
- bidirectional reflectance and transmission for optical diffusers use in space projects 8−36438
- Candela, radiometric definition appraisal *(German)* 8−32845
- chemical actinometric measurement of absolute luminescence quantum yields 8−32892
- computerised rapid-scan spectroscopy, at NAVWPNSUPPCEN Crane 8−41362
- defectoscope with feedback, charact. of operation 8−44321
- domestic coal, radiometric method for determ. of heating value, rel. to moisture content 8−20111
- electro-optical technological, review 8−29140
- electron optics, isoplanatic image formation 8−9312
- emissivity, measurement for low temp. sources, flux double modulation method 8−45634
- far IR technology and applications, conf., Reston, USA, (Apr. 1977) 8−45711
- far-zone angular coherence and intensity calc. 8−8435
- high power continuous laser emission meas. appls., pyroelectric ceramic appl. *(Russian)* 8−16845
- IR radiometric microscope technique for melt growth kinetics determ. 8−34453
- isotope radiometry, counting algorithm for information processing 8−44323
- lock-in amplifier, for measurements when signal-to-noise ratio is less than unity 8−29134
- microwave radiometry in detect. of breast cancer 8−40384
- multiplicative comparator of spectral radiances, systematic errors *(Japanese)* 8−29139
- photoelectric spectrometer, drift correction procedure 8−29178
- plant and soil monitoring, from tethered balloon, multispectral radiometry 8−3958
- quasihomogeneous planar source, coherence and radiometry 8−9421

radiometry continued
  radiometric flaw detectors, results of practical appl. 8−40004
  radionuclide survey of USA, ERDA aerial radiometric and magnetic survey 8−12027
  rain attenuation on satellite-Earth path at 11.4 and 14 GHz by radiometric meas. *(French)* 8−49066
  Schottky diode concepts, heterodyne radiometry 8−45713
  second order, radiant noise, coherence 8−287
  sensitometry, use of photographic film in radiometric meas. 8−269
  spectroradiometry, principles *(Japanese)* 8−4678
  spectroradiometry automation and applications 8−12740
  submillimetre wave mixers, review 8−45712
  thunderstorms, microwave radiometric detect. of corona from chaff 8−16106
  upper atmosphere, constituents detection, using submillimetre wave heterodyne radiometry 8−49183
  vacuum UV radiation scales, plasma blackbody lines and synchrotron radiation 8−1309
radiometry, ultraviolet *see photometry*
radionavigation
  Loran-C systems, propagation in polar regions, full wave analysis 8−7834
  NTS-1, propagation effects near mag. equator 8−7839
  OMEGA, polar region ionospheric disturbance, propagation effects 8−7835
  plasmaspheric time delay effects, observations, satellite navigation appl. 8−7831
  transionospheric radio signal time delay spatial correlation 8−45117
  TRANSIT Navigation satellite, phase fluctuation and ionospheric irregularities observations 8−7832
  VLF nighttime propagation anomalies, obs. at 10.2 and 13.6 kHz 8−28414
radios *see radio receivers*
radiosondes
  see also meteorological instruments
  No entries
radiosources (astronomical)
  see also BL Lacertae-type objects; pulsars; quasars
  Abell 478, cluster of galaxies, X-ray and radio obs. 8−8133
  Abell clusters, search for radio sources 8−12379
  Abell clusters of galaxies, interferometric obs. of radiosources 8−4380
  absolute flux density scale in 10-180 MHz range 8−28814
  angular diameter-redshift relation for scintillating sources 8−28824
  angular size-flux density relation rel. to evolution 8−28822
  angular sizes and cosmological tests 8−28821
  astrometry, precise, positions meas. on 35 km baseline 8−16551
  Bologna survey at 408 MHz, statistical analysis 8−28816
  brightness distribution, determ. via phaseless aperture synthesis 8−32353
  3C111, new very large radioenergy source in core of radio galaxy *(German)* 8−16558
  5C9 survey of radiosources, 214 objects 8−16312
  3C 10, 3C 58, H I distrib. small scale struct. 8−45383
  3C 123, OH 18 cm lines obs. 8−4318
  3C 129, orbital dynamics of head-tail radio galaxy around nearby supergiant galaxy 8−49518
  3C 227 and 382 radiogalaxies, spectral-flux distrib. in 0.36-3.5 μ range 8−36710
  3C 303, double radiosource, radio struct. and optical field 8−16519
  3C 326, very large radio galaxy, multifreq. obs. 8−28810
  3C 33, rot. axis. of assoc. optical galaxy 8−4355
  3C 345, quasar, compact radiosource obs. 8−12399
  4C 39.11, N galaxy, radio and optical obs. 8−16553
  4C 39.25, quasar, compact radiosource obs. 8−12399
  3C 58 (SN 1181), discovery of optical counterpart 8−32546
  5C 6 survey of 292 radiosources 8−24471
  5C 7 survey of 271 radiosources 8−24471
  3C sources, systematic optical identification 8−36709
  6C survey at 151 MHz, prospects 8−28813
  VY Canis Majoris, OH masers very long baseline interferometric obs. 8−36712
  Cassiopeia A, absolute radio spectrum 8−8090
  Cassiopeia A, radio emission evolution, freq. dependence *(Russian)* 8−4387
  Cassiopeia A, supernova remnant, progenitor evolution involving supergiant mass loss 8−36623
  Cassiopeia A direction, OH and formaldehyde absorpt. obs. 8−45381
  catalogue of 347 sources obs. at 610 MHz, source parameters, identifications 8−40838
  Centaurus A, NGC 5128, stellar population and dust lane 8−20890
  Centaurus A, X-ray variability, OSO-8 obs. 8−41082
  Centaurus A (NGC 5128), detect. of X-ray emission from giant radio lobes 8−41055
  Centaurus A (NGC 5128), radio and X-ray var. of nucleus 8−36711
  Centaurus A (NGC 5128), X-ray and gamma-ray lines prod. by nonthermal ions 8−36725
  o Ceti (Mira), variable 2.6 mm CO emission obs. 8−12241
  Circinus X-1, distance from H I absorpt. obs. 8−12413
  Circinus X-1 (3U 1516−56), obs. of optical and radio counterpart 8−12414
  close binary stars, radio survey at 6 cm wavelength 8−32510
  clustering, statistical analysis of source surveys 8−28818
  clusters of galaxies, props. of radio sources 8−12398
  in clusters of galaxies, review of obs. 8−12397
  clusters of galaxies, unborn, microwave and X-ray emission 8−8131
  clusters of galaxies with LF radio emission, dynamical evolution 8−24558
  compact double radio sources, relativistic blast-wave model for superlight motion 8−28807
  compact features in extragalactic sources, statistical props. as function of flux density 8−41071
  compact H II regions, fine struct. IR line emission 8−16482
  compact H II regions near Type I OH maser sources, obs. 8−8094
  compact sources in and near bright galaxies 8−49548
  cosmological evolution, free-form anal. method 8−41070
  cosmological evolution of extragalactic radiosources 8−28799
  cosmological information interpretation 8−28831
  3CR identifications 8−28825
  3Cr sources in directions of Zwicky clusters of galaxies, statistical investigation 8−4378

radiosources (astronomical) continued
  Crab Nebula, struct. at 327 MHz from occultation obs. 8−12339
  Culgoora-3 list of 2045 sources, obs. at 160 MHz 8−20655
  χ Cygni, Mira variable star, variable 2.6 mm CO emission obs. 8−12241
  Cygnus A, 99 GHz obs. of components and central source 8−41069
  Cygnus A, HEAO-1 pointed obs. 8−7856
  Cygnus A, rot. axis of assoc. optical galaxy 8−4355
  Cygnus X region, riddle of γ Cygni radio source resolved 8−28809
  Cygnus X-3, cocooned X-ray binary pulsar model 8−36723
  DA 240, radio galaxy, high-vel. gas in jet 8−28773
  double radio galaxies, symmetry rel. to dressed slingshot effect 8−12359
  double radio source structures, form. and superluminal expansion 8−8141
  double radiosource near NGC 2823 elliptical galaxy 8−24562
  double sources, steady-state configs., Cygnus A models 8−45416
  double sources, twin beam models, dynamical calcs. 8−49547
  double sources and jets, models and current-carrying beams 8−49313
  dwarf galaxies, H I redshifts rel. to absolute solar motion and discrete redshift 8−49530
  expanding nonthermal sources, evolution, nonrelativistic expansion 8−4376
  exploding black hole, radio pulse spectrum calc. 8−12271
  extended and compact sources *(German)* 8−45420
  extended extragalactic radio sources, relativistic parametric instabilities 8−24561
  extragalactic, integrated linear polarisation meas. 8−4381
  extragalactic, luminosity functions 8−28827
  extragalactic, optical variability 8−12396
  extragalactic objects, 1 mm continuum obs. 8−36720
  extragalactic radio sources, relativistic electrons in situ accel. by shock waves 8−49241
  extragalactic radio sources, relativistic Kelvin-Helmholtz instabilities 8−45419
  extragalactic radio sources with speeds exceeding speed of light, geometric models *(Danish)* 8−36715
  extragalactic sources, Faraday rot. rel. to Galaxy turbulent struct. 8−20885
  extragalactic sources, obs. with Cambridge 5 km telescope at 5 GHz 8−12391
  extragalactic sources, optical and radio props. 8−28829
  extragalactic sources, statistical investigation of compact emitting regions 8−32590
  extragalactic sources variability at 2.7 GHz, depend. on spectral class 8−4379
  extragalactic sources with strong millimetre wave emission, 90 GHz obs. 8−16548
  faint extragalactic radio sources, counts estimate at 5 GHz 8−32588
  flare stars, nature of nearby radiosources 8−12388
  flux density-angular size distrib. for extragalactic sources 8−28823
  G0.7-0.0 (Sagittarius B2), struct. and He abundance 8−45380
  G127.1+0.5, remarkable supernova remnant centred on very compact radiosource 8−16555
  G206.9+2.3 (=PKS 0646+06), supernova remnant, optical identification 8−36660
  G334.9−0.3, G339.6−0.1, identification with X-ray sources 4U 1624−49 and (4U 1624−45) 8−28860
  G55.7+3.4, shell source, high resolution obs. at 610 and 1415 MHz 8−8140
  galactic centre, ang. size for compact radio source 8−28779
  galactic centre, size and struct., radiation scatt. and scintillation *(Russian)* 8−16535
  galactic centre direction, low-freq. radio recomb. lines studies 8−32589
  galactic halo low-frequency radio emission, diffusion models 8−12433
  galactic nuclei, radio sources expansion rel. to compact X-ray sources model 8−28847
  galaxies, early-type, H I obs. 8−45401
  galaxies, optical spectra, morphological classification rel. to spectroscopic classification 8−41038
  galaxies, search for H I clouds 8−12316
  galaxies primordial protoclusters, search for H I emission at Z=3.33 and (4.92) 8−41066
  galaxies with radio tails, review *(French)* 8−41054
  Galaxy, synchrotron radiation rel. to mag. field configurations 8−20884
  Green Bank surveys at 1400 MHz 8−28543
  GT 0236+610, absence of variability in optical counterpart (LSI+61°303) 8−49438
  GT 0236+610, position and LS I +61°303 as optical counterpart 8−36568
  GT 0236+610, possible identification with LS I +61°303 (OB star) 8−32473
  GT 0236+610 radio counterpart for γ-ray source CG 135+1 8−24560
  GX 17+2 (3U 1813-14), radio and optical identification 8−45428
  head-tail radio galaxies velocities with respect to intracluster medium 8−49516
  HR 1099, flare emission at 2.8 cm (1978 February) 8−32476
  HR 1099, radio flux vars. obs. and optical ephemeris 8−36641
  HR 1099, RS Canum Venaticorum star, 4U 0336+01 optical counterpart 8−32475
  HR 8752, G-type supergiant, obs. of associated radio source 8−40942
  Hubble constant determ. from super-luminal radiosources 8−12439
  inhomogeneous cosmic masers, numerical calcs. of saturation behaviour 8−20898
  intergalactic H I clouds, search for 21 cm emission 8−12316
  interplanetary scintillation, appl. to detect. of solar wind whistler turbulence 8−45173
  interstellar, SO, millimetre wave emission obs. 8−24535
  interstellar dark clouds, CH obs. 8−28751
  interstellar molecular clouds, radio search for CO$^+$, HCN$^+$, HNC$^+$ and CN$^+$ 8−24534
  interstellar S_2, upper limits on abundance in mol. clouds 8−28738
  Kepler's supernova remnant, struct. at 327 MHz from occultation obs. 8−12339
  Kleinmann-Low nebula, ^{12}CO line profile rel. to radially moving cloud model 8−20865
  AR Lacertae, RS Canum Venaticorum type star, VLA obs. 8−8054
  BL Lacertae object 0109+22, optical and radio props. 8−32567

radiosources (astronomical) continued
- long-period variables, CO and SiO millimetre line emission obs. rel. to circumstellar shell props. 8−49423
- low-frequency variable radio sources, search for microarcsecond struct. 8−16550
- Lynds 673 nebula, radiosource obs. at 3.5 and 4 mm *(Russian)* 8−32557
- β Lyrae, nature of secondary component from radio emission 8−36638
- M101 companion galaxies, integral props. from H I meas. 8−49532
- M1-78, emission nebula, 15.4 GHz struct. 8−41025
- M1-92, bipolar nebula, OH emission obs. 8−41016
- M31, CO partial radial distrib. meas. 8−8117
- M31, high-resolution H I obs., spectra and major axis rel. plots 8−41057
- M33, radiocontinuum emission obs. at 14850 MHz 8−28783
- M51, radio spectral index distrib. 8−8119
- M82, nature of radio recomb. lines in extragalactic sources 8−45418
- M87, polarised radio emission rel. to galaxy mass and extended X-ray source model 8−28775
- M 81, CO emission upper limits 8−36693
- Maffei 2, CO emission obs. 8−16530
- maser sources, role of dust in pumping 8−36716
- molecular cloud complex assoc. with bright rim near VY Canis Majoris, CO obs. 8−24536
- Molonglo catalogues MC2 and MC3, optical identifications, 11^h28^m to 17^h00^m right ascensions 8−20900
- Molonglo radio source surveys at 408 MHz 8−28541
- Molonglo sources optical counterparts, spectrophotometric obs. 8−4375
- Molonglo survey and QSO identifications 8−28842
- MSH 14−63, probable remnant of A.D. 185 supernova, X-ray emission obs. 8−45427
- NGC 1275, possibly BL Lacertae object 8−45406
- NGC 1499 (California Nebula), CO obs. along ionisation front 8−24537
- NGC 281, H II region, CO and H_2O obs. 8−28740
- NGC 3079, peculiar edge-on spiral galaxy, 2.7 and 8.1 GHz obs. 8−36692
- NGC 4248, galaxy, H I obs. 8−4358
- NGC 4490/4485, interacting galaxy pair, 2.7 and 8.1 GHz obs. 8−36692
- NGC 4636, elliptical galaxy, H I large-scale distrib. 8−45400
- NGC 5128 (Centaurus A), X-ray structure 8−24569
- NGC 6251, elliptical galaxy, nuclear jet radio obs. 8−41059
- NGC 6251, very large radio galaxy with exceptional jet 8−12394
- NGC 6334, CO detailed struct. in mol. cloud complex 8−4324
- NGC 6822, galaxy, CO emission upper limits 8−36693
- NGC 6822, irregular galaxy, interferometer study of H I assoc. with optical core 8−20889
- NGC 7000/IC 5070 (North American/Pelican) nebular complex, thermal radio emission rel. to obscuration and excitation 8−36667
- NGC 7331/Stephan's Quintet area, obs. at 1421 MHz 8−12392
- NGC 7714−7715, peculiar interacting galaxies, discovery of two nearby quasars 8−28835
- NGC 7822 (W 1), supernova remnant, 2.8 and 6 cm wavelength obs. 8−4383
- NGC 891, edge-on disc galaxy, radio continuum obs. 8−28786
- nonthermal sources, evolution, relativistic expansion 8−41067
- North Polar Spur, possibly supernova remnant *(Russian)* 8−41072
- number-flux density counts of unidentified radiosources 8−12395
- OA 33, variability of optical counterpart 8−45421
- Ohio sources, optical identification using radio and optical positions meas. by Texas interferometers 8−28808
- ρ Ophiuchi dark cloud, atomic and mol. obs. 8−41013
- ρ Ophiuchi dark cloud, C II and S II regions obs. 8−49500
- optical and radio props. rel. to identifications of 3CR sources 8−28830
- Orion A, detect. of DNC at 152.6 GHz 8−4334
- Orion A, first detection of methane at 76 GHz 8−16503
- Orion A, SiO and H_2O maser obs. 8−8085
- Orion Molecular Cloud 1, cyanoacetylene emission obs. 8−4322
- Orion Nebula, C recomb. line mapping 8−20866
- Orion Nebula, OH masers obs. 8−16493
- Orion region, struct. in radiocontinuum 8−49549
- Parkes 2700 MHz survey, source counts and distrib. 8−28544
- Parkes 2700 MHz survey of radiosources, 13th part, 404 objects 8−20656
- Parkes 2700 MHz survey of radiosources, 13th part, optical identifications 8−20901
- Parkes sources with flat spectra, optical identifications 8−4382
- S Persei, supergiant 22 GHz H_2O maser emission temporal var. 8−49461
- PKS 0528−250, neutral stellar object with no emission and rich absorption 8−49551
- PKS 1345+12, radio galaxy, optical spectrum 8−4341
- planetary nebulae, electron temps. from radio continuum obs. 8−41027
- polarised compact radio sources, physical conditions 8−4384
- polarization meas. of distant double sources 8−28834
- ξ Puppis, radio emission obs. at 2 cm 8−40969
- quasars, optically selected, search for radio emission 8−20904
- quasars, redshift and 3 GHz radio magnitude correl. 8−45422
- radio galaxies, book 8−24564
- radio galaxies in Coma cluster, optical obs. 8−12358
- radiogalaxies, redshift-magnitude relation and cosmological test 8−28798
- radiogalaxies and quasars, models of extended and double sources 8−16557
- radiogalaxies and quasars, spectrophotometric survey 8−28828
- radiogalaxies in clusters 8−28806
- revised 3C catalogue sources, study of confusion and resolution 8−12105
- RMB 56 (1216+141), compact blueshifted galaxy, H I emission obs. 8−16527
- S255, molecular cloud, molecular line, radio continuum and IR data 8−8087
- HM Sagittae, emission-line variable star, radio emission detect. 8−28706
- Sagittarius A, 540 μ obs. of galactic centre 8−36699
- Sagittarius A, far IR obs., luminosity, colour temp., optical depth 8−41012

radiosources (astronomical) continued
- Sagittarius A (galactic centre), forbidden O III 88 μm line emission obs. 8−49503
- Sagittarius A region, 8.2 mm obs. 8−28794
- Sagittarius B2, far IR obs., luminosity, colour temp., optical depth 8−41012
- Sagittarius B2, far IR spectrum obs. 8−8073
- Sagittarius B2, He abundance problem 8−49496
- Sagittarius C, far IR obs., luminosity, colour temp., optical depth 8−41012
- Sagittarius dwarf irregular galaxy, H I obs. 8−20887
- Scorpius X-1, review of X-ray, optical and radio emission 8−16576
- FH Serpentis (Nova 1970), thick inhomogeneous shell model for radio emission 8−12236
- Seyfert galaxies, radio props. 8−49535
- Shostak high-velocity cloud, H I obs. 8−32575
- sky survey at 8085 MHz of 0.181 steradians, 64 sources, identifications, spectral indices 8−40836
- source count and redshift interpretation in evolutionary use 8−28832
- southern extragalactic sources, obs. with Fleurs synthesis telescope 8−4385
- southern Parkes radiosources, redshift obs. 8−20899
- southern sources, spectral indices 8−28819
- southern sources with steep radio spectra, identification, assoc. with clusters of galaxies 8−32587
- spectral index of extragalactic sources selected at 1.4 GHz 8−28820
- spectral index rel. to synchrotron reactor particle energy distrib. function *(Russian)* 8−4098
- steep-spectrum sources, possible LF variables, 410 MHz fine struct., interplanetary scintillation obs. 8−41068
- superlight flux variations in relativistically expanding sources, models 8−4377
- supernova radio pulses, searches and possible sensitivity improvements 8−40975
- supernova remnants, compact, positional coincidences with COS-B γ-ray sources 8−45435
- supernova remnants, cosmic rays accel. in shock fronts rel. to synchrotron emission 8−32302
- surveys at 5 GHz at NRAO and MPIfR 8−28817
- synchrotron sources, nonuniform struct. effects on physical parameters 8−8138
- Taurus HL-1, small H I velocity bridge, 21 cm obs. 8−28755
- two-dimensional radio brightness reconstruction, maximum entropy technique 8−28534
- Type I OH maser sources, obs. of nearby compact H II regions 8−8094
- type II OH/IR sources in AFCRL catalogue, optical, IR and radio sources 8−4393
- UTRAO 335-380 MHz survey, interim report 8−28815
- variable extragalactic sources with flat spectra, structure 8−28811
- variable radio sources, obs. at 0.95 and 1.65 cm wavelength 8−16552
- variable radiosource obs. at 13 cm *(Russian)* 8−32591
- γ^2 Velorum, radio emission obs. at 2 cm 8−40969
- Virgo A (M87), 1.3 cm obs. 8−49550
- 1601+17W1 (NGC 6034), radio tail galaxy in Hercules cluster, Westerbork obs. 8−36706
- W31 region, compact far IR source assoc. with G10.6−0.4, early stage of stellar evolution 8−49504
- W31 region, high resolution far IR survey 8−12389
- W33, recomb. lines as evidence for cool H II region with mass flow 8−49501
- W35, W43, H II regions, low-freq. radio recomb. lines studies 8−32589
- W3, dusty H II region, stellar optical polarisation meas. 8−45379
- W3, IR maps from 4.9 μm to 20 μm 8−49495
- W3(OH), H_2O emission vars. *(Russian)* 8−16556
- W3(OH), NH_3 emission and absorption at 23 GHz 8−36714
- W3/W4/W5 region, 1420 MHz continuum survey 8−16497
- W48, 18 cm obs. of OH source 8−28812
- W48, H II region, H 85α recomb. lines obs. 8−28762
- W51, detect. of impact broadening of recomb. line 8−28741
- W 51 region, possible detect. of Na I 17 cm hyperfine emission 8−8139
- weak sources with components, flux densities and source parameters 8−28833
- Westerbork radiosource surveys at 610 and 1415 MHz 8−28542
- WSRT deep surveys, identifications 8−28826
- young SNRs, search for radio emission at 3.7 and 11 cm 8−40972
- II Zw 40, 70, 71, CO emission upper limits 8−36693
- H I, nonplanar, assoc. with Perseus spiral arm, 21 cm obs. 8−16489
- H I in $348° \leq l \leq 12°$, $+3° \leq b \leq +17°$, 21 cm obs. 8−45377
- H I profiles classification system for dwarf galaxies, discrete redshift and asymm. 8−49517
- H I regions, comparison of 21 cm obs. with UV and optical absorpt. line meas. 8−24532
- H II regions, clumping factor meas. technique 8−20870
- H II regions, forbidden O III 88 μm line emission obs. 8−49503
- H II regions, galactic, comparative study of high-radiofrequency and far IR obs. 8−49497
- H II regions assoc. with optical nebula K3-50, 15 GHz obs. 8−16554
- H II regions in Perseus Arm, high-resolution radio maps 8−32549
- H II regions near OH 43.79-0.13 and OH 48.61+0.02, radio obs. 8−36669
- H_2O maser emission from external galaxies, detects. 8−45417
- H_2O maser sources in W3, accurate positions 8−4332
- H_2O masers, accurate interferometric positions at 1.35 cm 8−45374
- H_2O sources in Galaxy, sites of newly formed OB stars 8−12390
- N_2D^+, interstellar, radio detect. in L134 N 8−16492
- OH masers, obs. of new assoc. IR objects 8−12407
- OH masers in direction of H_2O masers, new discoveries 8−12393
- OH/IR source in compact H II region G45.5+0.1, IR photometry 8−4396
- OH/IR stars, IR search and identifications 8−24510
- OH/IR stars, OH main lines masers inversion 8−28664
- OH/IR Type II sources, radial diameters from 1612 MHz OH line obs. 8−36713
- OH/IR unidentified Type II stars, galactic distrib. and kinematics from 1612 MHz survey 8−49450

radiostars *see radiosources (astronomical)*

radiotelescopes
  see also radioastronomy
  7 m Cassegrain antenna, quasioptical feed system for millimetre wavelengths 8−32343
  antenna calibration, radioastronomical methods, standard sources *(Russian)* 8−4103
  antenna concepts, for interstellar search systems for extraterrestrial intelligence 8−28545
  basic, construct., perform., and testing 8−40828
  gravitational astigmatism meas. 8−45222
  historical account and development trends *(Italian)* 8−12095
  large telescopes, RATAN 600 and VLA *(German)* 8−4108
  multiple-beam array antenna for supernova radio pulse searches, sensitivity 8−40975
  Nancay radioheliograph, Mark II, preliminary results 8−28517
  portable two aerial system, for detecting the Sun, Milky Way, and remote sources 8−28524
  principal properties *(Swedish)* 8−24589
  radiospectrograph for solar emission S-component in 4-7 GHz range *(Russian)* 8−49320
  at Rao Observatory in Sweden, features *(Swedish)* 8−28513
  reflector phased array aberration effects, optical modelling *(Russian)* 8−16290
  uncooled millimeter wave receiver for radioastronomical observations uncooled millimeter wave receiver charact. *(Swedish)* 8−24461

radiotherapy *see radiation therapy*

radiowave propagation
  see also electromagnetic wave propagation
  11 GHz rain attenuation distribution, from 5-min. rain rate statistics, calc. 8−24326
  20 GHz multi relay links, simultaneous probability of rain attenuation 8−3898
  140 GHz atmospheric attenuation by rain, obs. 8−3914
  acoustic signal processing, influence of time- and space-varying random filters 8−5615
  air, vertical struct. of refr. index for ultrashort radio waves at subfreezing temps. 8−16128
  atmospheric amplitude spectra in absorption region 8−44920
  atmospheric attenuation meas. using radiometer *(Czech)* 8−36351
  atmospheric water vapour meas. over 10 years for microwave radio link planning 8−3857
  atmospherics noise variation with sunspot number during 1600-2000 hours at Delhi 8−49083
  attenuation due to precipitation, atmospheric gases, 22.75 GHz *(German)* 8−20465
  attenuation meas., satellite Earth path, in the freq., bands 20 and 30 GHz 8−7822
  auroral ionosphere, radio turbidity coeff. 8−45112
  auroral radio echo, ion-acoustic, short term characts. 8−45080
  bandwidth limitations in turbulent atmosphere using coherency and differential amplitude spectra *(French)* 8−49070
  beacon signals from ATS-6 satellite, ground refl. effects on polarization 8−40612
  copolar and cross-polar signals rain attenuation meas. at 30 GHz using ATS-6 satellite *(French)* 8−49064
  crosspolarisation, raindrop canting angle as function of wind velocity 8−3855
  over curved anisotropic surfaces, study *(Japanese)* 8−42266
  D-region, partially refl. radiowaves ang. distrib. meas. 8−49204
  D-region, radiowave propag. results during Western European Winter Anomaly Campaign (1975/76) 8−45123
  D-region, southern hemisphere, radio wave scatt. obs. 8−36363
  daytime sky wave component in Calcutta-C MF signals 8−16239
  differential attenuation and phase shift meas. for 36.5 GHz polarised waves rel. to raindrops 8−3856
  dipole field diffraction by perfectly conducting thick half-plate 8−46488
  Doppler scattering by ocean ripples due to acoustic and capillary waves 8−3807
  E-region, critical freq. computation 8−45109
  Earth-space paths, rel. between rain depolarisation and attenuation 8−3858
  ELF mode theory for Earth-ionosphere cavity 8−45131
  ELF propagation in Earth-ionosphere transmission line, rel. to ionospheric profiles 8−36234
  ELF radio waves, effect of sporadic-E on nocturnal propag. 8−36392
  ELF-LF radiowave reflection from lower ionosphere, mechanism 8−49224
  exosphere, global model using optical and incoherent scatter meas. 8−36343
  F_2-layer, peak electron densities in main trough region rel. to radiowave propag. 8−28417
  F-region, electron density disturbances nonlinear saturation, strong radiowave effects 8−28378
  F-region, radiowave influence on nonhomogeneity appearance connected with current instability *(Russian)* 8−49200
  F-region heating, caused by powerful radiowaves, calc. *(Russian)* 8−32278
  F-region irregularities and scintillations in equatorial region, VHF radar maps 8−36382
  field aligned radiowave scattering, artificial small scale irregularities, field aligned scattering *(Russian)* 8−32274
  forward scatter and cross polarisation, due to ice spheroids 8−3853
  ground screening factor evaluation to protect systems from interference *(French)* 8−49071
  HF, ionospheric recurrent storms causes, effects and occurrence probability 8−4028
  HF and VHF signals amplitude fluctuations due to ionospheric scatt. and E_s-layer refl. 8−45105
  HF excited plasma instabilities in ionosphere 8−45130
  HF induced plasma waves in ionosphere, time vars. 8−45119
  HF oblique radar obs. of plasma instabilities in equatorial electrojet over Africa 8−49205
  HF reflection and transmission coeffs. for horiz. polarised waves, sporadic-E layer 8−32290
  HF signal strength, triangular enhancements rel. to TIDs 8−16236
  HF signals, freq. shift during solar eclipse (1976, April 29) 8−45111
  HF transionospheric long range propag. from satellite, obs. at Florence 8−36396

radiowave propagation continued
  HF wave propagation with lateral deflection from great circle arc, investigation 8−45096
  HF-enhanced plasma line height in ionosphere above Arecibo 8−28392
  inhomogeneous media, horizontally polarized wave transmission and trapped waveguide modes 8−9297
  interplanetary scintillation, appl. for solar wind probing 8−45178
  ionosphere, absorpt. meas., differences between sporadic-E and normal E-layer refls. 8−40734
  ionosphere, attenuation meas. by oblique pulsed sounding method 8−28380
  ionosphere, closely-spaced receiver technique for horizontal drift meas. 8−40743
  ionosphere, day to night absorpt. ratio in auroral zone riometer meas. 8−20580
  ionosphere, DNA Wideband satellite expt., complex signal scintillation 8−45133
  ionosphere, E-region reflections at 2.2 MHz rel. to phase height var. and vertical drift 8−40747
  ionosphere, echo signals, between Khabarovsk and Irkutsk, 14-17 MHz band *(Russian)* 8−32281
  ionosphere, effects of solar X-ray and Lyman α radiation on absorpt. 8−40737
  ionosphere, equatorial scintillation rel. to irregularities, review 8−36380
  ionosphere, fluctuations during multiple refl. 8−45104
  ionosphere, group delay var. at oblique incidence rel. to travelling disturbances 8−45132
  ionosphere, LF transmission, electrons effective collision freq. determ. 8−40683
  ionosphere, MF waves generated by 8-40 keV electron beam 8−40750
  ionosphere, nonlinear effects influence on incoherent scatt. 8−40729
  ionosphere, penetration of quasi-parabolic layer, path integrals calc. 8−49208
  ionosphere, persistent subauroral scintillation enhancement obs. in Alaska 8−20573
  ionosphere, plasma interactions, instability growth rates and threshold powers *(Russian)* 8−32277
  ionosphere, pulse time dispersion, Earth's mag. field effects 8−45116
  ionosphere, ray-tracing calc. through Bradley/ Dudeney ionospheric model 8−7826
  ionosphere, refl. freqs. during vertical and oblique sounding 8−45099
  ionosphere, spread-F obs. rel. to plasma density profile 8−36383
  ionosphere, strong radio waves self-focusing instability near caustic 8−45107
  ionosphere, struct. from satellite radio beacon signals 8−12050
  ionosphere, sudden freq. deviations during solar flares, depend. on operating freq. 8−28373
  ionosphere, sweepers in HF and VHF bands 8−16231
  ionosphere, travelling disturbances effect on statistical characts. of refl. signals 8−45092
  ionosphere, VHF and L-band scintillation over Huancayo 8−36381
  ionosphere, VLF waves self-interaction 8−28382
  ionosphere, winter absorpt. obs., 1975/76, at about 52°N, 9°E 8−45124
  ionosphere artificial irregularity spectra disturbed by SW transmission *(Russian)* 8−32275
  ionosphere ionization var. caused by powerful radiowaves in lower region *(Russian)* 8−32273
  ionosphere LF propagation, refl. coefficient determ. via modulation method 8−45114
  ionosphere radio drift meas. simulation and analysis by correlation methods 8−45033
  ionosphere regular absorption, differences in daily vars. and annual pattern in N.hemisphere 8−45091
  ionosphere scintillation, calcs. based on in situ irregularity spectra 8−28415
  ionosphere waveguide propagation, excitation by ground based sources *(Russian)* 8−32283
  ionosphere waveguides, excitation of electromagnetic modes, using Lorentz lemma method *(Russian)* 8−32284
  ionosphere waveguides, excitation problem, using asymptotic method *(Russian)* 8−32285
  ionospheric, electron density profile determ. from rocket-based 40 kHz propag. obs. *(Japanese)* 8−24403
  ionospheric absorption measurement, peak amplitude recording system 8−3979
  ionospheric propagation conditions at decimetre wavelength 8−45136
  ionospheric scintillation, critical prop. freq. up to 1 GHz 8−7827
  in isotropic inhomogeneous atmosphere with refractive index arbitrary profile, mode theory anal. *(Japanese)* 8−44968
  Kanpur-Nainital troposcatter link, radio signal characts., simulation and obs. 8−40614
  LF absorption events during meteor showers, rel. to meteoric constituents ionization 8−40736
  LF signals attenuation due to meteor trains 8−40726
  LF signals knife-edge type field strength depression during mag. storms 8−40740
  LF signals nocturnal amplitude correl. with neutron monitor count 8−40741
  lightning cross polarisation model, for satellite links, 8−11961
  Loran-C in polar regions, amplitude and time-delay computations, full wave analysis 8−7834
  magnetic equator observations, amplitude and differential propagation delay data 8−7839
  magnetosphere, linear and nonlinear amplification during 6.6 kHz transmission 8−40771
  magnetosphere, VLF transmission induced slot electron precip. 8−32296
  man-made VLF waves, effects on radiation belts struct. 8−45150
  maximum usable frequency for distant radio lines, comparison of calc. methods *(Russian)* 8−32282
  MF sky wave, combined terrestrial diffraction/ionospheric reflection effects 8−28410
  microwave attenuation by salt water droplets 8−7725
  microwave attenuation in rain, UK rainfall studies 8−11965
  microwave link, 680 m vertically polarised attenuation by rainfall at 60 GHz 8−36238
  microwave links, rain attenuation in 10-40 GHz range, from rainfall rates 8−40607

radiowave propagation continued
microwave links, short and long term rainfall rates, link design implications *(German)* 8−49082
microwave satellite paths, crosspolarisation phase due to ice crysts. 8−7684
microwave solar radiation, forward scattering from water surface 8−44872
microwaves in troposphere, satellite-borne monitoring of atmospheric and surface characteristics 8−24353
microwaves near horizon meas. over water at 30 GHz, ATS-6 to ground link 8−24345
multicomponent HF skywave arrival elevation angle meas. 8−24408
ocean surface, radar echoes of second order from waves, first inversion 8−49032
OMEGA, navigational transmission, polar region ionospheric disturbance 8−7835
planetary atmospheres, complex geometric optics under superrefraction *(Russian)* 8−49353
plasmaspheric effects, satellite navigation systems 8−7831
pulsation excitation by 4.61 MHz transmitter action on ionosphere *(Russian)* 8−4026
pulse propagation over smooth irregular terrain 8−20458
radar aurora, per-unit-vol. RF scatt. cross section calc. 8−45079
radar for mm wave propag. expt. *(Japanese)* 8−16208
rain attenuation calc. 8−44919
rain attenuation data, appl. to path engineering 8−24327
rain attenuation for Earth-space links, comparison between radar- and radiometer-derived data 8−24343
rain attenuation on satellite-Earth path at 11.4 and 14 GHz by radiometric meas. *(French)* 8−49066
rain depolarisation and attenuation meas. at 11.7, 19.04 and 28.56 GHz *(French)* 8−49067
rain depolarisation using INTELSAT-IV satellite in 4 GHz band at low elevation angle *(French)* 8−49068
rain slant path attenuation statistics prediction at various locations 8−24344
refractivity diurnal variation up to 3 km over India 8−40627
satellite link, ionospheric radio lenses causing fading 8−7833
satellite low angle transmission effects, VHF and UHF 8−7747
satellite radio signals amplitude scintillations rel. to spread-F and sporadic-E over Brisbane 8−49209
satellite relay signals, 30 GHz, attenuation due to weather *(Dutch)* 8−7741
satellite transionospheric signals, group delays rel. to electron density profiles determ. 8−28371
scattering from uneven surface and law of conservation of energy 8−46492
scattering on acoustical formations of atmosphere in field of moving point source of sound 8−32210
Schumann resonance in ionosphere-Earth waveguide, line splitting detection, chirp-z transform 8−3861
scintillation, thin screen theory for spherical wave 8−13645
scintillation effects at 30 GHz on ATS-6 geostationary satellite *(French)* 8−49065
SHF, ATS-6 satellite 20 GHz carrier, attenuation and depopolarisation meas. *(French)* 8−49063
SHF differential phase shift method for total electron content meas. of ionosphere-plasmasphere 8−36304
short-wave echo azimuthal variation obs. over 2300 km *(Russian)* 8−4027
solar activity implications, historical account and predictions *(Italian)* 8−24496
solar plasma, observations using Mars-2 and Mars-7 probes 8−49345
solar wind, radial depend. of props. from Helios 1/2 and Pioneer 10/11 scatt. expts. 8−28595
solar wind radio scattering, meas. of spacecraft signals 8−49277
sporadic-E modes, directional dispersion between 9 and 14 MHz 8−28412
stochastic waves, temporal moments, mutual coherence function 8−20979
super distant trajectories, 10-15 MHz signal transmission, amplitude characts. *(Russian)* 8−32280
surface and interface aspects, Conf. Istanbul, Turkey (Oct. 1976) 8−22075
SW ionosphere-Earth waveguide, through polar and subpolar night ionosphere *(Russian)* 8−32279
SW ionospheric scattering by periodic artificial irregularities *(Russian)* 8−32276
thermal radio emission from exponential slab, sea ice appl. 8−28244
Thomson scattering, collision-dominated, negative ions effect, ionospheric D-region appl. 8−45118
thunderstorms, depolarisation at millimetre wavelengths 8−3854
transionospheric radio signal time delay spatial correlation 8−45117
TRANSIT, satellite observations, phase fluctuations, and ionospheric irregularities 8−7832
troposphere, fading at low elevation angles, meas. of satellite signals *(French)* 8−49069
troposphere, radio beam curvature effect on phase meas. 8−49118
troposphere, transhorizon radiowave propag. rel. to remote sensing 8−44921
tropospheric, spot dancing in inhomogeneous random media 8−46496
turbulent layer propagation, phase and amplitude scintillation freqs. 8−24405
tweek atmospherics propag. mechanism 8−49213
unified wave propagation theory, tenuous random medium 8−4491
VHF daytime scintillations and electrojet irregularities 8−28406
VHF radar echoes from equatorial E-region irregularities, sudden disappearance 8−40738
VLF, between Earth and ionosphere, anisotropic 3-layer model *(German)* 8−36358
VLF ducts in magnetosphere, protonospheric-ionospheric modelling 8−28446
VLF nighttime propagation anomalies, comparison at 10.2 and 13.6 kHz 8−28414
VLF signals, differences in diurnal phase and amplitude vars. 8−49212
VLF sudden phase anomalies during 1972 Aug. 2-4 solar flares 8−40739
VLF/RLF atmospheric noise, amplitude-probability distribution model 8−32288
water vapour dielectric constant, rotational part, engineering method of calc. 8−40717

radiowave propagation continued
whistler range in plasma, wave radiation *(Russian)* 8−36400
whistler-mode signals, spacecraft obs. near electron gyrofrequency 8−28418

radium
see also nuclei with ......
accumulation, in animal thyroid glands, U and Th prospecting appls. 8−27853
^{226}Ra determination in U ores, dusts and mill tailings 8−15736
^{226}Ra, flux from estuarine and continental shelf sediments 8−32061

radium compounds
No entries

radium emanation *see radon*

radius measurement *see diameter measurement*

radius of curvature measurement *see curvature measurement*

radon
see also nuclei with ......
aerosol particle size distrib. in uranium mine *(French)* 8−32195
alpha activity meas. with electronic cups, U exploration appl. 8−7781
alpha particle etch pits in CA80-15 and LR-115 cellulose nitrate track detectors 8−855
atmosphere, estimation of short lived daughter conc. by least squares anal. 8−7728
concentration in underground waters from landslide zone, Narao district, Japan 8−11918
daughter products in S.California coastal air 8−49087
dosimetry by plastic solid state nuclear track detectors 8−20556
dosimetry of Rn using plastic nuclear track detectors 8−33298
FUNGI, radon meas. with fast response 8−46216
isotope separation by barrier technique, U prospecting appl. 8−21770
monitoring for earthquake prediction *(Japanese)* 8−28181
San Andreas fault, Rn emanation vars. rel. to local seismicity 8−32022
^{222}Rn concentrations in water, rapid meas. with commercial liq. scintillation counter 8−28339
^{222}Rn daughter conc., meas. sensitivity computer optimisation 8−49126
^{222}Rn in Hudson River estuary, distrib. and transport across sediment-water interface 8−16064
^{222}Rn meas. during marine fog off Nova Scotia 8−40624

radon compounds
No entries

rail traffic
see also railways
noise, effects on nearby residents, survey 8−18114
wave reflections from slotted tunnel portals 8−18108

railroads *see railways*

railways
see also locomotives
noise, effects on nearby residents, survey 8−18114
steel wheel/steel rail vehicles using steerable steel wheel system for noise reduction 8−26005

rain
11 GHz rain attenuation distribution, from 5-min. rain rate statistics, calc. 8−24326
20 GHz multi relay links, simultaneous probability of rain attenuation 8−3898
140 GHz atmospheric attenuation by rain, obs. 8−3914
W.Africa, criterion for locating subtropical high, rel. to Sahelian drought 8−7718
Asian summer monsoon, simulation by general circulation models 8−40637
attenuation on satellite-Earth path at 11.4 and 14 GHz by radiometric meas. *(French)* 8−49066
S.Australia, T fallout in rainfall and wine samples 8−11960
Bay of Bengal and Arabian Sea, cyclones and depressions during 1975 8−32148
British Isles, regular rainfall meas. since 1677, historical review 8−36248
British Isles, systematic rainfall recording since 1677, tercentenary 8−44950
chain-dependent process, daily precip. amounts calc. 8−7712
chrysotile asbestos determ. in rainwater 8−44895
cloud condensation nuclei from paper mill, calc. effects on rainfall 8−11970
clouds, water droplets size, density distrib. meas., laser remote sensing technique *(Japanese)* 8−49175
Clutha Lakes catchment area, water inflow rel. to rainfall and atm. circulation 8−11926
composition and SO_2 washout, model 8−28253
convective clouds and rain showers form. over Indian Ocean 8−7735
cyclonic storm, 1974 Aug. 14-16, Calcutta, rainfall estimate using S-band radar 8−32157
depolarisation and attenuation meas. at 11.7, 19.04 and 28.56 GHz *(French)* 8−49067
depolarisation meas. using INTELSAT-IV satellite in 4 GHz band at low elevation angle *(French)* 8−49068
desert region, surface albedo and vertical vel. relations 8−11953
drop charge and assoc. electric field for different rain types 8−44933
drops, coalescence, theoretical model of approaching drops 8−32207
drops, coalescence problem, efficiency 8−32208
drops, collisions, coalescence efficiency, expt. evaluation 8−32206
drought in semi-arid regions, effects of albedo change 8−32128
dry and wet days occurrences, Markov chain model 8−7698
Earth-space paths, rel. between rain depolarisation and attenuation 8−3858
electronic high-resolution rainfall intensity recorder and totaliser 8−7793
EM pulsed beam wave propag. 8−12000
environmental γ radiation, variation during rainfall *(Japanese)* 8−36240
equatorial vortices over South China Sea and Malaysia during winter monsoon 8−40633
flood freq., analysis of storm prediction techniques 8−11976
Florida Area Cumulus Expt., natural and seeded rainfall 8−3872
frequency values, air pollution effects 8−7697
gauge, simplified optical path-averaged, based on scintillation detect. 8−40674
Hawaiian warm rain showers, aircraft obs. below cloud base 8−44932
Hudson Valley, New York, tree ring-drought relationships 8−28299

rain continued
- hydrologic data set distribution functions, extremes and confidence intervals 8-24313
- hydrometeor backscattering cross sections, meas. at 6328 Å 8-49135
- infiltration into bare soils, theoretical model and expts. 8-49058
- Kalahari desert, widespread heavy rainfall (October 1973) *(German)* 8-16119
- land-lake precip. relationships, using Lake Michigan data 8-44942
- landslides due to rainwater permeation, residual strength and frictional resist. of sliding soil masses *(Japanese)* 8-11919
- lidar observations of high plains thunderstorm precipitation 8-32167
- mapping of rainfall by radar 8-24397
- March rainfall in one day, record for St. Mawgan, Cornwall 8-44971
- measurement by optical scintillation, correl. method simulation 8-36290
- melting ice particles producing rainfall, radar obs. 8-3873
- microwave attenuation from rainfall rates, 10-40 GHz 8-40607
- microwave attenuation in rain, UK rainfall studies 8-11965
- microwave links, short and long term rainfall rates, link design implications *(German)* 8-49082
- microwave radiation from clouds meas. by Nimbus 6 for rainfall distrib. determ. 8-3981
- microwave rainfall attenuation, 680 m vertically polarized link invest. 8-36238
- microwaves attenuation for Earth-space links, comparison between radar- and radiometer-derived data 8-24343
- microwaves slant path attenuation statistics prediction at various locations 8-24344
- monsoon circulation and rainfall S.Asia 8-44958
- SW.monsoon over India, onset and northern limit 8-49102
- monsoon rainfall rel. to summer solar radiation and temperature 8-32154
- Norwich, homogeneous record of monthly rainfall totals for years (1836 to 1976) 8-3886
- organic micropollutants in precipitation in Norway 8-36262
- Oxford, England, private records of rainfall in 1767-1814 period 8-44948
- persistence, runs and recurrence characts. of precip. 8-3865
- precipitation probability forecasts, nonparametric technique based on pattern recognition algorithm 8-44946
- radiowave attenuation calc. 8-44919
- radiowave propagation, differential attenuation and phase shift meas. for 36.5 GHz polarised waves rel. to raindrops 8-3856
- radiowave propagation, raindrop canting angle as function of wind velocity, crosspolarization 8-3855
- rain attenuation data, appl. to path engineering 8-24327
- rain cloud effect on diversity reception at 13/18 GHz range, satellite relay systems *(Italian)* 8-49072
- raindrop interactions effect on drop size distrib. obs. at ground 8-44945
- rainfall prediction for attenuation prediction in Earth-space paths *(French)* 8-49062
- raingauge station network for flood forecasting, Yamuna and Damodar rivers, India 8-32126
- sampling errors in parameter meas. 8-28279
- sand deserts, extent during glacial maximum and climatic optimum 8-36259
- satellite mapping technique for use over oceans 8-3982
- S.E.Scotland, potential moisture deficit, 200-year series 8-7746
- shower intensity, sudden increase rel. to electrification in thunderclouds 8-20491
- Sierra Leone, monsoon characts. 8-7693
- simulator, portable, for soil erosion studies in difficult terrain 8-20537
- solar activity-weather correlation, anal. 8-40628
- spiral rainbands in hurricanes, inertia-buoyancy waves 8-7705
- storm depth, optimal estimation of total area, network analysis 8-49059
- summer monsoon over S. Asia, break and active phases 8-3912
- summer monsoons over Africa and India, comparison 8-32149
- supercooled drops, hydrodynamic behaviour, interaction with columnar ice crystals 8-32205
- Switzerland, 1975 August rainfall at Vitznau on Lake Lucerne 8-7743
- trace elements in rainwater, determ. by neutron activation analysis 8-3944
- tropical regions, rainfall during ice age, simulation 8-16144
- typhoons rainfall intensity, effects of extratropical circulation 8-3908
- variations in rainfall around thermal power station 8-3846
- waterdrop interaction extps., review 8-11974
- westerly trough unusual SE. movement over India, 1974 December 8-32161
- $^{15}N/^{14}N$ ratios in gaseous NH_3, NO_2 and NO_3^- in aerosols and precip. 8-44896
- soil, surface moisture content parametrization, use in atm. prediction models 8-49052

rainfall *see rain*

Raman effect *see Raman spectra*

Raman lasers
- atomic vapours, stimulated electronic Raman scatt., saturation of tunable IR lasers 8-37941
- cryogenic active media, stray transverse stimulated emission 8-25927
- fibre Raman oscillator, two-mode, group velocity matching 8-25925
- IR, tunable, review 8-13724
- spin flip Raman laser, IR source, physical processes, theory 8-17943
- spin flip Raman laser absorption spectrometer sensitivity enhancement 8-29173
- spin-flip Raman laser spectrometer as source for high resolution mol. spectroscopy and photochem. review 8-32894
- tunable 1.1 μm fibre Raman oscillator 8-1242
- vitreous oxides, Raman cross sections, rel. to appl. in fibre Raman lasers 8-31176
- CO_2, optical pumping in stimulated Raman scatt., tunable laser emitting at 14,16 μm, theory 8-46568
- InSb, spin flip Raman scattering, gain, linewidth, effective g-value 8-22167
- InSb spin-flip, characts. *(Japanese)* 8-25883
- InSb spin-flip Raman laser, external cavity CO_2-pumped, with intracavity etalon 8-42345
- SiO_2 fibre, CW tunable near IR Raman oscillator 8-1235

Raman scattering *see Raman spectra*

Raman spectra
- *see also molecular rotation; molecular vibration; Raman spectra of diatomic inorganic molecules; Raman spectra of inorganic solids; Raman spectra of organic molecules and substances; Raman spectra of polyatomic inorganic molecules; Raman spectroscopy; stimulated Raman scattering*
- AB_2 and AB_4 molecules Raman overtone and combination transition intensities, bond-polaris. approach 8-42034
- atom, collision and Doppler broadening of fluorescence and Raman scatt. 8-13465
- bound polaron and phonon states, optical characts. *(Russian)* 8-39556
- coherent optical spectroscopy 8-1112
- complex molecules, reson. Raman spectra, vibr. scatt., review 8-37644
- crystal point groups, electric and magnetic field-induced Raman tensors, effective charges 8-43848
- crystals of C_{4h}, D_{2d} and D_4 symmetry at second-order structural transform., spectroscopic props. 8-22845
- disordered solid reson. Raman scatt., smooth random field model 8-6676
- E. coli B, active, evidence for non-thermal excitation of energy levels 8-15800
- excitation profiles and mol. spectra synthesis, vibronic and exciton-in-mol. theory 8-42076
- excitons, condensation effects, review 8-2427
- Heisenberg antiferromagnet, magnon renormalisation, two-magnon Raman scatt., kinematic interaction 8-23228
- high pressure optical cell for Raman studies of gases, liquids and molecular solids 8-12767
- HxBPA smectic phases, X-ray diffr. and Raman spectra 8-6012
- inert gas, laser induced translational absorpt. *(Russian)* 8-31197
- intensity analysis, electrooptical parameters transferability 8-29820
- laser near-reson. scatt. from collisionally perturbed mol. 8-1033
- liquid phase band contours, data processing, band shape corrections 8-27215
- liquids, H-bonded, IR and Raman spectra, elec. anharmonicity on H-stretching bands 8-48167
- liquids, inverse electro-optical problem 8-2845
- localised electron-phonon system, second order optical processes, stationary response 8-43916
- localised electron-phonon system, second order optical processes, transient response 8-43917
- mixed crystal, line profile of absorpt. and Raman spectra, calc. 8-48183
- molecular coupling parameters, determ. in two interacting C_{3v} rotor systems 8-42074
- molecular crystals, low freq. Raman spectra, defects and lattice vibr. 8-31194
- molecular crystals, polarised Raman scatt. from lattice modes 8-43845
- molecular line intensities, modified CNDO/2/INDO calc. 8-25621
- molecular liquids, vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8-27221
- molecular Raman selection rules, spin degeneracy and vibronic states 8-987
- molecular reorientation of symmetric top molecules, in liquid state, book contrib. 8-22623
- molecule, collision-induced rot. Raman scatt. in low, high freq. Rayleigh tails 8-25546
- molecule, intensities dipolaris. ratios, polarisability, matrix rotation, isotopic rules 8-5288
- nonstationary Raman scattering, by polaritons, correlation spectroscopy *(Russian)* 8-23450
- nonstationary Raman scattering, of light, by vibration and polariton excitations *(Russian)* 8-23449
- plasma, plasmon prod. by laser light Raman conversion 8-47125
- plasma, Raman and Brillouin backscatt., nonlinear theory 8-47127
- polar semiconductor, Raman spectra of coupled LO phonon-plasmon mode, de Haas-Shubnikov like quantum oscills. 8-43863
- polar semiconductors, resonant secondary radiation 8-31242
- polaritons, Raman scattering, photoelec. recording method *(Russian)* 8-23468
- rare earth impurities in crystals, magneto-Raman effect 8-43864
- reflection symmetry violation for crysts. and mols. 8-48184
- resonance Raman scatt. cross sections, forbidden electronic transitions, depolaris. ratios 8-42075
- resonant Raman scattering by LO phonons 8-39551
- resonant secondary radiation of excitons weakly interacting with phonons, theory 8-31241
- resonant X-ray Raman scattering, IR divergence of Compton effect 8-21873
- scattering surface polaritons and compensation effect 8-10374
- semiconductor, p-type, determ., g-values, spin temp., from Raman spectra 8-43856
- solid, spectral line shape, quantum field theoretic formulation 8-31187
- solids, interacting elementary excitations, review 8-43846
- spherical liquid particle, Raman scatt. of light by random thermal oscill. in shape 8-13662
- stable molecules, matrix isolation spectroscopy obs., appls. 8-46320
- transient resonance Raman scattering, excitation, relaxation and observation, semiclassical theory *(Japanese)* 8-42078
- water, Raman bands, influence of paramag. rare earth cations 8-15157
- weak ferromagnet, single-ion anisotropy, one-magnon Raman processes 8-27234
- X-ray and synchrotron radiation inelastic scattering in crystals 8-39625
- AgBr melt, Raman spectra, rel. to sublattice melting in α-AgI 8-10882
- AgCl melt, Raman spectra, rel. to sublattice melting in α-AgI 8-10882
- AsD_3, solid and liq., vibr. relax., Raman ν_1 band, 54, 160K 8-27198
- $(C_2H_5)_2Fe^+$ complexes, vibrational electronic (Franck-Condon) Raman transitions 8-42070
- CO liq. and CO-O_2 (N_2)(Ar) mixtures, polarised vibr. Raman scatt. lineshapes 8-27199
- Cl_2, liq., mol. motion, Raman spectrum 8-5236
- N_2, vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8-27221

Raman spectra continued
- NF_3, liq., plastic cryst., gas, Raman spectra, Coriolis coupling and transition dipole 8−39533
- Na_2, liq., vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8−27221
- $SO_3^- + BrO_3^-$, fast oxidation in acid medium, laser Raman multichannel spectroscopy 8−27754
- Yb^{3+}, in dessicated (nondessicated) and protonated (deuterated) solvents, photoluminesc. energy degredation 8−19544

Raman spectra of diatomic inorganic molecules
- Ag_2, Raman spectra, matrix isolated in Kr 8−46347
- Ar_2, collision-induced Raman spectrum, absolute cross sections 8−46349
- Ar_2, collision-induced Raman scatt., polarisability anisotropy 8−46350
- Br_2, reson. Raman spectrum, vibr.-rot. struct. 8−17674
- CO, adsorbed on Ni, high press., low temp. Raman spectra 8−6219
- CO, solid and matrix isolated, IR and Raman spectra 8−48156
- Cl_2, liq., mol. reorientation, Raman spectra obs. *(French)* 8−31192
- Cl_2, resonance Raman spectrum, Q-branches of $^{35}Cl_2$ and $^{35}Cl^{37}Cl$ 8−25542
- D_2, electric discharge, vibr. excitation spontaneous Raman scatt. obs. 8−5234
- D_2, Q(2) line, absolute Raman freq. meas. using CW CARS 8−29794
- DCl and $(DCl)_2$, matrix isolated Raman spectra 8−42063
- H_2, electric discharge, vibr. excitation, spontaneous Raman scatt. obs. 8−5234
- HCl and $(HCl)_2$, matrix isolated Raman spectra 8−42063
- HD, Q-branch band shapes, motional narrowing and overlapping effects 8−29785
- I_2, adsorbed on silica, reson. Raman spectrum 8−42066
- I_2, in CCl_4 and cyclohexane solns., higher vibr. levels, dephasing lifetimes, from reson. Raman spectrum 8−42068
- Kr_2, collision-induced Raman spectra, absolute cross sections 8−46351
- N_2 discharge, non-Boltzmann vibr. level populations, CARS determ. 8−5968
- N_2, Q-branches, high resolution pulsed CARS 8−17676
- NO, vibr.-rot. bands of Raman spectra 8−29173
- O_2 isotopes, $^{17}O_2$, $^{16}O^{17}O$, $^{17}O^{18}O$, pure rot. Raman spectra, bond lengths 8−42071
- O_2, Q-branches, high resolution pulsed CARS 8−17676
- O_2, Raman spectra of fundamental vibr. band, rot. consts. 8−21932
- Rb_2, $X^1\Sigma_g^+$ state, Raman spectra, fluoresc., vibr. energy 8−46345
- Sn_2, matrix isolation Raman spectrum, overtone bands breadth 8−33515
- Xe_2, collision-induced Raman spectra, absolute cross sections 8−46351

Raman spectra of inorganic solids
- alkali borates, vitreous and cryst., vibr. spectra and struct. comparison 8−23470
- alkali halide, lattice dynamics calc., extended three body force shell model 8−47491
- alkali halides, F-centres, first order Raman scatt. *(French)* 8−2828
- alkali metal hexachlorotellurates, $A_2(TeCl_6)$, (A=Cs, Rb, K), IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- binary alloys, three mode, long wavelength optical vibr., appl. to Ge_xSi_{1-x} 8−6135
- butoxybenzylidene-aminobenzonitrile, crystalline and liq. cryst. states, low freq. spectra 8−34437
- cokes, graphitised, Raman spectra, effective Debye parameter, magnetoresist. 8−44231
- cryolite, hydrothermal synthesis of large synthetic single crystal, props. 8−19654
- cryst., vibr. spectrosc. *(French)* 8−6667
- diamond, resonant Raman scattering 8−48176
- glass, low-freq. Raman scatt., 6-700K, excess scatt. 8−23473
- glass, porous Vycor, surface phonons, Raman and IR reflectivity spectra meas. 8−38931
- glass, relaxation phenomena and Raman spectroscopy, review of developments 8−22665
- glass fibre waveguide, polymer cladding effect 8−30073
- graphite, optical probe of lattice dynamics 8−35131
- graphite and graphitic intercalation compounds, lattice dynamics 8−34574
- graphite and luminesc. 8−23460
- graphite intercalated with Cs(K) donor atoms, Raman scatt. 8−10890
- graphite intercalation compounds with Rb Raman scattering 8−35130
- graphite-Rb intercalation compounds, Raman scatt. from in-plane lattice modes 8−15168
- gypsum, struct., vibr. spectroscopic obs. *(Russian)* 8−15175
- hot electron distribution functions, expts., review 8−27231
- ice, isotopic, I_h, single crystal Raman intensities, OH bond polarisability, librational modes 8−27208
- ice I, assignment of O-H stretching bands in disordered state 8−19454
- interband electronic Raman scattering, three band semiconductor, resonant EM field 8−23452
- Lennard-Jones, glass, Raman spectrum calc. 8−48165
- metal oxides, cation ordering effect on Raman spectra 8−43850
- molecular crystal, lattice vibr., Raman and IR obs., review 8−43079
- niobates, columbite struct., IR and Raman spectra *(French)* 8−19485
- nitrate salts, Raman spectra, thermally disordered energy states 8−35122
- oxide semiconductor crystals, with forbidden energy gap, review of spectroscopic props. 8−2876
- oxyanions, in nuclear waste materials, laser Raman spectrometric determ. 8−35743
- polar semiconductor, secondary emission, multiphonon cascade process *(Russian)* 8−2850
- α-quartz, Raman spectral lines, radiation and temp.-induced changes in width and intensity 8−2859
- α- quartz, Raman spectrum, piezospectroscopic behaviour 8−35138
- rare earth-gallium sulphide glass, R_2S_3-$1.8Ga_2S_3$, vibr. and electronic spectra, short-range order 8−27228
- resonance Raman scattering, influence of mass defect disorder 8−35133
- ruby, 29 cm^{-1} phonon propag. and lifetime, reson. scatt. *(Russian)* 8−34581
- semiconductor, radiative spectra from hot photocarriers 8−31249
- semiconductor, saturated, dielectric response 8−10384
- semiconductor, vibr. IR excitons, spectra *(Russian)* 8−15173
- superconductor and normal metal, Raman sound scattering *(Russian)* 8−23199

Raman spectra of inorganic solids continued
- superionic conductor, model taking account of polarizability changes due to ionic motions 8−2855
- transition metal hexafluorides, density of exciton states, two-particle and mixed cryst. spectra 8−2829
- two-photon reson. Raman scatt. by excitons via intermediate excitonic mol., polarisation and polariton effects 8−10880
- Ag_3AsS_3, proustite, cryst., vibr. spectra 8−48172
- AgBr, dispersive phonon modes, reson. Raman scatt. obs. 8−10896
- $AgClO_3$, γ-irradiated, resonant Raman effect of O_3^- centres 8−48178
- $AgGaS_2$, degenerate mods, temp. depend. 8−35150
- Ag_2HgI_4, ordered and disordered phases Raman spectra temp. depend., ion hopping 8−23438
- AgI, density of states, IR cond., and Raman scatt., lattice dynamics calc. 8−30709
- α-AgI, superionic cond., compared to liquid like model 8−2855
- α-AgI, superionic cond., sublattice melting, Raman spectra, rel. to AgBr(Cl) melts 8−10882
- α-AgI, superionic conductor, Raman spectra, freq. depend. cond. exam. 8−10883
- η-Al_2O_3, surface, laser Raman fluoresc. background, OH^- excitation 8−10875
- α-$Al_2O_3:Cr^{3+}$, electronic Raman transition from optically pumped excited state 8−39531
- $Al_2O_3:Mn^{3+}$, electronic and vibronic Raman scatt. 8−2839
- β-Al_2O_3-$H^+(H_2O)_n$, IR and Raman spectra, OH stretching freqs., struct. and cond. 8−27210
- β-Al_2O_3-Na_2O, low freq. Raman scatt. from NH_4^+ ions 8−43878
- Ar crystals, first order Raman scattering, evidence for HCP phase 8−23454
- AsD_3, solid and liq., vibr. relax., Raman ν_1 band, 54, 160K 8−27198
- As_2O_3-SO_3, polarised Raman and IR spectra, force field calc. *(French)* 8−6674
- As_2S_3, crystalline, two phonon vibrational spectra 8−35142
- As_2S_3, LF inelastic light scatt. meas. 8−15181
- As_2S_3, two-phonon vibrational spectra, crystalline and amorphous forms, Raman and IR spectra 8−39537
- $(As_2S_3)_{1-x}(GeS_2)_x$, LF inelastic light scatt. meas. 8−15181
- As_2Se_3, LF inelastic light scatt. meas. 8−15181
- B, amorphous, X-ray Raman scatt. 8−48157
- B, amorphous film, Raman scatt. exam. 8−39545
- BN, hexagonal, low freq. Raman active vibr. 8−43880
- B_2O_3, vitreous, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
- B_2O_3-NaF-$NaBF_4$, crystalline compounds and glasses 8−11210
- Ba hexafluorometallates, $BaMF_6$, (M=Si,Ge,Sn,Ti), press. up to 25 kbar, anion libration obs. 8−6670
- $Ba(ClO_3)_2H_2O$, γ-irradiated, resonant Raman effect of O_3^- centres 8−48178
- BaF_2, polarised Raman scatt. in fluorite crysts., anharmonicity, high-temp. disorder 8−35132
- BaFCl, thin film, in vacuo Raman spectra using prism-film coupler 8−24873
- $Ba_2NaNb_5O_{15}$, Raman spectra, soft oscillations, temp. depend. 8−31203
- α-$Ba_2P_2O_7$, Raman, IR spectra, factor group anal. and band assignment 8−35126
- $BaSO_4$, single cryst., SO_4^{2-} vibr. levels, cryst. field effects, laser Raman spectroscopy 8−43847
- $BaTiO_3$, ferroelec. temp. depend. of broad A_1 (TO) phonon Raman linewidth 8−2857
- BeF_2, vitreous, Raman and IR spectra 8−39549
- $Bi_xSb_{1-x}SI$, low freq. Raman spectroscopy 8−15162
- Bi_2Te_3, Bi_2Se_3, $Bi_2(Te_{1-x}Se_x)_s$, Raman and far infrared investigation of phonons 8−23453
- $Bi_2Ti_4O_{11}$, anomalous temp. depend. of phonon modes, Raman spectra 8−10893
- $Bi_2Ti_4O_{11}$:PbO, anomalous temp. depend. of phonon modes, Raman spectra 8−10893
- $BiVO_4$, ferroelastic, observation of soft optical phonon 8−2856
- C, in various forms including graphite, new lines, exam. 8−48169
- CO, solid and matrix isolated, IR and Raman spectra 8−48156
- CO_2-N_2O, mixed cryst., librational motion, Raman obs. 8−6661
- $CaCO_3$, calcite, coherent excitation of vibr., dephasing time meas. 8−35120
- CaF_2, polarised Raman scatt. in fluorite crysts., anharmonicity, high-temp. disorder 8−35132
- α-$Ca_2P_2O_7$, Raman, IR spectra, factor group anal. and band assignment 8−35126
- CaR_2S_4, R=rare earth, ternary sulphide with Th_3P_4 struct., vib. spectra 8−2844
- $CaSO_4(.2H_2O)$, single cryst., SO_4^{2-} vibr. levels, cryst. field effects, laser Raman spectroscopy 8−43847
- $CaWO_4:Nd^{3+}$, thermal behaviour of shape and width of 9145 Å laser line 8−6755
- $Ca(WO_4)_x(MoO_4)_{1-x}$, Raman scatt. line shape 8−10898
- $CdCr_2Se_4$, influence of ferromag. ordering on phonon Raman scatt. 8−2853
- $CdGa_2S_4$, vibr. spectra, 33-400 cm^{-1}, symm. transform. *(Russian)* 8−23465
- $CdIn_2S_4$, photoluminesc., reson. Raman scatt. 8−48179
- $CdIn_2S_4$, Raman and IR spectra 8−48181
- CdP_2, tetragonal, one and two phonon states using second order Raman spectra 8−43874
- CdS, resonant Raman scattering by LO phonons 8−39551
- CdS, spin flip Raman scatt. linear k term 8−19475
- CdS, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
- CdS:Cl, resonant Raman scatt. exam. 8−39546
- $CeCl_3$, Raman spectra circ. polaris., Faraday effect phonon state splitting 8−43855
- $Ce_cLa_{1-c}F_3$, Raman spectra circ. polaris., Faraday effect phonon state splitting 8−43855
- $CoCO_3$, exciton and magnon excitation spectra *(Russian)* 8−23467
- $CoCl_2$, interlayer force constants 8−14406
- $CoCl_2$, one-magnon Raman scatt. 8−43877
- $Co(NH_3)_6FeF_6$, anomalous Raman intensities, due to interionic coupling by H bonding 8−27230
- $CsBr:Tl^+$, impurity induced Raman spectra, breathing shell model 8−39541

Raman spectra of inorganic solids continued
$CsCoCl_3$, 10 Ising antiferromag., mag. excitations, electronic Raman and IR absorption spectra 8−2668
$CsCoCl_3$, Ising antiferromagnet, electronic Raman scatt. on Co^{2+} 8−10878
$Cs_3CoCl_5(Br_5)$, polarised single cryst. spectra 8−39535
CsH_2AsO_4, and deuterated isomorph., ferroelectric mode and molecular vibr. press. depend. 8−19424
CsH_2AsO_4, pres. depend., LF dielec. response, ferroelec. props. 8−15120
Cs_2SO_4, cryst., coord. and Raman intensity anal. 8−2831
Cu complex, $[(CH_3)_2NH_2]_3CuCl_5$, single cryst. Raman spectra 8−39535
CuCl, forward scattering by excitonic molecule 8−2838
CuCl, giant two-photon absorption into excitonic mol., anomalous dispersion of excitonic polariton 8−27211
CuCl, polariton effects in resonant Raman scatt. 8−10881
CuCl, two-photon reson. Raman scatt., recoil of upper-branch excitonic polariton 8−27212
CuCl, two-photon resonant Raman scatt. via biexcitons 8−43302
Cu_2HgI_4, ordered and disordered phases Raman spectra temp. depend., ion hopping 8−23438
CuI, superionic cond., Raman spectra in all 3 phases 8−19486
Cu_2O, fine struct. of exciton spectrum 8−18972
D_2S, solid, low-temp. phase, IR, far IR and Raman spectra 8−27218
Er_2O_3 sesquioxide, Raman spectra 8−19478
Eu chalcogenide, spin-disorder Raman scatt., mag. phase depend., theory 8−10887
Eu chalcogenides, paramag., spin-disorder-induced Raman scatt. 8−19474
EuO(S)(Se), spin assisted Raman scatt. theory 8−43866
EuS(Se), mag. phase depend. Raman scatt. 8−10886
$Fe_2(CO)_9$, solid, Raman and IR spectra, vibr. exam. 8−27214
$FeCl_2$, interlayer force constants 8−14406
$FeCl_2$, one-magnon Raman scatt. 8−43877
$FeCl_2.2H_2O$, and $FeCl_2.2D_2O$, Raman scatt. at metamagnetic phase transitions, mag. hysteresis 8−14958
$Ga_x In_{1-x}P$, localised exciton-phonon complex as intermediate state in light scatt. 8−39543
GaAs oxidised surface, detection of excess crystalline As by Raman scatt. 8−19453
GaAs, photoluminescence and resonant Raman spectra, press. depend. 8−31251
n-GaAs, Raman spectra of coupled LO phonon-plasmon mode, de Haas-Shubnikov like quantum oscills. 8−43863
$GaAs\text{-}Ga_{1-x}Al_xAs$ superlattices, resonance enhanced Umklapp Raman process 8−39547
$GaAs_{1-x}P_x$, localised exciton-phonon complex as intermediate state in light scatt. 8−39543
$Ga_xIn_{1-x}Sb$ LO phonon obs. using Raman scatt. 8−35152
GaP, complex form of donor energy levels, optical spectra anal. 8−23045
p-GaP, Raman scatt. by coupled plasmon-phonon oscills. 8−6687
GaP, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
αGa_2S_3, single crystal, lattice phonon exam., Raman and IR spectra of polycrystalline samples *(French)* 8−27229
GaSb oxidised surface, detection of excess crystalline Sb by Raman scatt. 8−19453
GaSe, zone-centre optical phonons, Raman scatt. meas. 8−10141
$GaSe_{1-x}Te_x$, zone-centre optical phonons, Raman scatt. meas. 8−10141
GaTe, zone-centre optical phonons, Raman scatt. meas. 8−10141
GdS, FCC metallic phase, Raman scatt., phonon density of states 8−19480
GdS(Se)(Te), metallic, phonon density of states, Raman scatt. expt. 8−23451
Ge:As, uniaxially stressed, electronic Raman scatt. from valley-orbit transitions 8−15166
Ge-type semiconductor, light scatt. from zero-sound 8−43857
GeF_4, Raman spectra at 77K, scatt. angle, polaritons and space group 8−23439
GeO_2, vitreous, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
GeS_2, LF inelastic light scatt. meas. 8−15181
GeS(Se), layer cpds., Raman spectra, press. coeffs. and mode Gruneisen parameters 8−10891
$GeSe_2$, LF inelastic light scatt. meas. 8−15181
Ge_xSe_{1-x} glass, $1/3 \leqslant x \leqslant 1/2$, Raman scatt., local order 8−23442
$Ge_{1-x}Si_x$, vibrational and Raman-scattering props. 8−10884
H_2S, solid, low-temp. phase, IR, far IR and Raman spectra 8−27218
Hg_2Br_2, powder, Raman spectra, press. effects 8−2837
$Hg_2Br(Cl_2)$, paraphase, Raman scatt. spectra, soft mode from Brillouin zone boundary *(Russian)* 8−2851
Hg_2Cl_2, low temp. phase transition, X-ray diffr., Raman spectra 8−22849
Hg_2Cl_2, powder, Raman spectra, press. effects 8−2837
$Hg_3In_2Te_6$, complex ordered-vacancy cpd., struct. and lattice dynamics 8−34496
InAs, oxidised surface, detection of excess crystalline As by Raman scatt. 8−19453
$InCl_3$, aqueous soln., factor analysis and band contour resolution applications, book contrib. 8−21931
InS, layer semicond., Raman scatt. meas. 8−35134
InSb oxidised surface, detection of excess crystalline Sb by Raman scatt. 8−19453
InSb, spin flip Raman scattering, gain, linewidth, effective g-value 8−22167
InSe, layer semicond., Raman scatt. meas. 8−35134
InSe, layer type, Raman spectrum exam. 8−23461
KBr(I), absolute cross sections of second order Raman scatt. 8−39548
$KBrO_3$, near-forward Raman scatt. by polaritons 8−43842
KCN-KCl mixed system, order-disorder transition, Raman spectra obs. 8−15113
$K_4Fe(CN)_6.3H_2O$, Raman spectrum and dielec. relax. 8−19476
K_2FeF_4, Raman scatt. in two dimens. antiferromagnet 8−19488
KH_2AsO_4, and deuterated isomorph, ferroelectric mode and molecular vibr. press. depend. 8−19424
KH_2AsO_4, pres. depend., LF dielec. response, ferroelec. props. 8−15120
KH_2PO_4, laser light scatt. spectroscopy 8−10156

Raman spectra of inorganic solids continued
KH_2PO_4, Raman scatt. near T_c, search for soft modes 8−15114
$KI:Se_2^-$, reson. secondary emission, total spectrum *(Russian)* 8−19551
KIO_3, temp. depend. Raman spectra and phase transitions *(Russian)* 8−15171
$K_{0.75}Li_{0.25}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8−2852
$K_3Mn_2F_7$, antiferromagnet, two magnon Raman scatt. 8−15164
KNO_3, antiferroelec., press. induced II to IV phase transition, Raman scatt. 8−15161
$K_xNa_{1-x}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8−2852
$K_2O\text{-}SiO_2$ glass, Raman scattering of dissolved CO_3^{2-} ions 8−27848
$K_5(UO_2)F_9$, optical spectra, vibr. freqs. calcs. *(Russian)* 8−31205
$LaNbO_4$, room temp. phase exam. 8−26536
LaTe, metallic, phonon density of states, Raman scatt. expt. 8−23451
$LiBaPO_4$, vibrational spectra and cryst. struct. 8−39536
$LiH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8−43853
$LiIO_3$, possible separation of direct and cascade processes in active combination scatt. Raman spectroscopy 8−13764
$LiIO_3$, Raman induced Kerr effect with elliptical polarisation 8−42392
Li_3N, IR and Raman spectra and lattice dynamics 8−48177
$LiNbO_3$, dispersion law of polaritons, refr. index in IR, and Raman spectra meas. 8−27232
$LiNbO_3$, inverse Raman scatt. by polaritons 8−23434
$LiPbPO_4$, vibrational spectra and cryst. struct. 8−39536
$LiSrPO_4$, vibrational spectra and cryst. struct. 8−39536
$LiZnVO_4$, high press. spinel modification, vibr. spectra 8−35124
MgO, second-order Raman scatt. 8−10894
MgO, surface, laser Raman fluoresc. background, OH^- excitation 8−10875
$Mg_2P_2O_7$, α- and β-phase, vibr. spectra, Raman and IR spectra 8−19467
$Mn_3B_7O_{13}Cl$ improper ferroelec., orthorhombic phase, Raman spectrum, lattice vibrs. 8−43849
Mo complex, $MoOCl_3.2Ph_2SO$, prep. and characterisation 8−30592
MoF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
N_2, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
$\alpha\text{-}N_2$, solid, Raman spectra vibron bands, a priori calcs. 8−31181
$N_2\text{-}CO$ mixed cryst., librational motion, Raman obs. 8−6661
$(ND_4)_2BeF_4$, ferroelec. transition, Raman spectra obs. *(Russian)* 8−23408
NF_3, plastic cryst., Raman spectra, Coriolis coupling and transition dipole 8−39533
NH_4Cl, orientational disorder, Raman and far IR spectra 8−23447
$NH_4H_3(SeO_3)_2$, Raman spectra meas. 8−10899
NH_4I, orientational disorder, Raman and far IR spectra 8−23447
$(NH_4)_2SO_4$, pure and Rb doped, ferroelec. transition, light scatt. meas., dielec. and elastic props. 8−43822
$(NH_4)_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
$NH_4UO_2(NO_3)_3$, Raman spectra 6-293K, phase transition 8−27220
$NaBrO_3$, IR and Raman spectra, vibrs., dipolar coupling effect 8−43852
$NaBrO_3$, temp. depend., 77-400K *(Russian)* 8−23466
NaCN, Raman spectrum, hydrostatic press. effects 8−6663
$NaClO_3$, IR and Raman spectra, vibrs., dipolar coupling effect 8−43852
$NaH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8−43853
$NaLO_3$, disorder of NO_3^- ions, rel. to Raman spectrum temp. depend. *(Russian)* 8−2099
$NaNH_4SeO_4.2H_2O$, ferroelectric phase transition mechanism 8−31162
$NaNO_3$, disordered, temp. depend. of Raman spectra, Rayleigh wing scatt. 8−31209
$Na_2O\text{-}TiO_2\text{-}SiO_2$ glass, IR refl., Raman and EPR spectra, struct. *(Russian)* 8−2860
Na_xWO_3, $X>0.5$, temp. depend. of Raman active soft modes, tetragonal-tetragonal transition 8−48180
Nb complex, $NbOCl_3.2L$ ($L=Ph_2SO$, Ph_3PO and $(Me_2N)_3PO$), prep. and characterisation 8−30592
$NbOPO_4$, cation ordering effect on Raman spectra 8−43850
$Ni(NH_3)_6(NO_3)_2$, Raman spectra exam. of orientational phase transitions 8−31184
$Ni(NH_3)_6X_2$, ($X=Cl$, Br, I, ClO_4, BF_4) and d, far IR, Raman spectra, 80-300K 8−31190
P_2O_5 vitreous, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
$(Pb,La)TiO_3$, soft E(TO) phonons, and phase transitions, Raman spectra, −200 to 400°C 8−15109
PbF_2, polarised Raman scatt. in fluorite crysts., anharmonicity, high-temp. disorder 8−35132
$Pb_5Ge_3O_{11}$, temp. depend. of A_{1o}-modes, Raman spectra meas. 8−2213
$PbHAsO_4$, $(PbDAsO_4)$, Raman spectra of ferroelec. transition proton tunnelling 8−23410
$PbHPO_4$, Raman spectra study of ferroelec. transition, proton tunnelling 8−23410
$PbO\text{-}SiO_2$ glass, IR and Raman spectra interpreted in terms of struct. 8−27213
$Pb(Ti,Zr)O_3$, soft E(TO) phonons, and phase transitions, Raman spectra, −200 to 400°C 8−15109
$PbTiO_3$, laser light scatt. spectroscopy 8−10156
Pt, electrode, unroughened, I_2, I_3^- adsorbed from $H_2SO_4\text{-}KI$, Raman spectra 8−31689
$RbCoF_3$, single oriented antiferromag. domain, polarised Raman scatt. under uniaxial stress 8−23463
$RbGa_3Br_{10}$, cryst., vibr. spectrosc. *(French)* 8−6667
RbH_2AsO_4, and deuterated isomorph, ferroelectric mode and molecular vibr. press. depend. 8−19424
RbH_2AsO_4, pres. depend., LF dielec. response, ferroelec. props. 8−15120
RbH_2AsO_4, Raman scatt. near T_c, search for soft modes 8−15114
RbH_2PO_4, Raman scatt. near T_c, search for soft modes 8−15114
$RbH_3(SeO_3)_2$, Raman spectra meas. 8−10899
$RbMnF_3$, zone-boundary magnon energy and damping, Raman scatt. meas. 8−31202
ReF_6, cryst., Raman and absorpt. spectra, Jahn-Teller effect 8−6675

Raman spectra of inorganic solids continued
  Ru complexes, carbonyl hydrides, pre-reson. Raman spectra, Ru-Ru and Ru-C modes 8−43854
  S_4N_4, press. and temp. depend., 0-10 kbar, 10-295K 8−15160
  $(SNBr_y)_x$, Raman scatt. exam. 8−39550
  SO_2, IR and Raman spectra, mol. and lattice vibrs. 8−19464
  $S(SiD_3)_2$, gaseous, liquid, solid phases, molecular vibr. exam. 8−25547
  $S(SiH_3)_2$, gaseous, liquid, solid phases, molecular vibr. exam. 8−25547
  $SbCl_3$ and $SbBr_3$ mixture in CS_2, factor analysis and band contour resolution applications, book contrib. 8−21931
  SbSBr, electronic and optical props. 8−34763
  SbSI, electronic and optical props. 8−34763
  SbSI, near tricritical point 8−15159
  SbSeI, electronic and optical props. 8−34763
  Sb_2Te_3, $(Bi_{1-y}Sb_y)_2Te_3$, Raman and far infrared investigation of phonons 8−23453
  Si, amorphous film, IR and Raman spectra of Si-H bonds 8−19482
  n-Si, heavily doped, intraband Raman scatt. by free carriers 8−19483
  Si, Raman spectrum, two-dimens. tensile stress effects 8−48173
  SiC, H^+, D^+ and He^+ ion implanted, Raman scatt. obs. of localised vibr. modes 8−6689
  SiC:Al, g-values, spin temp., determ. from Raman spectra 8−43856
  SiF_4, Raman spectra at 77K, scatt. angle, polaritons and space group 8−23439
  SiO_2, amorphous, phonons, neutron, IR and Raman spectra calcs. 8−10150
  SiO_2, vitreous, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
  SiO_2 vitreous, Raman spectrum, bound OH, Si-O stretch vibr. 8−19462
  α-Sn, reson. first and second order Raman scatt. 8−35144
  Sn tetrahedral molecular solids, ^{119}Sn Mossbauer and Raman spectra 8−15070
  $SnCl_2.2H_2O$, protonic order-disorder transition, H-bond vibr. Raman spectra temp. depend. 8−23437
  SnSe, Raman scatt., zone centre optical phonons, layer-like struct. 8−48158
  SnTe, carrier density depend. of soft TO-phonon, Raman scatt. meas. 8−6684
  $SrF_2(Cl_3)$, polarised Raman scatt. in fluorite crysts., anharmonicity, high-temp. disorder 8−35132
  $Sr(NO_3)_2$, Raman and infrared spectra, structure of nitrate ion from space groups 8−43002
  α-$Sr_2P_2O_7$, Raman, IR spectra, factor group anal. and band assignment 8−35126
  SrR_2S_4, R=rare earth, ternary sulphide with Th_3P_4 struct., vib. spectra 8−2844
  $SrTiO_3$ 8−6678
  $SrTiO_3$, absolute cross sections of second order Raman scatt. 8−39548
  $SrTiO_3$, central peak in spectrum of ferroelec. mode fluctuations and dielec. losses, 4.2K 8−19432
  $TaS_2(Se_2)$, intercalated with ethylenediamine, Raman spectra 8−48182
  $TaSe_2$ (2H) and (1T), Raman spectroscopy of CDW state 8−35141
  TeO_2, paratellurite, stress induced changes in Raman spectrum 8−39540
  Ti complex, $Ti_2Cl_8(CH_3NO_2)_2$, single cryst., struct., IR and Raman spectra, X-ray diffr. 8−43000
  $(TiCl_4.POCl_3)_2$, solid, IR and Raman spectra, vibr. assignments 8−43868
  TiO_2, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
  $TiSe_2$, superlattice formation, Raman and far IR spectra 8−35135
  $TlBrO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
  TlCl, Raman spectra in melting region 8−27224
  $TlClO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
  $TlGaS_2(Se_2)$, intralayer and interlayer modes 8−43876
  $TlIO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
  β-$TlInS_2$, intralayer and interlayer modes 8−43876
  TlN_3, press. induced phase transition, Raman scatt. meas. 8−19468
  $TlSbF_6$, press. up to 25 kbar, anion libration obs. 8−6670
  $Tl_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
  UF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
  V_2O_3, phase transitions, Raman scatt. expts., 20-300K 8−39538
  W-complex, $WOCl_4.Ph_3PO$, prep. and characterisation 8−30592
  WF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
  $Zn_{1-x}Cd_xS$ mixed crystals, frequency internal between LO(Γ) to TO(Γ) 8−2854
  $ZnIn_2S_4$, photoluminesc., reson. Raman scatt. 8−48179
  $ZnIn_2S_4$, Raman and IR spectra 8−48181
  ZnO, near-forward Raman scatt. intensity of E_1(TO) polariton mode 8−23462
  ZnO, reson. Raman scatt. 8−35137
  $Zn_4O(BO_2)_6$, phonon coupling exam. by Raman spectroscopy 8−30719
  ZnP_2, tetragonal, one and two phonon states using second order Raman spectra 8−43874
  ZnS, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
  ZnSe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
  $ZnSiP_2$, first- and second-order Raman scatt. 8−35151
  ZnTe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
  ZnTe, temp. depend. of Raman scatt. and exciton luminesc. spectra 8−39586
  ZnTe:P(As), g-values, spin temp., determ. from Raman spectra 8−43856
  ZrO_2, Raman spectra, temp. depend. 8−6668

Raman spectra of organic molecules and substances
  acenaphthylene, orientational disorder, spectroscopic exam. 8−14670
  acetonitrile, ν_2, ν_3 and $2\nu_3$ bands, vibr. relax., Raman spectra of liq. and dil. soln. 8−9154
  acetyl halide-titanium tetrahalide adducts, coordination, IR and Raman spectra 8−42050
  acetylene, Q-branches, high resolution pulsed CARS 8−17676

Raman spectra of organic molecules and substances continued
  acetylene, Raman spectra, high resolution using laser source 8−42072
  adenosine 5′-monophosphate, UV resonant Raman spectra 8−48756
  adenylyl 3’-5’ adenosine, conform. equilib., Raman temp. jump obs. 8−8450
  alkylammonium tetrachloromanganate (II) IR and Raman spectroscopic exam. 8−31189
  allene-d_4, Raman and IR spectra, rot.-vibr. bands, ground state constants 8−25545
  ammonium hydrogen glutarate, H bonding, vibr. spectra 8−43860
  aniline, prereson. Raman effects, intensity enhancement mechanism 8−42069
  anisole and -d_3, Raman spectra, low freq. vibrs., torsional barrier 8−25543
  anthracene crystal, stimulated emission and Raman scatt. 8−1303
  anthracene-PMDA, charge transfer cryst., 2K, zero-phonon lines, singlet spectra 8−23484
  anthracene-TCNB charge transfer crystal, orientational phase transition, EPR, Raman spectroscopy exam. 8−26817
  astaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
  benzaldehyde, prereson. Raman effects, intensity enhancement mechanism 8−42069
  benzaldehyde derivatives, Raman intensities obs., phenyl ring-carbonyl group conjugation 8−29792
  benzene, Raman and IR spectra at high press. 8−35127
  benzene, reson. Raman cross sections, forbidden electronic transitions, depolaris. ratios 8−42075
  benzene, vibr. relax. in soln., ν_1 C-H stretching band Raman spectra 8−25540
  benzene($-d_6$), prereson. Raman effects, intensity enhancement mechanism 8−42069
  benzene soln., UV Raman scatt., forbidden states 8−9155
  benzene-^{13}C, liq., vibr. spectra, band assignments 8−13500
  benzene-d_3, gas phase Raman spectrum, E′ and E″ species, Coriolis consts. *(French)* 8−5235
  benzene-d_6, liq., Raman spectra vibr. relax. and band widths 8−23440
  benzoic acid, dimer, cryst., IR and Raman spectra, vibr. assignments 8−31191
  biological molecules, chem. reactions, Raman difference spectroscopic obs. 8−44368
  bis(trifluoromethyl)peroxide, gas and solid, Raman, IR spectra, internal rot. barrier of CF_3 8−29789
  bromanil and radical anion, Raman and IR freq. shifts 8−33516
  1-bromo-2,4-dimethylbenzene, liq., IR and Raman spectra 8−42049
  1-butanol, IR and Raman spectra, vibr., conformers 8−25532
  d-camphor systems, mol. reorientation dynamics, Raman spectra 8−31178
  carbon tetrafluoride, compressed gas, ν_1 vibr. Raman line 8−32884
  β-carotene, in CS_2, reson. Raman spectra, room temp. 8−35803
  trans-β-carotene, Raman excitation profile spectra, prereson. region 8−33514
  cetyltrimethylammonium bromide, aq. soln., mol. conform., laser Raman spectra 8−21934
  chloranil and radical anion, Raman and IR freq. shifts 8−33516
  chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
  coal, Raman scatt. and luminesc. 8−23460
  combustion products, Raman scatt., fluoresc. interference 8−15728
  conjugated molecules, resonance Raman spectra calc. 8−984
  cyclopropane, lattice vibrs., IR and Raman spectra, 4 to 78K 8−27209
  diamantane, low temp. soft librational mode, Raman spectra exam. 8−30730
  4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
  p-dichlorobenzene, cryst., Raman spectra , intensity of low freq. line 8−2846
  dichloromethane, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
  1,2-difluoroethane, gauche-trans conformers, IR and Raman spectra, vibr. 8−17667
  p-dihalobenzene, mixed cryst., Raman spectra, phonons and vibr. excitons, criteria for solid solns. 8−43840
  1,4-dihalonaphthalenes, binary solid solns. lattice stability, mol. motions 8−31182
  N,N-dimethylbenzamide+$POCl_3$ reaction products 8−7199
  dimethylboric anhydride, IR and Raman spectra, vibr. and struct. 8−25531
  1,1-dimethylcyclopropane-d_0,-d_6, internal rot., Raman spectra 8−985
  trans-dimethyldiazene-1, 1, 1-d_3, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
  trans-dimethyldiazene-d_0,d_6, IR and Raman spectra, vibr. assignments and pot. functions 8−33507
  N,N-dimethylformamide+$POCl_3$ reaction products 8−7199
  dimethylnitrosamine, in aq. soln., detect. and meas. by laser Raman spectroscopy 8−15725
  dimethylsulphide, Raman spectra, torsional pot. consts. and kinetic coeffs. 8−5233
  dimethylsulphide-d_3, two interacting C_{3v} rotor system, mol. coupling parameters, Raman spectra 8−42074
  1,1-diphenylethylene, adsorbed on porous Vycor glass, reson. Raman spectrum, surface species identification 8−42066
  electron donor-acceptor complex formation, equilib. const. determ., reson. Raman spectroscopy 8−3329
  ethylene, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
  ethylene oxide, cryst. symmetry, X-ray diffr., far IR and Raman spectra 8−35123
  2-fluoropyridine, IR and Raman spectra, vibr. assignments 8−25534
  fungicides, in water, detect. by laser excited reson. Raman spectroscopy 8−31732
  glycylglycines, isotope substituted, IR and Raman vibr. spectra 8−42051
  hexachlorobenzene, Raman intensities, polarised scatt. from lattice rot. modes. 8−43845
  hexamethylbenzene, cryst., Raman spectra, intensity of low freq. line 8−2846
  2- and 3-iodopyridine, IR and Raman spectra, vibr. assignments 8−25534
  isobutene-d_0, -d_6, torsional pot. functions, spectra anal. 8−25528

Raman spectra of organic molecules and substances continued
- liquids, H-bonded, IR and Raman spectra, elec. anharmonicity on H-stretching bands 8−48167
- lithium formate monohydrate, temp. depend. Raman spectra, H bonds 8−6673
- lutein, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- MBBA, dye activated, isotropic phase, induced Raman emission *(Russian)* 8−13766
- MBBA, nematic, order parameters meas. by Raman scatt. 8−6011
- metalloporphyrin, vibronic coupling, Raman scatt. 8−21933
- methane, CW coherent antiStokes Raman spectrum, ν_1 band, press. depend. 8−42377
- methane, phase II, IR and Raman spectra of ν_3 and ν_4 modes 8−2834
- methane, solid phase II Raman spectrum, lattice vibr. and ν bands 8−19456
- methane (-d_1,d_2,d_3,d_4) Raman electro-optical parameters, overlay least squares calcs. 8−42105
- methyldisilylamine, and -d_3, vibr. assignment and barriers to internal rot., IR and Raman spectra 8−13496
- N-methylthioacetamide(-d_1), reson. Raman spectra obs. and mechanism 8−17672
- monochlorobenzene, prereson. Raman effects, intensity enhancement mechanism 8−42069
- monohalobenzenes, circularly polaris. Raman spectra, vibr. symmetries assignment 8−29787
- mucochloric acid-d_0, -d_1, vibr. spectra, struct. 8−46326
- naphthalene, cryst., low freq. Raman spectra, defects and lattice vibr., 80-320K 8−31194
- naphthalene, Raman intensities, polarised scatt. from lattice rot. modes. 8−43845
- naphthalene, reson. Raman scatt. from non-totally symm. mode 8−37641
- naphthalene-TCNB (PMDA), Raman spectra orientational disorder, charge transfer cryst. 8−19459
- nitroethane-3-methylpentane, binary liq., depolarised light scatt. at crit. point 8−39558
- nucleic acid components, UV resonant Raman spectra 8−48756
- octamethylcyclotetrasilazane, gas, liq., cryst., CCl_4 soln. IR and Raman spectra, assignments, struct. *(French)* 8−29790
- optically active molecules, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
- palladium bis-β-diketonates, IR and Raman spectra 8−46327
- n-paraffins, solid and liq., Raman spectra, longitudinal acoustic vibr. mode 8−31183
- pentachloronitrobenzene crystal, anomalous microwave permittivity, IR absorption and Raman spectra *(Japanese)* 8−15169
- perdeuteropolyethylene, IR and Raman intensities by electro-optical parameters, single chain 8−1115
- perfluoro-1,3-butadiene, vibr. spectra, struct. and barrier to planarity 8−9147
- pesticides, in water, detect. by laser excited reson. Raman spectroscopy 8−31732
- phenanthrene, cryst., Raman spectra, intensity of low freq. line 8−2846
- phosphatidylcholine bilayer endothermic transitions, Raman difference spectroscopy 8−40119
- polybutylene terephthalate, hysteresis of stress-induced cryst. phase transition 8−31404
- polydiacetylene cryst., electronic struct. change at phase transition, Raman spectra 8−2833
- polyethylene, IR and Raman intensities by electro-optical parameters, single chain 8−1115
- polyethylene, oriented, Raman active modes 8−23457
- polyethylene oxide, Raman scatt. from longitudinal acoustic modes of crysts. swollen by oligomers 8−27226
- polymer, amorphous, bulk, structure models and exptl. methods, review 8−22671
- polymer, amorphous, translational motion and lattice vibr. obs. by Raman scatt., T_g phenomena 8−23469
- polymer, Raman spectra, cryst. morphology, longitudinal acoustic mode 8−43859
- polymer, Raman spectra, longitudinal acoustic mode 8−43858
- polynucleotide soln., order-disorder transition, Raman spectra 8−41360
- polystyrene, isotactic, normal vibrational anal. 8−43869
- polystyrene, substituted, Raman, IR and neutron spectra of LF vibs. 8−2848
- polytetrafluoroethylene copolymers and oligomers, melt and solid, Raman active longit. acoustic modes 8−19484
- porphyrins, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
- potassium acid phthalate, Raman spectra and lattice vibr., 77, 300K 8−27219
- potassium hydrogen glutarate, H bonding, vibr. spectra 8−43860
- pyrazine, phase transitions, sp. ht., X-ray diffr., LF vibr. spectra 8−43122
- pyrazine, reson. Raman spectra, vibronic theory of Raman intensity 8−37643
- pyridine adsorbed onto roughened Ag electrode, Raman band intensity 8−48160
- QED theory of differential scatt., Raman scatt. of circularly polarised light, two chromophores model 8−9158
- QED theory of differential scatt., Rayleigh scatt. of circularly polarised light, two chromophores model 8−9157
- rubidium hydrogen glutarate, H bonding, vibr. spectra 8−43860
- salicylic acid, Raman active external modes *(French)* 8−23458
- samarium oxalate, IR and Raman spectra exam. *(French)* 8−48159
- scandium oxalate, IR and Raman spectra exam. *(French)* 8−48159
- semiconductor, vibr. IR excitons, spectra *(Russian)* 8−15173
- silacyclopentane, Raman spectra, pot. energy surface, barrier to interconversion 8−25541
- squaric acid, struct. and Raman spectra 8−47311
- sultams, characteristic band in IR region, Raman obs. 8−29784
- TCNQ alkaline salts, in dimethylsulphoxide, and aq. solns., Raman and IR spectra 8−46344
- p-terphenyl, Raman scatt., order-disorder phase transition 8−43841
- tetraalkylammonium bromide, solid and liq., Raman spectra, longitudinal acoustic vibr. mode, mol. dimensions of ions 8−31183
- 1,2,3,5-tetrachlorobenzene, chemical perturbation of cryst. structs., Raman phonon spectra 8−26559
- tetrachloroethylene, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
- tetrafluoroethylene, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
- tetramethylammonium hexachlorotellurate, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- thioamides, characteristic pattern in IR and Raman spectra 8−29818
- tin tetrahedral molecular solids, ^{119}Sn Mossbauer and Raman spectra 8−15070
- toluene sulphonate diacetylene polymer, electronic and vibr. excitations, press. and temp. depend. 8−31188
- transition metal complex anions, ligand-bridged, binucl., reson. Raman spectra 8−42067
- s-triazine, Raman spectrum, lattice vibrs. 8−19465
- 1,3,5-trichloro-2-bromobenzene, chemical perturbation of cryst. structs., Raman phonon spectra 8−26559
- 1,2,3-trichloro-5-bromobenzene, chemical perturbation of cryst. structs., Raman phonon spectra 8−26559
- trichloroethane, CH_3-stretching modes, Raman spectra reson. energy transfer obs. 8−48162
- trichloromethane, and -d_1, liq., vibr. relax., Raman spectra 8−19471
- triethylenediamine, aq. soln., stimulated Raman scatt., struct. enhancing solute 8−27222
- 1,1,1-trimethoxyethane, mol. struct., electron diffr., vibr. spectra 8−37765
- trimethylgermylisocyanate, IR and Raman spectra, struct. 8−37637
- trimethylgermylisothiocyanate, IR and Raman spectra, struct. 8−37637
- S-trioxane, lattice vibrs. from Raman spectra 8−6672
- triphenylphosphine compounds, $(C_6H_5)_3PM_xM'_{1-x}(CO)_5$, M,M'=Cr, Mo, W, mixed cryst., CO vibr. spectra, modal anal. 8−35128
- S-trithiane, lattice vibrs. from Raman spectra 8−6672
- trithiane, Raman spectrum, press. effect on internal rot. angle 8−37642
- TTF crystals, polarised Raman spectra meas. 8−6681
- TTF-d_0, -d_4, IR and Raman spectra, vibr. assignments 8−23436
- vinyl sulphides, divalent S linking with multiple bonds, spectrosc. obs. *(Russian)* 8−21929
- zeaxanthin, aq. soln., aggregate, reson. Raman spectra, and IR spectra, exciton interactions 8−31770
- 1-bromo-1-chloro-1-fluoroethane(-2-d_1), IR and Raman spectra, vibr. assignments, normal coord. anal. 8−42053
- Cu complex, glycylglycine, isotope substituted, IR and Raman vibr. spectra 8−42051

Raman spectra of polyatomic inorganic molecules
- transition metal complexes, of 4-methylpyridine, IR and Raman spectra, vibr. anal. 8−25536
- Ag_3, Raman spectra, matrix isolated in Kr, linear config. 8−46347
- AsH_3, vibr. relax. in dense media, memory functions approach 8−37722
- BCl_2SH, BCl_2SD, Raman and IR spectra, barrier to internal rot. 8−5223
- C_2N_2, gas, high resolution Raman spectra 8−17673
- $^{12}C^{16}O_2$, vibr.-rot. Raman spectrum, in Fermi reson. region 8−42073
- $COCl_2$, Raman line intensities, modified CNDO/2/INDO calc. 8−25621
- $CeCl_3$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
- $Co_4\,(CO)_{12}$, heptane soln. Co-Co force consts., prereson. Raman spectra, rel. to solid IR spectra *(French)* 8−31193
- DCl and $(DCl)_2$, matrix isolated Raman spectra 8−42063
- $FeBr_4^-$, circularly polarised Raman spectra, spin-orbit induced vibr. antisymmetry 8−5232
- $FeCl_3$, matrix isolation Raman spectra, mol. config., thermodynamic props. 8−46346
- Fe_2Cl_6, matrix isolation Raman spectra, mol. config., thermodynamic props. 8−46346
- HCl and $(HCl)_2$, matrix isolated Raman spectra 8−42063
- HN_3, and DN_3 pure rot. Raman spectra, rot. consts., K-depend. parameters 8−29791
- H_2O, sum rule props., SCF optimizations of MO and VB calcs. 8−5156
- H_2O, vap., depolarised Rayleigh scatt., rot. Raman spectra, mol. polarisability 8−33513
- H_2O, vibr. Raman scatt. signature in flames 8−25539
- HPO_3^{2-}, in NaH_2PO_2-Na_2HPO_3, quantitative anal. by relative Raman intensities obs. *(Japanese)* 8−23991
- $H_2PO_2^-$, in NaH_2PO_2-Na_2HPO_3, quantitative anal. by relative Raman intensities obs. *(Japanese)* 8−23991
- H_3PO_4, aq. soln., laser Raman spectra, 0.005-15.6 M 8−46348
- HgI_2, in $CsNO_3$ at 703K, in meta and para terphenyl at 508K and 513K 8−29796
- HgX_2 (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788
- HgX_3^- (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788
- HgX_4^- (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788
- $IrBr_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
- $IrBr_6^{2-}$, Raman tensor patterns, vibr. reson. Raman scatt., group theoretical calcs. 8−986
- $IrCl_6^{2-}$, circularly polarised Raman spectra, spin-orbit induced vibr. antisymmetry 8−5232
- $IrCl_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
- $(IrCl_6)^{2-}$, electronic Raman spectra, spin-orbit components of ground state, vibr. 8−5231
- K_2SO_4, IR and Raman spectra of vap. over heated matrices 8−25525
- $K_2[B_{12}D_{12}]$, in aqueous soln., laser Raman spectra 8−15158
- $K_2[B_{12}H_{12}]$, in aqueous soln., laser Raman spectra 8−15158
- NF_3, Raman spectra, Coriolis coupling and transition dipole 8−39533
- $NH_4I(ND_4I)$.dioxane complexes, Raman spectra, vibrs., H-bonding 8−25544
- $(NH_4)_2S_5$, Raman spectra, vibrs. and rot. isomers of Sn^{2-} (n=4-8) *(German)* 8−13504
- NO_2, high-press. Raman matrix isolation spectra 8−45721
- NO_2, reson. Raman spectra, vibr.-rot. scatt. Q branch enhancement 8−989
- Na_2SO_4, IR and Raman spectra of vap. over heated matrices 8−25525

Raman spectra of polyatomic inorganic molecules continued
  OCS, vibr.-rot. bands of Raman spectra 8−29173
  $OsBr_6^{2-}$, complex Raman tensors, irreducible tensor method, antisymmetric scatt. 8−37623
  P_4S_{10}, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
  P_4S_3, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
  P_4S_7, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
  S_4Cl_2, Raman spectra, vibrs. and rot. isomers of S_n^{2-} (n=4-8) *(German)* 8−13504
  SF_6, ground state, mol. consts., ν_2 Raman band calcs. *(French)* 8−9156
  SF_6, vibr. Raman spectrum, Q branches shapes 8−42077
  $S_4N_4H_4$ ($S_4N_4D_4$), vibr. spectra, force consts. *(German)* 8−13499
  $S(SiD_3)_2$, gaseous, liquid, solid phases, molecular vibr. exam. 8−25547
  $S(SiH_3)_2$, gaseous, liquid, solid phases, molecular vibr. exam. 8−25547
  Tl_2Cl_2, mol. consts., IR and Raman freqs. assignments 8−17648
  Tl_2F_2, mol. consts., IR and Raman freqs. assignments 8−17648
  UF_5, monomer struct. and pot. consts., IR and Raman spectra in inert gas matrices 8−5215
  VCl_4, Raman spectra and selection rules, Jahn-Teller splitting 8−988
  ZnXY, (X,Y=Cl,Br or I), matrix isolation, vibr. spectra, isotope effects, force consts. and geometry 8−46337

Raman spectroscopy
  see also Raman lasers; Raman spectra
  adenylyl 3'-5' adenosine, conform. equilib., Raman temp. jump obs. 8−8450
  air pollutant emission and emission meas. by laser *(German)* 8−40665
  air pollution, stationary source, quantitative meas. using Raman lidar 8−36291
  catalytic surface phenomena, Raman spectroscopy using rot. vacuum cell 8−16852
  coherent, using optical heterodyne detect. 8−21223
  coherent anti-Stokes Raman spectroscopy, with focused laser beam, power generation 8−4701
  coherent polarisation spectroscopy of Raman scatt. 8−13758
  coherent Raman gain spectroscopy using CW laser sources 8−37076
  compressed gas, small depolarisation factor meas. method 8−32884
  electron donor-acceptor complex formation, equilib. const. determ., reson. Raman spectroscopy 8−3329
  flame, temp. meas. *(German)* 8−32900
  flame diagnosis, laser modulated particulate incandescence effects 8−20117
  glass He cryostat for Raman scattering meas. 8−290
  high-pressure Raman matrix isolation spectroscopy 8−45721
  high-resolution molecular spectroscopy, rot. and rot.-vibr. spectra, review 8−42064
  inverse Raman scattering, highly fluorescent substances 8−4702
  laser Raman temp. jump apparatus 8−41360
  laser-heated miniature oven, for prop. of matrix isolation samples for Raman studies 8−45737
  lidar Raman spectroscopy of atmosphere *(Russian)* 8−24387
  molecular microprobe, microscope system 8−45686
  multiple atmospheric parameter meas. laser radar system 8−4009
  oil spills remote detection using laser-excited Raman backscatt. and backscatt. fluoresc. 8−32242
  optically active molecules, differential Raman scatt. of right and left circularly polarized light *(Japanese)* 8−17675
  polaritons, Raman scattering, photoelec. recording method *(Russian)* 8−23468
  polyatomic vapour phase mols., medium resolution, appls. review 8−42065
  pure rot. spectra of CO_2, H_2, dry-lab expt. for undergraduates 8−32634
  recent advances, review 8−41359
  resonance Raman kinetic spectroscopy of bacteriorhodopsin on μsec time scale 8−20320
  resonance Raman spectroscopy 8−4425
  spin flip Raman laser absorption spectrometer sensitivity enhancement 8−29173
  spin-flip Raman laser spectrometer as source for high resolution mol. spectroscopy and photochem. review 8−32894
  stimulated Raman spectroscopy using low power CW lasers 8−29172
  temperature jump apparatus, with pulse spectrometric detection 8−8450
  thin films condensed onto cold substrate, prism-film coupler for in vacuo investigation 8−24873
  turbulent flow field investigation techniques 8−34224
  vibrational spectroscopy, modern trends, book 8−13503

ramp generators
  linear scanning circuit, for piezoelectrically controlled Fabry-Perot etalon 8−4704

Ramsauer effect *see collision processes*

random functions
  see also random processes
  acoustic imaging systems using random signal analyses 8−42499
  convergence to stable distribution laws in limiting theorem *(Russian)* 8−28920
  estimation aided by instrumental variables, regression model *(German)* 8−29080
  exponential random variables sum, probability density function 8−12537
  linear stochastic diffusion equations, two-dimens. system, asymptotic behaviour of functional for distribs. from argument of soln. *(Russian)* 8−21083

random noise
  see also thermal noise
  1/f fluctuations *(Japanese)* 8−43448
  1/f noise mechanisms, linearity 8−45568
  acoustic waveguide, active noise suppression 8−5613
  biomembranes, mechanism for 1/f noise in diffusing ion channels 8−27911
  charge sensitive preamplifiers, signal and noise response 8−33404
  Cygnus X-1, short-term time variability, shot noise model 8−36721
  Cygnus X-1 X-ray emission, shot noise rel. to physical reality of millisecond bursts 8−45429
  electron micrograph, image processing systems, random noise removal 8−12791
  equilibrium system, temp. fluctuations and 1/f noise 8−23143
  extremal levels *(Rumanian)* 8−21070

random noise continued
  FM-CW acoustic sounder resolution rel. to modulation noise *(Japanese)* 8−30137
  Gaussian noise, simple models 8−32763
  metal films and whiskers, 1/f noise theory 8−34872
  noise voltage in film structures, two-dimensional analysis 8−6420
  nuclear reactor identification, test inputs review 8−41819
  nuclear reactor temperature sensors, response time testing by noise anal. 8−13300
  optical problems, statistical reversal methods of linear transforms. *(Russian)* 8−1179
  p-n junction, low freq. noise 8−6419
  p-n junctions, inhomogeneous, theory of LF noise 8−2559
  p-n junctions, microplasma noise, stochastic model, breakdown voltage of microplasma 8−47854
  physical aspects of electrical noise in solids and semiconductor devices *(French)* 8−19111
  preamplifier, low noise, for gravit. research 8−243
  pseudo-random noise generator, for sound absorption and buildings, insulation testing *(Spanish)* 8−13861
  radiation spectra unfolding code COOLC 8−5090
  radiographic mottle, screen sharpness quantum noise depend. 8−20261
  seismic data, noise-resistance of optically generated correlograms *(Russian)* 8−40699
  semiconductor, homogeneous, Hall effect noise 8−39173
  semiconductor DH lasers, effect of impurities on quantum shot noise reson. 8−22132
  Stark effect in Gaussian noise field, three-level system 8−41266
  stochastic evolution eqns. with general white noise disturbance 8−16734
  teaching, Campbell's theorem, use in elec. noise formulae derivation 8−24602
  vision, stereomovement from interocular delay, random spatial disparity hypothesis 8−24074
  Al-Si_3N_4-Al cathode, fluctuation noise 8−2998
  $BaSrTiO_3$, semiconducting, excess noise characts. exam. 8−19110
  $Cd_{0.1}Hg_{0.9}Te$, polycrystalline thin film, correlation between structure and 1/f noise 8−39234
  CdSe, single crystal, low-frequency current noise, effect of temperature quenching of photoconductivity 8−34874
  GaAlAs CW DH diode lasers, 1/f noise behaviour 8−1226
  K adsorbed on W(112) planes, temp. depend. of noise spectral density functions 8−2992
  W, adsorbed K, field emission flicker noise, coverage depend. 8−35262
  W, adsorbed layers of K on (112) planes, flicker noise field emission obs. 8−26774
  ZnS, low resistivity, ohmic contact noise characts. and contact resistance 8−14827

random number generation
  congruential pseudorandom number generators uniformity, number sequence length, resolution effects 8−41147

random phase approximation *see RPA calculations*

random processes
  see also Brownian motion; fluctuations; Markov processes; probability; queueing theory; stochastic processes
  acoustic discontinuous waves in nonlinear media, characts. 8−5601
  acoustic signal processing, influence of time- and space-varying random filters 8−5615
  acoustic wave propag., product of matrices and random transfer *(French)* 8−5596
  acoustics, average field attenuation in irregular waveguide 8−1459
  Bethe lattice, displacement correl. function, random walk 8−41247
  bias meas. lessening of dispersion of non-centred and nonstationary random processes *(Russian)* 8−12645
  bidimensional surface waves, periodic correlational random field model *(Russian)* 8−20430
  biomedical flow systems effects 8−44445
  cosmic rays propagation, non-field-aligned diffusion effects on neutral monitor diurnal anisotropy 8−32304
  demonstration, for student lab., showing time distrib. 8−41124
  distribution function for random walks without self-intersection 8−8350
  distribution functions, oscillographic measurement 8−4607
  education, random walk approx., theory of generating function and method of steepest descent 8−36744
  electron relax. time in metals, waiting time paradox, for teaching 8−36771
  EM waves in medium with ellipsoidal inhomogeneities and regular refr., ray statistics 8−25773
  film deposition, adatom diffusion and capture by clusters, random-walk problem 8−2385
  fluctuations, wave-number spectrum moments, correlation method for estimation 8−16732
  FM signal modulation by smoothed random telegraph signal, appl. to underwater acoustic meas. 8−18130
  galaxies, distrib. of ang. momenta 8−20886
  Gaussian beam wave scatt. from perfectly conducting column 8−1135
  Gaussian random fields 8−36934
  Gaussian random surfaces, umbilic points 8−4467
  harmonic oscillators, randomly disordered linear chain, normal frequencies 8−36818
  hopping conduction, AC conductivity in random structs., renewal theory 8−141
  linear dynamic systems, response to product random processes 8−34054
  liquids, electron scavenging and ion recomb. processes, 3-dimens. continuous time random walk model 8−7216
  Lorenz attractor, origin and struct., appl. to specific model systems 8−29054
  MHD turbulent diffusion, root mean square mag. field calc. 8−36449
  motion, roller device appls. 8−16600
  multidimensional wave radiation from source with Gaussian time variation and Gaussian approx. distrib. about spherical sheet 8−45487
  noise waves, low-frequency, parametric excitation in nonlinear medium 8−9472
  noiselike optical signals, photoelectron counting statistics and error rate characteristics 8−1178
  ocean internal waves, damping by rough bottom *(Russian)* 8−24293

random processes continued
Poisson processes subset selection procedures, binomial and multinomial problem appls. 8−36802
polymer random flight chain, surface adsorbed, end-to-end mean value 8−22060
pulse train processing by linear filter *(Russian)* 8−46518
quasar red shifts, anal. for randomness 8−12400
quasars red shifts, anal. for randomness rel. to Earth-centred universe 8−16563
random walk problem, history, in consideration of interdisciplinarity 8−16618
reacting gas flow, time-depend., one dimens., random choice method anal. 8−9726
scalar field theory in lattice space, analogy to random walk 8−21325
scalar wave propagation, coherent scalar field in pair correlated random distribs. of aligned scatterers 8−32690
seismic signals, amplitude and phase jitter rel. to optimal multichannel filtering evaluation *(Russian)* 8−40697
self avoiding random walks, exactly soluble lattices 8−32767
semiclassical wave functions, regular and irregular 8−20998
stationary, spectral density structure estimation *(Russian)* 8−24736
stellar systems dynamics, purely discontinuous random processes in field of irregular forces *(Polish)* 8−16465
surface profiles reference line selection and fitting 8−45594
surface topography as nonstationary random process 8−24739
three-dimensional lattices, random walks, probability of eventual return calc. by matrix method 8−6172
time series analysis and forecasting for ANL TREAT expts. on fast reactors 8−13289
track length type estimators, general formulation 8−37401
truncated exponential density sequence, estimator asymptotic variance comparison 8−12539
underwater sound, random ocean current effects on acoustic transmission in isospeed channel 8−13840
walk, with arbitrary pausing time distrib., master eqns. 8−16736
wave propag., mean power transmission determ. by using cumulant expsn. 8−36841
wave propagation, probability distrib. at large depth in extended random medium 8−28959
wave propagation in random linear systems and temporal homogeneity 8−32691
wave propagation in random stratified media, statistical theory *(Russian)* 8−1157
wavefront dislocations, incoherent Gaussian random waves 8−16660
range finding *see distance measurement*
range of particles *see energy loss of particles*
ranging (sonar) *see sonar*
rare earth alloys
see also cerium alloys; dysprosium alloys; erbium alloys; europium alloys; gadolinium alloys; holmium alloys; lanthanum alloys; lutetium alloys; neodymium alloys; praseodymium alloys; promethium alloys; rare earth compounds; samarium alloys; terbium alloys; thulium alloys; ytterbium alloys
intermetallic compounds of rare-earth and 3d transition metals, struct., props., review 8−10668
magnetic amorphous, nonaxial elec. field gradients 8−39285
magnetic moments of rare earths in metallic environment 8−6515
magnetic phase diagram, mean field random alloy model 8−10684
noble metal-rare earth, dil., magnetotransport props., theory 8−39097
$R^1{}_xR^2{}_{1-x}H_2$-H_3 systems, phase transitions 8−18767
resistivity anomalies 8−19018
transition metal alloys, RM_5, intermetallic compound $CaCu_5$ struct. crystal field pots. 8−43339
Au-R, dil., magnetoresist., quadrupole scatt. effects 8−39096
Co-R dilute alloys, mag. annealing, conc. depend. 8−35011
Gd-R alloys, phase diagram determ. 8−15366
R-Co films, extraordinary Hall effect meas. 8−6459
R-Fe alloys, magnetoelastic props. *(Japanese)* 8−23316
R-Pt alloys, cryst. struct. determ. 8−26491
RAl_2, cubic Laves phases, prep. and phys. props. *(German)* 8−23075
RCo_2, 'as cast', fibre texture, neutron diffr. exam. 8−3117
RCo_2 amorphous alloys, atomic order, mag. behaviour 8−19221
RCo_5, ferromag., thermomag. charact. in mag. field *(Russian)* 8−23273
RCoAl, mag. props. 8−2659
RCu_4Ag, struct. study 8−30587
RCu_4Al, struct. study 8−30587
RFe_x, amorphous alloys, atomic order, mag. behaviour 8−19221
$R_2Fe_4Si_9$ and $RFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8−34957
$R_{0.2}La_{0.8}Ni_5$ (R=Er,Y,Gd,Nd,La,Th,Zr), H_2 storage appl., desorption isotherms depend. on d-bandfilling 8−18912
RNi_4Al, Hz absorpt. and cryst. struct. of hydride 8−34487
Sn-R, dil. liq., elec. resist. and mag. susceptibility 8−43350
rare earth compounds
see also under the individual compounds e.g. cerium compounds
see also rare earth alloys
borides, mag. props., book contrib. 8−47978
chromates (lanthanide series), paramag. state, crystalline elec. field calcs. 8−39074
double nitrate, Van Vleck temp. independent suscept. 8−43555
double tungstates with Cd, scheelite struct. 8−44103
electron-phonon interaction influence on electronic phase transitions *(Russian)* 8−47743
ethyl sulphate nonahydrates:Gd^{3+}, $g_\parallel$, EPR obs. 8−35031
garnet single crystal films, synthesis and props., reviews 8−48013
garnet substrate crystals, substituted, and LPE films, for magneto-optic appls. 8−31351
intermediate valence compounds, mag. susceptibility and sp. ht., mean-field theory of periodic Anderson model 8−47937
iodates, crystallographic and nonlinear optic data 8−6044
magnetic moment and valence fluctuations 8−23244
magnetic properties, cryst. field theory 8−27006
magnetic properties, cryst. field theory 8−27007
magnetic susceptibility in intermediate valence state 8−14928
monophosphides, K-emission bands, electronic struct. 8−15250
monopnictides, Knight shift systematics 8−43661
orbit-lattice interaction empirical parameter determ. 8−38799
oxide cermets with Re, prep. and props. 8−27466
oxides, determ. using ion microanalyzer *(Japanese)* 8−23987
rare earth compounds continued
oxides, TEM lattice images *(French)* 8−26397
oxides, XPES final state struct., 4d electron ionis. 8−25616
oxyhalides, thermochromic luminescent mats. *(Russian)* 8−48230
oxysulphides, strengthening covers in light radiography *(French)* 8−41396
oxysulphides, thermochromic luminescent mats. *(Russian)* 8−48230
phosphor development survey 8−6781
phosphor intensifying screen speed gain 8−7447
phthalocyanine solutions, bleaching by ruby laser beam 8−30030
reaction processes in solid phase *(French)* 8−30756
RIG, garnets, contribution of Fe ions in noncubic magnetostriction from crystal field model 8−43622
superconductivity, phenomenological study 8−43512
tellurides, electron density distrib. from Mossbauer spectra 8−23374
CaR_2S_4, R=rare earth, ternary sulphide with Th_3P_4 struct., vib. spectra 8−2844
Fe-R-O systems, thermodynamic props., cpd. formation 8−31390
Ga_2O_3-R_2O_3:Nd^{3+} glass, prep., characts., X-ray diffr., absorpt. and thermal anal. obs. *(French)* 8−19704
$KR(SO_4)_2$, R=La to Tb, unit cell parameters, thermal stability and decomposition 8−18613
Li_2O-Fe_2O_3-R_xO_y, Hall effect and magnetoresist. 8−34849
R-B systems, phase equilibria, phase diagrams, book contrib. 8−48389
$RAsO_4$, flux growth and characterisation by X-ray topography 8−48311
RB_{12}, nature of magnetism *(Russian)* 8−31049
$R_4Ba_6(BO_3)_9$, flux growth and chem. characts. 8−23595
$RCl_3.6H_2O$ Gd^{3+}, R=Nd, Sm, Eu, Tb, Dy, Ho, Er, Tm, Yb, EPR obs., 9.4 GHz, 297K 8−15017
$R(Co(CN)_6)n.H_2O$, (R=La to Ly), optical spectra 8−39566
RF_3, struct. changes in series 8−26548
RFX mixed halides, synthesis and lattice parameters 8−30594
$RFeO_3$, struct. changes in series 8−26548
RFe_5O_{12}, sputtered layer comp. rel. to target comp. 8−6848
$R_{2x}Gd_{2(1-x)}(MoO_4)_3$, R=Nd,Sm,Gd,Tb,Ho,Yb, ferroic, linear and nonlinear optical susceptibility 8−22164
$RKMo_2O_8$, flux growth in R_2O_3-K_2O-MoO_3 system, and cryst. struct. 8−35289
R_2MoO_6, flux growth in R_2O_3-K_2O-MoO_3 system 8−35289
R_6MoO_{12}, flux growth in R_2O_3-K_2O-MoO_3 system 8−35289
$R_xMo_6S_8$, mag. susceptibility meas., 1.3-300K 8−14936
RNi_4AlH_x, Hz absorpt. and cryst. struct. of hydride 8−34487
RO_x, film, short-range order to long-range order transition 8−10288
R_2O_3, cathode material, influence of surface and bulk effects 8−11065
RP_5O_{14}:Ce^{3+},Tb^{3+}, energy transfer between dopants, excitation spectra, laser appls. 8−10961
RPt_2Si_2, crystallographic study *(French)* 8−47286
$R(Rh_{0.85}Ru_{0.15})_4B_4$, mag. ordering and supercond. 8−14861
RRu_2Si_2, crystallographic study *(French)* 8−47286
R_2S_3-$1.8GaS_3$, chalcogenide glasses, (R=La, Ce, Pr, Nd, Gd), vibr. and electronic spectra, short-range order 8−27228
$RSbO_4$, low temp. form, prep., cryst. chem. identification 8−47300
$RScO_3$ synthesis and lattice constant reevaluation 8−30593
$RTiNbO_6$, electrophys. props. 8−23388
RVO_3, indirect exchange 8−34977
RVO_4:Eu^{3+}, ligand field parameters, computed from fluoresc. and absorption data 8−2453
$R_2V_2O_7$, (R=Tm, Yb, Lu), physical props. 8−39320
R_xWO_3, metallic, elec. props. meas. 8−30906
$SrRMnO_4$, (R=La,Nd,Sm,Gd), cryst. struct. determ. *(French)* 8−6042
SrR_2S_4, R=rare earth, ternary sulphide with Th_3P_4 struct., vib. spectra 8−2844
$TlR(MoO_4)_2$ (R=La to Ho), polymorphism, X-ray diffr., thermographic anal. 8−47269
$Y_{1-x-y}R_xEr_yAlO_3$, $Y_{1-x-y}R_xEr_yScO_3$, stimulated emission of Er^{3+} ions 8−6705

rare earth elements *see rare earth metals*

rare earth metals
see also the individual metals e.g. cerium
cations in aqueous chloride soln., effect on Raman bands of water 8−15157
determination, in rocks, by neutron activation anal. 8−27870
determination in geological materials, using thermal and epithermal neutron activation 8−7797
in eucrite meteorites, abundances rel. to parent body comp. and evolution 8−20766
excitation energies for 5s electrons 8−10408
grains, submicron size, in Earth's atm., solar vs. terrestrial origin 8−12180
impurities in crystals, magneto-Raman effect 8−43864
ion, crystal field, spin correlation effect calc. 8−23058
ions, optically excited states, EPR, ENDOR 8−43637
lanthanide ion fluorescent probes, spectroscopic obs. system 8−11573
lanthanide series properties, double peaks effect *(Chinese)* 8−29740
lanthanides in Si Ap-star HD 192913, spectral identifications and abundances 8−45345
laser using R in organic soln., nuclear pumping 8−5470
lasers and excited states of rare earths, book 8−29958
liquid, varying d-band occupancy 8−39083
multiplet splittings of s-core levels, exchange correl. 8−10407
Oklo natural reactor, elemental and isotropic abundances rel. to rare earths behaviour 8−49019
resistivity anomalies 8−19018
sound attenuation anomaly near mag. transition temp. 8−15004
surface atoms, photoionisation of 4f electrons, photoelectron spectra 8−11077
trace diffusion of nuclear reaction products, lanthanides, in polycryst. Ta 8−22896
trivalent, 5d states, charge transfer and intershell spectra, separation and overlap 8−10966
X-ray $N_{IV,V}$ emisison spectra in region of 5p→4d transitions *(Russian)* 8−6815
CaF_2:R, cluster-associated relax., 5.5-400K 8−31153
CdF_2:R^{3+}, cooperative luminescence influenced by symmetry of centres 8−6791
Dy, magnetocrystalline anisotropy, perturbation theory 8−2675
$KGd(WO_4)_2$:R^{3+}, stimulated emission 8−23496

rare earth metals continued
- $KY(WO_4)_2:R^{3+}$, stimulated emission 8−23496
- $LaCl_3:R^{3+}$, cryst. field parameters, angular overlap model calcs. 8−26830

rare gases *see inert gases*

rarefied fluid dynamics
- *see also atomic beams; Knudsen flow; molecular beams*
- Boltzmann equation, continuous nonnegative equilib. soln. 8−41250
- boundary conditions in rarefied gas dynamics, phase shift formulation 8−1694
- convective heat transfer coeff. and surface emissivity, effect of degree of vac. 8−1693
- free molecular flow, rot. degrees of freedom effect *(Russian)* 8−9657
- free-molecule flow, through circular tube with sudden enlargement or contraction 8−14047
- gas, flow through aperture into vacuum 8−9621
- gas flow characteristics through fibrous filter with supercrit. press. drops 8−1738
- heat transfer for gas between parallel plates *(Russian)* 8−46961
- intermolecular interaction, Boltzmann eqn., Monte Carlo simulation *(German)* 8−34165
- low-speed flow over sphere, convergence of integral methods 8−22375
- molecular flow conductance of long tube, cross section depend. 8−34167
- molecular shield for Shuttle Orbiter, effect of expts. on density distrib., model 8−22374
- monodimensional Poiseuille and thermal creep flows, rigorous constructive soln. 8−30319
- nuclear reactor fuel element gap conductance, heat transfer over range of Knudsen number 8−13213
- Poiseuille slip and thermal creep at boundary surface *(Russian)* 8−38371
- slip flow past tangential flat plate at low Reynolds numbers 8−47000
- slow viscous flow, slip-plane and slip-cylinder theorems 8−14046
- sphere in gas slip flow, vel. field, heat exchange, friction dissipation *(German)* 8−34138
- spherical condensed phase, motion in uniform vapour gas flow, kinetic theory 8−1725
- unsteady heat transfer from suddenly heated infinite plate in rarefied gas 8−34166

rarefied gas dynamics *see rarefied fluid dynamics*

rarefied gas flow *see rarefied fluid dynamics*

Rayleigh-Benard instability *see flow instability*

Rayleigh law *see Rayleigh scattering*

Rayleigh limit *see Rayleigh scattering*

Rayleigh scattering
- n-alkanes, obs. and anal. of depolarised Rayleigh doublet 8−35154
- atom, photon scatt. by bound electrons, form factor predictions for amplitude, numerical method calc. 8−33474
- benzene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- 2,4-biphenylpentane, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- t-butylbenzene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- 2-chloropropane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
- coherent four photon Rayleigh scattering *(Russian)* 8−48191
- compressed gas, small depolarisation factor meas. method 8−32884
- cumene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- cyclohexane-methanol, crit. opalescence, AC elec. field effect 8−35159
- depolarized double scattering, spatial and temporal coherence coupling 8−1164
- dichloromethane, liq. and dil. CCl_4 soln., far IR spectra and Rayleigh scatt. for planar itinerant oscillator 8−47229
- 1,1′-diethyl-4,4′-quinocyanine iodide, S_0-S_1 transition, relax. time meas. by reson. Rayleigh technique 8−42374
- n-dodecane-dichlordiethyl ether, stratified solns., depolarisation of scatt. light 8−10910
- ethane, gas-liquid crit. pt. region, depolarised light scatt. 8−34612
- ethylene, gas-liquid crit. pt. region, depolarised light scatt. 8−34612
- Fabry-Perot expt. for lines in presence of elastic scatt. 8−4703
- fibre waveguide, Brillouin and Rayleigh scatt. meas. 8−30085
- forced, appl. in method to determ. thermal diffusion ratio *(French)* 8−2271
- Freon-12(22), gas, Rayleigh vol. scatt. coeffs., spectronephelometric meas. 8−14127
- ionic solution, light scatt., hydrodynamic theory 8−6692
- lipid-water smectic phase, forced Rayleigh scatt. 8−14278
- localised electron-phonon system, second order optical processes, transient response 8−43917
- macromolecular, solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas., review 8−48187
- MBBA, isotropic, depolarised doublet, de Gennes viscosity coeffs. 8−31207
- MBBA, isotropic, obs. and anal. of depolarised Rayleigh doublet 8−35154
- methane, Stokes collision-induced Rayleigh scatt. 8−25546
- methane, thermal diffusivity within 0.001K of critical temp., Rayleigh scatt. obs. 8−34607
- 3-methylpentane-nitroethane, binary fluid, Rayleigh linewidth meas. near crit. point 8−48190
- molecular liquids, depolarised Rayleigh-wing scatt. and far IR absorpt. spectra 8−39532
- molecule, collision-induced rot. Raman scatt. in low, high freq. Rayleigh tails 8−25546
- nitroethane-3-methylpentane, binary liq., depolarised light scatt. at crit. point 8−39558
- nondipolar liquids, axially-symm., diamag. mols., Kerr effect and Cotton-Mouton effect meas. 8−39524
- nonspherical particles, Rayleigh-Gans-Debye scatt. theory 8−46510
- 8OCB, nematic-smectic A transition, impurity effects 8−47507
- 7-8-OCB mixture, nematic-smectic A transition, impurity effects 8−47507
- PBLG, cholesteric, exam. of Rayleigh line reveals low freq. modes, scatt. via orientational fluctuations 8−19496
- 4-phenyl n-pentyl ester, Nematel 105, nematogen, isotropic phase, Rayleigh scatt. and mol. reorientation 8−34429
- plasma diagnostic technique, CW Ar laser, radiation scatt. 8−38536
- plastic crystal, Rayleigh scatt. of Mossbauer radiation 8−27125

Rayleigh scattering continued
- polybutadiene-n-hexane-n-heptane soln., Rayleigh scatt., diffusion coeff., viscosity 8−15179
- polymer solution, depolarised Rayleigh scatt., time correlation function 8−2862
- polymer solutions, dilute, depolarized Rayleigh scatt. 8−35155
- polymer system, two-phase, transparency conditions, interparticle interference effects 8−23428
- polymers, soln. props. by low angle laser light scatt. photometry 8−35156
- polysaccharide gels, spectral broadening 8−31771
- polystyrene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- polystyrenes, p-halogenated, optical anisotropies, Kerr consts. 8−27246
- QED theory of differential scatt., Rayleigh scatt. of circularly polarised light, two chromophores model 8−9157
- reflected light from Earth's surface, estimation *(Japanese)* 8−40663
- resonant Rayleigh type optical mixing, appl. to ultrafast relax. process obs. 8−42373
- resonant Rayleigh type optical mixing, appl. to ultrafast relax. in dye solns. 8−42374
- solar radiation reaching Earth's surface directly, turbid ideal Rayleigh atm. 8−36274
- stimulated Rayleigh wing scatt. line, anomalous shift in external transverse resonator containing CS_2, CS_2-ethanol, o-xylene 8−13763
- tert-butyl chloride, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
- tetrachloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
- tobacco mosaic virus, solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas. 8−48187
- toluene, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- trichloroethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
- trichloromethane, separation of collision-induced from intrinsic mol. depolaris. Rayleigh scatt., C-Cl bond optical anisotropy 8−27244
- 2,4,6-triphenylheptane, depolaris. Rayleigh scatt., optical anisotropy 8−27245
- CO_2, gas-liquid crit. pt. region, depolarised light scatt. 8−34612
- H_2O, sum rule props., SCF optimizations of MO and VB calcs. 8−5156
- H_2O, vap., depolarised Rayleigh scatt., rot. Raman spectra, mol. polarisability 8−33513
- ^4He, liq., Rayleigh linewidth meas. 8−14522
- $NaNO_3$, disordered, temp. depend. of Raman spectra, Rayleigh wing scatt. 8−31209
- Pb, Rayleigh scatt., expt. and form factor approx. 8−33474
- SF_6, gas, Rayleigh vol. scatt. coeffs., spectronephelometric meas. 8−14127
- SF_6, gas-liquid crit. pt. region, depolarised light scatt. 8−34612
- Xe, gas-liquid crit. pt. region, depolarised light scatt. 8−34612

Rayleigh-Taylor instability *see flow instability*

Rayleigh waves
- *see also acoustic surface waves*
- Black Sea basin, crustal struct. from Love and Rayleigh waves dispersion *(Russian)* 8−28192
- channel waves propag. in coal seams, model seismic expt. *(German)* 8−40513
- ferromagnetic metal, EM generation of US guided waves, model 8−22236
- heterogeneous material, effective elastic props. of finite media, integro-differential eqns. *(German)* 8−22291
- metal, Rayleigh sound absorption *(Russian)* 8−43233
- North Sea region upper mantle struct. from Rayleigh wave dispersion 8−36122
- pink westerly granite, wave propag. study by holographic interferometry 8−20536
- scattering from topographical irregularities at oblique incidence 8−38927
- seismic wave amplitude meas. from earthquakes in distance range 0-150° 8−48979
- seismic waves, phase-matched filters appl. 8−45010
- superconductor, Rayleigh sound absorption *(Russian)* 8−43233
- surface layer structure, from Rayleigh wave dispersion, anal. theory for sparse data case 8−38928
- and surface thermodynamics 8−6207
- surface waves propag. in crystalline media 8−2350
- transmission and reflection through a step 8−44775
- velocity measurement, pulse technique 8−5618
- viscoelastic media, surface wave propagation 8−42555
- $BaTiO_3$, nonpiezoelec. dielec., light-sensitive Rayleigh wave generation by surface piezoelectricity 8−43228
- $KTaO_3$, nonpiezoelec. dielec., light-sensitive Rayleigh wave generation by surface piezoelectricity 8−43228
- NiZn ferrite, magnetic field effect on Rayleigh wave attenuation 8−6557

reactance, electric *see electric reactance*

reaction kinetics
- *see also catalysis; chemical exchanges; chemical reactions; explosions; potential energy surfaces for collision processes; reaction kinetics theory; reaction rate constants*
- activated chemisorption, kinetics, adsorbate distrib., temp. and press. depend. 8−35720
- anisothermal oxidation kinetics, model 8−44375
- atom+diatom, prior statistical distribs., collinear reactions, theory review 8−35670
- bimolecular autocatalytic reaction-diffusion system with Michaelis-Menten saturation law, multiple steady states 8−40045
- concrete, thermal decomposition, empirical model for kinetics and stoichiometry 8−17386
- diffusion controlled reaction kinetic studies, light scatt. obs., for one-step reaction case 8−35659
- electrochemical electron transfer at electrodes in soln., review, in book, for teaching 8−8203
- electrode MHD phenomena in electrolytes heterogeneous processes *(Russian)* 8−27768
- electrode reaction kinetic parameters, programs for computer retrieval, in FORTRAN 8−31654
- enzyme activity, kinetic assay, progress curve algorithm for spectrophotometric meas. 8−20083
- ethylene+F$(CH_3\cdot)$, transition state, ab initio calc. 8−48640

reaction kinetics continued
  fixed bed reactor catalyst decay, dynamic phenomena study *(German)* 8−7201
  flame, turbulent mixed gases, thermal exchange effect on reaction rate 8−7205
  fluid, dense, chem. reacting, Enskog theory 8−35667
  gas, dilute, reacting, mass and momentum transport, DIPR model extension 8−35666
  haemoglobin+CO reaction kinetics, using various regimes of photolytic illum. 8−48753
  heat and mass transfer, simultaneous, chemically reactive flow characts. *(Japanese)* 8−22431
  heterogeneous charge transfer kinetic effects, deconvolution by FFT faradaic admittance meas. 8−20091
  hexaborates of group II metals, thermal dehydration 8−43132
  interstellar dense molecular clouds, chem. evolution 8−28749
  ion-molecule reactions, vibr. energy effects on kinetics, phase space model 8−11508
  isopropanol, decomp. on α- and β-V_2O_5 bronzes, 186-300°C, kinetics and mechanism 8−11553
  isotope separation, by selective laser-induced mol. vibr. excitation effect on reaction kinetics 8−33627
  measurement over many orders of magnitude in time, using minicomputer 8−7200
  metal-gas interactions, kinetics and mechanisms, book contrib. 8−11558
  metals and alloys, sulphidation, high-temp., thermobalance for studying kinetics 8−23876
  methane formation, CO hydrogenation kinetics, using polycryst. Ni ribbon catalyst 8−40078
  network thermodynamics with entropy stripping 8−7223
  photochemical smog, rate parameters and computer simulation 8−48677
  polymerisation, multicomponent, differential and integral rate eqn. 8−23944
  proton transfer photoreaction kinetics, in singlet excited state 8−48671
  radical pair recombination kinetics, low conc. in solid matrix, 1, 2 and 3 dimens. 8−27793
  thermostimulated effects, correlations and invariants 8−31619
  troposphere, photochemical mechanisms, computational methods 8−49084
  weak neutral currents displayed in biological isomerism, L- and D-mol. reaction rates 8−415
  Zircaloy, hydriding reaction kinetics, oxidised specimens 8−26728
  $Ba+N_2O$, crossed mol. beams, BaO recoil vel. spectra 8−7184
  $BeO+SiO_2+V_2O_5$, reaction kinetics and mechanism, phenakite formation 8−23608
  Ce^{3+}, oxidation kinetics in X zeolite on O_2 adsorpt. 8−3373
  CoO, high temperature physico-chemical interactions with oxygen under pressure *(French)* 8−31549
  Cr_2O_3, reduction rate by C and C in liquid Fe-Cr-C 8−6877
  Cu wire, corrosion in $AgNO_3$, effective corrosion time, resistance variation 8−11404
  F_2+UO_2, reaction kinetics, molecular beam study 8−46157
  Fe, adsorbed S effects on surface reaction kinetics and surface self-diffusion 8−7234
  Fe-C-(P)(S), drops, oxidation kinetics in oxidizing slags 8−11153
  Fe-Zn couple, Zn electrodeposited on polished Fe, reaction rate in solid state *(Japanese)* 8−15322
  Ge+S (vapour) reaction kinetics 8−35718
  H-air, laminar diffusion flames, chem. nonequilib. effects model 8−48654
  H_2+F_2 reaction, coherent emission efficiency 8−17928
  $H_2+H_2O^+ \rightarrow H+H_3O^+$, reaction kinematics 8−31625
  $H_2{}^+ + H_2 \rightarrow H_3{}^+ + H$, reaction dynamics, isotopic variations 8−27745
  HO_2+NO, reaction kinetics meas. 8−31624
  LiH+Te exothermic solid-state reaction, ion backscatt. obs. 8−20064
  Mo, thin film on Si, stress effects 8−43261
  N_2-Ar plasma, coupled thermal-chem. relax., thermodynamic nonequilib. 8−34265
  NH_3, flow in steel tubes, wall heat transfer with catalytic dissoc. 8−14099
  NO, interstellar, ion-molecule reactions rel. to candidate mols. form. 8−28739
  N_2O, dissoc. in alternating elec. field, kinetic and energetic data *(French)* 8−13620
  Ni, oxidation, diffusion enthalpy and entropy 8−7084
  Ni-Fe alloy, oxidation, diffusion enthalpy and entropy 8−7084
  $NiFe_2O_4$, solid state formation, exam. of kinetics for formation at 700 to 1400 degrees C 8−48648
  $O(^3P)$+1-butyne (2-butyne), CO pro dynamics, mechanisms 8−11510
  $Pb+N_2O \rightarrow PbO+N_2$, chemiluminesc. reaction, vel. depend. 8−27762
  ^{147}Pm, deposition on anodically polarised Pt surface 8−27424
  Pt electrode O_2 reduction kinetics in conc. H_3PO_4, H_2SO_4 and $HClO_4$ 8−23952
  $SO_3{}^- + BrO_3{}^-$, fast oxidation in acid medium, laser Raman multichannel spectroscopy 8−27754
  Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
  Ta, sputtered layer, thermal oxidation, reaction kinetics 8−39959
  $Ta+F_2$ reaction, modulated molecular beam mass spectrometry 8−15678
  Ta_2N, sputtered layer, thermal oxidation, reaction kinetics 8−39959
  Ti, α→ω transform., pressure-induced, impurity effects and reaction kinetics 8−11220
  Ti, reaction with P, at high temp. 8−44260
  $Xe(^3P_{0,2})+Br_2 \rightarrow Xe^*+Br$, excitation function 8−40028

reaction kinetics models and mechanisms *see reaction kinetics theory*

reaction kinetics theory
  Acree relation, re-evaluation of its conceptual foundations *(French)* 8−7172
  Arrhenius equation, pre-exponential factor temp. depend., thermogravimetric data calcs. 8−15654
  atom+diatom collinear collisions, exponentiating trajectories and statistical behaviour, variational eqns. 8−27742
  azoethane, pyrolysis, master eqn. for rate coeff. 8−48612
  backward differentiation method, extrapolant formulation, appls. to chem. kinetics eqns. 8−48628
  Belusov-Zaikin-Zhabotinsky reaction, chem. wave equation 8−15653
  Belusov-Zhabotinskii reaction, chaotic states obs. 8−20006

reaction kinetics theory continued
  bimolecular endoergic reactions, threshold behaviour, statistical phase space approach 8−48615
  bimolecular reaction kinetics, role of density fluctuations 8−44351
  calorimetric methods 8−27733
  catastrophe theory in chem. reactions, study and classification of propagating phenomena 8−7170
  chemical instability with diffusion, nonlinear rate eqns. 8−31615
  chemical kinetics, first-order model, optimal design of expts. to estimate parameters 8−15650
  chemically reacting quantum gases, kinetic eqns. 8−40024
  chemically reactive flow, kinetics, stiff ordinary differential eqns. numerical soln. 8−48631
  collective quantum states in model chem. systems 8−48634c
  complex chemical systems, chemical process and rate models, computer simulation appls. 8−48620
  complex chemical systems, kinetic mechanisms simulation method 8−48622
  copolymers, cooperative reactions, sequential anal. of 2nd order Markovian chains 8−7204
  copolymers, cooperative reactions, sequential anal. of binary copolymer with protecting monomer 8−7203
  coupled chemical reactions, exact stochastic simulation, using digital computer algorithm 8−48625
  dense fluid chem. kinetics, correlated binary collisions, solvent effects 8−44347
  dense fluid systems, spatial correls. effect on steady state nucleation kinetics 8−11500
  diffusion controlled reactions, kinetics 8−40022
  discrete simulation methods, appl. 8−48627
  education, unimolecular gas reactions, Lindemann theory 8−27753
  electric field effects on thermodynamic equilib., and field chem. consequences 8−7224
  energy disposal specificity on magnitude of thermal rate const. 8−44350
  equations of chemical kinetics, numerical solns., stiffness 8−48624
  equilibrium fluctuations in conc. for reversible reaction *(Russian)* 8−11501
  exothermic triatomic exchange reactions, dynamics, anal. theory 8−3322
  first order reaction in catalyst particle, conc. depend. diffusion coeff., effectiveness factors 8−48693
  first-order rate equations, coupled, closed system, symmetry theory 8−40021
  Fourier sensitivity analysis, improved freq. sets 8−31628
  free radical reaction, mechanisms, mathematical theory 8−48647
  ionic systems, chemical wave equation 8−15653
  kinetic systems, determ. of number of independ. variables by correlation function meas. 8−31614
  large chemical kinetic systems, functional group anal. 8−48626
  liquid phases interface, hydrochemical stability 8−22933
  modelling, numerical method based on Taylor series expansion 8−48629
  multivariate master eqn. diffusion operator, reaction diffusion system eigenfunctions 8−29077
  noise analysis for differentiation between equilib. and nonequilib. kinetic systems 8−44439
  noise power spectrum matrix 8−48617
  nonequilibrium phase transition, exact results, stochastic anal. 8−29076
  nonequilibrium systems, with multiple stationary states, kinetic anal. 8−27735
  nonequilibrium systems, with multiple stationary states, stability, thermodynamic anal. 8−27734
  partial differential equations, time-varying, numerical solns. 8−45463
  phase transition probability, system size depend., consequences for stochastic eqns. 8−41258
  protein-ligand equilibrium binding, mathematical models 8−48688
  pyrolysis, mean first-passage time, steady-state and equilib. rate consts. 8−35673
  quantum gases, kinetic eqns. 8−19997
  quantum mechanical kinetics problems, averaging principle, degenerate states and reson. effects 8−19996
  quantum mechanical kinetics problems, averaging principle appls. 8−19995
  quantum tunnelling of proton and activated complex theory 8−17586
  rate equations, soln. by CAKE program 8−48630
  reaction mechanisms, deduction from rate laws, computer appls. 8−48623
  reaction mechanisms, models, computer method appls., conf., New Orleans, USA (1977) 8−48645
  reactive scattering, trajectory calcs., Monte Carlo sampling method for initial values 8−41147
  reversible isomerisation, rate consts. and kernels 8−40020
  simultaneous reactions, kinetic eqns. optimisation anal., appl. to dissolution problem *(French)* 8−19994
  sphalerite, kinetic study of pressure leaching for Zn prep. 8−44050
  thermodynamic-like relations, mixing entropy for activation barrier 8−19993
  thermodynamics of internal variables, rel. to absolute reaction rate theory 8−18696
  troposphere, urban photochemistry, computer simulation 8−49085
  unimolecular reactions, in one dimension, theory 8−44364
  unimolecular reactions, master eqn. for rate coeff. Nesbet's algorithm 8−48612
  unimolecular reactions, RRKM theory using effective strong collision freq. 8−44365
  urban atmospheric photochemistry, O group anal. and O_3 prod., theory 8−48626
  F+muonium (H)(D)(T), exothermic triatomic exchange reactions, dynamics, anal. theory 8−3322
  $^{18}F+H_2$, nuclear recoil reaction, steady state hot atom kinetic theory calc., rate coeffs. 8−35712
  Fe_2O_3, reduction, double reaction, reaction kinetics exam., expt. verification *(French)* 8−31705
  Fe_3O_4, reduction, double reaction, reaction kinetics exam., expt. verification *(French)* 8−31705
  H atom recombination, Morse oscillator model 8−20001
  NH_3, inversion, transfer reaction theory calcs. 8−44364

reaction rate coefficients *see reaction rate constants*

reaction rate constants
acetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
Acree relation, re-evaluation of its conceptual foundations *(French)* 8−7172
alcohols, electrochem. oxidation, kinetic isotope effect *(German)* 8−15681
allene+$O(^3P)$, absolute rate consts. meas., 297-439K 8−7196
allyl free radical decay, in irrad. polyethylene, const. diffusion controlled rate const. 8−15651
allylmethylether, thermal and IR laser induced unimol. decompositions 8−20012
aromatic hydrocarbons, singlet energies, correlation with anion radical protonation 8−40064
atom+diatom, collinear exchange reaction rates and probabilities, threshold behaviour 8−27738
azoethane, pyrolysis, master eqn. for rate coeff. 8−48612
benzil triplet-anisole, reversible exciplex form., phosphorescence, photostationary and transient obs., simulation 8−9182
bilirubin, aq. soln., pulse radiolysis 8−48761
1,3-butadiene, absolute rate consts. meas., 297-439K 8−7196
n-butane, decomposition in RF discharges, 10-40 torr 8−3318
chemical equilibrium rate coefficient derivation, using scatt. theory 8−15697
chloroform-n-hexane, liq. mixture, radiolysis, mechanism, rate consts. 8−20039
cycloheptatrienes, substituted, photoisomerisation, rate consts. 8−35708
data evaluation and compilation, simulation and models 8−48621
dissociation-recombination, collision induced, exactly soluble model 8−7191
electrode processes possessing charge transfer mechanism, overvoltage theory, in book, for teachers 8−8204
energy disposal specificity on magnitude of thermal rate const. 8−44350
enzyme reaction rate determ. by capacitance meas. 8−31997
enzyme-substrate interaction forces influence on reaction rates 8−31765
ethane, decomposition in RF discharges, 10-40 torr 8−3318
ethanol-d_0,-d_1, solvated electrons reacting with scavengers, inverse isotope effects 8−31751
ethylacetate, thermal and IR laser induced unimol. decompositions 8−20012
ethylene, decomposition in RF discharges, 10-40 torr 8−3318
ethylene+$H \rightarrow C_2H_5^*$, rate const., 198-320K, high press. 8−48618
exponential transition probilities for collision induced dissoc. and vibr.-rot. relax. 8−27749
fire plume, turbulent, reaction rate, air entrainment, radiation 8−35682
first order kinetic data anal., optimisation method 8−12500
first order reaction in catalyst particle, conc. depend. diffusion coeff., effectiveness factors 8−48693
flames, diffusion, reaction rates 8−35637
fluctuation spectroscopy, determ. of chemical reaction rates based on optical density fluctuation 8−27730
fluoromethane+$Br(^2P_{3/2})(^2P_{1/2})$, photobromination 8−11535
formaldehyde+$H_3O^+(H_3S^+)(HCNH^+)(HCHO.H^+)$, proton transfer, rate and equilib. consts. 8−48636
fuel, liq. droplet, combustion, quasi-steady analytical model predictions 8−35681
fuel cell electrocatalytic O_2 reduction mechanism with metal chelate coating 8−23951
gas, dilute, reacting, mass and momentum transport, DIPR model extension 8−35666
hexane, liq., burning rate in small vessel, convection effect 8−35680
ion-molecule reaction rate consts., time resolved meas. in mass spectrometry 8−48614
ion-molecule reactions in interstellar gas clouds, lab. meas. 8−12314
isopropylbromide, thermal and IR laser induced unimol. decompositions 8−20012
lactate dehydrogenase+free radicals, reactions, pulse radiolysis 8−7214
methane, decomposition in RF discharges, 10-40 torr 8−3318
methane+Cl, rate const., discharge flow-reson. fluoresc. meas. 8−7178
methyl isocyanide, intracavity CW dye laser state-selective activation of isomerisation 8−11533
neopentane, steady state in flow pyrolysis, determ. individual rate consts. 8−35650
nitro compounds in cyclohexane, electron attachment reaction rates from pulse radiolysis 8−31663
polymer, accelerated ageing data processing using linear regression analysis 8−39815
prereaction effects on laser-initiated reaction rate meas. by chemilum. obs. 8−44386
radical addition, rate consts. calc. 8−40023
reversible isomerisation, rate consts. and kernels 8−40020
secondar free radicals, primary reacting with substrated, CIDEP relax. time, theory 8−25573
time independent diffusion controlled rate consts. anal., second order solid state reactions 8−15651
transient species, form., quantitative anal. by extrapolation method 8−15685
1,1,1-trifluoroacetone, photochem. and photophysics, 330-250 nm, 0-1000 torr 8−17706
tryptophyl peptides, pulse radiolysis, hydrated electron reaction 8−48679
unimolecular reactions, master eqn. for rate coeff. Nesbet's algorithm 8−48612
vinyl methyl ether+$O(^3P)$, absolute rate consts. meas., 297-439K 8−7196
$Ar^++H_2(O_2)(CO_2)$, reactions in flow-drift tube, rate consts. 8−15664
$Ar^{2+}+O_2(CO_2)(C_2H_2)$, reactions in flow-drift tube, rate consts. 8−15664
$Ar^+(Ar^{2+})+N_2$, reaction rate consts. 8−48613
$Ar^+(Ar^{2+})+O_2$, reaction rate consts. 8−48613
$Bi(6^4S_{3/2})$+acetylene(ethylene), absolute rate consts., time-resolved reson. fluoresc. meas. 8−27731
$Br+OClO$, reaction rate consts., mass spectrometry meas. 8−3316
$BrO+ClO$, reaction rate consts., mass spectrometry meas. 8−3316
CCl+alkynes, absolute reaction rate consts. 8−27728

reaction rate constants continued
CH_3^++small molecules, binary and ternary reactions at thermal energies, rate coeffs., product distribs. 8−44358
$CH_n^++COS(H_2S)$(formamide)(methanol)(methylamine), (n=Q-4), reactions at 300K 8−44357
CO+Ar, shock heated steady state dissoc. rate consts. calc. 8−40039
CO+chemisorbed O_2, on Pt surface, transient kinetics obs. 8−7229
CO+OH(+isobutane), reaction rate consts., press. depend. 8−35654
CO_2-Cs-He discharge, CO_2+Cs reaction rate meas. by IR absorption, press. depend. 8−44367
$CS+O \rightarrow CO+S$, rate const. temp. depend., ESR-mass spectrometer obs. 8−20013
$Ca+NH_4^+(CH_3NH_3^+)(PH_4^+)$, proton transfer reaction cross sections, 1-6 eV 8−20003
$Cl+C_2H_2$, reaction kinetics, stratospheric implication 8−31618
$Cl+H_2$, absolute reaction rate consts., 200-500K 8−15655
$Cl+H_2O_2$, absolute rate const., 265-400K 8−15652
$Cl+NH_3$, reaction rate consts., flash photolysis-reson. fluoresc. obs. 8−3327
$Cl_2+2Br^- \rightarrow Br_2+2Cl^-$, aqueous soln., specific rate determ., competition technique 8−44348
$ClNO+Cl_2O \rightarrow ClONO+Cl$, reaction kinetics, IR spectra 8−35641
Cr corrosion, high-temp., in Cl_2 and Cl_2-O_2 mixtures 8−15601
Cr_2O_3 corrosion, high-temp., in Cl_2 and Cl_2-O_2 mixtures 8−15601
$F+H_2$, reactive collision, semiclassical dynamics on multiple electronic surfaces, 3-dimens. calcs. 8−27746
$F+H_2(Cl_2)(HCl)$(methane), delay and decay times of stimulated emission 8−3317
$F+O_2+M \rightarrow FO_2+M$, flash photolysis IR chemiluminesc., rate const. 8−3311
$F_2+X \rightarrow XF+F$ (X=Mu,H,D,T), isotope effects, quantum mech. and information theoretic calcs. 8−44360
$^{18}F+H_2$, nuclear recoil reaction, steady state hot atom kinetic theory calc., rate coeffs. 8−35712
H+bromotrifluoromethane, reaction rate consts., flash photolysis-reson. fluoresc. obs. 8−3327
H+Cl_2(organic molecule), rate const., discharge flow-reson. fluoresc. meas. 8−7178
H+ethane, chemical reaction, 357-544K 8−7198
H+ethylene episulfide→HS+ethylene, absolute rate parameters, flash photolysis reson. fluoresc. 8−3312
$H+ICl \rightarrow HCl+I$, IR chemiluminesc., product energy distrib. 8−23926
$H+NO+H_2 \rightarrow HNO+H_2$, rate of reaction, temp. depend., third body efficiencies 8−23933
$H+OCS \rightarrow HS+CO$, absolute rate parameters, flash photolysis reson. fluoresc. 8−3312
H_2+O_2+CO, 500°C, rate consts. involving OH and HO_2 radicals 8−35646
$HBr+Cl \rightarrow HCl+I$, rate const. temp. depend., laser-initiated reaction 8−23929
$HCN+H_3O^+(H_3S^+)(HCNH^+)(HCHO.H^+)$, proton transfer, rate and equilib. consts. 8−48636
HCN(DCN), photodissoc. dynamics, rot. (vibr.) energy disposal 8−48672
$HCO+NO(O_2)$, reaction rate consts. 8−31617
HCl+Ar, shock heated steady state dissoc. rate consts. calc. 8−40039
HCl+O(OH), reaction rate const. temp. depend., stratospheric implications 8−31616
$HCl(\nu=1,2)+O(^3P_g)$, reaction and deactivation, laser-induced fluoresc. obs. 8−35669
HF+Ar, shock heated steady state dissoc. rate consts. calc. 8−40039
$HI+Cl \rightarrow HCl+I$, rate const. temp. depend., laser-initiated reaction 8−23929
HNO_2+O_3 reaction kinetics under stratospheric conditions 8−11499
HO_2+NO_2, reaction rate consts. by laser mag. reson. 8−27748
$H_2O+H_3O^+H(H_3S^+)(HCNH^+)(HCNO.H^+)$, proton transfer, rate and equilib. consts. 8−48636
HO_2NO, unimol. dissoc., rate consts., temp. depend., atmospheric implications 8−7175
$H_3O^+.H_2O$, cluster ion form. mech., rate coeffs. 8−25764
$HPO_4^-(H_2PO_4)$ radicals + organic compounds, reaction rate consts. 8−15669
$H_2S+H_3O^+(H_2S^+)(HCNH^+)(HCHO.H^+)$, proton transfer, rate and equilib. consts. 8−48636
He+water (cyanomethane), afterglow, excitation and quenching reactions, optical pumping 8−35690
$HeH^++H_2 \rightarrow H_3^++He$, reaction rate. coeff. 8−18371
$He_2(2^3\Sigma_u^+)+He_2(Ne)$, reaction rate consts. meas. in afterglow 8−7173
I $(5^2P_{1/2})$+HBr, reactive and inelastic channels rate, temp. depend., AAS obs. 8−35657
$Kr+ArF^* \rightarrow KrF^*+Ar$, in gas cell pumped by 150 keV electrons 8−33730
KrF, laser, e-beam pumped Kr-F_2 mixtures, form. and quenching processes 8−42322
$Kr^+.+H_2(D_2)(HD)$ reactions, temp. depend., isotope effect 8−31630
Mn_xN_y, prep., rate of formation, chem. stability 8−11185
$Mu+F_2 \rightarrow MuF+F$, 300 to 400K in N_2 moderator, reaction rate determ., tunnelling 8−48682
N+organic molecule, rate const., discharge flow-reson. fluoresc. meas. 8−7178
N_2, nonequilibrium dissociation rates in electrical discharges, temp. depend. 8−33447
NF_3, dissoc. electron attachment, rate consts. meas. 8−3326
$NH_2^++H_2O$, bimolecular reactions, product. distrib., rate consts. 8−11513
$NH_3+OH^+(H_2O^+)(H_3O^+)$, bimolecular reactions, product. distrib., rate consts. 8−11513
$NH_3^++H_2O$, bimolecular reactions, product. distrib., rate consts. 8−11513
NH_4^+, mutual neutralisation, with simple and clustered positive (negative) ions 8−44372
$NO+O_3(001)$, laser-enhanced reaction, rates, temp. depend. 8−48675
$NO^++e^- \rightarrow N+O$, recombination rate const. determ. in flames 8−48632
$NO^++X^- \rightarrow NO+X$ (X=Cl, Br, I), rate const. determ. in flames 8−48633
$NO_2^*+CO \rightarrow NO+CO_2$, laser stimulated reaction, rate const. 8−40044
NaCl+Ar, dissoc.-ionis. process rates in shock tube 8−35674
Ni (110), oxidation, initial stage kinetics, RHEED and X-ray emission 8−15588

reaction rate constants continued
- $NiO+Cr_2O_3 \rightarrow NiCr_2O_4$, kinetic parameters calcs. using anal. soln. of Fick's second law 8−34644
- O+acetaldehyde(propylene), rate const., discharge flow-reson. fluoresc. meas. 8−7178
- O+ethylene, OH chemiluminesc., mechanism, rate const., mathematical model calcs. 8−48655
- $O+N_2O_5$, rate const., 220K, 300K, discharge-flow method 8−44352
- O+nitroethane (nitromethane), H atom abstraction in discharge flow system 8−35671
- $O^-+N_2 \rightarrow N_2O+e$, rate studies 8−40036
- O_2+hydrated electron, rate const., Arrhenius parameters 8−20041
- $O_3+O^-(OH^-)(S^-)(SH^-)$, associative detachment, rate coeffs. 8−3325
- $O_3^-+CO_2 \rightleftharpoons CO_3^-+O_2$, rate const., 200-600K in flowing afterglow 8−7193
- O_3^-+molecule reactions, thermochemistry, electron affinity and rate consts. 8−40040
- $O(^1D)+H_2(HCl)(NH_3)(N_2O)$(methane), rate consts., temp. depend. 8−27747
- $O_2(^1\Delta_g)+O_2$, deactivation rate const. meas. 8−5262
- OH radical, reactions with ester vapours, reaction rate consts. determ. at 292K 8−27729
- OH+acetylene (CO), reaction rate consts. meas. 8−35663
- OH+allene (1,3-butadiene)(3-methyl-1-butene), absolute rate consts. 8−23927
- $OH+COS(CS_2)$(dimethyl thioether), reaction rate consts., 299-430K 8−35653
- OH+dimethylamine, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
- OH+ethylamine, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
- OH+n-propyl acetate (sec-butyl acetate) (tetrahydrofuran) (peroxyacetyl nitrate), raction rate consts., in irrad. NO_x mixture 8−7171
- $OH+OH \rightarrow H_2O+O$, rate meas. by UV absorpt., 1200 to 1800K 8−35642
- OH+trimethylamine, rate const., 298-426K, Arrhenius expressions and activation energy 8−48619
- OH^-+methoxybenzene (o-cresol), gas phase reaction, 299-435 K, kinetics and mechanism 8−11515
- $O(^3P)$+amines, rate consts. temp. depend., 298-440K 8−48616
- $O(^3P)$+vinyl halides, reaction rate consts. 298-442K flash photolysis obs. 8−7195
- PO_4^{2-} anion radicals + organic compounds, reaction rate consts. 8−15669
- SF_6, unimolecular reaction model 8−7189
- $SO_2+CO(C_2H_2)$, photochem. reactions, rate consts. 8−23956
- SO_2+OH, role for stratospheric HSO_3 layer 8−32202
- $Sb(5^4S_{3/2})+NO(O_2)$, rate consts., time-resolved reson. fluoresc. meas. 8−27732
- Si oxidation rate constants and role of H_2O 8−7072
- SiO_2+H_2 reactions, rate controlling processes for H_2 transport in vitreous silica 8−26733
- Zn (0001), oxide film growth, at. and electronic struct. 8−15587

reactions (chemical) *see chemical reactions*

reactions (nuclear) *see nuclear reactions and scattering*

reactive sputtering
- mass spectometric analysis of RF reactive sputtering reaction mechanism *(Japanese)* 8−19665
- phosphorus silicate glass, etching characts. by plasma reactive sputter etching 8−27661
- square wave grating with μm dimensions, reactive sputter etching 8−33921
- CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
- GaN, GaAs MIS struct. fabrication and props. 8−39686
- In, reactive sputtering in DC triode config. 8−23618
- InP cylindrical magnetron reactive sputtering, for solar cell appl. 8−39693
- Pb film, reactive ion beam sputtering 8−19666
- SiN_x, film by magnetron sputtering, composition, hardness and optical props. 8−3047
- Si_3N_4, etching characts. by plasma reactive sputter etching 8−27661
- SiO_2, etching characts. by plasma reactive sputter etching 8−27661
- SiO_2, fabrication of surface relief struct. with linewidth below 2000 Å 8−42478
- Ti, film, reactive ion beam sputtering 8−19666
- TiO_2, etching characts. by plasma reactive sputter etching 8−27661
- VO_2:Al(W), thin layer prep. by reactive DC sputtering doping effectiveness *(German)* 8−6847
- V_2O_5, etching characts. by plasma reactive sputter etching 8−27661
- $Zn_{1-x}Cd_xS$ films, polycryst., reactively sputtered, MSM struct. obs. of dielec. props. and cond. mechanism *(French)* 8−14841
- Zr film, reactive ion beam sputtering 8−19666

reactively sputtered coatings
- DC reactive sputtering system for coating tubes 8−35307
- AlN, protection on GaAs, $Ga_{1-x}Al_xAs$ and $GaAs_{1-x}P_x$ *(French)* 8−23849
- CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
- $Cd_{1-x}Zn_xS$ reactively sputtered phtoconductive films for high field applications *(German)* 8−39154
- PtO, existence 8−18923
- SiN_x, film by magnetron sputtering, composition, hardness and optical props. 8−3047
- $Zn_xCd_{1-x}S$ solid soln. films, reactive cosputtering, struct., comp. and opt. absorpt. edge *(French)* 8−6237

reactors (electric)
- *see also capacitors; inductors*
- electron beam heated solenoid reactors for fusion power and fissile fuel breeding 8−8992

reactors (nuclear) *see fission reactors*

Read diodes *see IMPATT diodes*

readout, digital *see digital readout*

real time computer systems *see real-time systems*

real-time systems
- *see also online operation*
- air pollution data, real-time meas. transformation and statistical processing 8−24365
- design appl. of formal logic 8−33247

real-time systems continued
- kinoform synthesis using chalcogenide glass films *(Russian)* 8−13669
- LF real-time spectral analyser design and operation *(French)* 8−20538
- magnetic torque curve analysis, online microprocessor system 8−254
- multispectral feature classification by analogue CCD 8−24438
- online real-time data acquisition system design 8−35994
- plethysmography, whole-body, automated real-time anal. system 8−28112
- river management operational system development using weather radar 8−40718

reboilers *see boilers*

receivers
- *see also acoustic receivers; radio receivers; transceivers; transponders*
- optical communication, phase compensation type 8−1329
- optical fibre communication for military appls., review and assessment 8−42438
- radioastronomical, 408 MHz band, design details HF transistor amp., ring modulator LO, 30 MHz IF amp. *(Italian)* 8−45234

receiving antennas
- *see also reception*
- diffraction by semi-infinite parallel-plane waveguide in anisotropic plasma 8−1845
- optical, angle-distance sensitivity variation anal. 8−33841
- optical antennas focused at finite distances, angle-distance pattern 8−33842

reception
- *see also diversity reception*
- RF frequency standard transmission, phase instability due to effect of ionosphere 8−41279

reception quality *see reception*

recombination, electron-hole *see electron-hole recombination*

recombination, ion *see ion recombination*

reconnaissance satellites *see artificial satellites*

record players *see gramophones*

recorders
- *see also recording; tape recorders*
- automatic crack growth recording using PSR-1-19 potentiometer 8−39971
- automatic deformation recording instrument 8−7122
- biological impedance automatic recording system 8−44625
- Biomation 8100 recorder interfaced to remote computer, data acquisition in photolysis expts. 8−21107
- chart recorder, pen-holder design 8−16611
- chart recorders, for school use 8−12503
- digital automatic blood pressure recorder *(Japanese)* 8−24168
- digital colour recording system for digital-analogue hybrid image processing 8−16880
- electronic high-resolution rainfall intensity recorder and totaliser 8−7793
- eye movement recording system for clinical appl. 8−3623
- optometer recorder of human eye microfluctuations, IR *(French)* 8−7463
- peak amplitude, ionospheric absorption of radio waves appl. 8−3979
- piston core behaviour recording device 8−20532
- point recording device realisable operations *(Polish)* 8−29099
- polygraph for simultaneous recording of diagnostic parameters 8−36011
- potentiometer type, Servogor, features, appls. *(German)* 8−12681
- pulse continuous RF signal amplitude and phase difference measuring device 8−12719
- pulse rate recorder providing printed record 8−3644
- temperature monitor using thermistor sensor 8−209
- tensile test diagram remote recording device 8−7139
- torsion pendulum oscillations recording equipment for internal friction meas. 8−36998
- toxic gas microconcentration determ. by automatic belt photometer *(Russian)* 8−28347
- transient recorders, multichannel *(German)* 8−235
- X-Y recorder use in LF function generator/controller 8−21108

recording
- *see also audio recording; magnetic recording; video recording*
- dichromated PVA specific wavelength sensitisation for laser beam recording 8−5531
- ECG recording system simplification *(Russian)* 8−40379
- ECG skin artifact reduction by skin puncture method 8−44672
- electrochemistry, recording coulometer for controlled atmosphere reactions of metals in molten salts 8−3344
- holographic recording, using photopolymer material, redox sensitized 8−13674
- horizontal pendulum tiltmeters, recording device 8−40679
- laser beam threshold recording energy density meas. method 8−5520
- luminous pointlike object, three-dimensional trajectory recording 8−12671
- oceanic temperature-depth profiles, recording via solid-state memories 8−24383
- oil and gas well profiles, appl. of combined well-logging techniques *(Russian)* 8−40705
- parallel recording system for magnetostrictive spark chambers 8−867
- pattern recognition by one-dimensional projection recording and processing *(Russian)* 8−42291
- respiratory data, using XY recorder with data storage 8−7474
- sleep EEG ambulatory monitoring and anal. 8−44650
- theodolite microprocessor selection, development, and programming 8−24218
- well mud logging, online data processing *(Russian)* 8−40706

recording instruments *see recorders*

recovering *see recovery*

recovery
- *see also recovery-creep*
- FCC metals, high dose neutron irrad. effects, 4.6K 8−34548
- interstitials, mobility and interactions 8−47328
- polyethylene, linear, strain rate effects on ratio of recoverable to nonrecoverable strain 8−27566
- polyethylene, linear role of recovery forces in deformation 8−48459
- steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
- steel, quenched, martensite, tensile and compressive deform. resist. *(Russian)* 8−19819

recovery continued
steel 40 KhSN2MVF, chemical micro-inhomogeneity recovery during thermal working *(Russian)* 8−15442
work hardening-recovery type constitutive eqns., numerical integration, improved method 8−6949
Ag, cascade energy density effect on isochronal recovery 8−47431
Ag, production and annealing of radiation defects 8−47362
Ag, proton irrad., radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
Ag-Zn(Cd), production and annealing of radiation defects 8−47362
Al alloy, 2024, shock-loaded, recovery of Young's modulus 8−23751
Al, interstitial trapping configuration study by ion channelling 8−47455
As_2Se_3, film, amorphous, fatigue and recovery of electrophotographic props. 8−21253
Au, proton irrad., radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
Cd, recovery after 6.1 MeV α-particle irradiation at 4.2K 8−47441
Cu, cascade energy density effect on isochronal recovery 8−47431
Cu, electron irrad., positron lifetime exam. of annealing recovery 8−47354
Cu, electron irradiated, additional recovery around 200K 8−38755
Cu foi.foil, interstitial impurity interaction investigation by stage II isochronal recovery expts. 8−47423
Cu, interstitial trapping configuration study by ion channelling 8−47455
Cu, polycryst., low temp., plastic deform., structural defects, elec. resist. meas. *(Russian)* 8−39844
Cu, proton irrad., radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
Fe, high-purity, H_2 charged, resist. recovery at low temps. 8−26729
Fe vacancy form. by positron annihilation in thermal equilibrium 8−10041
$KCl:Pb^{2+}$, γ-irrad., rel. to props. 8−31262
Lu, low-temp. electron-irradiated, recovery 8−6102
Mo-Zr-B-C, dil. alloy, struct. changes under prolonged high temp. annealing *(Russian)* 8−6944
NbC_x, reactor irrad. effects on elec. resist. and supercond. props. *(Russian)* 8−47895
Ni, H diffusion in H_2 quenched sample, elec. resist. recovery 8−2299
Ni, shock loaded, work softening 8−27537
Ni, thermal softening, influence of alternating mag. field *(Russian)* 8−23312
Pb, strain hardening and recovery during primary creep 8−39799
Pt, point defect properties, damage curve anal. 8−47359
Pt(Au), ion irradiated alloys, stage II recovery 8−47440
steel, 36NKhTYu, aged, rate of discontinuous precipitation of γ'-phase, short high-temp. treatments *(Russian)* 8−11226
Ta-T(D), diffusion and resistivity at low temps. 8−14511
Ti, industrial grade structural changes during polygonization *(Russian)* 8−19779
Ti-Ni-Cu (44.5, 10 wt%), opposing stress effect on shape memory and martensitic reversion 8−44185
UO_2, irradiation induced lattice defects 8−33251
W, neutron irrad., at thermal energies, annealing exam. of recovery 8−47355
W, structural defect recovery after irradiation and cold work 8−47429
W, vacancy-defect clustering, due to annealing and quenching, TEM and elec. cond. exam. 8−47344
Zn, defect recovery after low temp. electron irrad. 8−10090
Zn, recovery after 6.1 MeV α-particle irradiation at 4.2K 8−47441
Zn, thermal recovery and stress-strain relations 8−11266

recovery-creep
ice, dislocation creep, creep deform. predictions 8−19815
metal creep, deform. struct. modeling, compatibility conditions *(Russian)* 8−13924
non-metallic materials dislocation creep, creep deform. predictions 8−19815
Al_2O_3, dislocation creep, creep deform. predictions 8−19815
LiF, dislocation creep, creep deform. predictions 8−19815
MgO, dislocation creep, creep deform. deformations 8−19815
UO_2, dislocation creep, creep deform. predictions 8−19815

recrystallisation
microstructural processes and features only
see also recrystallisation annealing; recrystallisation texture
austenitic steel, 45G17Yu3, structure and loss of strength after hot deform. by rolling *(Russian)* 8−39794
austenitic steel, mechanical properties, effect of high temp. thermomechanical treatment and post-deform. ageing *(Russian)* 8−39809
disperse particles concentration and spacings between them in Poisson point field model 8−39963
foil, recrystn. during heating in column of electron microscope *(Russian)* 8−48421
grain size and orientation, appl. of X-ray synchrotron topography to recrystallisation studies 8−35610
heat-resisting alloys, VM-1 and VX-4, thermal fatigue rel. to struct. changes *(Russian)* 8−11302
induced, in thin metal plates *(German)* 8−19783
kinetics, system of eqns. 8−22650
polycrystalline film, singularities of recrystallisation *(Russian)* 8−2382
steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
steel, austenitic stainless, ferritic, prep. with fine grains by cold rolling and recrystallisation, superplasticity *(French)* 8−35406
steel, Cr, phase transform., effect of high temp. plastic deform. *(Slovak)* 8−19837
steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
steel, low C, quenched, struct. and props. after plastic deform. and tempering 8−23734
steel, martensitic, Cr-Ni, grain refining and phase transforms. effect on plasticity *(Russian)* 8−39837
steel, ShKh15, carbide particle size and pearlite grain size changes *(Russian)* 8−6946
steel, stainless, hot rolled texture, effect on cold rolled and annealed textures *(Japanese)* 8−48425
steel austenitic Cr-Ni-Be, cellular precipitation *(Japanese)* 8−11229
steels, C, cold worked and recrystallised, attenuation behaviour *(German)* 8−48445

recrystallisation continued
vacancy adsorption on internal boundaries, rel. to recrystalln. and precip. 8−10084
Ag-Sn, dil., high perfection single cryst. growth, strain-anneal technique 8−44010
Al, annealing of lightly deformed samples, effect of press. *(Russian)* 8−39795
Al, deformed, nucleation and recrystallisation at second phase particles 8−6941
Al-Li, dil. alloy, cold-worked, annealing spectrum 8−39801
Al-Mg-Si rod, extruded and cold drawn, annealing *(German)* 8−39804
Al-Mn (1.8 wt.%), cold-rolled, precipitation and recrystallisation 8−27540
Be, phase struct. *(Russian)* 8−15401
C fibre, Ni coated, high-temp. compatibility 8−19829
CdS, effect of halide (NaCl, $CdCl_2$, $CdBr_2$, CdI_2) and polysulphide (Na_2S_x, K_2S_x) on recrystn. 8−11171
CdS-based phosphor, microstruct. and luminesc. efficiency 8−10959
CdSe, effect of halide (NaCl, $CdCl_2$, $CdBr_2$, CdI_2) and polysulphide (Na_2S_x, K_2S_x) on recrystn. 8−11171
Co, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Cu, annealing of lightly deformed samples, effect of press. *(Russian)* 8−39795
Cu, fragmentation and dynamic recrystallisation after heavy and very heavy deform. *(Russian)* 8−39793
Cu, high purity, recrystallisation kinetics *(Russian)* 8−11238
Cu-Al-Fe, strength increase from intermediate annealing determ. of annealing temp. by recrystallisation 8−44136
Fe, (100) [001], texture development by recrystallisation and normal grain growth 8−27539
Fe, compressed, recrystallisation, transmission Kossel study of struct. 8−19776
Fe, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Fe-Ni, austenite formed from martensite during annealing in (α+γ) region, crystallographic study 8−19782
Fe-Si (3 wt.%), recrystallisation along grain boundaries *(Russian)* 8−6942
Fe-Si (3wt.%), quantitative determ. of grain orientation and textile by etch figure method *(Chinese)* 8−11233
Fe-Si as grown crystal, dislocation study by etching and X-ray topography 8−47377
Fe-Si-MnS-Al, Al effect on hot rolling struct., recrystallization, texture magnetic props. *(Chinese)* 8−11237
Fe-W(Ni), recrystallisation under laser irradiation *(Russian)* 8−35396
GaAs:Te, laser annealing of implanted Te 8−35400
Ge film recrystallised by unidirectional solidification, GaAs film deposition 8−19671
Ge-Si-Sb solid soln., struct. peculiarities and mech. props. under weightlessness *(Russian)* 8−23693
Mo container for leucosapphire synthesis, recrystallisation 8−2151
Mo, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Mo, secondary recrystallisation grain structure, effect of conditions of annealing *(Russian)* 8−6945
Mo-Zr-B-C, dil. alloy, struct. changes under prolonged high temp. annealing *(Russian)* 8−6944
$Na_2O-SiO_2-H_2O-FeO$ system, 'heavy phase', recrystallisation and struct. 8−2089
Nb-Zr-N, deformed and annealed, internal friction, rel. to structural state *(Russian)* 8−6957
NbC, recrystallisation 8−11251
Ni, cold swaged, unidirectional recrystallisation over range of temp. gradients *(Japanese)* 8−48424
Ni, recrystallisation kinetics, deform. degree effects *(Russian)* 8−6943
Ni, thermal softening, influence of alternating mag. field *(Russian)* 8−23312
Ni-A-Ti (6,1 wt.%), γ' phase precip., deform. effects *(Russian)* 8−48404
$Ni-ThO_2(HfO_2)$ dispersion hardened alloys, recrystallisation during annealing, O_2 partical press. effects *(Russian)* 8−3140
Ni-W-Co-Cr, superalloy MAR 200, with Hf, cellular composite prod. by isothermal dendrite ripening 8−44150
Si:Sb, epitaxial regrowth of amorphous layers created by high-dose Sb implantation 8−30654
Ti, recrystallised, dislocation obs. and characterisation by X-ray topography *(French)* 8−22722
W heater for leucosapphire synthesis, recrystallisation 8−2151
ZnS-based phosphor, microstruct. and luminesc. efficiency 8−10959
ZnSe-Ge(GaAs)(mica) epitaxial heterostructs., growth struct. 8−43257
Zr-Nb microduplex alloys, struct. and props. 8−3170
ZrC, recrystallisation 8−11251

recrystallisation annealing
steel, low-C, Al-stabilised, texturing during annealing *(Russian)* 8−19777
CdS, evaporated film, effects of heat treatment on photosensitivity *(Japanese)* 8−39237
Cu *(Russian)* 8−15430
Cu, anisothermal annealing, effect on props. of MOOB bands 8−23719
Cu, annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
Fe-Si (3 wt.%), cold rolled, effect of primary recrystallisation texture, on behaviour of secondary recrystallisation 8−39802
Nb base alloy, high temp. creep estimation and long term strength charact. 8−3195
Ni, annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
Si:As,Sb, amorphous, damage depend. of epitaxial regrowth during annealing 8−47679
$Si:As^+$, annealing by scanning Ar ion laser, dislocation loop density comparison 8−47438
Si:B, lattice location of implanted ions after laser annealing 8−30660
Si:Pb, He^+ Rutherford backscatt. and TEM exam., implant species effect on recrystn. 8−47452
SiO_2 layers, crystallisation, structural props. rel. to annealing 8−34724
Ti-Al-V, (6.7, 4.3 wt.%), fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510
Ti-Al-V-Sn (5.5, 5.3, 2.3 wt.%) fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510

recrystallisation texture
steel, low-C, Al-stabilised, texturing during annealing *(Russian)* 8−19777
Al alloy, AK4-1, hot-worked, struct. states and recrystn. *(Russian)* 8−19778
Cu -Sn (0.05 at.%), grain boundary relax., misalignment angle effect *(Russian)* 8−3159
Fe-Ni, crystallization texture, rolling, effect of impurities 8−15425
Fe-Ni (50 wt.%), secondary recrystallization 8−23723
Fe-Si (3 wt.%), cold rolled, effect of primary recrystallisation texture, on behaviour of secondary recrystallisation 8−39802
Mo filament, coated with thin Ni film, creep and recrystn. *(Russian)* 8−19822
Si, compressed, polycrystalline, deform. and recrystallisation texture 8−27538
Ti thin sheet, texture and mechanism of primary recrystallisation 8−23721
W, doped wire, textural aspects of recrystallization 8−11239
W filament, coated with thin Ni film, creep and recrystn. *(Russian)* 8−19822

rectangular waveguides
No entries

rectification
metal whisker diode, thermal field emission, nonlinearity, response time and polarity reversal 8−2579
metallic point contact diodes, tunnelling props., geometrical asymmetry effects 8−10576
n-Si-Ni surface barrier junction, rectifying, struct. and elec. characts., effect of low temp. annealing 8−14821

rectifier tubes
No entries

rectifier valves *see rectifier tubes*

rectifying circuits
see also rectification
stabilised rectifier unit 8−4643
transformer rectifier flux pump power supply using inductive current transfer 8−12704
transformer-rectifier flux pump power supplies performance anal. 8−12703

recursive functions
linear recursion relns., discrete path approach 8−24678
phonocardiogram classification, linear prediction analysis appl. *(Japanese)* 8−36010

red giants *see stars*

red shift
see also cosmology; Doppler effect; gravitational red shift
Abell 2255, X-ray luminosity/vel. dispersion correl. for one and two cluster models 8−49553
Abell 2319, X-ray luminosity/vel. dispersion correl. for one and two cluster models 8−49553
Abell 478, X-ray cluster of galaxies, redshift and optical struct. 8−8134
AO 0235+164, Lacertid, optical and radio absorption line systems 8−16520
AO 0235+164, nature of nebulosity assoc. with BL Lacertae object 8−28778
AWM 4, redshifts for five galaxies in poor cluster 8−45415
binary galaxies, radial vel. separation rel. to dynamics 8−4354
3C 232, quasar, redshifts of quasar lines and NGC 3067 CaII absorpt. lines 8−36719
3C 286 radio absorpt. line, red shift rel. to cosmological deceleration meas. 8−20902
3C 33, red shifts and rot. axis of assoc. optical galaxy 8−4355
3C 343.1, distant radio galaxy, spectroscopy and photometry, redshift 8−8123
4C 39.11, N galaxy, radio and optical obs. and red shift 8−16553
CA 0340−538 (3U 0328−523), southern cluster of galaxies, redshift, vel. dispersion and global parameters 8−36705
catalogue of galaxy redshifts rel. to local mean mass density and galaxy clustering 8−45436
clusters of galaxies, ang. size-red shift relation as test for deceleration parameter 8−12437
clusters of galaxies, ang. size-redshift relation for nearby clusters 8−4372
Coma cluster, two-dimens. struct., Zel'dovich disc model 8−41062
Cygnus A, red shift and rot. axis of assoc. optical galaxy 8−4355
DA 240, radio galaxy, jet, high-vel. gas obs. 8−28773
distant cluster of galaxies, photometry and red shift 8−12377
distant objects, magnitude-redshift and ang. dia.-redshift relations for matter and radiation filled universes 8−20917
dwarf galaxies, H I redshifts rel. to absolute solar motion and discrete redshift 8−49530
emission line objects from Curtis Schmidt thin prism survey, redshifts 8−28537
emission-line objects in Curtis Schmidt thin prism survey, redshifts 8−28538
ESO 113-IG45, galaxy and/or quasar, red shift 8−28782
faint quasars, spectroscopy and props. of CTIO 4 metre survey 8−32592
Friedman universe, parallax depend. on redshift 8−12438
galaxies, Doppler shift meas. technique without spectrograph 8−20646
galaxies, Simkin effect and Hg I 4047 Å night sky contamination 8−41032
galaxy group in Cetus with redshift discrepancy 8−36708
Hubble diagram curvature, from redshifts and photometry of distant galaxy clusters 8−49515
Klemola 44, X-ray cluster of galaxies, redshifts and vels. 8−45414
local cluster, satellite galaxies and globular clusters, radial vels. and galactic mass 8−49522
Local Group galaxies, 21 cm red shifts and solar motion rel. to centroid 8−12376
M87, red shifts and dynamical evidence for central mass concentration 8−49529
Markarian galaxies, Hubble modulus 8−49538
massive black hole accretion disc, red and blue shifts rel. to X-ray spectrum 8−40985
neutron stars, redshift determ. of X- and γ-ray lines rel. to strong principle of equivalence 8−40814

red shift continued
NGC 3379, elliptical galaxy, red shifts, rot. and vel. dispersions 8−49529
NGC 4235, Seyfert galaxy, spectrum and radial. vel. 8−49536
NGC 4248, radial vel. from H I obs. 8−4358
NRAO 5 GHz and 4C catalogues, optical spectra and redshifts 8−8145
optical quasars, radio and optical obs., redshifts, luminosity function 8−49552
peculiar extragalactic sources, red shifts from mutliaperture UBV photometry 8−28772
PHL 1070, quasar spectrum and redshift of surrounding halo 8−28771
PKS 0237−23, absorpt. spectrum obs., absorpt. lines origin 8−41074
PKS 0528−250, neutral stellar object with no emission and rich absorption 8−49551
Q2227.6−3928, highest redshift quasar from Tololo deep survey 8−12403
Q2228.1−4033, high redshift quasar from Tololo deep survey 8−12403
Q 0002−422, QSO with $z_{abs} \ll z_{em}$ 8−16565
QSO redshift data, statistical 8−32598
QSOs, absorption systems in high redshift objects 8−28843
QSOs, profiles and redshifts of broad lines 8−16566
quasar red shifts, anal. for randomness 8−12400
quasar redshift data, cosmological interpretation using V/V_{max} test 8−28844
quasar-galaxy associations, search using Jodrell Bank 966 Hz survey 8−24566
quasars, absorption line spectra, accidental redshift system estimation 8−16562
quasars, angular diameter−redshift test for large redshift objects 8−28841
quasars, emission line redshift distrib. gaps, trend analysis 8−45423
quasars, high-redshift, from CTIO survey 8−4389
quasars, ln(1+z) periodicity 8−12406
quasars, nonuniform radial distrib. regardless of redshift 8−32593
quasars, optical and radio Hubble diagrams 8−28845
quasars, red-shift hypothesis implies Earth-centred universe 8−16563
quasars, redshift and 3 GHz radio magnitude correl. 8−45422
quasars near peculiar pair of galaxies NGC 7714−7715, spectra and redshifts 8−28835
quasi-stellar objects, red shifts correl. with element abundance ratios 8−20903
quasi-stellar radio sources with large redshifts, angular dia.-redshift test 8−24565
quasistellar objects possible assoc. with radio galaxies and rich clusters of galaxies 8−8142
radio galaxies in Coma cluster, red shift distrib. 8−12358
radio sources, cosmological evolution rel. to predicted redshifts 8−41070
radiogalaxies, redshift-magnitude relation and cosmological test 8−28798
radiosource populations and redshift interpretation in evolutionary use 8−28832
radiosources, angular diameter-redshift relation for scintillating sources 8−28824
radiosources, cosmological information interpretation 8−28831
RMB 56 (1216+141), compact galaxy, blue shift 8−16527
Sc-type galaxies of Rubin et al. sample, Milky Way galactic absorpt. study 8−49533
Seyfert galaxies, profiles and redshifts of broad lines 8−16566
southern Parkes radiosources, redshift obs. 8−20899
southern peculiar galaxies and galaxy pairs, morphologies, spectra and redshifts 8−32579
spacetime, extended conformal, interactions and dynamical groups of elementary particles 8−8290
Universe and general field clumpy structure 8−45443
white holes, blueshifted light rays emission rel. to ang. appearance 8−45352
I Zw 1727+5015, redshift and spectra of BL Lacertae-type object 8−41044
H I profiles classification system for dwarf galaxies, discrete redshift and asymm. 8−49517

reduction (chemical)
see also oxidation
air-acetylene flame, atom form., theory 8−7208
alumina reduction cells, electrolytic, instabilities of metal surface, computer simulation 8−39720
bilirubin, aq. soln., pulse radiolysis 8−48761
cytochrome c oxidase, oxidised and reduced, X-ray absorpt., edges, using synchrotron radiation 8−48758
ferrous alloy melting, chromatogravimetric equipment for redox studies 8−40097
fuel cell electrocatalytic O_2 reduction mechanism with metal chelate coating 8−23951
geikielite, solid soln., phase transform. during reduction *(Russian)* 8−44042
graphite, intercalation compound with $AuCl_3$, reduction by H_2 *(French)* 8−27820
graphite-metal chloride intercalation compound, reduction 8−27821
haematite, reduction to magnetite, HVEM 8−6892
ilmenite, solid soln., phase transform. during reduction *(Russian)* 8−44042
l 8−39711
metal oxide, by H_2-CO mixture 8−44404
metal oxides, chemical dissoc. under pressure as alternative to metallisation, feasibility study *(Russian)* 8−48553
peroxidase, low-temperature radioreduction, MCD and absorpt. spectra 8−31763
photographic emulsion, redox potential evolution during development, potentiometric anal. 8−16865
picrate anion active transport through organic liq. membrane 8−11556
plasma reduction technology, low temp., present state and future prospects *(Russian)* 8−18462
porous solid, reaction with mixed gases 8−44404
SL/RN direct reduction process, mathematical model 8−6876
steel, oxidation-reduction processes on surface during heating in vacuum *(Russian)* 8−11403
steel 35KhN2VL, deoxidation effect on fatigue and endurance limit in wear tests varying P and S content *(Russian)* 8−35523

reduction (chemical) continued
- succinamic acid, X-irrad., primitive radn. damage, ESR, ENDOR 8−3352
- zinc etioporphyrin I anion radical, photoreduction obs. *(Russian)* 8−23958
- β-$Al_2O_3Na_2O$, H-exchanged, effect of moisture, on H_2 activity changes and thermal stability 8−47580
- B compounds, prep. of amorphous B, review, book contrib. 8−48358
- BCl_3, endothermic reduction in H_2 thermal plasma and nonequil. H_2 plasma discharge 8−15671
- C gas-diffusion O_2 electrode in acid, electrochem. performance 8−31652
- $CaO.V_2O_5$, reduction by Al powder for V production 8−44049
- $CeNbO_{4+x}$, oxidation-reduction reactions 8−39930
- $CeTaO_{4+x}$, oxidation-reduction reactions, phase equilibrium, thermogravimetry and magnetic susceptibility meas. 8−39930
- $^{249}CfCl_2$, prep. by reduction of $CfCl_3$, spectrochem. anal. 8−27756
- $(Co_{1-x}Mg_x)_2SiO_2$, reduction to Co *(Russian)* 8−44043
- CoO, plasma reduction melting *(Russian)* 8−31359
- Cr_2O_3, carbothermic reduction to metallic Cr, effect of oxide additions (Al_2O_3, SiO_2, MgO, and CaO) *(Japanese)* 8−48651
- Cr_2O_3, reduction rate by C and C in liquid Fe-Cr-C 8−6877
- Cu, liquid, deoxidation kinetics using CO 8−44403
- Cu melts, induction stirred, electrochemical deoxidation 8−39718
- Cu^+, in LiCl-KCl fused eutectic, diffusion and surface effects, chronopotentiometry *(French)* 8−11524
- CuI, H_2 reduction, Cu whisker growth mechanism 8−30853
- Fe, deoxidation by H_2 during plasma arc heating *(Russian)* 8−15703
- Fe-Cl_3-graphite intercalate, slow electrochem. reduction, Fe-graphite intercalate production *(French)* 8−27437
- Fe-Co-Ni-Al-Zr magnetically hard alloys, reduction *(Russian)* 8−43614
- Fe-Si (3 wt.%), tertiary products from deoxidation, electron emission microscope study *(Russian)* 8−11214
- Fe_2O_3, reduction, double reaction, reaction kinetics exam., expt. verification *(French)* 8−31705
- α-Fe_2O_3, reduction to active magnetite and direct air oxidation to α-Fe_3O_4 *(German)* 8−7060
- Fe_2O_3-FeO, sinter, heating and reduction effect of phase transform. and fracture *(Russian)* 8−15375
- Fe_2O_3-FeO, sintered and pellets, reduction in H_2 *(Russian)* 8−15705
- Fe_3O_4, reduction, double reaction, reaction kineticx exam., expt. verification *(French)* 8−31705
- Fe_3O_4-Cr_2O_3-Ni_2O mixture, reduction by gases heated by electric arc discharge *(Russian)* 8−15704
- Fe_xO_y, adsorption of H_2O, oxidation and reduction effects on adsorption 8−43237
- FeS_2-$CaCO_3$-C, reaction on heating, dissociation, reduction to Fe *(Russian)* 8−44041
- H_2, reducing agent in natural U ore deposits 8−36169
- K_2TiF_6 in LiCl-KCl eutectic mixture, analysis of reduction waves of Ti ion in chronopotentiometry *(Japanese)* 8−20025
- $(Ni_{1-x}Mg_x)_2SiO_2$, reduction to Ni *(Russian)* 8−44043
- NiO, plasma reduction melting *(Russian)* 8−31359
- NiO powder, mixed with graphite, reduction mechanism *(Korean)* 8−11555
- Pb-Zn-SiO melt, mathematical model of thermal C reduction *(Russian)* 8−15663
- PbO-B_2O_3, solder glass, thermal reduction of Cu^{2+} and Cu^+:Cu^{2+} effect on thermal props. 8−15350
- Pt complex, $PtCl_4^{2-}$, in chloride-sulphate soln., Pt electrodeposition, galvanostatic transients *(Russian)* 8−31655
- Pt electrode O_2 reduction kinetics in conc. H_3PO_4, H_2SO_4 and $HClO_4$ 8−23952
- SiO_2, reduction by RF induction plasma torch., Si form. 8−11186
- SiO_2, reduction with C black in plasma reactor, feasibility of Si production 8−27426
- $TiCl_4$, electrolytic reduction *(French)* 8−23644
- $(U,Pu)O_{2-x}$, fuel, particle cavitation during reduction by H_2 8−8958
- V_2O_3, to VO_xC_y carbothermic reduction, rel. to steel prep. 8−40049
- V_2O_5-TiO_2 interface, role of struct. props. in interfacial reactions 8−31688
- V_2O_5-water, EPR of VO_{aq}^{2+} formed by solar light photoreduction, electrolysis appl. 8−11540
- ZrO_2-CeO_2, semiconducting ceramics, electronic conductivity and oxido-reduction *(French)* 8−26919
- ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8−26663

redundancy
- *see also bandwidth compression; data compression; logic design*
- exercise ECG analysis, noise-impervious pattern recognition approach 8−7515
- hologram memory redundancy evaluation by spatial and defect permittance 8−1197
- vector ECG meas., bandwidth limitation effects 8−36001

redundancy theory *see redundancy*

reeling *see winding (process)*

reference circuits
- comparator with auto reference level, used in physiological research 8−31992

references (standards) *see standards*

reflectance *see reflectivity*

reflection
- *see also acoustic wave reflection; electromagnetic wave reflection; neutron reflection; reflectivity*
- elastic wave, transverse, reflection from cylindrical defect 8−47472
- spinless particles through one dimens. pot. barrier, formal series method, refl. coeff. 8−32700

reflection high energy electron diffraction
- Bragg diffraction imaging of cryst. surface defects 8−9920
- RHEED-AES combined system, simultaneous struct. and comp. information 8−47216
- SEM with ultrahigh vacuum system for surface physics expts. 8−38925
- streaked intensity distrib. origins in RHEED 8−47215
- surface research developments *(Japanese)* 8−22607
- Ag, Cl adsorption, AgCl epitaxial layer form. 8−14642
- Au, spherical crystal, drop grown from melt, RHEED obs., superstructs. 8−43225
- $BiF_2Si_2O_8OH$, crystal struct., space groups by RHEED 8−47297

reflection high energy electron diffraction continued
- Cr (111) face, oxidation, LEED and RHEED meas. *(French)* 8−39955
- $CrCl_2$, epitaxial relationships studied by RHEED and Auger emission spectra *(French)* 8−22990
- GaAs, adsorpt.-desorpt. of Zn, thermal desorpt., at. beam adsorpt., AES, SEM, RHEED 8−14591
- GaAs, MBE of autoepitaxial films, temp. range for growth, RHEED monitoring 8−44025
- $GaSb_{1-x}As_x$, MBE RHEED meas. 8−18916
- InAs, MBE growth, SEM, RHEED, optical microscopy and elec. meas. 8−18925
- $In_{1-x}GaxAs$, MBE, RHEED meas. 8−18916
- Ni (110), oxidation, initial stage kinetics, RHEED and X-ray emission 8−15588
- $Pb_xSn_{1-x}Te$, RF sputtered films, struct., lattice parameter, stoichiometric comp., RHEED 8−38975
- $SbFe_2Si_2O_8OH$, crystal struct., space groups by RHEED 8−47297
- Si (111) surface structure induced by Ag evaporation, RHEED meas. 8−22942
- Si, laser pulse induced amorphous to cryst. transition, thickness depend. 8−47678
- Si, Pb implantation, channelling and RHEED anals. 8−30657
- SiC film synthesis by plasma deposition process 8−11127
- W_6Co_6C cemented carbide substrate, TiC CVD coating, structure, composition and hardness exam. 8−11425

reflection nebulae *see nebulae*

reflection spectra *see reflectivity; spectra*

reflectivity
- *see also electroreflectance; magnetoreflectance; piezoreflectance; thermoreflectance*
- alkali halides, microcryst. powders, colour centres, refl. spectra 8−23493
- anthracene, thin film vacuum deposited, exciton reflection spectra *(Russian)* 8−15194
- Arctic summertime stratus clouds, solar radiation pyranometric meas. 8−32165
- attenuated total reflection minima, correlation with surface polariton modes, computational study 8−31265
- bidirectional reflectance and transmission for optical diffusers use in space projects 8−36438
- borosilicate glass, IR refl. spectra resulting from phase separation *(Japanese)* 8−39542
- cholesteric helix surface, elec. field-induced high-order ref. 8−35115
- cholesteric liquid crystal, influence of orientational order 8−42900
- cholesteric liquid crystal, stabilisation, multicomponent mixtures, refl. spectra, clarification temp. and melting point meas. 8−9951
- coating, low reflection, continuously varying refr. index, transmission curves 8−25947
- diffuse reflectance spectra, model interprets., review 8−32859
- diffuse reflectance spectroscopy, applics., standards and calibration 8−32848
- diffuse reflectance spectroscopy, calibration of reflectance standards, review 8−32860
- electronic elementary excitations in far UV, core level exciton and core hole polarisation 8−39032
- ellipsometry method, sensitivity threshold, sample polaris. reflectance and inhomogeneity effects 8−24846
- exciton resonances, interacting, dielec. theory 8−14673
- films, in situ meas. in ultrahigh vac. at low temp., optical reflectivity and transmissivity, DC resistivity, Au appl. *(French)* 8−39617
- geometric reflecting props. and nomenclature 8−29146
- Georgian Bay, chlorophyll conc. from airborne spectral refl. meas. 8−16202
- glass, porous Vycor, surface phonons, Raman and IR reflectivity spectra meas. 8−38931
- graphite, IR optical properties, refl. data and complex dielec. function 8−10889
- heavy water, optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
- heavy water, VUV reflectance, refr. index, absorpt. coeff., isotope effects 8−6695
- integrating spheres for absolute refl. meas., goniophotometric corrections 8−21202
- interference microscope, VELOMET interphako, for optical path difference measurement 8−37054
- Kramers-Kronig analysis, reflectivity extrapolation 8−19438
- laser mirror, low-loss, precision meas. technique 8−17947
- LiH, cubic, vibronic struct. and anisotropy of excitons, refl. and edge luminesc. spectra 8−23523
- liquid, reflectivity meas. by gas ionisation, vac. UV 8−294
- measurement at diffuse incidence *(German)* 8−21201
- Mercury, IR and vacuum UV reflectivity rel. to surface material props. 8−12130
- metal drilling with Nd lasers, absorption phenomena 8−30002
- metal surface, reflectivity, single laser pulses, plasma burst effect 8−19609
- metal surface oxidation, refl. spectra obs. 8−39958
- metallic film, IR reflectivity, mirror appl. 8−5536
- mirror reflection coefficient meas. instrument 8−18036
- mirror surfaces for solar power stations, specular reflectance obs. 8−13786
- modulation spectroscopy, anal. of Kramers-Kronig relations 8−23423
- Moon, IR and vacuum UV reflectivity rel. to surface material props. 8−12130
- multilayer dielectric reflectors, optical props. calc. 8−30041
- multilayer optical film thickness analyser 8−32785
- multilayer stack reflectance derivatives, fast computation method 8−46508
- multilayer structure, multiple internal reflections effect on Faraday rot. 8−48148
- opaque layered system, complete absorpt. of transverse mag. waves 8−39615
- optical consts. determ. as func. of wavelength, causality calcs. in reflection spectroscopy 8−32887
- optical glass, spottability determ. 8−30102
- oxide layers on high-temp. alloys, for central-receiver, solar-thermal power systems 8−18071
- parallel surfaces, absorptance, reflectance and transmittance, generalised eqns. for calc. 8−42273

reflectivity continued
particulate material, spectral reflectance, Monte Carlo model with asperity scatt. 8−37804
Phobos, composition, evidence for carbonaceous chondrite surface from spectral anal. 8−49365
Phobos, evidence for carbonaceous chondritic composition from multicolour obs. with Viking lander cameras 8−49366
photometric standards and coatings, retrofefl. meas. 8−25940
plasma prod. by laser, reflection losses from plane target, optical calorimetry 8−9809
polaritons, molecular thin plate, with near-surface polariton transition layer, reflection and transmission spectra *(Russian)* 8−14677
polydiacetylene, cryst., refl. spectra, Kramers-Kronig transforms 8−43889
polydiacetylene, reflection spectra, thermochromism, temp. hysteresis and phase transformation 8−19452
polydiacetylene PTS crystal, Davydov splitting in spectra at 15000 to 19000 cm^{-1}, at low temp. 8−31212
polydiacetylene-bis(toluenesulphonate), refl. spectra, 0-15 kbar, doublet press. shift 8−43891
PTS polydiacetylene single cryst. reflection spectra, exciton site splitting 8−31211
quartz beach sand, spectral reflectance/grain size relationship 8−16005
real thin films, optical consts. determ. 8−35213
refl. depend. on angle of incidence, 8 to 12 μm 8−37960
resonance scattering on 1-D cryst. and thin film *(Russian)* 8−31268
rocks and minerals, colour values from diffuse reflectance spectra *(French)* 8−11881
Schumann UV spectrophotometer system for absorpt. and refl. meas. on thin films and solids 8−12772
semiconductor, inhomogeneously doped, computed IR refl. spectra 8−27205
semiconductor, time resolved reflectivity of ps pulses 8−31217
semiconductors, free electron scattering and dynamical cond. 8−2476
silicate glass, IR refl. spectra resulting from phase separation *(Japanese)* 8−39542
single layer gradient refr. index film, ang. refl. 8−5538
soil, ultrashort radio waves reflectance rel. to moisture content determ. 8−16075
spatially dispersive crystal, reflectivity calc. 8−48140
spectral bidirection refl. props. meas., at 0.52 μm, for savannah, bog, pasture, and coniferous forest vegetation 8−40649
spectral reflectance curves estimation from multispectral image data 8−32886
specular reflectance meas. with double-beam spectrophotometers 8−45674
substrate, surface quality determ. by optical reflectance methods 8−43862
TCNQ, metallic reflection band, vibronic struct. 8−19502
TCNQ-HMTSeF, polarised single cryst. reflectance obs. and one-dimens. behaviour interpret. 8−6690
tetraselenatetracene bromide complex, optical props. 8−6680
textured surface, reflectance and transmission props. 8−1165
TTT-I$_n$, charge transfer salt, electronic spectra in soln. and solid state 8−2878
vegetation reflectivity, effect on atmospheric radiance and polarisation 8−40650
water, optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
water, VUV reflectance, refr. index, absorpt. coeff., isotope effects 8−6695
wheat canopy reflectance, Suits' spectral model appls. 8−7811
Ag, intraband optical conductivity, electron-electron scatt. 8−35166
Ag-Sb alloy, reflectivity, effect of electrodeposition conditions 8−13784
AgGaSe$_2$ wavelength-modulated reflectance, optical electronic transitions, 1.5-5.5 eV 8−35170
AgInSe$_2$, far IR refl. spectra, polarised light 8−43870
AgInTe$_2$, far IR refl. spectra, polarised light 8−43870
Al, electron beam evaporation, on Kapton laminates, and characterisation 8−11373
Al, low vacuum condensates, struct., IR refl. obs. *(Russian)* 8−30850
Al, refl. coeffs., changes at high temps. 8−19440
Al-SiO$_2$ layered system, complete absorpt. of transverse mag. waves 8−39615
Al$_2$O$_3$, films on Al, photoacoustic refl.-absorption spectroscopy 8−31264
Al$_2$O$_3$, hyperfine film on metal, IR refl.-absorpt. spectra *(Russian)* 8−11014
AsF$_5$-graphite intercalation compound, metallic. optical reflectance meas. 8−6683
As$_{1-x}$S$_x$(Se$_x$), bulk-quenched glasses, opt. freq. dielec. const., chem. ordering effects 8−23472
Au coated surface, reflectivity in soft X-ray range 8−45221
Au, intraband optical conductivity, electron-electron scatt. 8−35166
Au, ion implanted, ellipsometry, 1.8-5.5 eV, dielec. function 8−6697
BaSO$_4$, pressed powder Eastman White reflectance standard, absolute refl. meas. 8−25939
BaSO$_4$ white reflectance standard, Kubelka-Munk optical props. 8−4675
BaTiO$_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
BeO film, amorphous or polycryst., dielec. function, refl., from electron energy loss meas. 8−43947
(Bi$_{0.25}$Sb$_{0.75}$)$_2$Te$_3$, opt. props. of bulk and films 8−27206
CO, adsorption on Pt (111), adsorption site investigation by IR reflection spectra 8−14565
Ca, optical props., 2-11 eV 8−15191
CdBr$_2$ crystal, transverse and longitudinal lattice mode freq., IR reflection spectra meas. 8−27227
CdBr$_2$, optical refl. spectra, exciton bands obs. around optical gap 8−15192
CdCl$_2$ crystal, transverse and longitudinal lattice mode freq., IR reflection spectra meas. 8−27227
CdCl$_2$, optical refl. spectra, exciton bands obs. around optical gap 8−15192
CdI$_2$ crystal, transverse and longitudinal lattice mode freq., IR reflection spectra meas. 8−27227
CdI$_2$, layered cryst., photoluminesc., and reflection spectra obs. 8−6726
(CdI$_2$)$_x$(PbI$_2$)$_{1-x}$, layered cryst., photoluminesc., and reflection spectra obs. 8−6726

reflectivity continued
CdIn$_2$S$_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
CdS, exciton-contrib. to reflection spectrum at high excitation intensities 8−43900
CdS, spontaneous optical activity in exciton spectrum *(Russian)* 8−35167
n-CdTe, single crystal, photoreflectance, temp. depend. of exciton spectra *(Russian)* 8−23488
CdTiO$_3$, refl. and absorpt. coeffs. 3-3.5 eV, and refr. index dispersion *(Russian)* 8−39561
Co$_x$Mg$_{1-x}$Al$_2$O$_4$, struct., catalytic activity, Co^{2+} ion distrib. 8−30595
Co$_{1-x}$Ni$_x$Si, IR refl. spectra in plasma refl. region 8−27233
CoSi, IR refl. spectra in plasma refl. region 8−27233
Cr$_2$O$_3$, IR active phonons 8−34578
Cr$_2$O$_3$, UV absorption spectra from reflectivity meas. 8−2879
CsPbBr$_3$, optical props. and electronic struct. 8−48198
CsPbCl$_3$, optical props. and electronic struct. 8−48198
Cu, intraband optical conductivity, electron-electron scatt. 8−35166
Cu light pipe, submm. wave transmission, and refl. of surfaces 50-10 cm^{-1} 8−18050
Cu, refl. coeffs., changes at high temps. 8−19440
Cu-Ni, dil. alloy, optical reflectivity meas. virtual bound state model analysis 8−2873
CuAl$_{1-x}$Fe$_x$S$_2$ system, delocalisation of d-electrons, mag., elec. and optical obs. 8−34804
CuGaS$_2$, IR lattice reflectivity spectra obs. 8−19477
CuGaS$_2$-CuGaSe, solid solutions, IR lattice reflectivity spectra obs. 8−19477
CuGa(S$_x$Se$_{1-x}$)$_2$, refl. spectra, comp. depend. 8−39570
CuGaSe$_2$, IR lattice reflectivity spectra obs. 8−19477
CuInS$_2$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
CuO-MgO system, Cu ions valence states, electronic refl. spectra 8−35168
Cu$_2$S:Cd(Zn), effects of doping on elec. and optical props. 8−38743
EuO, mag. semicond., dielec. and optical props. 8−10824
EuSe, mag. semicond., dielec. and optical props. 8−10824
Ga, optical properties in 0.3 to 5 eV range 8−31196
GaAs epitaxial film on GaAs substrate, IR characterisation 8−23544
Ga$_2$S$_3$, IR refl. spectra, linear chain model for lattice vibrs. 8−27235
Ga$_2$Se$_3$, IR refl. spectra, linear chain model for lattice vibrs. 8−27235
Ga$_2$Se$_3$-Ga$_2$S$_3$ solid solutions, IR refl. spectra, linear chain model for lattice vibrs. 8−27235
Gd, optical constants, reflectance meas. *(French)* 8−2869
Gd, optical consts. polarimetric meas., mag. ordering effects 8−15184
Ge, nonlinear reflection props. rel. to thermal effects 8−42371
Ge, refr. index and refl. changes due to intense laser irrad., surface heating effect 8−42372
Ge$_{1-x}$S$_x$(Se$_x$), bulk-quenched glasses, opt. freq. dielec. const., chem. ordering effects 8−23472
GeSe, amorphous film, optical properties 8−39620
Hg$_2$Cl$_2$, cryst., birefringence and dichroism, 200-500 nm and far IR 8−27257
HgI$_2$, excitons, spectral obs. 8−23492
Hg$_3$In$_2$Te$_6$, complex ordered-vacancy cpd., struct. and lattice dynamics 8−34496
Hg$_{1-x}$Mn$_x$Te, 1.7 to 3.5 eV, reflectivity spectra 8−43899
Hg$_{1-x}$Mn$_x$Te, far IR studies of lattice and free carrier effects 8−39544
KBr, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KN$_3$, IR refl. spectra, fundamental lattice modes, azide ion dipole derivatives 8−48166
K$_2$SO$_4$:XO$_4{}^{2-}$, X=Cr, Se, Mo, W, lattice-impurity interactions, IR spectra 8−19522
LiH, excitons, reflection, cathodolum. and photocond.-excitation spectra 8−10989
LiNbO$_3$, asymm. phononlines, IR refl. analysis 8−27197
LiNbO$_3$, IR reflectivity temp. depend. 8−27202
LiTaO$_3$, asymm. phonon lines, IR refl. analysis in paraelec., ferroelec. phases 8−27197
Mg-Bi alloy, liq., far IR reflectivity rel. to possible transport processes 8−2827
MgAl$_2$O$_4$ spinel, optic frequencies, evidence for membership of F43m space group 8−48168
MnTe, optical props. and electronic struct. 8−6682
MnZn ferrite, optical refl. and electroreflection spectra obs. 8−27262
NaBr powder coloured in electrodeless discharge, reflectance spectra, thermoluminescence props. 8−6796
NaCl, far IR dispersive-reflection meas. at room temp., comparison with calc. 8−35139
NaCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
Na$_2$O-TiO$_2$-SiO$_2$ glass, IR refl., Raman and EPR spectra, struct. *(Russian)* 8−2860
Na$_2$SO$_4$:XO$_4{}^{2-}$, X=Cr, Se, Mo, W, lattice-impurity interactions, IR spectra 8−19522
Ni complex, Ni-hexamethylenetetramine, reflectance spectra 8−31218
Ni(100) platelet surface optical and magneto-optic consts. 8−15151
PbI$_2$, layered cryst., photoluminesc., and reflection spectra obs. 8−6726
PbI$_2$, photolum. and reflectivity temp. depend., cryst. anisotropy effect on electron-phonon interaction *(Russian)* 8−15225
PbS epitaxial film, struct., optical and elec. props. 8−19583
PbSe$_{1-x}$Te$_x$, symmetry change in cond. levels, photovoltaic effect and reflectivity obs. 8−34766
Pb$_x$Sn$_{1-x}$I$_2$, thin films, photosensitivity, ageing and annealing effects *(Russian)* 8−6804
Pb$_{1-x}$Sn$_x$Se, plasma reflection spectra, carrier effective masses and relax. times determ. 8−2858
PbTe, TO phonon mode softening, sub mm spectra 8−6665
(SN)$_x$, electronic struct. and opt. props. 8−6256
SbSBr, electronic and optical props. 8−34763
SbSI, electronic and optical props. 8−34763
SbSeI, electronic and optical props. 8−34763
Si, polycrystalline, film thickness meas., visible spectral reflectance analysis 8−32786
Si$_3$N$_4$, CVD films, chemically trapped H reflection spectrometry 8−10081

reflectivity continued
Sn film, white, optical props. between 2-15 eV 8−19584
SnI_2, layered cryst., photoluminesc., and reflection spectra obs. 8−6726
SnS, coupling of plasma waves with optical phonons 8−31204
SnS_2, optical props. and band struct. 8−2880
SnSe, lattice refl. spectra in long-wavelength IR range 8−27236
$SnSe_2$, optical props. and band struct. 8−2880
$SnSe_2$, single crystal, reflectivity, XPS, UPS, and band struct. 8−6701
$SrTiO_3$, surface EM wave propag., IR refl. expts. 8−39553
$SrTiO_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
Ti, oxide layer form. in acid soln., electrochem. and optical props. 8−48560
TiN, optical props. at 300K 8−19466
TiO_2 single cryst., refl. and electrorefl. spectra 8−2870
TiO_2 single cryst., refl. and electrorefl., energy levels 8−2871
Ti_2O_3, IR refl. spectra, IR active phonons, Ti 3d electronic effects 8−35145
TlSe, vibrational spectrum, IR spectra meas. 8−35146
V_3Si, complex refr. index and reflectivity of thin film, microscopic characts. and superconductivity 8−31267
W, dendritic, solar absorbing surfaces anodised interference coatings 8−13815
Y-Er, surface, high-freq. elec. cond. dispersion function, effects of polishing and annealing 8−19506
$Zn_xCd_{1-x}S$, forbidden band width, exciton refl. and luminesc. meas. 8−10947
$ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831
(ZnFe)S, marmatite, optical properties 8−39555
$ZnIn_2S_4$, fund. optical consts., Kramers-Kronig analysis, reflectivity spectra 8−39573
$ZnIn_2S_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
ZnO, ang. depend. of reflection spectra and directional dispersion of anisotropic exciton polaritons 8−31216
ZnS-O, single cryst., fast neutron irrad., optical props. 8−27331
p-ZnTe, single crystal *(Russian)* 8−23488
ZrN, optical props. at 300K 8−19466

reflector antennas
7 m Cassegrain radiotelescope, quasioptical feed system for millimetre wavelengths 8−32343
140 GHz atmospheric attenuation by rain, obs. 8−3914
phased array aberration effects, optical modelling *(Russian)* 8−16290

reflex klystrons
No entries

refraction
see also acoustic wave refraction; electromagnetic wave refraction; refractive index
No entries

refractive index
see also photorefractive effect; refractometers
achromatism of optical wedge of holographic elements *(Russian)* 8−13787
air, vertical struct. of refr. index for ultrashort radio waves at subfreezing temps. 8−16128
alkali metal ternary chlorides, $ABCl_3$ type, optical props. 8−35111
p-n-alkoxybenzoic acid, homologs, principal mol. polarisabilities calc., refr. indices of nematic mesophase meas. 8−2004
anisotropic inhomogeneous guiding media, rel. between phase and group indices 8−9320
aqueous electrolyte solutions, refr. index, Tamman-Tait-Gibson model 8−10863
arachidate monolayers, optical props. integrated optics meas. 8−35214
asymmetric-slab optical waveguide losses due to refractive index inhomogeneities 8−1381
atmospheric dust, imaginary refr. index rel. to particle size 8−7763
azoxybenzenes, nematic, refr. index, birefringence, internal field 8−34427
chloroplasts, in suspension, near IR radiation dispersion *(Russian)* 8−24045
cholesteric binary mixtures, composition and temp. depend. of pitch 8−1984
complex diamond like crystals, optical nonlinearity and average refractive index 8−30011
CVD fabricated fibres, abrupt central dip 8−22217
demonstrations, refr. index-matching soln. for Pyrex 8−12519
diamond, temp. and press. var. 8−27174
dielectric slab waveguide, radiation pattern determ. due to refractive index fluctuations 8−22216
diethylcarbonate, liq., alkoxy group internal torsion, extended micro-wave/far IR anal. 8−19457
p-diiodobenzene, phase transition obs. using interferometry 8−34616
dimethylcarbonate, liq., alkoxy group internal torsion, extended micro-wave/far IR anal. 8−19457
ethane, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
ferroelectric, photoinduced changes in refractive index and spontaneous polarisation 8−43804
fibre, gradient index, refr. index profile influence on transmission quality 8−42453
fibre cable transmission performance in operational ducts *(German)* 8−33864
fibre-optic index-difference dispersion and bending loss/wavelength relationships 8−1367
fluoride crystals, nonlinear refr. index, 1064 nm 8−30005
freon 12, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
glass, optical grade, refractive index-density relationship changes assoc. with reannealing 8−27175
glass, refractive index during annealing, nonlinear structural relaxation model 8−44234
glass CVD fibres with axial refractive index dip, dispersion meas. *(German)* 8−33857
L(+) glutamic acid halogen acid salts, crystallographic, optical and calorimetric meas., halide effect 8−34505
graded-index fibre differential mode attenuation meas. 8−1403
heavy water, 6-450 cm^{-1}, 19°C 8−6649
heavy water, optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
heavy water, VUV reflectance, refr. index, absorpt. coeff., isotope effects 8−6695
inhomogeneous dielectric material, light refl. by refr. index distrib. gradient 8−25800
insulating film for semicond. devices, props., rel. to deposition conditions 8−23612
IR radiometer objective lens, optimal refr. index 8−29137
IR window materials, optical phenomena, book contrib. 8−9420
laser beam, high power, focusing props., influence of nonlinear refractive index medium *(French)* 8−46696
limestone, complete refr. index meas. in visible and IR 8−40541
low-aberration focusing fibre, optimum diffusion exchange and heat treatment 8−1378
MBBA, refr. index, high press. meas. 8−26428
meta-toluylene-diamine, equal-deflection method, UV laser rad. 8−29145
metal, optical props., high-temp., from emissivity ang. depend. data 8−39519
methane, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
monochromatic coherent plane wave scatt. by living cell *(Russian)* 8−48765
multilayer dielectric waveguide, effective index nonlinearity 8−9446
nonhomogeneous media, Fuchsian differential equations, aspects 8−9302
4-n-octyl-4′-cyanobiphenyl, smectic A and nematic liq. cryst., refr. indices and order parameters 8−22644
optical coating, low reflection, continuously varying refr. index, transmission curves 8−25947
optical fibre, rapid Δ meas. by refr. index tuning 8−13792
optical fibre, refractive index and radius ratio determ. from backscatt. light 8−30049
optical fibre bandwidth change under production process and splicing *(German)* 8−33858
optical film, layered coating synthesis, optimisation formulae 8−25946
optical film, production by RF cosputtering of dielectrics, and optical props. 8−6849
optical glass, long range fluctuations, before and after annealing, light scatt. exam. 8−13772
optical glass, refractive index, effects of alkali oxide comp. changes *(Russian)* 8−22182
optical waveguides with var. refr. index 8−46837
organic bases, biologically important, and derivatives, optical crystallograhpic props. 8−3449
4-n-pentyl-4′-cyanobiphenyl, nematic liq. cryst., refr. indices and order parameters 8−22644
4-n-pentyl-4′-cyanobiphenyl, refr. index, high press. meas. 8−26428
phase objects, refractive index distrib., holographic interferometry meas. 8−37846
phase velocity matching method *(Russian)* 8−30406
phosphatidylcholine dispersion, phase transitions obs. with interference refractometer 8−44459
poly (alkyl cyano acrylate), sensitised with parabenzoquinone, holographic storage mechanism exam. 8−37850
PVC, magneto-electrets, refr. index, temp. and mag. field effects 8−6655
radio refractivity diurnal variation up to 3 km over India 8−40627
sea ice, initial forms, microwave refr. index and absorpt. 8−49036
silicate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
single-mode optical fibres with different B_2O_3-SiO_2 compositions 8−1392
six-level atomic medium, self-focusing of two intense monochromatic waves *(Russian)* 8−25932
solar selective film absorber, design improvements by refr. index grading 8−25976
submerged diffused waveguide prep., refr. index distrib. determ. 8−18068
teacing, lens object-image relations 8−36780
underground optical waveguide air refractive index thermal fluctuation obs. 8−9452
water, 6-450 cm^{-1}, 19°C 8−6649
water, optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
water, VUV reflectance, refr. index, absorpt. coeff., isotope effects 8−6695
water droplet aerosol interaction with EM radiation, temp. field and refractive index distrib. model 8−3899
Al_2O_3 anodic layer formation in H_3PO_4 solns., surface charact. 8−15603
Al_2O_3 film, determ. by Nomarski differential interference contrast microscopy 8−24849
Al_2O_3, film form. by reactive HF sputtering with voltage bias 8−3045
Al_2O_3-Al, multiphase thin films, correlation between optical props. and chemical/metallurgical constitution 8−19588
As, amorphous, refr. index meas. near absorpt. edge 8−2819
As-Ge-Se based glasses, refr. index, 1-11 μm 8−39520
As-Se based glasses, refr. index, 1-11 μm 8−39520
AsSe, relaxation of photoinduced refr. index changes *(Russian)* 8−23426
B films, amorphous, prep., struct., props., review, book contrib. 8−48321
B_2O_3 glass, nonlinear structural relaxation model for glassy state 8−26448
$BaCa_2Mg[SiO_4]_2$, synthesis and struct. characterization 8−22698
$Ba_2NaNb_5O_{15}$, equal-deflection method, UV laser rad. 8−29145
$Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8−3026
Ca, optical props., 2-11 eV 8−15191
Cd, gas, refraction, determ. by phase vel. matching method *(Russian)* 8−30406
Cd_3As_2 film, cryst. and amorphous 8−11013
$CdCl_2$:Cu, optical props. 8−43918
CdS, optically controlled range of refr. index 8−6650
CdTe crystal, 10.6 μm ellipsometric meas. 8−24847
$CdTiO_3$, refl. and absorpt. coeffs. 3-3.5 eV, and refr. index dispersion *(Russian)* 8−39561
$Co_{1-x}Ni_xSi$, IR refl. spectra in plasma refl. region 8−27233
CoSi, IR refl. spectra in plasma refl. region 8−27233
$CsCuCl_3$, optical props. rel. to IR electro-optical modulator appl. 8−42393

refractive index continued
$Cs_8Nb_{22}O_{59}$, melt growth and struct., dielec. and optical characterisation 8−35294
Cu film, electron energy loss spectra meas., optical functions calc. 8−19618
Cu-Al film, electron energy loss spectra meas., optical functions calc. 8−19618
CuO film, electron energy loss spectra meas., optical functions calc. 8−19618
Cu_2O film, electron energy loss spectra meas., optical functions calc. 8−19618
DF laser, refr. index changes during stimulated emission 8−17929
Fe-Si alloys, liq., refractive index, absorpt. coeff., elec. cond. 8−43830
Fe_2O_3-B2O_3-PbO glasses, visible and UV optical props. *(Rumanian)* 8−48196
GaAs, nonlinear refractive index dispersion at helium temp. 8−2820
GaAs, optical conductivity, constants, refractivity from IR absorption spectra 8−43873
GaAs oxide, anodic, heat treatment temp. effects, optical props. obs. 8−27658
GaP, ion-implanted, radiation damage, ellipsometry expts. 8−38735
GaS, refr. index meas. 8−10864
GaSe, refr. index meas. 8−10864
Gd, optical consts. polarimetric meas., mag. ordering effects 8−15184
$Gd_2(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
Ge, refr. index and refl. changes due to intense laser irrad., surface heating effect 8−42372
Ge-Se based glasses, refr. index, 1-11 μm 8−39520
Ge-Te alloy films, amorphous, semicond. props., refr. index, struct. study 8−26978
H_2, gas, refractivity and dispersion in visible and IR regions 8−34258
H_2O, vap., optical refractivity, comparison of expt. with sum rule moment calcs. 8−5156
Hg_2Cl_2, cryst., birefringence and dichroism, 200-500 nm and far IR 8−27257
$Ho_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
KCl, crystal, 10.6 μm ellipsometric meas. 8−24847
KH_2PO_4, ferroelectric phase transition exam. by spontaneous parametric light scatt. 8−19427
K_2SO_4-$ZnSO_4$ system, glass formation and phase diagram study, physical props. 8−27500
LiCl, 300-700 nm., temp. coeff., 100-580K *(Russian)* 8−15142
$Li_2Gd_4(MoO_4)_7$, Czochralski growth, struct. and optical props. 8−27397
$LiIO_3$, visible and UV refr. indices 8−19439
$LiNbO_3$ diffused waveguide, with exponential profile, metal-clad and dielec. overlay effects 8−46755
$LiNbO_3$, dispersion law of polaritons, refr. index in IR, and Raman spectra meas. 8−27232
$LiNbO_3$, equal-deflection method, UV laser rad. 8−29145
$LiNbO_3$, Ti diffused planar waveguide, WKB approx. for refr. index profile determ. 8−30086
$LiNbO_3$ waveguide, diffusion of Ti, exam. by electron probe anal. and X-ray diffr. 8−47588
$LiNbO_3$:He, ion implantation, optical waveguide form., refr. index changes 8−46762
$LiNbO_3$:Ti, dopant conc., refr. index profile rel. to integrated optics 8−5583
$LiNb_{1-y}Ta_yO_3$, Czochralski grown, refr. index, 5893-10600 Å, and zero birefr. 8−31166
$LiTaO_3$, equal-deflection method, UV laser rad. 8−29145
MgO:Cu, dopant conc., refr. index profile rel. to integrated optics 8−5583
N_2 gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
$NH_4H_2PO_4$, 90° phase matching temp., refr. index freq. and temp. depend. 8−46720
N_2O, gas, up to 50 atm, refr. index, 328, 3103 MHz *(French)* 8−14129
NaI, 300-700 nm., temp. coeff., 100-580K *(Russian)* 8−15142
Na_2O-B_2O_3-SiO_2 low-loss optical fibre prep. by double crucible technique *(German)* 8−33929
Na_2O-B_2O_3-SiO_2:GeO_2 medium-loss graded-index preform fabrication by phase separation and leaching *(German)* 8−33930
Na_2O-$GeO_2(TiO_2)(SnO_2)(ZrO_2)(ThO_2)$-$SiO_2$ glass, density, refractive index, thermal expansion, hardness IR spectra, DTA *(Japanese)* 8−15535
Nb anodic oxide films, reversible optical changes 8−35580
$Nd_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
Ni(100) platelet surface optical and magneto-optic consts. 8−15151
PLZT ceramic, optical gate, dielec., optical props., electro-optical effect meas. 8−42418
PLZT, refr. index, 405-764 nm, surface layer 8−35110
$PbHPO_4$, single cryst., growth, optical props., ferroelec. transition 8−35285
PbI_2 film, photolyzed, refr. index change 8−11010
PbO thin layers on PbO-SiO_2 glass, reaction behaviour 8−34660
PbO-SiO_2 glass, leaching behaviour in dil. HNO_3, ellipsometry and AES obs. 8−23846
PbS, colloidal, light scatt. and electron microscopy 8−3379
phosphate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
S-Se-Te semicond. glasses, mag. suscept. meas., refractive index 8−34952
Si, diamag. and dielec. susceptibility, temp. depend. 8−10646
Si-N film, passivation layer, density comp., and ref. index, Lorentz-Lorenz correl. 8−39697
SiN_x, film by magnetron sputtering, composition, hardness and optical props. 8−3047
Si_3N_4, film, absorption, refr. index, freq. dispersion 8−48248
SiO_2 (silicalite), hydrophobic crystalline mol. sieve, refr. index and density 8−30598
SiO_2, film form. by reactive HF sputtering with voltage bias 8−3045
SiO_2 glasses, opt. consts. in IR and vacuum UV 8−27238
SiO_2, oxide growth in HCl-O_2 mixture, ellipsometric meas. 8−7073
SiO_2, vitreous, radiation behaviour of optical props. 8−21655
SiO_2:GeO_2 graded-index fibres, without index dip, fabrication by CVD method 8−9431

refractive index continued
SiO_2-$B_2O_3(P_2O_5)(GeO_2)$, optical fibres, double Sellmeier oscillator model 8−33793
SiO_2-GeO_2 glass, refr. index and density, comp. depend. 8−23424
$Sm_{2x}Gd_{2(-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
SnS_xSe_{2-x}, thermal changes in optical props. 8−19504
Ta_2O_5, anodised film, nonuniformities, optical props., spectrophotometric obs. 8−2933
Ta_2O_5, film form. by reactive HF sputtering with voltage bias 8−3045
$Tb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
TeO_2, paratellurite, equal-deflection method, UV laser rad. 8−29145
TeO_2, paratellurite cryst., polariton Raman scatt., refr. index dispersion 8−25928
TeO_2, visible and UV refr. indices 8−19439
ThF_4 film, 10.6 μm ellipsometric meas. 8−24847
Ti anodic oxide films, reversible optical changes 8−35580
TiO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
TiO_2-ZrO_2-SiO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
$TlMnCl_3$, optical props. 8−35111
V_3Si, complex refr. index and reflectivity of thin film, microscopic characts. and superconductivity 8−31267
Xe, refraction, determ. by phase vel. matching method *(Russian)* 8−30406
$Yb_{2x}Gd_{2(1-x)}(MoO_4)_3$, ferroic, linear and nonlinear optical susceptibility 8−22164
$ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831
ZnSe crystal and film, 10.6 μm ellipsometric meas. 8−24847
ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304
ZrO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
ZrO_2 film, CVD from organometallic cpds. and characterisation 8−23626

refractive index measurement
see also refractometers
crystals, meas. installation 8−4673
dielectric film, refr. index, film thickness, phase shift and order of interference, interferometric method 8−276
dielectric thin films, refractive index and thickness, spectrophotometric determ. 8−29144
diffused optical waveguide numerical analysis and applications 8−1377
ellipsometric method for IR materials 8−24847
equal-deflection method, IR and UV determinations 8−29145
fibre index near-field profiling methods, detail resolution 8−42451
fibre index profile meas. technique 8−42452
fibre waveguide and cable parameter meas. techniques *(German)* 8−33860
film, by Nomarski differential interference contrast microscopy 8−24849
film, optical characts., computer inversion method 8−11008
film refractive index and thickness meas., error anal. of SYNCANG and SYNCWANG methods 8−8439
gas in boundary layer, refractive index meas. by light refl. 8−8438
gradient index optical lenses, use, design, fabrication and refr. meas. 8−13780
heterogeneous media, local refr. index meas. *(Russian)* 8−32858
homogenoeus media, local refr. index meas. *(Russian)* 8−32858
HPLC, refr. index meas. detectors 8−45675
HPLC detection systems, review 8−48733
lenslike medium, method for refr. index profile determ. 8−37046
liquids, refr. index meas. method., sensitivity, geom. optics 8−12480
liquids, refr. index meas. method, sensitivity 8−12479
optical fibre, index profile meas., nondestructive 8−13796
optical fibre, refr. index profile determ. from diffr. pattern 8−25953
optical fibre, single mode, refr. index profile meas. by refl. method 8−46756
optical fibre refractive index profile, automatic measuring technique *(Japanese)* 8−37982
optical fibre refractive index profile meas., nondestructive transverse interference method 8−38024
optical fibres, refr. index profile determ. via spatial filtering method 8−33829
phase velocity matching method *(Russian)* 8−30406
planar diffused waveguide, WKB approx. for refr. index profile determ. 8−30086
polymeric thin film, by integrated topical techniques 8−27342
prism, using critical angle method 8−30071
real thin films, optical consts. determ. 8−35213
refractive index automatic profiling 8−46836
refractodensimetric analysis, liquor samples with low total solids 8−36972
sugars, detect. in HPLC systems using polarimetry, refractometry and optical rot. 8−48734
thin films for integrated optics, modified Abeles method *(Italian)* 8−1427
transparent film, from zero refl.-induced ellipticity angles of incidence 8−41345

refractivity *see refractive index*

refractometers
Fresnel cell redesign for REMAT 20 refractometer 8−21207
interference type, obs. of phosphatidylcholine dispersion phase transitions 8−44459
prism developments for PR2 Pulfrich refractometer 8−24848

refractometry *see refractive index measurement*

refractories
see also ceramics; cermets; clay
alkali metal borides, prep., cryst. struct., thermal stability, phys. and chem. props., book contrib. 8−47304
alloys, spectrochem. anal. using high-voltage unipolar spark discharge *(Russian)* 8−15750
badde-leyite-corundum refractories, qualitative X-ray phase anal. 8−7112
borides, book 8−48292
borides, metallic, sintering, review, book contrib. 8−48359

refractories continued
- borides, transition metal, rare earth, and actinide, mag. props., book contrib. 8−47978
- castable, stability in steam-N_2 and steam-CO atmos. at 199°C 8−20063
- ceramic, creep meas. in tension and compression 8−31486
- ceramic, creep testing, equipment combination 8−11477
- ceramic, deform. test apparatus and method *(Russian)* 8−35613
- chrome-forsterite-periclase refractory constitution and props., phase reactions during firing *(German)* 8−11175
- corundum, thermal strength, effect of additives 8−19770
- creep testing, high-temperature, at different loadings, laboratory equipment *(Russian)* 8−19970
- crystal high temp. properties *(Japanese)* 8−48418
- curvilinear lining, thermal stresses 8−5649
- fibre, metallisation by continuous casting in Al and Al alloys *(Russian)* 8−35538
- film laser detector 8−41350
- glass fabric, effect of phosphate binders on properties 8−44075
- glass making refractories, progress, review 8−3089
- heat-resisting alloys, VM-1 and VX-4, thermal fatigue rel. to struct. changes *(Russian)* 8−11302
- laser vaporised surface, free jet expsn. of vapour 8−1703
- masonry with gunite coating adhesion strength determ. apparatus, breakaway tests 8−35618
- metal, refractory, BCC, free migration of self-interstitials 8−47574
- metal, strength charact., effect of thermal test conditions 8−39994
- metal, surface geometry and emission parameters, changes during directional mass transport 8−2344
- metal refractory single crystal growth by plasma heating *(Russian)* 8−35292
- metals, and alloys, boride coatings, technology, props., book contrib. 8−48574
- MHD generator duct wall, semi-hot, thermal stress design study *(Japanese)* 8−13890
- MHD refractory materials, arc spot heat impact degradation *(Japanese)* 8−39819
- oxide, solid electrolytes, thermal and mech. props. at steelmaking temps., review *(German)* 8−15418
- oxide layer growth by high-temp. electrochemical vapour deposition 8−23627
- phosphate bonded refractory plastics, hot modulus of rupture, 1500 to 2500°F 8−19855
- process quality control, thermal analysis appl. *(German)* 8−35337
- refining in DC transferred arc, initiation and performance characts. 8−9866
- Spreading of liquid TiO_2 over refractory metals under the influence of surface forces 8−26749
- thermal conductivity, temp. and press. depend. 8−43188
- thermal strength under program controlled thermal loads 8−11325
- thermophysical props. in rarefied gaseous medium 8−34664
- transition metal borides, cryst. struct., prep. methods, chem., elec., mag. props., appls., book contrib. 8−47307
- transition metal borides, refractory, single cryst. prep. methods and characterisation, book contrib. 8−48296
- transition metal carbides, Group IV-VI metals, thermal expansion coeff., rel. to bond energy 8−2266
- transition metal refractory materials, slip and microhardness 8−3211
- viscous-sheath filaments production 8−3077
- AlN, cpd. form. reaction in reactive evaporation, quadrupole mass analysis *(Japanese)* 8−23628
- AlN film, epitaxial growth by reactive evaporation *(Japanese)* 8−23629
- AlN, precipitation from gas phase 8−6025
- Al_2O_3, arc spot heat impact degradation *(Japanese)* 8−39819
- Al_2O_3, molten, specific elec. cond. up to 3000K 8−2273
- Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
- B, fibre, metallisation by continuous casting in Al and Al alloys *(Russian)* 8−35538
- B_4C, effect of fast neutron irradiation on struct. 8−26597
- BN fibres, prep., struct., thermal, mech. and elec. props., appls., book contrib. 8−48360
- BeO, arc spot heat impact degradation *(Japanese)* 8−39819
- C materials, thermal insulating props., furnace appls. *(French)* 8−44345
- C, vitreous, disintegration by fluorophosphate optical glass melt 8−30101
- CaO-MgO refractory, wettability by Fe melt *(Russian)* 8−10257
- CaO-MgO-Al_2O_3-Cr_2O_3-Fe-O_2-SiO_2 system, exptl. determ. of periclase and spinel comps. 8−6906
- CrC electrophoretic coating, electric field strength effect on deposition rate 8−19677
- LaB_6, US comminution of refractory compound powders 8−23656
- La_3Te_4, thermal cond., thermoelec. power abd elec. cond. meas., 80 to 750K 8−18853
- $Mg(Al,Cr,Fe)_2O_4$, spinel, elastic moduli calc. 8−6960
- MgO, arc spot heat impact degradation *(Japanese)* 8−39819
- MgO, fused periclase, sintering and struct. characts. 8−23652
- MgO, precipitation from gas phase 8−6025
- MgO-Al_2O_3-ZrO_2, wetting with liquid Fe and Al 8−22936
- Mn_xN_y, prep., rate of formation, chem. stability 8−11185
- Mo, ionic siliciding, diffusion layer prod. 8−23855
- Mo_2C, synthesis by ion bombard. of Mo film 8−48357
- Mo_3N, synthesis by ion bombard. of Mo film 8−48357
- $NaCaPO_4$-Ca_2SiO_4 partial system, phase diagram 8−35364
- $NaCaPO_4$-Ca_3SiO_5 partial system, phase diagram 8−35365
- $NbBe_{12}$, by diffusion saturation in vacuum, resistance to heat 8−44259
- NbC, recrystallisation 8−11251
- NbC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
- Nb_xC powders, plastic deform. characts. on vibratory milling 8−11183
- SiC containing material, deform. props. investigation by pure bending 8−19823
- SiC, fibre, metallisation by continuous casting in Al and Al alloys *(Russian)* 8−35538
- β-SiC, oxidation in CO-CO_2 mixture *(German)* 8−23844
- SiC, polycrystalline, quantitative phase analysis, statistical estimation and mathematical splines *(Bulgarian)* 8−39753
- β-SiC powder compact, microstruct. changes and β to α transform., Si vapour influence 8−19738

refractories continued
- SiC protective coatings, on graphite for HTR, corrosion *(German)* 8−3248
- SiC, reaction bonded, microstruct. characterisation 8−48353
- SiC, reaction sintered transform. interface morphology 8−31364
- SiC single crystal, fracture toughness 8−7019
- SiC, strength assessment by Young's modulus meas. up to 1400°C *(German)* 8−11253
- SiC, US comminution of refractory compound powders 8−23656
- Si_3N_4, α to β transform., TEM and electron diffr. obs. 8−27507
- Si_3N_4 based abrasive material for grinding unhardened steel 8−35529
- Si_3N_4 first pressed, mixed mode fracture from controlled surface flaws 8−27603
- Si_3N_4, grain-boundary-crystallized, thermal shock resistance 8−11308
- Si_3N_4, hot pressed, rate controlling process in oxidation 8−27659
- Si_3N_4, intermediates in CVD, mass spectrometric detect. 8−27411
- Si_3N_4, oxidised, with Y_2O_3 densification aid, temp. and compositional stability of $Y_6Si_6O_{21}$ 8−27664
- Si_3N_4, reaction bonded, bending strength meas., influence of loading conditions, proof testing and anal. methods *(German)* 8−31451
- Si_3N_4, sintering with Al_2O_3 and Y_2O_3 *(Japanese)* 8−19703
- α-Si_3N_4-MgO (5 wt.%), hot-pressed, mech. strength development 8−44195
- Si_3N_4-ZrO_2, sintered and hot pressed, exam. of mech. props. 8−48509
- SiO_2-Al_2O_3, refractory fibrous heat insulating material 8−6990
- $SrO.HfO_2(ZrO_2)$, US comminution of refractory compound powders 8−23656
- $SrZrO_3$ coatings, plasma-sprayed, spectral emittance *(French)* 8−26709
- $TABe_{12}$, by diffusion saturation in vacuum, resistance to heat 8−44259
- Ta carbides, changes in phase structure during prolonged heating in vacuum 8−44095
- TaC, thermal and electrical conductivity, 1500-3000K 8−43385
- Ti, band struct. correlation with TiC, APW calc. *(Japanese)* 8−23017
- Ti, surface struct., HCP to BCC type struct. transition, FEM obs. *(Japanese)* 8−22938
- Ti-B-Mo system, phase equilibria at 1400°C 8−35354
- TiB_2, electrode, hot pressed, erosion resistance, struct. and porosity effects 8−3228
- TiB_2-$TiSi_2$ composites, high-temp. oxidation, scale comp. 8−15561
- TiC, band struct. correlation with Ti, APW calc. *(Japanese)* 8−23017
- TiC, CVD layers on Fe substrate *(Japanese)* 8−27415
- TiC, cpd. form. reaction in reactive evaporation, quadrupole mass analysis *(Japanese)* 8−23628
- TiC, polycrystalline, elastic props. 8−27547
- TiC single crystal, micro-Vickers hardness meas. up to 1500°C *(Japanese)* 8−23804
- TiC single crystal, prep. by floating zone technique *(Japanese)* 8−23607
- TiC single crystal, work function, field emission characts. *(Japanese)* 8−19641
- TiC_x, fused material, microstruct. 8−44115
- TiC_xN_y, fused material, microstruct. 8−44115
- TiN, CVD layers on Fe substrate *(Japanese)* 8−27415
- TiN, high dispersed superconductivity 8−43505
- TiN, highly dispersed, metallic thermo-EMF 8−43363
- TiN-AlN, composite, erosion resist. in electron stream 8−11365
- TiN-Nb(Ta)N, microcomposite film prod. for radio resistors 8−3052
- TiN-VN refractory powder composite, resistors, produced in low temp. 8−11182
- UC, polycrystalline, creep mechanism interpretation 8−8898
- W_2B_5, sintering rel. to prod. by boron carbide process 8−11184
- Y_2O_3, digital pyrometry in solar furnace *(Japanese)* 8−32821
- Y_2O_3, US comminution of refractory compound powders 8−23656
- Z+C, band struct. correlation with Zr, APW calc. *(Japanese)* 8−23017
- ZnO, precipitation from gas phase 8−6025
- Zr, band struct. correlation with ZrC, APW calc. *(Japanese)* 8−23017
- Zr-O, high temp. phase diagram 8−11211
- ZrB_2, etching method using H_3PO_4 and H_2SO_4, effect of Pt 8−44339
- ZrB_2, pure, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649
- ZrB_2-Ta composite, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649
- Zr(C,N), coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 500-600°C *(French)* 8−44266
- ZrC, prep. from $ZrCl_4$+C *(Russian)* 8−19682
- ZrC, recrystallisation 8−11251
- ZrC, sintering 8−19700
- ZrC, US comminution of refractory compound powders 8−23656
- ZrC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
- ZrN, coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 550-700°C *(French)* 8−44266
- ZrN, plasma-formed, ESCA and supercond. transition temp. 8−19697
- ZrN-AlN, composite, erosion resist. in electron stream 8−11365
- ZrO_2, arc spot heat impact degradation *(Japanese)* 8−39819
- ZrO_2 coatings, prod. by low-temp. oxidation, props. 8−23856
- ZrO_2, digital pyrometry in solar furnace, freezing point *(Japanese)* 8−32821
- ZrO_2-$HfO_2(Y_2O_3)$ solid soln. complex refractories, sublimation *(Russian)* 8−47513
- ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8−26663
- $ZrSiO_4$, sintering, effect of grinding and additives 8−48356

refractory materials *see refractories*

refrigeration
- *see also cryogenics; freezing; low-temperature production*
- cryo-tip, heat transport via metal filled epoxy glue 8−37013
- cryorefrigerator, cryopump and its appl. *(Japanese)* 8−37021
- crystal cooling device with heat exchanger 8−42850
- liquefied gas usability *(Japanese)* 8−45638
- magnetic refrigerator for operation near 2K 8−37012
- metallic thermal connectors for use in nuclear refrigeration, elec. resist. meas. 8−224
- two-stage refrigeration and power producing arrangement, with cooling tube and thermoelectric stage 8−21142
- ^3He-^4He, dilution refrigerator, design, for Mossbauer expts. on Tm and its cpds. 8−27127
- ^3He-^4He refrigerator, construction and appl. to Mossbauer expts. 8−24909

refrigerators
- cryo-tip, heat transport via metal filled epoxy glue 8−37013
- Ettingshausen refrigerator, longit., isothermal, nonstationary regimes, theory 8−18157
- fast-cooling microrefrigerator 8−24801
- mechanical laser/component cooling appl. 8−22136
- He, optimisation for superconducting power transmission lines, w.r.t. cost and reliability 8−24802

regenerative receivers *see radio receivers*

Regge poles and trajectories
- $\pi N\rightarrow\rho X$, trajectory data, reson. and scatt. regions, compatibility *(Russian)* 8−8703
- baryons and baryonium, SU_6 symmetry, duality and unitarity 8−8622
- bootstrap, planar pole, and existence of good finite mass sum rules 8−16948
- bounds for Regge slopes and intercepts for ordinary and new hadrons 8−8627
- charmed meson masses, duality predictions 8−8619
- charmed particles, duality constraints on spectroscopy 8−21398
- cross section rise in high energy strong interactions, multipomeron exchange, Mandelstam diagrams 8−41516
- crossing symmetric and unitary scatt. amplitudes 8−21356
- Deck model, rescattering effects for diffr. dissociation of hadrons 8−4844
- double-phase representation, fixed-angle and fixed-momentum-transfer scatt. 8−8628
- dual multiperipheral model planar bootstrap 8−4837
- dual pomeron contrib. to inclusive distrib., triple-Regge, fragmentation, pionisation, regions 8−41509
- dual unitarisation, renormalisation of trajectories with zero quantum numbers 8−21400
- dual unitarisation scheme, Pomeron and f Regge pole prod. 8−41512
- eikonal Regge model, opacity and diffr.-dissociation cross section of grey disks 8−4845
- eikonal theory, interacting Pomeron production by retaining Feynman graphs 8−8633
- electroproduction structure functions in asymptotically free theories, Regge behaviour 8−25025
- four-reggeon couplings, analogue quantum-spin model 8−45813
- geometrical pomeron 8−37188
- hadron dynamics, multiparticle prod., intermol. pot. in Feynman-Wilson gas 8−477
- hadron-hadron collisions, parton model of hard and soft processes in small p_t inclusive reactions 8−41599
- hadron-hadron high energy scatt., Jost-Lehmann-Dyson representation, light cone singularities 8−17049
- hadron-nucleon total cross section 8−45888
- hadronic physics, Regge trajectories families, S-matrix theory, nonrelativistic linear pot. quark binding model, comparison 8−33048
- hadrons, parton distribs. calc. 8−421
- harmonic oscill. model, trajectories for old and new particles 8−12886
- heavy ion optical potential elastic scatt., energy depend., Regge pole and Coulomb amplitudes 8−25228
- heavy-ion transfer reactions, Regge parametrisation of ang. distribs. 8−21592
- inclusive vector and tensor meson prod. in beam fragmentation region, Mueller-Regge formalism 8−17057
- meson spectrum in simple planar bootstrap model 8−8618
- meson trajectories in quark-gluon theories 8−25005
- meson-meson scatt., Regge theory, crossing-symmetric representation of dynamical eqns. 8−4841
- multi-Regge limit of Veneziano model, exchange of new trajectories 8−33043
- multi-Regge limit of Veneziano model, unconventional trajectories props. 8−33044
- multicolour QCD as dual resonance theory, mesons on rising Regge trajectories 8−16987
- multiparticle Regge poles, t-channel particle repulsion *(Russian)* 8−45814
- multiparticle reggeon with $\alpha(0)>1$, quantal struct. *(Russian)* 8−445
- $n+p\rightarrow p+n$, charge exchange, energy depend., possible explanation, Regge exchange 8−21465
- particle correlations in multiperipheral resonance prod. model, broken SU_3 symmetry 8−45891
- perturbative reggeon calculus, topological cross sections 8−8632
- phenomenological consequences of new Regge trajectories on pion trajectories, dual models 8−33045
- QCD, two dimens., hadron scatt., leading order calcs., meson-meson scatt. 8−4831
- QCD, two dimens., hadron scatt., multi-Regge and inclusive reactions 8−4884
- Regge phenomenology, review 8−24979
- Regge pole theory, reasons for survival, review 8−24977
- Regge-Mueller diagrams, Froissart saturation case, struct. and props. *(Russian)* 8−4808
- Reggeon amplitudes satisfying good finite mass sum rules 8−16953
- relativistic mechanics of two or three point particle systems 8−4481
- singularities in multiparticle processes, limit of Veneziano model 8−29274
- soliton trajectories from nonlinear field eqns. of Dirac field, Lorentz and gauge invariant 8−4791
- spin-mass trajectories and QED in null plane, free field theories 8−29259
- stochastic-field multieikonal theory, high-energy hadron dynamics 8−8634
- string-like configurations in Weinberg-Salam theory, Regge trajectories of excitations 8−16966
- threshold behaviour of simple and double Regge pole trajectories 8−16950
- total and triple-Regge inclusive cross sections 8−400
- Veneziano model, 6-point function and new trajectories 8−16998
- Zweig-superconvergence relations in meson collisions 8−21397
- ep, deep inelastic scattering on π-pole Regge *(Russian)* 8−12918
- $\gamma\gamma$ scatt., fixed and moving Regge poles 8−21406
- $K(\bar{K})N\rightarrow K(\bar{K})N$, 1.5-280 GeV/c, Regge pole residues and trajectories, review 8−45886
- $K^*(890)$ prod. at 13 GeV/c, Regge models 8−45961
- $\bar{K}N$ finite energy sum rules, Regge pole models, exchange amplitudes 8−470

Regge poles and trajectories continued
- $Kp\rightarrow K^*p(K^{**}p)$, diffractive prod. and Reggeon-photon coupling analogy 8−45890
- K^-p, inclusive Ξ^- production at 4.2 GeV/c, triple Regge formalism 8−4875
- $K^-p\rightarrow\bar{K}^0n$, 25 and 40 GeV, differential cross section meas. *(Russian)* 8−25083
- $K^-p\rightarrow\Lambda X$, 4.2 GeV/c, polarisation and triple Regge framework 8−45948
- Λ inclusive prod., Regge cuts and spin depend. 8−21402
- NN low-energy pot., Regge-pole theory 8−45889
- np charge exchange cross sections, Regge pole and cut behaviour at Fermilab. energies 8−441
- νp interactions, charmed meson prod., Regge pole model, cross sections 8−33052
- p electroprod. struct. function and constituent-particle scatt. 8−45931
- $pN\rightarrow NN\pi$, 6 to 1480 GeV, double Regge pole model 8−45964
- $\bar{p}N\rightarrow\bar{N}(N\pi)_{I=1/2}$, 5.7 GeV.c ρ exchange contrib., cross channel isospin amplitude anal. 8−45938
- pp large $|t|$ scatt. and Regge cuts 8−41587
- $pp\rightarrow\Lambda$, 10 to 300 GeV, triple Regge framework 8−21472
- $pp\rightarrow pX$, triple-Regge fits, duality struct. of inclusive diffr. dissoc. 8−8715
- $\bar{p}p\rightarrow\pi^+\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
- π electroprod., light cone dispersion sum rules, Regge subtractions 8−41556
- πp, 16 GeV/c, diffr. dissoc. into $\bar{K}K^*$, $\bar{K}^*K$ 8−41594
- $\pi p\rightarrow A_2p$, diffractive prod. and Reggeon-photon coupling analogy 8−45890
- πp charge exchange reactions, model of ρ Regge trajectory 8−37226
- $\pi^-p\rightarrow\Delta^{++}(1232)$, 15 GeV/c, multiplicity distrib. determ. 8−45982
- $\pi^-p\rightarrow\eta n$, tensor-exchange amplitude and polarisation determ. 8−45962
- π^-p interaction, 15 GeV/c, ρ^0 prod. analysis within triple Regge model 8−37251
- π^-p interactions, 15 GeV/c, K^0_s, Λ, $\bar{\Lambda}$ prod., Regge anal. 8−45981
- $\pi^-p\rightarrow\Lambda K^0(K^{*0})$, 3-6 GeV/c, Regge theory of baryon exchange 8−25074
- $\pi^-p\rightarrow\omega n$, Reggeon cuts and reaction description *(Russian)* 8−45947
- $\pi^-p\rightarrow p\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
- $\pi^-p\rightarrow\pi^0n$, pure $\rho+\rho'$ Regge-pole anal. for 20-200 GeV/c forward scatt. 8−8702
- $\pi^-p\rightarrow\rho^0n$, Reggeon cuts and reaction description *(Russian)* 8−45947
- $\pi^{\pm}p$, 40-45 GeV, Regge anal. differential cross sections *(Russian)* 8−25081
- $\pi^{\pm}p$, A meson prod., Regge model, polarisation anal. 8−41577
- $\pi^{\pm}p$ elastic scattering, amplitude anal., σ trajectory 8−33081
- $K^{\pm}p$, 40-45 GeV, Regge anal. differential cross sections *(Russian)* 8−25081
- $\bar{p}p$, 40-45 GeV, Regge anal. differential cross sections *(Russian)* 8−25081
- $\bar{p}p\rightarrow\Lambda$, 10 to 300 GeV, triple Regge framework 8−21472

Reggeon field theory
- cut Reggeon field theory on transverse lattice, inclusive distribs. determ. 8−21334
- dual unitarisation, renormalisation of trajectories with zero quantum numbers 8−21400
- four-reggeon couplings, analogue quantum-spin model 8−45813
- hermicity properties, Schwarz trajectories 8−29274
- high energy collisions of heavy nuclei, Glauber rescatt., Reggeon field theory 8−37369
- inclusive interactions of fast hadrons with nuclei, Reggeon chain *(Russian)* 8−45985
- lattice approx., total cross-section anal. *(Russian)* 8−29273
- one-component formulation of Reggeon field theory 8−8630
- ordered phase in Reggeon field theory, Hamiltonian formulation, scatt. amplitude calc. 8−4807
- OZI rule violation, analyticity and duality 8−24978
- particle correlations in multiperipheral resonance prod. model, broken SU_3 symmetry 8−45891
- perturbation theory at large orders 8−8510
- pomeron flavouring in reggeon field theory with thresholds 8−41437
- pomeron flavouring Reggeon field theory with thresholds 8−29275
- quantum mechanics, Reggeon, Hamiltonian formulation, S-matrix, pomeron Green functions 8−16951
- review of recent developments 8−41439
- SL(3,R), unitary analytic representations, hadronic Regge sequences 8−37155
- spontaneously broken nonAbelian gauge theory, Regge behaviour 8−41438
- supercritical reggeon field theory, classical kink state quantisation 8−16952
- total and triple-Regge inclusive cross sections 8−400
- triple Regge region, higher order ε terms 8−16954
- triple-Regge limit, cut Reggeon field theory 8−8629
- vector meson scatt., two to three body, high energy, in Yang-Mills theory 8−17051
- Yang-Mills theory, Regeisation of scalars and dual model struct. 8−16927
- Yang-Mills theory, spontaneously broken, reggeon field theory appl. 8−8512
- KN scattering, reggeised particle exchanges used in Blankenbecler-Sugar eqn. 8−37230
- π electroprod., light cone dispersion sum rules, Regge subtractions 8−41556

region of escape *see exosphere*

regulators *see controllers*

Rehbinder effect *see mechanical properties of substances; surface phenomena*

relative density *see density*

relative humidity *see humidity*

relativistic band structure calculations
- Os, correlation effect of crystal pot., RAPW calcs. 8−6265
- Th, correlation effect of crystal pot., RAPW calcs. 8−6265

relativistic corrections
- *see also Lamb shift*
- actinide configurations, isotope shifts rel. to $|\psi(0)|^2$ 8−17580

relativistic corrections continued
atom, HFS, many-body and relativistic effects 8−37565
atom, nucl. quadrupole coupling const., relativistic many-body perturbation theory 8−37566
atom, quasiclassical approximation, Thomas-Fermi method, for Z>137 nuclei *(Russian)* 8−17547
atom, screened Coulomb pots., anal. perturb. theory for relativistic case 8−21861
atoms, relativistic electron impact, K-shell ionisation, Z and E depend., scaling behaviour 8−42227
charge transfer, resonant, spin depend. *(Russian)* 8−29850
C_{2v}-formaldehyde, Tamm-Dancoff approx., relativistic correction, vertical excitation energy, radiative lifetimes 8−9090
four subshells of equivalent electrons, matrix elements of relativistic energy operator 8−33407
heavy-ion collision, quasimolecular L X-rays, relativistic self-consistent correlation diagram 8−5247
molecular, relativistic orbitals for double group D_{3h} 8−41968
multicharged Li-like ions, decay of metastable autoionised state *(Russian)* 8−25455
multipole transitions in complex config., matrix elements for operators inc. relativistic corrections 8−5150
muonium, bound-state solutions in relativistic two-body formalism 8−13443
positronium, bound-state solutions in relativistic two-body formalism 8−13443
pseudo pot. model Hamiltonian, spin-orbit splitting, intercombination and relativistic orbital reorganisation 8−25424
superheavy molecules, Z=110, Dirac-Slater SCF relativistic mol. calcs. 8−41970
X-ray, lineshifts in nonrelativistic and relativistic approxs. 8−951
XPS binding energy determ. without retarding pot., relativistic mass increase 8−41377
Ar, and isoelectronic sequence, E1 transitions, relativistic oscill. strengths 8−949
Au, ab initio effective core pot., Dirac-Hartree-Fock and Hartree-Fock calcs. 8−33426
Au, valence orbitals, Dirac-Fock scheme, direct and indirect relativistic effects 8−41969
Ba I, low-lying, even-parity levels, ab initio relativistic SCF MCDF calcs. 8−37568
Bi, electron config. mixing and parity nonconservation 8−13439
Cu isoelectronic series, Hartree-Fock line strengths 8−9122
H-like ion, elec. multipole polarisability, relativistic corrections, shielding factors, Dirac eqn. 8−13441
He-like ions, oscillator strengths of transitions between low-lying S and P states 8−13470
Li, ^{2}S ground state calc. using Hylleraas-type wavefunctions 8−33418
Li, isoelectronic series, Hartree-Fock line strengths 8−9122
Lu, valence orbitals, Dirac-Fock scheme, direct and indirect relativistic effects 8−41969
Mg, intercombination line oscill. strength, including core-polaris. and relativistic effects 8−25475
Mn, HFS, many-body and relativistic effects 8−37565
N, nucl. quadrupole coupling const., relativistic many-body perturbation theory 8−37566
Na isoelectronic series, Hartree-Fock line strengths 8−9122
O, isoelectronic sequences, energy spectra inc. relativistic corrections 8−924
Rb, HFS, many-body and relativistic effects 8−37565
Tl, valence orbitals, Dirac-Fock scheme, direct and indirect relativistic effects 8−41969
UO_2^{2+}, relativistic X_α scatt. wave calcs. 8−46268
Xe, 5p subshell photoelectron branching ratio, Dirac-Fock calcs. 8−42021
Xe, ab initio effective core pot., Dirac-Hartree-Fock and Hartree-Fock calcs. 8−33426
Xe, atom and ions, relativistic Dirac-Fock-Slater calc., fluoresc. yield, X-ray energies shift 8−25450
Xe_2, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
Xe_2^+, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
XeF, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281

relativistic electron beam tubes
beam surface envelope and angular vel., propag. through gas 8−46499
critical vacuum current, virtual cathode effect 8−25790
diode with annular cathode immersed in axial mag. field, pinching rot. and reflexing 8−9860
diode with converging mag. gradient, electron beam oscills. and ion production 8−9861
high-power microwave generation by relativistic electron beams 8−5444
intense slow space charge generation appl. to collective ion accel., plasma diode 8−9863
magnetron with diffracted output of EM radiation, construction and operation *(Russian)* 8−24823
microwave source 8−46556
nonisochronic reflecting electron system, high power microwave emission 8−1140
plasma diode, intense neutralised ion beam ballistic focusing 8−9859
X band gigawatt microwave pulse, produced by relativistic electron beam injection into waveguide *(French)* 8−25781

relativistic fluid dynamics
accretion discs, fluid, orbiting Kerr black hole, analytic theory 8−36631
black holes, relativistic accreting discs hydrodynamic struct. 8−36632
D type perfect-fluid solutions of Einstein's equations, classification 8−21019
extragalactic radio sources, relativistic Kelvin-Helmholtz instabilities 8−45419
general relativistic anal. of self-gravitating perfect magnetofluid 8−36905
geodesic flows and Kepler problem, in spaces of const. curvature 8−40807
Hamiltonian formalism for self gravitating relativistic perfect fluid, Lagrangian variational principle 8−16289
heat conducting fluid, existence and unity of Cauchy problem solns. *(French)* 8−47070

relativistic fluid dynamics continued
inhomogeneous cosmological model solns. of Einstein eqns. for perfect fluid 8−24585
isentropic perfect fluids, integration of relativistic equations of motion 8−7872
Newtonian stars with stratified flows, mirror planes 8−32444

relativistic mechanics
see also relativistic fluid dynamics
axisymmetrical body, translational-rotational motion in gravitational field of sphere, averaging methods applic. *(Russian)* 8−21049
Bhabha first order relativistic wave eqns., historical development 8−14
celestial mechanics, periodic solns. in Hill's relativistic problem 8−40804
clock problem explained by nonrelativistic premises 8−24664
composite particle scatt., quasipotl. approach 8−404
conservation law derivation using digital computers 8−12552
contrinuous media, natural theory *(Russian)* 8−41157
de Sitter space, dynamics of free particle systems 8−20958
de Sitter universe and mechanics 8−21034
Dirac monopole, relativistic theory, canonical quantisation 8−45517
education, relativistic torque, comment on 'right-angle lever paradox' 8−36750
electrodynamics of mag. monopoles and electric charges 8−28967
electron currents in vac. relativistic generalisation of Child/Langmuirs laws *(German)* 8−36843
fermions, charged relativistic, semi-classical, two-body problem, new approach 8−29284
field eqns., geometric and algebraic foundation of spinor formalism 8−37128
gyratron, coherent microwave mag. bremsstrahlung, general theory of masers *(Russian)* 8−1141
Hamiltonian n-particle systems, advanced retarded polarisation 8−29017
hard sphere relativistic gas transport coeffs. 8−30401
Kepler problem and geodesic flows, in spaces of const. curvature 8−40807
Lorentz invariant multiparticle amplitudes, massive particle relativistic kinematics, spinor amplitudes 8−41156
multilocal fields in relativisitic quantum field theory 8−37125
multilocal theory, relativistic mechanics of interacting particles 8−16638
Newtonian mechanics, four vectors 8−4477
position operators for relativistic non-interacting n-particle system 8−41182
quantum, localisation and causality 8−4514
quantum, phase space formulation 8−36878
quantum, relativistic localisation and operator density current 8−32709
quantum Hamiltonian for directly interacting particles 8−16729
relativistic nuclear physics, collisions of relativistic ions *(Rumanian)* 8−46104
relativistic string with massive ends, dynamical eqns. 8−4826
Schwartz's method and Goldstein's eigenvalue problem 8−4814
solitons, nontopological, and appls. to hadrons 8−32968
synchronous formulation of relativistic statics 8−24663
transitive mechanical systems, param. determ. from co-adjoint action 8−12554
two or three point particle systems 8−4481
wave equation of bilocal field, and mechanical model 8−29241
Wigner representation, gauge invariant, electrodynamics of scalar particles 8−29251
WKBJ approx. for classical particles with spin in external field 8−32692

relativistic plasmas
astrophysical transrelativistic plasmas, photon pair prod. 8−20632
Boltzmann, theory, entropy production, reference frame 8−22547
Boltzmann theory, reciprocal relations, transport props. 8−30477
confinement of relativistic charged particles by EM wave 8−38524
E-layer nonneutral, negative mass instability, axial energy spread effect 8−42745
electron oscillations, dispersion relations in mag. field 8−34364
electron waves, relativistic effects 8−34310
EM wave interaction, Doppler shift, reflected pulse duration 8−34328
EM wave propagation in cold inhomogeneous electron plasma, relativistic effects 8−26295
EM wave reflection from front of relativistic electron beam 8−34329
EM wave self-focusing due to relativistic electron mass variation 8−1838
Maxwellian, interaction with cyclotron radiation, absorpt. coeff., computer model 8−30478
oscillations, dispersion relations, electron fluid model approx. calcs. 8−1882
pulsar atmospheres, beam-plasma interaction mechanism for radio emission 8−20847
pulsar magnetospheres, plasma relativistic co-rotation 8−12258
radiative processes in relativistic plasmas, appl. to kinetic theory of free-electron lasers 8−42316
shock waves, in relativistic MHD 8−9770
streaming plasma, generalised Ohm's Law, pulsar magnetosphere relevance 8−9823
synchrotron emissivity near electron cyclotron and upper hybrid freqs. 8−14140
transport coeffs., relativistic Boltzmann theory, variational method 8−47096
ultrarelativistic electron-positron plasma, wave prod., rel. to pulsar radiation 8−20629
viscous phenomena, for relativistic plasma in EM field 8−34365

relativistic scattering theory
see also elementary particle scattering; quantum field theory of elastic scattering
canonical theory of relativistic interactions, N+1 interacting particles 8−33003
Compton scattering, high intensity appl. of relativistic invariace as gauge invariance 8−41201
convergent polynomial expansion, lines of zeros, slopes of diffr. scatt. 8−45892
direct interaction scatt. theory, cluster decomposition 8−33002
eikonal approx., interaction representation *(Russian)* 8−33005
eikonal expansion, scalar meson exchange 8−29278
eikonal Regge model, opacity and diffr.-dissociation cross section of grey disks 8−4845

relativistic scattering theory continued
electron-photon collision, relativistic variance of cross section *(French)* 8−45924
fast particle scattering on exponential type singular potential 8−37157
field theory model of $NN\pi$ system, three-body problem, disconnectedness problem 8−29276
four-body scatt., transition amplitudes determ. 8−24983
froissarton coupling constant, s-channel unitarity *(Russian)* 8−45799
gas of interacting particles, phase vol. approx. 8−41225
hadron-nucleus scatt., corrections to Glauber amplitude *(Russian)* 8−41683
hadronic diffraction mechanism, geometrical space-time formulation 8−443
half-phase shell shift in terms of on-shell phase function 8−29279
harmonic oscillators, relativistic two-body interaction, exactly soluble system 8−16955
high-energy scattering amplitude, quantum field theory representation 8−24980
impact-parameter group, realisation on cone functions *(Russian)* 8−45817
inelastic eikonal phenomenology in stationary-phase approx. 8−45816
ladder equations for imaginary part of scatt. amplitude, diagonalization 8−37156
Maxwellian electrons, moment generated radiative transfer functions 8−24747
meson+proton→3 mesons+proton, partial wave anal., Ascoli anal., fire-ball dimens. 8−17054
meson-meson inelastic collisions, Glauber multiple-quark scatt. model, quark-quark scatt. amplitudes 8−21459
meson-meson scatt., Regge theory, crossing-symmetric representation of dynamical eqns. 8−4841
multiple scatt. series, eikonal approx. 8−21358
off-energy-shell T matrix, frame depend., relativistic pot. theory 8−25159
partial wave expansions for arbitrary spin, non-central forces 8−21535
partial-wave amplitudes, crossing sum rules 8−21355
phase space integral, n-particle, relativistic, Monte Carlo integration program 8−33001
phase-modulus correlations for forward scatt. amplitude without Froissart bound 8−401
reduced mass for relativistic quantum-mechanical problems 8−4809
Regge multiparticle poles, t-channel particle repulsion *(Russian)* 8−45814
relativistic electron Coulomb scatt., approx. to cos γ 8−28962
Roy eqns., regularisation with smooth cut off 8−29271
semi-inclusive single particle cross-sections, upper bounds determ. 8−41442
single scattering optical model, three body approach, appl. to nucleon+nucleus scatt. 8−25162
Stueckelberg phases, 3-parameter exponential model 8−41440
three body unitary formalism 8−41443
three particle bound states and contribution of three particle unitarity, dispersion method *(Russian)* 8−8336
three-body problem, decoupled integral eqns. 8−24982
three-particle bound states, wave function calcs. 8−8558
total cross sections, upper bound 8−12839
two body reactions, spin system constraints, quark additivity, geometrical hypothesis 8−29309
two spinless particles, scatt. amplitude and cross-section, relativistic correction *(Russian)* 8−36889
two-fermion relativistic eqns with form factors, anomaloys mag. moment interactions 8−372
unitarity and analyticity bounds on multiplicity and transverse momentum 8−45815
unstable particle+nucleon, total cross section, from diffractive prod. on nuclei, multiple scatt. approach 8−41441
$\Delta(1232)$, mass calc. by inverse scatt. procedure 8−403
$e\bar{e}\nu_e\bar{\nu}_e$, reactive mixture, bulk viscosity 8−45565
KN reaction below 1.9 GeV, dispersion theoretic discrepancy anal., SU(3), hadron coupling 8−21457
$K^-p \rightarrow K^-p\pi^+\pi^-$, partial wave anal. of low-mass $p\pi^+\pi^-$ system 8−25070
$K^-p \rightarrow \pi^0\Lambda(1520)$, 1710 to 2170 MeV CM energy, partial wave anal. 8−33085
K^-p reactions, 1.934-2.516 GeV/c, partial wave anal., SU_3 classification of Y^* states 8−25077
$K^{\pm}p \rightarrow K^{\pm}\pi^+n$ or $K^{\pm}\pi^-\Delta^{++}$, 13 GeV/c, elastic $K\pi$ partial wave anal. 8−41593
Λ nucleus→Σ^0 nucleus, cross section, Glauber approx. *(Russian)* 8−46114
nd elastic scattering, perturbation calcs., Faddeev eqns., Reid soft core pot. 8−33177
NN, total cross sections, medium energy dynamics, OPE three-body theory 8−25064
NN scatt., high-energy, effect of anomalous mag. moments in quantum field theory 8−465
NN scatt., small angle, appl. of eikonal vector meson exchange theory 8−17052
np observables, ^3P-waves effects, phase shift anal. of pp expts. 8−33077
$N\pi$ scatt., high-energy, effect of anomalous mag. moments in quantum field theory 8−465
πd scatt., relativistic kinematic effects 8−8685
πd-scattering length calc., on basis of Faddeev's equations *(Russian)* 8−33082
$\pi^{\pm}p \rightarrow \pi^{\pm}p\pi^+\pi^-$, partial wave anal. of low-mass $p\pi^+\pi^-$ system 8−25070
$\pi\pi$, Roy eqns., S- and P-wave scatt., constraints and correl. 8−21460
$\pi\pi$ S-wave phase shift, lower bounds, ε° and ρ poles 8−45953
$\pi\pi$ scatt. length, interior dispersion relations 8−45952
$\pi\pi$ scattering in 1 GeV region, partial wave dispersion relation with inelastic cut 8−4877
$\pi\pi\pi$ system, relativistic dynamics in ω channel 8−21360
$^{12}C(\alpha,\alpha)$, 1.37 GeV, modified eikonal multiple scattering theory 8−21576
$^4He(d,d)$, Glauber theory at high energy *(Russian)* 8−41732
$^4He(d,pn)^4He$, Faddeev eqns., separable pots., total cross sections 8−21571

relativistic scattering theory continued
Ne^+, electron scatt., relativistic R-matrix calc., fine-struct. level transition cross sections 8−13604
$\pi^{\pm}p$ elastic scatt., charge exchange, partial wave anal., Δ mass splitting, P_{33} resonance 8−29348

relativity
see also general relativity; light cones; relativistic mechanics; relativistic scattering theory; special relativity
absolute space-time theory 8−36921
education, relativistic line of charge over ideal conductor, net force 8−36762
gyroscopic precession machine design, calc., cost estimation *(German)* 8−21048
Mach's philosophy, genesis of relativity theory 8−8211
relativistic Boltzmann eqn., series convergence 8−36949

relaxation
see also anelastic relaxation; chemical relaxation; dielectric relaxation; magnetic relaxation; stress relaxation; ultrasonic relaxation; viscoelasticity
butadiene acrylonitrile copolymer, relaxation processes *(German)* 8−31439
glass, refractive index during annealing, nonlinear structural relaxation model 8−44234
liquids, relaxation, binary collision theory 8−6000
metallic glass, load relaxation studies 8−48441
metals and alloys, relaxation, rel. to defect struct. *(Russian)* 8−19801
METGLAS^{tm}2826, load relaxation studies 8−48441
plastic elasticity, hardness, creep, and relaxation meas. with Vickers indenter by electroacoustic method *(German)* 8−48584
polyethylene oxide, solid state relaxation, DSC study 8−9962
polyethylene oxide, solid-state relaxation, spin labelling technique 8−9963
polymer, thermolum. rel. to mol. relax. 8−11003
rubber, loaded, effect of polyfunctional nitro-oligomers on relaxation props. *(German)* 8−48436
styrene crosslinked polyester networks, low temp. γ' relaxation 8−44156
styrene crosslinked polyester networks, low temp. γ relaxation, water and chem. struct. effects 8−44157
transport-relaxation equations, time-depend. variational principle and reciprocity theorem 8−12655
B_2O_3 glass, nonlinear structural relaxation model for glassy state 8−26448

relaxation oscillators
semiconductor laser direct PCM improvement by optical feedback 8−1287

relaxation time, carrier *see carrier relaxation time*

relay systems (radio) *see radio links*

relay systems (satellite) *see satellite relay systems*

relays
see also switches
fibre optic relay with metallic pads heated by light 8−18038

relays (repeaters) *see repeaters*

reliability
see also circuit reliability; quality control; standards; testing
Clinch River Breeder Reactor Plant reliability and safety methodology 8−29617
CMOS microcircuit, scanning electron microscope and mass spectrometry appl. 8−21264
component, thermal neutron environment 8−21787
coronary care unit interactive ECG monitoring 8−7481
electromedical equipment, safety *(Croatian)* 8−48901
electronic piece parts, evaluation by neutron radiography 8−31610
FBR, Clinch River, computer anal. and models 8−13260
fracture sensitive structures, materials related aspects 8−42570
geostationary satellite, station-keeping activator subsystem reliability 8−4074
heterojunction laser and LED reliability rel. to facet damage and nonradiative centre formation 8−5472
hip joint prosthesis 8−11777
laser diode and transmitter unit lifetime tests *(German)* 8−37883
leads, solderability of external coatings after storage at 25-400°C 8−184
light-duty electrical contact, reliability assessment methods 8−29219
LWR, commercial, evaluation of human errors and operator reliability 8−17373
microelectronic device bonds, glass-metal seals and weld metal, assessment using Auger spectroscopy 8−24900
NDT, methods of increasing indices 8−40010
NMR analysis system, LAOCOON3-type, reliability efficiency and error estimates 8−258
nonferromagnetic coating thickness monitoring stability and general serviceability of applied sensors 8−44326
nuclear industry value of reliability analysis 8−29619
nuclear power plant, fault tree analysis, development of DICOMICS-TWIN self-adaptive algorithm for minimal cut sets determ. 8−17380
nuclear power plant, fault tree and reliability analysis, modular decomp., PL/1 program 8−17381
nuclear power station, probabilistic methods for risk assessment and safety standard 8−21693
nuclear reactor, class 1E electronic instruments, ageing 8−8945
nuclear reactor shutdown system reliability, effect of operator performance 8−29611
nuclear reactor technology, structural reliability *(Japanese)* 8−17315
optical fibre communication systems, Soviet studies *(German)* 8−25972
polyethylene pipes, lifetime determ., crack growth in thermoplastics under various conditions 8−39981
radiochemical and chemical trace analysis, in environmental materials 8−40106
reactor Shutdown System Reliability Duty Cycle generation method 8−29620
science and technology, importance of safety and reliability, in materials testing 8−39982
structural reliability and safety, probabilistic methods 8−39978
superconducting power transmission lines, He refrigerators optimisation 8−24802
thermal reactor safety and reliability technology 8−701
thermistor bolometers, anal. methods 8−24795
tribology and technical systems reliability 8−39918

reliability continued
US multichannel shadow flaw detectors, accuracy and reliability of inspection 8−44306
$Al_xGa_{1-x}As$-GaAs LED design and characterisation for fibre-optic communications 8−46796
Cu electrodeposition on Su, failure anal. methods 8−24901
GaAS-$Al_xGa_{1-x}As$, DH laser and modulation developments *(German)* 8−37903
GaAs FET, assessment by SEM electron beam 8−29216
GaAs-$Al_xGa_{1-x}As$ DH laser, high-temp. degradation *(German)* 8−37884

reliability theory
see also statistical analysis
digital m-of-n system with error indicating components, Boolean model appl. *(German)* 8−41133
nuclear reactor fuel handling system availability, minimum requirements 8−41820
nuclear safety system, time dependent unavailability anal., FRANTIC computer code 8−29588
reactor safeguard system common-mode failure analysis 8−29618

remanence
see also coercive force
basalts from Nazca Plate, mag. props. and opaque mineralogy 8−20396
Beaufort Sea sediment cores, NRM, geomag. excursion record 8−20349
Devonian lacustrine sediments, from Caithness, Scotland, palaeomag. and mineralogy 8−28170
DSDP abyssal igneous cores, remanent mag. inclinations, postemplacement tectonic effects 8−28161
ferromagnetic plate, magnetic hysteresis theory, singularities of magnetic reversals on industrial freq. *(Russian)* 8−39373
Late Cretaceous polarity sequence, Scaglia Rossa limestone, Italy, rock and palaeomag. studies 8−11803
meteorites, evidence for primordial mag. field in parent body era 8−45293
Miocene rocks, Borzsony Mountains, Hungary, palaeomag. 8−32011
Rayleigh hysteresis, reexam. 8−48002
red beds, secondary magnetizations significance and utilization 8−28165
rock, reversible effect of small uniaxial stress on remanent mag., single-domain theory 8−20393
rocks, multiphase magnetizations, recognition and separation techniques 8−28349
sediments, fine-grained, compaction effect on acquisition of detrital remanent magnetization 8−20395
Skye lavas, NW.Scotland, remanent mag. struct. 8−28167
steel, high-speed, 30Kh2N2SMKt, deform. effects on physicomech. props. 8−23741
terrestrial planets, remanence model for mag. fields 8−12125
Tertiary basalts with low Curie temps., palaeomag. data reliability 8−28166
Tertiary rocks, Faeroe Islands, remagnetization 8−28168
Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
twin crystals, magnetic reversals, role of magnetostatic interaction *(Russian)* 8−39361
V-Fe (29-35 at%), ferromag., mag. props. near crit. conc. for ferromagnetism 8−19225
Yellowstone and Jackson Lakes, mag. props. and secular var. in sediment cores 8−48968
Co, FCC, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
Cu-Mn, mag. irreversibility and metastability 8−19279
(ErEu)$_3$(FeGa)$_5$O$_{12}$ film, for mag. writing and magneto-optical displays 8−6549
Fe-Co-Ni-Al-Zr magnetically hard alloys, reduction *(Russian)* 8−43614
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous, mag. props. 8−10728
Fe_3O_4, magnetite, TRM props. of single-domain, pseudo-single-domain and multidomain particles 8−40544
Gd-Co alloy, sputtered film, mag. props. determ. *(Chinese)* 8−2714
MnBi particles, demagnetised, coercivity, remanence and magnetisation reversal 8−19281
$Mn_{2-x}Cr_xSb$ film, prep. and mag. props. 8−48009
Ni, deformed, coercivity and remanence anisotropy 8−31093
Ni, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
Ni-Co, mag. props. of single-domain powders after plastic deform. *(Russian)* 8−6554
$Y_{2.01}Gd_{0.99}Fe_{4.925-x}Mn_xO_{12}$, comp. depend. of mag. props., and stress sensitivity control 8−27057

remanent magnetism *see remanence*

remote control *see telecontrol*

remote control equipment *see telecontrol equipment*

remote metering *see telemetering*

remote sensing
see also infrared imaging; remote sensing by laser beam
3 mm wavelength scattering and emission characteristics of natural media 8−3770
aerial multispectral-photographic lenses, Pinatar 4/125, manufacture *(German)* 8−4717
aerial photography, high altitude, aspects and results 8−36309
air pollution, remote sensing via computer assisted correl. spectrometer 8−4002
air pollution single ended monitoring system, 1.4 to 4 μm range 8−3974
Arctic sea ice, layered struct. study by radar sounding *(Russian)* 8−16023
artificial satellites, and resource sensing *(Japanese)* 8−16211
atmosphere, active microwave sensing *(Japanese)* 8−16213
atmosphere, echo carrier freqs. and antenna dimensions rel. to echosonde antennas performance 8−1474
atmosphere, mesoscale temp. and moisture fields from satellite IR radiance meas. 8−7717
atmosphere, moisture profile estimation from satellite IR radiance meas. 8−45021
atmosphere, quantitative bistatic acoustic sounding of boundary layer 8−49176

remote sensing continued
atmosphere temperature field, spatial anal. from weather satellite meas. 8−20488
atmospheric and Earth surface characteristics affecting tropospheric propagation of microwaves, satellite techniques 8−24353
atmospheric data, geopotential field numerical analysis 8−7814
atmospheric O_3 monitoring with IR heterodyne radiometer 8−16216
atmospheric temperature, vertical profile, from satellite data, information retrieval 8−3959
atmospheric temperature sounding from CO_2 4.3 μm absorption spectrum 8−16166
beach sand, spectral reflectance/grain size relationship 8−16005
camera, film and solid-state-array types comparison w.r.t. imagery 8−4723
cloud classification techniques, comparative study 8−7809
computer elaboration and image processing of sensing data 8−40690
contour map aeromagnetic data computer processing 8−7819
cosmic ray air shower remote sensing using light emission and optical detection 8−4050
crop rows, effect on thermal radiation from terrestrial surface 8−16016
crop spectra, discrete absorpts. and emissions at Fraunhofer lines 8−44994
data interpretation, computer-assisted analysis techniques 8−7776
data processing developments, review *(Japanese)* 8−7801
digital thermal inertia image construction and interpetation 8−4001
dynamic, under-surface temp. pattern estimation method *(Japanese)* 8−36315
Earth, visual observations of environment from space *(Russian)* 8−40796
Earth's surface, air survey methods *(Dutch)* 8−3972
Earth observations by astronauts, potential appls. and results *(Russian)* 8−40795
Earth resources, remote sensing by Skylab microwave radiometer 8−16273
Earth resources surveying, multispectral photography from space *(Russian)* 8−16197
Earth surface, active microwave sensing *(Japanese)* 8−16214
Earth surface, photomontage of Europe and Asia *(Russian)* 8−16199
Earth surface features classification atm. turbidity effects 8−16204
Earth surface multispectral photography from space *(Russian)* 8−16198
Earth surface obs. satellites and remote sensor/attitude control interface 8−45182
environment, from space, automated digital data handling 8−3960
environmental remote sensing achievements and prospects 8−45028
estuary mapping, classification algorithms for Landsat data 8−40567
European remote sensing satellite programme benefit identification and quantification methodology 8−32231
flame, temp. meas. spectral remote sensing 8−32818
Friuli area, LANDSAT-2 imagery of linear features 8−24284
geological lineaments computer-assisted photointerpretation, perception method 8−7639
Georgian Bay, chlorophyll conc. from airborne spectral refl. meas. 8−16202
geothermal energy prospecting by geophys. methods, review 8−7803
ground exploration and geological evaluation using remote sensing from space platforms 8−40682
Gulf Stream cold core ring, observed formation 8−44862
height meas. from satellite images using zoom height finder 8−36308
HF radio acoustic sounder, atm. wind and temp. remote meas. 8−32235
Himalayas, tectonic lineaments from ERTS imageries 8−3739
hydrothermally altered and unaltered rocks, discrimination in visible and near IR 8−7641
image registration, similarity measures and preprocessing techniques 8−32240
IR pyrometer for remote temp. meas. of high-power radiation-generating equipment 8−24799
Japanese weather satellite, purpose and instrumentation 8−49290
JROE II LIDAR, atmospheric gas components/aerosol meas. *(Italian)* 8−3957
land-use map accuracy test, statistical sampling method 8−7805
land-use photo classification using optical spectrum anal. 8−12023
land-use/soil survey data processing for resource planning 8−7804
LANDSAT, proposed parameters 8−7858
LANDSAT 1 MSS imagery, plumes visible over NE.England and Midlands 8−45035
LANDSAT colour image digital data display using matrix printer 8−12024
LANDSAT computerised data anal. rel. to global development 8−36286
Landsat imagery for terrain analysis 8−40691
LANDSAT imagery geologic processing software 8−20521
LANDSAT multispectral images clustering scheme 8−32241
LANDSAT multispectral sensor image adaptive coding techniques 8−45060
LANDSAT obs. of estuarine density fronts and effects on coastal pollutants 8−7659
LANDSAT satellite images; low-cost enhancement of multispectral data 8−20559
LANDSAT scene- and map-corrected images using mini computer 8−7806
Landsat views of Earth, book 8−7643
lunar surface unit definition and characterization using remote sensing 8−28551
magnetosphere, elec. fields parallel to mag. field, remote sensing expt. 8−40776
meteorological parameters *(Japanese)* 8−16205
Meteosat image processing 8−36297
Meteosat imaging payload, functional aspects 8−36424
microwave holography appl. 8−37830
microwave radiation from clouds meas. by Nimbus 6 for rainfall distrib. determ. 8−3981
microwave radiometry and devices *(Japanese)* 8−16212
microwave spectroscopic imagery of Earth from Nimbus 6 satellite 8−12026
mineral prospecting by airborne EM method *(Japanese)* 8−24392
Moon, orbital gamma-ray data rel. to large-scale lunar problems 8−12123

remote sensing continued

- multiband photography for geomorphology, soils and land use study, feasibility 8−12025
- multispectral camera, use on Soyuz 22 spacecraft 8−40794
- multispectral projector, colour synthesis instrument for evaluating multispectral photographs 8−40688
- natural resources, satellite remote sensing, issues 8−12022
- neutral atmosphere, monitoring techniques *(Japanese)* 8−16126
- Nimbus 6 high-resolution IR sounder channels, upwelling radiance sensitivity to clouds 8−32227
- North Sea pollution detection, appl. *(Dutch)* 8−36202
- nuclear power plant, siting, appl. of remote sensor data 8−21744
- numerical photogrammetry, orientation, triangulation and digitisation 8−36312
- ocean, optical properties, one parameter characterisation for remote sensing 8−7644
- ocean, satellite IR photography rel. to low temp. skin-layer *(Russian)* 8−36180
- ocean buoys, environmental data acquisition 8−36287
- ocean density profile remote sensing pulses, numerical algorithm 8−20429
- ocean surface, active microwave sensing *(Japanese)* 8−16215
- ocean surveillance by US Coast Guard 8−45004
- ocean wave patterns under Hurricane Gloria, obs. with airborne synthetic-aperture radar 8−44873
- ocean waveheight nondirectional spectrum from inversion of HF sea-echo Doppler spectrum 8−16203
- ocean-disposed waste drift, satellite and current drogue studies 8−3824
- oceanography, nearshore bathymetry using remote multispectral imaging 8−45053
- Oceans '77, conf., Los Angeles, USA (Oct. 77) 8−36193
- orthophotoquad processing using photodensity control system 8−7807
- Pacific Ocean, E.equatorial, long waves obs. in geostationary satellite IR images 8−24308
- Pacific Ocean, satellite obs. of mesoscale eddy dynamics in E tropical regions 8−24295
- passive remote crosswind sensor 8−7773
- Peru Current, advection obs. by satellite 8−16029
- photogrammetric system 'Zenit', automatic image processing *(Russian)* 8−24466
- photolineaments semi-quantitative geological interpretation 8−3766
- pollutant plumes, remote sensing from Landsat 8−40689
- pollution detection, of coastal waters, Italian methods *(Italian)* 8−3828
- radar for mm wave propag. expt. *(Japanese)* 8−16208
- radio, acoustic and radio-acoustic sounders *(Japanese)* 8−16209
- radiometry, multispectral , by tethered balloon, of plants and soils 8−3958
- satellite imagery stereographic pairs for cloud top height meas. 8−45017
- satellite-borne IR scanning radiometer obs. of stratosphere, optimum field view and spacing 8−16201
- sea ice/lake SAR L-band imagery computer processing 8−36311
- sea state and wind sensing by HF skywave radar 8−24396
- SEASAT program, Canadian participation 8−20535
- selective modulation radiometer for gaseous pollutant remote sensing *(French)* 8−20550
- sequential scene matching using edge features 8−32239
- side-looking airborne radar appl. 8−20561
- signal correction optimisation considering internal noises *(Russian)* 8−16191
- smoke cloud plumes from forest fires in Canada, satellite obs. 8−24367
- smoke from lightning-caused fires in Alaska, NOAA-5 images 8−49079
- snow cover water storage determ. using aircraft-borne gamma-ray surveys 8−16218
- soil moisture content, determ. by meas. of reflectance in ultrashort radio wave band 8−16075
- soil moisture meas. with airborne imaging passive microwave radiometer 8−36310
- soil moisture measurement, remote sensing simulator 8−49143
- spectral bidirection refl. props. meas., at 0.52 μm, for savannah, bog, pasture, and coniferous forest vegetation 8−40649
- spectral reflectance curves estimation from multispectral image data 8−32886
- spectral signatures of particulate minerals in visible and near IR 8−7620
- storm zone location methods using radiothermal remote meas. of ocean *(Russian)* 8−16189
- stratosphere, O_3 vertical profile determ. by lidar sounding from ground 8−11972
- surface albedo change, monitoring by LANDSAT 8−32104
- technology, Canadian advances 8−16170
- terrestrial luminance field spatial structure 8−49140
- thermistor bolometers in Earth horizon sensor telescope 8−24795
- tri-Doppler radar, tetrahedral scan appls. 8−16184
- tropical cyclones, photometric method for estimating cloud cover from satellite data 8−4007
- troposphere, transhorizon radiowave propag. appl. 8−44921
- upper atmosphere, constituents detection, using submillimetre wave heterodyne radiometry 8−49183
- water depth and bottom features mapping, from passive multispectral scans 8−40673
- wheat canopy reflectance, Suits' spectral model appls. 8−7811
- wind, strong shear obs. using pulse compression radar 8−32193
- H_2O vapour absorpt. in 10-12 μm atm. window 8−20513

remote sensing by laser beam

- acoustic microscope, scanning laser, biomedical research and materials science appls. 8−46878
- aerosol measurements with calibrated two- and three-freq. lidars 8−36334
- air pollutant emission and emission meas. by laser *(German)* 8−40665
- air pollution monitoring of ethylene and vinyl chloride, computer-controlled CO_2 laser system 8−49182
- airborne lidar, continuous long-distance system, flight tests *(German)* 8−36338
- airborne lidar, multidisciplinary, planned operation 8−36335
- atmospheric aerosols, flash holography investigation 8−16217

remote sensing by laser beam continued

- atmospheric composition meas., lidar theory and meas. *(Japanese)* 8−16206
- atmospheric pollutan2 gases, at CO_2 laser wavelengths 8−40647
- atmospheric pollution monitoring by PROBE, density profile meas. of specific constituent 8−28320
- atmospheric techniques *(Japanese)* 8−45019
- atmospheric trace constituents, differential absorpt. lidar from Space Shuttle 8−45179
- dense particulate system, particle size meas. device based on scatt. light 8−45006
- depth sounding using airborne laser land profiler 8−49173
- Earth observation by airborne CW CO_2 lasers, heterodyne reception 8−40676
- Earth surface intersite distances, using spaceborne laser ranging system, SPEAR 8−3978
- ethylene remote meas. using CO_2 differential absorpt. lidar 8−49122
- high-sensitivity multipurpose remote sensor 8−40684
- lidar observations of high plains thunderstorm precipitation 8−32167
- lidar Raman spectroscopy of atmosphere *(Russian)* 8−24387
- lidar system, heavy, for environmental protection control, containerisation 8−36336
- lunar ranging, scientific progress, 1969-77 period 8−36476
- Magnox reactors, remote corrosion monitoring, laser based instrument 8−41822
- multiple atmospheric parameter meas. laser radar system 8−4009
- oil spills remote detection using laser-excited Raman backscatt. and backscatt. fluoresc. 8−32242
- optical pulse receivers for distance meas., basic params. determ. 8−33843
- rain gauge, simplified optical path-averaged, based on scintillation detect. 8−40674
- seawater pollution studies, laser appls. *(Polish)* 8−20528
- smoke and dust clouds, lidar observation at 0.7 μm, 10.6 μm 8−49181
- terrain profiler, pulsed GaAs laser system 8−49145
- time digitiser for laser ranging, ps. resolution, built in CAMAC minicrate 8−36301
- turbulent jet, dye-dilution laser induced fluoresc. meas. 8−30397
- velocimeter based on CO_2 laser for long-range anemometry 8−36333
- water droplets in mists, clouds, size, density distrib. meas., laser remote sensing technique *(Japanese)* 8−49175
- H_2SO_4, vapour, foreign gas broadening diode laser spectroscopy in IR 8−36261
- OH, laser absorption spectrum, scanning technique, appl. to atmospheric monitoring 8−17664
- $Pb_{1-x}Sn_xSe$ diode laser absorption spectrometer, pollution detection equipment 8−40672

renormalisation

- $(\theta^4)_4$ field, Borel summability, renormalization group, perturbation theory 8−16922
- $(\varphi^3)_6$, on mass shell parametric space renormalisation 8−24920
- φ^4 field theory, manifestly finite, renormalisable, scatt. amplitudes 8−41407
- Abelian spontaneously broken gauge model, perturbation expansions *(Chinese)* 8−8500
- alloy, dilute, sp. ht., electronic, mass renormalisation and band density of states influences 8−43137
- anomalies of quantum conserved currents in exactly solvable models 8−387
- asymptotically free massless field theory, self-consistent β functions 8−16911
- baryon-quark phase transition, asymptotic freedom studied using renormalised coupling constant 8−4830
- binary mixtures an and liquid-gas transitions, model for coupling between molecule polarisation and order parameter 8−22823
- Borel singularities, effective one-loop Lagrangian in constant elec. field 8−16917
- Bose fluid, interacting, renormalisation group approach 8−45562
- Bose system condensed, crit. behaviour, renormalisation group approach 8−41231
- boson system, scaling equation of state, renormalisation group transformation 8−12643
- chemical instabilities, renormalisation group approach 8−15657
- classical 2-D Heisenberg model, low temp. recursion relations, high temp. series expansion 8−10639
- colour-flavour symm., renormalisation effects in guage theories 8−33018
- composite fields, renormalisation group eqn. using Green's functions generating functional *(Russian)* 8−16934
- composite particles, quantised theory, UV and IR divergences, renormalisation *(Chinese)* 8−24997
- compressible magnet with exchange anisotropy, crit. behaviour 8−39354
- conformal spinor current anomalies 8−8520
- conformal trace anomalies of stress-tensor 8−29023
- conformally flat space-time, space tensors, trace anomalies 8−12623
- conservation laws, infinite set for Thirring model, massive and quantum sine Gordon model 8−29226
- Coulomb scatt., perturbation theory, renormalised half-off-shell T-matrix 8−32996
- coupled order system in 1/n expansion, fixed points critical exponent φ^4 theory 8−4578
- critical phenomena, renormalisation group approach, ferromagnetic example 8−8497
- cubic antiferromagnetic, first to second order transition crossover 8−10709
- cutoff and lattice models, construction of renormalised field theories 8−4787
- dimensional anal. in renormalised perturbation theory 8−24950
- dimensional renormalisation, contraction anomalies 8−45784
- dual unitarisation, renormalisation of trajectories with zero quantum numbers 8−21400
- Dyson's hierarchical model, essential singularities of borderline Ising case 8−31077
- Dyson's hierarchical model, Heisenberg models and n-vector 8−31078
- electron gas, relativistic, ground-state energy 8−8536
- fermion systems, quasipartic renormalisation of memory function approach for response functions 8−8345

renormalisation continued
- ferroelectrics, uniaxial, critical behaviour studied via renormalisation group theory 8−8367
- ferromagnet, disordered, low temp. renormalisation group 8−10688
- ferromagnet, unaxial, random with dipolar interactions, crit. amplitude ratio change 8−31083
- finite Fermi systems, symmetrized correl. functions, renormalisation procedure 8−4555
- finite formulation of renormalisable field theory, improved operator products 8−32981
- finite nonpolynomial field theories, renormalisation group, scatt. amplitudes 8−16901
- finite size scaling theory, static, dynamic, based on renormalisation group approach, critical phenomena exam. 8−16745
- four dimensional operators 8−16929
- gauge field theory with multiple coupling consts., renormalisation group eqns. 8−360
- gauge theories of massive vector fields without scalar fields 8−8528
- gauge theory, supersymmetric, charge renormalisation vanishing 8−24930
- gauge theory on lattice, gauge-fixing and mass renormalisation 8−24949
- gravitation, covariant quantisation 8−8327
- graviton propagator calc. renormalisation and 1/N expansion 8−8320
- Green's function in nonrenormalisable massless $\varphi^6_{3+\varepsilon}$ theory, removal of cutoff, vertex functions expansion 8−45772
- Green's functions in nonrenormalisable massless $\varphi^6_{3+\varepsilon}$ theory, renormalisation of regularised theory 8−45771
- Heisenberg antiferromagnet, magnon renormalisation, two-magnon Raman scatt., kinematic interaction 8−23228
- Heisenberg ferromagnet, low-dimens., crit. temp. *(Russian)* 8−23274
- Heisenberg ferromagnet, magnon renormalisation, higher approx. 8−14945
- Heisenberg ferromagnet, two-dimens., spin dynamics, renormalisation group calc. 8−47966
- Heisenberg planar model, two dimens., renormalisation vortices, and symmetry breaking perturbations 8−10638
- hierarchical model, critical and tricritical behaviour 8−10712
- Higgs mechanism, implementation 8−24921
- indefinite-metric fields and renormalisation group 8−8529
- independent value models, renormalisation of nonperturbative functional integral 8−12810
- Ising chain, disordered, linear renormalisation transformations, appl. to dil. soln. model 8−34941
- Ising model, arbitrary spin, space renormalisation group calc. 8−27046
- Ising model, ferromag. coupled, semi-infinite, with free surface, renormalisation group approach 8−14975
- Ising model, Monte-Carlo method appl. to evaluation of Niemeijer-van Leeuwen cumulant expansion 8−16751
- Ising model, spin-glass, renormalisation group calc. for two dimens. models 8−14968
- Ising model, surface tension, using real-space renormalisation group methods 8−47985
- Ising model, three dimensional, free energy, lower bound approx. 8−10707
- Ising model, two point correlation, renormalisation group methods 8−8353
- Ising model of bond mixtures, spin glass transition, renormalisation group approach 8−43601
- Ising model on square and triangular lattice, variational renormalisation group method 8−16740
- itinerant electron antiferromagnetism, effect of mag. field 8−27013
- itinerant electron system, helical spin structure appl. to MnSi 8−23234
- Kadanoff renormalisation for s-state Potts model in 3-d 8−21074
- Kondo-lattice model Hamiltonian, zero-temp. real-space renormalisation group method 8−34960
- lattice renormalisation group and thermodynamic limit 8−8359
- linear conductor, interchain coupling role 8−6294
- local operator products, gauge invariance and renormalisation 8−358
- mass generation in a normal product formulation 8−25027
- moving bond approach for renormalisation group transform 8−21078
- multicritical (order O) magnetisation eqn. of state, renormalisation group calc. 8−31085
- n-component compressible model with cubic anisotropy, critical behaviour RG calc. 8−145
- nitrobenzene-n-hexane, shear viscosity, critical conc. fluctuation rate, verification of renormalisation prediction 8−47514
- nonlinear scalar interactions, 1/N expansion 8−16903
- nonrenormalisable theories with UV stable fixed point, possible renormalisation, eigenvalue condition 8−41429
- nuclear field theory, renormalisation of single particle states 8−24926
- nucleon self-energy in finite nuclei; renormalisation, nucleon-meson interaction, ^{16}O calcs. 8−17110
- O(N)ψ^4 interaction, strong coupling limit, rel. to renormalizability of chiral field 8−386
- one-dimensional electron-phonon system, renormalisation *(Russian)* 8−43314
- one-dimensional Fermi gas model with two charact. energies, scaling theory 8−6287
- paramagnetic-helical crit. line, near Lifshitz point 8−23278
- phase transitions with several order parameters, catastrophe and renormalisation theories 8−32782
- plasma resonance absorption, mag. field generation, renormalized theory 8−47126
- polymer chain, phenomenological theory, renormalisation group approach 8−26418
- position space renormalisation of spin systems with long-range forces, hyperscaling breakdown 8−24755
- Potts model, three-state, antiferromag. ordering 8−23279
- pure leptonic weak interaction with induced shadow states, renormalisable theory 8−37136
- QCD, infrared, near-mass-shell, behaviour of non-Abelian gauge theories 8−24947
- QCD, long-range correl. in forward quark-quark scatt. 8−4779
- QCD, parton transverse mass distrib. 8−8587
- QCD, renormalisation group invariant charge and confinement 8−45791
- QCD, review 8−37146
- QCD, two dimens., renormalisation group functions 8−29242
- QCD, two-dimens., bare pomeron graph 8−4824
- QCD on mass shell, Ward identities 8−16913

renormalisation continued
- QED, dimensional regularisation and current commutators 8−12843
- QED, renormalisation group invariant charge and confinement 8−45791
- quantum field theory in de Sitter space, renormalisation by point-splitting 8−29035
- quantum gravity, higher-derivative, renormalisation 8−8326
- quantum gravity near two dimens., charge renormalisation const. 8−41222
- quantum renormalisable theories from nonrenormalisable interactions 8−383
- quantum spin systems, renormalisation group transformation 8−47984
- quantum stress tensor calc. by adiabatic regularisation in Robertson-Walker space times 8−32747
- quark form factors in quantum chromodynamics, renormalisation method *(Russian)* 8−45882
- quark gas, relativistic, ground-state energy 8−8537
- random resistor network, elec. cond., renormalisation group approach 8−34815
- random-spin systems, with short range interaction, static crit. behaviour 8−39328
- real-space renormalisation of self-avoiding walk by linear transformation 8−8360
- roughening transition dynamics, renormalisation group method 8−45574
- scaling factor in renormalisation group, 2-D Ising model 8−41237
- single-particle properties of systems undergoing struct. phase transitions 8−26654
- site percolation problem, finite lattice renormalisation-group approach 8−12648
- soft X-ray thresholds, exchange effects, renormalisation group theory 8−31280
- spin glass, low temp. renormalisation group 8−10688
- spin systems, one-dimensional, free energy series expansion, renormalisation group series 8−31081
- spin systems, tricritical phase transition, eqn. of state, critical exponents, logarithmic corrections 8−27048
- spin-s Ising model, renormalisation group transformation 8−14916
- square site percolating system, renormalisation group approach 8−41241
- stochastic-field multieikonal theory, high-energy hadron dynamics 8−8634
- stress tensor of conformally invariant field in conformally flat spacetime, axiomatic renormalisation 8−29034
- SU(3)×SU(3) chiral renormalisable gauge model, nonleptonic decays 8−24938
- subtraction procedure, algorithmic features 8−375
- superspace, auxiliary mass BPHZ renormalisation procedure 8−16902
- thermodynamic pot. at finite temp. and density, QED and QCD 8−8535
- Thirring model, renormalisation and sine-Gordonisation 8−37135
- trace and dilatation anomalies in gauge theories 8−4790
- transfer coefficients of ultrarelativistic gas of elementary particles *(Russian)* 8−8635
- triangular Ising model, phase diagram 8−10631
- TTF-TCNQ, two-chain inverted band model 8−6313
- two-dimensional Ising model, real space renormalisation transform. 8−2687
- two-dimensional SU(2) Yang-Mills theory 8−24942
- vacuum instability 8−41419
- weakly disordered uniaxial ferromagnet, phase transition *(Russian)* 8−23291
- Wilson's renormalisation group recursion eqns., critical phenomena in spin systems 8−4581
- Yang-Mills theory, SU(4) supersymmetric, charge renormalisation 8−24929
- zero mass renormalisation and triangular anomalies 8−16915
- μ, anomalous mag. moment, eighth-order contribution calc. 8−29261
- μe universality violation in renormalisation theory, neutral leptonic currents *(Russian)* 8−45837
- φ^3 field theory in $6+\varepsilon$ dimensions, anomalous dimens. calc. 8−134
- φ^6 theory, Gell-Mann and Low renormalisation group appls. 8−29224
- ^{48}Ti, (A+2)particles-2 holes excitations, interaction renormalisation 8−29375
- U_2N_2Te, and related cpds., crit. behaviour 8−43605
- UPTe, and UAsTe, crit. behaviour 8−43605

repackaging *see packaging*

repeaters
- 32 Mb/s step-index optical fibre repeater equaliser *(German)* 8−33881
- 32Mb/s optical fibre transmission system planning and expt. 8−1418
- 44.7 Mb/s fibre optic transmission system expts. 8−1420
- 140 Mb/s optical fibre transmission system 8−42436
- 400Mb/s SELFOC fibre transmission system expt. 8−1419
- fibre optic, low-power (0.5 W) design 8−22195
- hybrid digital optical fibre transmission system, terminal equipment and reshaping/regenerative repeaters *(German)* 8−33880
- optical communication conference, Munich (1977) *(German)* 8−33854
- optical fibre communication for military appls., review and assessment 8−42438
- optical fibre system, optimum repeater parameter calcs. of 1.12 Gbit/sec system *(German)* 8−37989
- optical repeater section lengths rel. to transmitter power and fibre dispersion *(German)* 8−38012
- underwater housings, corrosion resistance, of Be-Cu alloy 8−15583

replica techniques
- biological material cryofixation, fast freezing device 8−28138
- ceramic nuclear fuel, porosity characterization, optical and electron microscope exam. 8−44302
- electron microscope appl. to steel separations estimation, use of X-ray microanalysis *(Bulgarian)* 8−40012
- freeze-etch device, for electron microscope laboratories 8−8474
- freeze-etching results interpretation 8−28141
- freeze-fracture replication, in biological research, review 8−40444
- freeze-fracturing effects on membrane struct. 8−28140
- freeze-fracturing preparation technique, methods and results, review 8−24776
- NDT anal. and inspection technique 8−11467

replica techniques continued
US inspection of fracture surface by replicas, determ. of reflector size by scanning 8−27689
Pt shadowing of freeze-fractured or freeze-etched specimens using electron beam gun 8−20329
replicas
surface topography, high-resolution polymer replication 8−10264
$Bi_{1-x}Sb_x$ film, evaporated, cross-sectional struct., electron microscopy and replica technique study *(German)* 8−22977
reproduction (copying)
see also photocopying; printing
hologram copying using amorphous film as master 8−29912
research and development management
European remote sensing satellite programme benefit identification and quantification methodology 8−32231
nuclear waste disposal R & D programmes by OECD countries 8−41823
nuclear waste management problem, R&D efforts 8−4991
nuclear waste management research, UKAEA programme for Iran 8−4992
ocean thermal energy conversion (OTEC), emerging programme of significance to marine community 8−44875
ocean thermal energy conversion plant design, oceanographic data interpretation, ERDA program 8−44874
phase equilibria data and research prog., user survey implications 8−15380
power supply selection for R&D instrumentation 8−246
radioactive waste disposal options, modelling studies 8−41830
scientific Siberia *(German)* 8−24634
submicron structures, National Research and Resource Facility at Cornell 8−38101
residual stresses *see internal stresses*
resins *see polymers*
resistance, electric *see electric resistance*
resistance coupled amplifiers *see d.c. amplifiers*
resistance furnaces
nuclear fuel element, post irradation testing *(German)* 8−29632
resistance noise *see thermal noise*
resistance thermometers
calibrating apparatus, automatic, 4.2-300K range 8−45624
cold wire thermometers, cct. for instantaneous temp. meas. in heated turbulent flows 8−21137
electronic sensors for clinical replacement of metethmor 8−7473
industrial platinum models, resistance/temp. relationship, thick film construction 8−37008
International Practical Temperature Scale 1968, fixed point determination 8−41270
low temperature measurement in high mag. fields, instrumentation and methods, review 8−37003
low-temperature resistance thermometers 8−223
radiation temp. scales 630-1064°C relationship 8−37004
Speer C resistance thermometer, magnetoresist. effect 8−4624
thermal exchange between sensor and supports, temp. fluctuation meas. in turbulent airflow 8−21135
thermal noise thermometer, features *(Russian)* 8−29113
thermocouples and resistance thermometers properties 8−199
thermoelectric resistance thermometer *(Japanese)* 8−32816
thin film, Ti and GE, for surface temperature meas., design, fabrication and appl. 8−24792
time constant, influence on temperature control circuits obs. *(Czech)* 8−29114
C thermometers with stability over wide range 8−24789
GaAs:Cu, Fe, Cr resistance thermometer expts., 0° to 200°C *(Russian)* 8−45627
Ge, resistance thermometer, low temp., approx. of calibration curve 8−45620
Ge stability at 20K 8−41307
Pt, linearisation circuit *(German)* 8−200
Pt resistance standard low-temp. thermometer checking methods 8−37006
resistivity *see electrical conductivity*
resistors
see also photoresistors; posistors; thermistors; thick film resistors; thin film resistors; varistors
1/f fluctuations *(Japanese)* 8−43448
artificial cold resistors, electronic feedback cct. 8−32750
coaxial current shunt and resistor stack, current waveform recording in μsec region 8−21178
fluctuations in resistance and enthalpy, response to current changes 8−34871
semiconductor tensoresistor use for extending operating temp. range of press. transducers 8−4608
shunt, made from composition resistor, for current pulse measurement 8−4640
Speer C resistance thermometer, magnetoresist. effect 8−4624
Speer C resistors, low-temp. magnetoresist. meas. by NaF:OH and KCl:OH capacitance thermometers 8−4623
strain-dependent resistors, in force meas., noise limitations 8−16771
temp. meas. by thermal noise, appl. *(German)* 8−4615
C, improved thermal contacts 8−37015
TiN-VN refractory powder composite, resistors, produced in low temp. 8−11182
resolving power (optical) *see optical resolving power*
resonance
see also circuit resonance; cyclotron resonance; dielectric resonance; Fermi resonance; magnetic resonance; magnetoacoustic resonance; optical double resonance; vibrations
abyssal sediments, effect of particle size var. on DRM/ARM ratio 8−32067
artifical Earth satellites, gravit. harmonics from shallow reson. orbits 8−40805
bubble resonances, effects on standing waves in gas-liq. medium 8−9474
cantilever sandwich beams, natural freqs. of vibr. 8−18212
continental shelf wave side band instability and long wave resonance 8−16030
cylinders and plates, dynamic deform. at high frequencies *(Russian)* 8−18223
EM dominant reson. freqs. of human body 8−31857
resonance continued
EM power deposition in prolate spheroid models of man and animals at resonance 8−31905
mechanical vibrators miniaturisation 8−18229
nonconservative system resonance, modal analysis 8−42557
nonhamiltonian systems with one degree of freedom, forced periodic motion *(Russian)* 8−20959
nonlinear resonant oscillations of body containing liquid *(Russian)* 8−18222
nonlinear two-degrees-of-freedom system, internal resonance, forced vibrations 8−12551
orthotropic cylindrical panel with glued circular ribs, natural vibrations 8−22299
quantum field theory, nonperturbative, resonance states, solitons 8−380
scattered wave focusing in periodically inhomogeneous layers *(Russian)* 8−1158
shell of revolution, resonant oscillation obs. by holographic interferometry *(Russian)* 8−22297
solar system orbit-orbit resonances, varieties and similarities 8−4093
thickness meas., US resonance method 8−48590
US tool, radial mode, with statically loaded inner surface, reson. condition nomogram 8−183
resonance reactions and scattering, nuclear *see nuclear resonance reactions and scattering*
resonances, baryon *see baryon resonances*
resonances, meson *see meson resonances*
resonant absorption of gamma-rays *see Mossbauer effect*
resonant cavities *see cavity resonators*
resonant cavity wavemeters *see wavemeters*
resonant gamma-ray interactions in crystals *see Mossbauer effect*
resonators
see also cavity resonators; crystal resonators; resonance
capacitive transducer with superconducting resonator for mechanical vibration meas. 8−21127
fibre optic relay with metallic pads heated by light 8−18038
Helmholtz, acoustic absorption properties improvement, with fibrous materials *(Spanish)* 8−14405
long thin wire scattering widths, meas. using open resonator 8−46489
mechanical, cylindrical resonator with coaxial ring flange, inherent oscillations *(Russian)* 8−34051
optical fibre mode coupling coeffs. determ. using fibre resonator 8−5560
plasma radial carrier density profiles, determ. using microwave resonators *(German)* 8−47160
receiver design principles 8−45714
relativistic electron ring azimuthal oscillations in resonator with stabilising medium *(Russian)* 8−29889
SAW grating resonators, mode pattern verification 8−1532
superconducting, for H^+ collective accelerator, Q-values and field profiles 8−46188
superconducting for H^+ collective accelerator 8−46187
three arm plate tuning fork, anal., mechanical filter appl. 8−22300
waveguide, RF breakdown, rel. to lower hybrid reson. in Tokamak plasma 8−26364
revaporisation *see vaporisation*
reverberation
see also anechoic chambers; architectural acoustics; echo
artificial, electroacoustic equipment for concert halls *(Czech)* 8−1514
assisted reverberation, in outdoor environment 8−13825
chamber LF sound power injection analysis and response averaging 8−42496
cross-spectral density meas. in partially reverberant fields 8−30140
decay in room design, cinema appl. 8−33961
Exhibition Hall of Yamaha Sportland TSUMAGOI, auditorium delay/reverberation system 8−13858
large industrial hall reverberation time 8−38145
listening room, reverberation time and reproduced sound definition *(Japanese)* 8−9499
music reproduction in small rooms, theory *(Spanish)* 8−38155
ocean reverberation spectra rel. to remote detect. of turbulence 8−38124
open plan offices, reverberation reduction via sound absorbing partial partitions 8−18116
rectangular reverberant room, sound press. correl. coeffs. 8−18115
rectangular reverberant room, sound pressure correl. coeff. *(Japanese)* 8−38146
rectangular room, reverberation times determ. on basis of image methods *(Japanese)* 8−30129
resonator appls. to hall reverberation time modification *(Dutch)* 8−22227
room reverberation, removal from speech signals using multimicrophone signal-processing technique 8−9501
spherical enclosure, reverberant sound decay 8−30128
sports areas, reverberation and noise levels 8−9497
reversible shape memory effect *see ferroelasticity*
reviews
see also Bibliography Index (special index bound with Author index)
$A>228$ odd mass nuclei, single particle states, nuclear deform. 8−12952
AB-type compounds, high press. and high temp. behaviour 8−22850
absorption coefficients meas. by transmission emittance and calorimetry 8−24839
acoustic emission in brittle materials, book contrib. 8−11484
acoustic emission leak detection, attenuation of elastic waves in pipelines 8−27711
acoustic microscopy 8−46877
acoustics of auditoria, eighth annual Fairey lecture 8−13859
acousto-optic correlators, spatial or time integrating 8−9341
actinoid element alpha-decay, current state of results 8−17159
active nuclei of galaxies and quasars, role of UV obs. *(Italian)* 8−32577
active permanent magnet suspensions, scientific instruments appls. 8−24829
adaptive optics 8−42296
adenylyl cyclases, stimulation by hormones and regulation by nucleotides, review 8−15760
ageing process, role of cell membranes, review 8−15809
agglomeration techniques in powder technology 8−39713

reviews continued
air pollution climatic effects 8-28291
air transport noise reduction measures 8-1505
alkali feldspars, TEM study of exsolutions *(French)* 8-28224
alkali halide crystals, radiation damage products, impurities and colour centres *(German)* 8-10086
alloy, struct. transform. during ageing, book contrib. 8-11199
alloy film, vacuum deposition, monitoring and controlling techniques 8-11113
alloys, ferrous and nonferrous, failure mechanisms overview 8-11322
alloys, microstructural instabilities, review 8-35348
amino acid racemization, appl. to geochronology and geothermometry 8-20341
amorphous semiconductors, doped, electronic props. 8-19030
amorphous semiconductors, doping effect and nature of localised states 8-14696
amorphous semiconductors, elec. and opt. props. 8-23094
antigenic nature of mammalian cell surfaces, review 8-15805
Ap stars, review of obs. and possible nucl. reactions *(Russian)* 8-20843
asteroids, observations and theories 8-20720
asteroids, polarimetric, radiometric and spectrophotometric obs. *(Polish)* 8-36490
asteroids in 1974, review of Institute of Theoretical Astronomy (USSR) activities *(Russian)* 8-49368
astronomical IR instrumentation on NASA airborne observatories 8-45224
astronomical photography, hypersensitisation, testing of emulsions for threshold imagery 8-32351
astronomy, recent developments 8-16307
astronomy and astrophysics, annual review (volume 15) 8-24473
astrophotography, hypersensitisation 8-32348
atmosphere S compounds, homogeneous chemistry 8-49119
atmospheric aerosol, laser beam propag., UV, visible and IR regions *(Russian)* 8-28313
atmospheric electricity, or static electrification hazard 8-28283
atmospheric submillimetre wave spectroscopy 8-7796
atom+diatom, prior statistical distribs., collinear reactions 8-35670
atom+electron (positron), eikonal theory 8-25707
atomic absorption, bibliography, July-Dec. 1977 8-3403
atomic and molecular spectra, absorpt., emission, linebreadths 8-13448
atomic beam and mol. beam scatt. from cryst. surfaces in quamtum regime 8-35244
atomic collision theory 8-1043
atomic ionisation, inner-shell, heavy charged particles 8-42181
atomization 8-23642
atoms and molecules, autoionisation processes, and expt. methods 8-29763
backscattered electron image in SEM 8-21304
bearing and frictional material, current state of prod. and development trends review 8-19902
beta-decay in labelled molecule, chem. and biological consequences 8-11541
biochemistry and biophysics horizons, book 8-7315
biological applications of fluoresc. and fluoresc. probes 8-15932
biological fluid mechanics 8-35874
biological specimen preparation for X-ray microanalysis 8-24214
biological specimen-conductivity problem in electron microscopy 8-24206
biomembrane, active transport, review 8-15814
biomembrane excitability 8-15786
biomembrane properties, influence of solute environment 8-15789
biomembrane ultrastructure rel. to function 8-15785
biomembranes and energy control 8-15807
biopolymers, studied by circular dichroism and optical rot. 8-44457
black holes and work of Hawking 8-8042
boride coatings, technology, props., book contrib. 8-48574
borides, electronic struct., review, book contrib. 8-47700
borides, hexa- and di-, electronic structs., elec. props., book contrib. 8-47701
borides, hexa- and tetra-, prep., struct., elec., mag. props., book contrib. 8-47303
borides, nature of chem. bond, book contrib. 8-47276
borides, ternary, struct. classification, props., book contrib. 8-47309
borides, transition metal, rare earth, and actinide, mag. props., book contrib. 8-47978
brain tissue, microwave fixation, neurochemical technique 8-20323
breast examination methods including radiography, thermography and cytology 8-3656
British Isles, systematic rainfall recording since 1677, tercentenary 8-44950
brush border of renal proximal tubule and intestinal mucosa, review 8-15815
capacitance transient spectroscopy, book contrib. 8-10548
capillary gas chromatography 8-44412
cardiology, development progress 8-3646
cast iron development 8-48347
catalysis, heterogeneous, role of surface science expts. 8-15710
catalyst surface characterisation by cyclic voltammetry 8-40092
cell, membrane permeability, review 8-15813
cell adhesion 8-15803
cell binding, role of surface carbohydrates 8-15804
cell growth in vitro, rel. to cell surface 8-15808
cell membranes, effects of hydrostatic pressure, review 8-15790
cell membranes, ionising and UV radiation effects, review 8-15875
cell surface immunoglobulins, characts., mobility and role in immune phenomena 8-15806
UV Ceti flare stars *(Russian)* 8-28685
chalcogenide semiconductors and SiO_2, similarities and differences 8-6721
Chamberlin-Moulton cosmogony, rise and fall 8-32641
channelling 8-2184
charged magnetic domains, formation, existence, dynamics, collective props. 8-23310
chemical bonding in crystals, modern theories 8-2064
chemical tracer expts. on atm. precip. systems 8-24324
classical mechanics, invariants, stability, KAM theorem 8-41
climate change, anthropogenic effects 8-28293
climate variability, effects of volcanoes, pollution and CO_2 8-28292
climatic evolution *(German)* 8-20503

reviews continued
closed-line magnetic field approach to plasma confinement, in toroidal systems 8-42792
cluster expansion in statistical mechanics, S-matrix formulation *(German)* 8-41256
coherent anti-Stokes Raman spectroscopy, book contrib. 8-22177
coherent optical spectroscopy 8-1112
collision processes, classical theory 8-33563
colour degrees of freedom in hadron physics *(Russian)* 8-16979
colour reproduction by photography 8-309
compact H II regions, review of radio obs. 8-16507
complex molecules, reson. Raman spectra, vibr. scatt. 8-37644
composite growth by eutectoid or solid-state decomposition 8-44056
composite material strength *(Japanese)* 8-39850
concrete, unbonded, prestressed, review *(Japanese)* 8-6884
contact electrification of dielectric solids 8-26934
convective mass transfer measurement methods *(German)* 8-46959
corona in atmosphere 8-26363
coronary arteriography, current techniques and equipment 8-35940
corrosion science, use of XPS 8-15586
cosmic dust 8-16516
cosmic gamma radiation, detection and sources 8-12059
cosmic ray isotopic composition 8-20599
critical point drying theory, practice and artifacts 8-24211
cryobiology, freezing and cryofixation 8-28136
cryobiology, struct. and functional aspects of freezing techniques 8-28137
cryogenic targets for streamer chambers and cryofluid target supply *(Russian)* 8-13381
crystal growth, Czochralski and related methods, diameter control 8-31328
crystal growth from vapour, kinetics, impurity capture 8-26468
crystal growth mechanism for glass forming systems 8-30555
cubic metals, impurity-host force-constant changes, from Mossbauer data 8-48097
Cygnus X-1, black hole candidate, review 8-16577
cytoplasmic membranes in somatic cell interaction and hybridisation, review 8-15792
D-region, equatorial, ionisation processes and ion comps. review 8-36362
D-region winter anomaly, review of Western European study campaign (1975/76) 8-45122
dark nebulae and globules, star form. regions 8-12347
data processing developments in remote sensing *(Japanese)* 8-7801
decorated lattice gas model of critical phenomena in fluids and fluid mixtures 8-36944
deep impurities in semiconductor, book contrib. 8-10403
defect characterisation by mag. leakage fields 8-3296
deformation of A15 compounds 8-39864
densitometry, review of new approaches 8-307
detection of flaws in metal of atomic power plants, testing whilst in operation 8-17343
diamond turning, state of the art update 8-46853
dichromated gelatin as holographic material, book contrib. 8-25833
dielectric films on semiconductor devices, deposition techniques 8-23611
differential pressure 8-38423
diffraction of partially coherent light 8-29894
diffuse reflectance spectra, model interprets. 8-32859
diffuse reflectance spectroscopy, applics., standards and calibration 8-32848
diffuse reflectance spectroscopy, calibration of reflectance standards 8-32860
diffuse soft X-ray sky, astrophysics rel. to 0.1-2.0 keV cosmic X-rays 8-16581
diffusion in glasses and melts 8-2017
diffusion pump back-streaming 8-21155
dilute alloys, solute diffusion 8-47589
diode design review, intense mag. insulated ion diodes 8-9857
dipole oscillator strengths of atoms and molecules 8-21975
discontinuous metal films, elec. cond. 8-19167
disordered quasi-one-dimensional materials 8-6361
Doppler-free laser spectroscopy seminar 8-302
drag reduction with compliant coatings, review 8-26115
E-region, equatorial, dynamics 8-36369
Earth resources surveying, multispectral photography from space *(Russian)* 8-16197
Earth surface multispectral photography from space *(Russian)* 8-16198
earthquakes, Japanese prediction studies, building design and location 8-32014
EEG technique, for ABRET oral exam. candidates 8-20298
Einstein's relativity paper (1905) and the electromagnetic world picture 8-16616
elastomers, vacuum compatible, chem. character correl. with physical characts., review 8-24804
elastometric glasses and porous network polymers, review of future developments 8-22657
ELDOR 8-39449
electric currents in cosmic plasmas 8-12094
electrical conduction mechanism in noncryst. solids, review of developments 8-26854
electro-optic and holographic meas. techniques for atmospheric sciences 8-49184
electrochemical electron transfer at electrodes in solution, in book, for teachers 8-8203
electrode process research, instruments and appls. review 8-21174
electrodeposition and related processes, progress, (1952-1977) 8-27420
electrodynamics, classical, field, conservation principle, history *(Russian)* 8-36849
electrolyte solution structure, (1952-1977) 8-26417
electromechanical phenomena assoc. with earthquakes 8-36108
electron emission, appl. of unified theory 8-35256
electron energy loss spectroscopy and microanalysis, instrumentation developments 8-35783
electron mobility, effect of mol. struct. and elec. field 8-2535
electron scattering, atoms and mols., expt. and theory 8-25699
Electron spectroscopy and molecular structure 8-1026
Electron stimulated desorption: a critical review 8-22958

reviews continued
electron-hole liquid, in semiconductors, equilib. props. *(Russian)* 8−34773
electronic emission spectroscopy, instrumentation 8−29166
electronic to vibrational energy transfer, vibr. state anal. 8−37725
electrophotography, electrostatic aspects 8−25768
electrophotography, process configuration, architectures 8−29188
electroretinography, human, psychophysical appl., review 8−35859
electrostatic electron energy analysers, cylindrical mirror appls. 8−21265
electrostatics, quest for charging mechanism to end of 19th century 8−12525
electrosurgical instrumentation review 8−44680
elemental layered material prep. and growth, book contrib. 8−19647
elementary particle physics 8−8493
elementary particle weak interaction theory 8−4822
elementary particle weak interactions, resource letter, WI-1 8−16601
elements origin and evolution 8−32619
EM frequency sounding, crustal struct. determ. 8−49167
EM periodic SAW transducers 8−13880
endocytosis 8−15816
epitaxial layers, transition regions 8−14630
EPR of nonsilicate minerals 8−39384
equatorial counter-electrojet, geomag. aspects review 8−36367
erosion, book contrib. 8−11350
ESCA, chem., technical and industrial appls., lecture 8−27875
ESCA, principles and appls. 8−27375
excimer lasers, and applications *(Japanese)* 8−33723
excimer lasers 8−33728
excitons, condensation effects 8−2427
exotic atoms, E2 and E4 nucl. moments from HFS 8−37265
exotic atoms, props., EM and strong interaction effects within the atoms 8−9281
exotic atoms, significance of exotic atoms to particle physics 8−9282
exposure meters for colour positive process 8−12781
extended growth defect characterisation 8−30649
F-region, equatorial, topside and bottomside, review of struct. 8−36373
far IR CW lasers, optically pumped 8−46588
far IR interferometry, (1950-76) 8−4456
far IR research, grating era (1925-60) 8−4455
far IR research, Rubens era (1892-1925) 8−4454
fast metal assemblies, prompt alpha and reactivity meas. 8−21685
fatigue of high strength materials, strengthening *(Japanese)* 8−15513
Fermi surface studies of pure cryst. materials 8−10334
ferroelectric, H-bonded, soft and central modes, mag. reson. 8−15108
ferroelectric crystals for hologram storage, book contrib. 8−25834
fibre optics for military appls., review and assessment 8−42438
fibre optics tasks of NASA 8−42441
fibre reinforced concrete *(Japanese)* 8−31372
field emission spectroscopy of transition metals 8−35257
field ionisation mass spectrometry of inorganic cpds. 8−35764
field ionisation mass spectrometry of organic cpds. 8−35763
fifth international conference on reactor shielding, review 8−29599
film growth, high rate, book contrib. 8−11117
films, amorphous, prep., struct., props., review, book contrib. 8−48321
FIM techniques, appl. to metallurgical problems 8−35620
fissile material supervision, safety measures *(German)* 8−684
flame, ionis. and Massey's adiabatic criterion 8−33563
flash photolysis, appl. to biological systems 8−11530
flow interference between two circ. cylinders 8−46985
flow measurement, international standards organisations, review 8−34246
flow measurement, review of thermal and optical methods 8−34233
flowmeters, EM, for fast reactors 8−21686
fluidised fine particles, turbulent ascending gas flow in cylindrical channel 8−42643
fluorescence spectroscopy in study of biochem. processes 8−11784
fracture mechanics of yielding materials, review 8−31521
freeze-fracture replication, in biological research 8−40444
freeze-fracturing effects on membrane struct. 8−28140
freeze-fracturing preparation technique, methods and results 8−24776
Frohlich brain wave model, limit cycle stability, enzyme-substrate reaction 8−44490
fusion pulsed accelerators, development, problems 8−5046
fusion reactor materials, neutron experiments for data testing 8−5023
fusion reactor pulse power supplies development 8−8990
galaxies with radio tails, review *(French)* 8−41054
galaxy classification, structure and origin 8−49541
gamma-ray picture of sky, review *(Russian)* 8−41097
geodesy, development and form. of calc. of trigonometric networks *(German)* 8−15947
geoelectric phenomena assoc. with earthquakes 8−36095
geological data automatic contouring techniques 8−7820
geophysical environment, monitoring techniques for neutral atmosphere *(Japanese)* 8−16126
geothermal energy prospecting by geophys. methods 8−7803
German Standards Institute, 50 years of standardisation in surveying *(German)* 8−45591
giant intrinsic magnetic hardness 8−48004
giant multipole resonance in nuclei 8−13044
Gilbert, Grove Karl, 1843-1918, life and contribs. to geomorphology 8−45451
glass, mechanical properties 8−3162
glass, new appls. 8−3306
glass, phase separation 8−2015
glass, relaxation phenomena 8−2014
glass, relaxation phenomena and Raman spectroscopy, review of developments 8−22665
glass, ultrapure, prep. for optical waveguides 8−3086
glass fibre reinforced cement, review of reinforcing theory, ageing, stress/strain relations 8−44165
glass for construction purposes 8−3307
glass formation, models 8−2012
glass forming processes 8−3090
glass industry, air pollution 8−3936
glass industry forming machines 8−3091
glass making process, math. and phys. models 8−3083
glass making refractories, progress 8−3089
glass melting, heat transfer 8−3084
glass melting, new aspects 8−3087

reviews continued
glass melting furnaces, development and prospectives 8−3088
glass raw materials and batch prep. 8−3085
glass structure 8−2013
glasses, acoustic and dielec. props. at low temps. 8−6128
glasses as bioactive materials, review 8−3698
grain boundary struct. and energetics 8−14359
graphite intercalation compounds, electronic props. review 8−30860
graphite intercalation cpds., electronic props. 8−34744
guided wave devices, use of ferroelectric materials, review 8−38048
hadron+hadron elastic scatt., >100 GeV, asymptotic theorems *(Czech)* 8−29357
hadron interactions, multi-particle production processes, interaction models 8−33024
hadron-nucleus interactions at high energies, phenomenological models 8−8859
handicapped persons technical aids, R&D in Sweden *(Japanese)* 8−48934
heat and mass transfer, bibliography, Soviet works 8−22343
heat and mass transfer, Polish works, (1975-1976) 8−38320
heat transfer, 1976 literature 8−5740
heat transfer, bibliography, Japanese works 8−22344
heavy current electron beams prod., survey 8−33337
heavy ion, deep inelastic reactions, as probes of nuclear matter 8−46083
heavy particle elastic collisions, quantum effects *(Japanese)* 8−21015
heavy-ion collisions, supercritical fields, charged vac. and pion condensate effects 8−21600
heavy-ion elastic and inelastic scatt. 8−37375
heavy-ion stripping, semi empirical expressions 8−13395
heteroepitaxial structures based on III-V compounds, appl. in optical electronics, defect form. 8−23160
high power laser propag., thermal blooming 8−30035
high pressure production at low temps. 8−12709
high resolution NMR of solids 8−6582
high resolution UV solar spectroscopy, review 8−45313
high-energy physics, progress and prospects 8−45989
high-energy two-body and inclusive reaction data 8−29370
high-temperature alloys, hot corrosion, book contrib. 8−11444
holographic microscopy, theory and appls. 8−45690
holographic recording materials and devices, book contrib. 8−25838
holographic vibration measurement *(German)* 8−33709
holography in dentistry 8−48859
host cell membranes in animal virus reproduction, review 8−15791
hot electron phenomena, calc. 8−26870
hot electron quantum magnetotransport 8−30940
hydrocarbon crystal, calc. of internal friction resulting from molecular defects 8−31448
hyperfine fields on fast ions in ferromagnetic media 8−37283
III-V semiconductors for optoelectronic appls. 8−30975
III-VI compound layered materials, prep. and growth, book contrib. 8−19661
Inca people (Peru), evidence of astronomical knowledge *(Swedish)* 8−32640
incommensurate structural phase transitions and phason interpret. *(Japanese)* 8−22827
inelastic electron scattering as analytical tool 8−24010
infrasound waves, in the Earth's atmosphere *(Russian)* 8−32143
integrated optics, device principles 8−1429
integrated optics (1977) 8−33916
integrated optics and guided wave devices 8−42468
integrated optics for wavelength division multiplexing, review of recent developments 8−38079
intercalation compounds, synthesis *(French)* 8−27429
interferometry, including holographic interferometry 8−37050
intermetallic compounds 8−15333
intermetallic compounds of rare-earth and 3d transition metals, struct., props. 8−10668
intermolecular interaction potential, adsorption, Henry const. 8−22948
International Magnetospheric Study, progress report 8−20587
interpenetrating polymer networks, and related materials 8−42923
interplanetary H, review 8−49272
interplanetary magnetic field polarity effects on equatorial geomagnetic field and ionosphere 8−36416
interplanetary scintillation, appl. for solar wind probing 8−45178
interstellar matter distrib. and dynamics in spiral galaxies 8−16540
ion+molecule reactions, upper atmospheres of Earth and planets, interstellar clouds 8−33563
ion implantation formation of amorphous layer *(Japanese)* 8−22746
ion scattering spectra, fine features 8−15267
ion sources, negative 8−33345
ion-selective electrodes for blood serum anal. 8−3645
ionic solute hydration, thermodynamic and transport props. 8−27815
ionosphere, equatorial scintillation rel. to irregularities 8−36380
ionosphere, research in Netherlands *(Dutch)* 8−4029
ionospheric drifts, review 8−36364
IR astronomy and galactic dust *(French)* 8−12352
IR detectors in 10 μm region *(Japanese)* 8−24862
IR lasers, and laser techniques in mol. spectroscopy 8−8455
IR materials, laser residual absorpt. 2 to 10 μm 8−25906
IR spectroscopy of metal surfaces *(Japanese)* 8−19470
IR window materials, optical phenomena, book contrib. 8−9420
irreversible thermodynamics, review of foundations postulates and implications 8−12658
isotope separation, new methods 8−1111
IV-VI material production and physical props. for microelectronics *(Russian)* 8−11108
IV-VI semiconductor film technology, review 8−3034
K(K)N→K(K)N, 1.5-280 GeV/c, Regge pole residues and trajectories 8−45886
large angle hadron-hadron scattering, power automated asymptotic behaviour *(Russian)* 8−17050
laser applications in otology 8−48860
laser beam, spectral analysis, photomixing method 8−46698
laser beam materials processing, thermophys. and hydrodynamic effects 8−19957
laser biomedical research in USSR 8−48858
laser clocks for psec. meas. 8−12676
laser fusion research, present (1977) status *(Japanese)* 8−37439
laser induced fluorescence 8−37678
laser isotope separation, book contrib. 8−9280

reviews continued
laser isotope separation *(Japanese)* 8-5048
laser isotope separation 8-37758
laser light polarisation *(Japanese)* 8-5516
laser plasma, strong mag. field effects *(Russian)* 8-38462
laser spectroscopy, present problems and tunable laser status 8-24867
laser spectroscopy, review of new techniques 8-32893
lasers, far IR, present and future problems 8-5466
lasers, high-efficiency, high-power, fusion appls. *(Japanese)* 8-5486
lattice gauge fields, review 8-45797
layer perovskites, $(C_nH_{2n+1}NH_3)_2MX_4$ and $NH_3(CH_2)_mNH_3MX_4$, cryst. growth, solubility and props. 8-43999
LEED surface crystallography, past and present 8-14253
lightning main discharge theories 8-32132
limnological theses and dissertations concerning Texas waters, 1897 to 1976 period 8-7680
linear analogue ohmmeter circuits design 8-37031
linear laser spectroscopy, absorption, opto-acoustic and fluorescence techniques 8-29170
linear molecule liquids, computer simulation and theory 8-38604
liquid alloys, thermodynamic properties *(German)* 8-18794
liquid crystal appl. *(Polish)* 8-30537
liquid crystal phases and phase transitions 8-2006
liquid metal, electron states, esp. opt. and mag. props. 8-2882
LMFBR, post accident heat removal technology review 8-41839
LMFBR safety 8-13257
Lorentz microscopy, thin film and bulk specimen, recent advances 8-35002
low energy atomic collisions, ionisafion processes, chemi-ionisation, review 8-22024
low temperature measurement in high mag. fields, instrumentation and methods 8-37003
low-temperature spectroscopy techniques *(Japanese)* 8-291
luminescence, worldwide research survey 8-10986
luminescence and luminescent devices, lecture 8-27323
lung lavage for removal of inhaled radioactive particles 8-3618
lung ventilator, development, engineering appraisal 8-3673
LWR local corrosion causes and preventive methods *(French)* 8-8963
macromolecular solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas. 8-48187
magnetic critical phenomena, hyperfine expts., selective review 8-43722
magnetoelastic waves *(Japanese)* 8-23317
magnetosphere, elec. and mag. fields at high latits. 8-12057
magnetosphere, macroscopic elec. fields 8-49238
magnetosphere, plasma waves and instabilities in polar cusp 8-12058
magnetospheric plasma physics, global problems and soln. 8-20588
magnetostrictive materials and devices *(Japanese)* 8-23316
magnetotelluric sounding, inverse problems soln. 8-49162
magnetotelluric sounding method development in USSR 8-49169
magnetotelluric studies in USSR 8-49168
magnons, general lecture 8-27026
mammalian cell membranes, plasma membrane responses, book 8-15787
mammalian cell membranes and cellular functions, book 8-15784
mammalian surface membrane turnover, review 8-15788
Mars, props. of surface and atmosphere *(Russian)* 8-20667
material processing by high power lasers, comparison of available systems 8-30003
materials for noise and vibr. control, review 8-13854
materials science, book 8-11089
matrix isolation spectra of high-temp. and interstellar molecules 8-46340
MBE crystal growth 8-39707
mechanical properties of soft animal tissue, in vitro testing, apparatus 8-31985
mechanical props. of vapour deposited coatings 8-6247
medical diagnostic, X-rays, effects, risks and protection 8-3591
medical US applications and new developments 8-11712
medicine, diagnostic radiology, radiation therapy, nuclear medicine, sensitometry, review 8-20260
mesosphere winds at equatorial latits., observational aspects review 8-36229
metal, cond. electron relax. time *(Japanese)* 8-30910
metal, plastic deform. *(Russian)* 8-19825
metal, point defect clusters, TEM obs., review 8-26564
metal, self-diffusion, atomic jump processes 8-47562
metal, self-diffusion 8-47561
metal, self-interstitial atoms, review 8-47332
metal, vacancies and interstitials, electronic struct. 8-47320
metal, vacancy concentration 8-47319
metal, vacancy defect mobilities and binding energies obtained from annealing studies 8-47325
metal, vacancy-solute interaction 8-47409
metal film thickness meas. methods and instruments *(German)* 8-32787
metal forming, limit anal. appl., book contrib. 8-11140
metal halide layered materials, prep. and growth, book contrib. 8-19648
metal hydroxide layered materials, prep. and growth, book contrib. 8-19649
metal mirrors for CO_2 laser fusion systems, material constraints and fabrication 8-5476
metal-gas interactions, kinetics and mechanisms, book contrib. 8-11558
metal-nonmetal transitions in fluids 8-2529
metal-semiconductor contacts 8-2566
metallic glasses, prep., characterization, struct., formation, electronic, mag. and mechanical props. 8-3074
metallic glasses, struct. and props. 8-47245
metals, radiation damage, FIM and atom probe FIM expts. 8-35623
metals for mirror substrates, manufacturing processes 8-5542
metamagnetism, materials, theories and phys. props. 8-19248
methylhydropolysiloxanes, equilibration by catalysts *(German)* 8-35722
microfabrication techniques for integrated optics 8-38091
micron scaled cathodoluminescence of semicond. with SEM 8-23537
microoptic signal processing research, review 8-38073
microscopic theory of collisions in atomic phys. survey of recent developments 8-46410

reviews continued
mixtures, high-press. vap.-liq. equilib., phenomenological description 8-30737
mixtures, physical-chemical separation and thermodynamics *(German)* 8-18774
modulation spectroscopy in vacuum UV, with synchrotron radiation 8-4710
molecular, rotational energy levels, quartic and sextic centrifugal effects, book contrib. 8-21910
molecular clouds, summary of obs. 8-16512
molecular crystals, simple, lattice vibrations, Raman and IR obs. 8-43079
molecular electronic spectra, vibrational struct., determ. by Franck-Condon method, book contrib. 8-21911
molecular gas, thermalisation under reson. excitation by laser radiation *(Russian)* 8-26231
molecular gases, non-self sustaining discharge for CW laser excitation, review 8-42849
molecular ions, gas phase, spectrosc. props. 8-33501
molecular reorientation of symmetric top molecules, in liquid state, book contrib. 8-22623
molecular self-assoc. and complex form. in soln., IR and Raman spectra, book contrib. 8-21931
molecular vibration, spectra, summaries and reviews of recent work, book 8-21894
molecule-surface scattering, appls. 8-39653
monocarbides of subgroups IVa and Va, kinetic props., review 8-47613
MOS processing for III-V semiconductors 8-10570
MOS structures, hot electron transport, expt. review 8-30994
Mossbauer effect in solid-state physics, overview *(French)* 8-2782
Mossbauer spectroscopy, matrix isolation techniques appls. 8-46376
Mott insulator electronic struct. 8-18963
muscle contraction cross-bridge model 8-44475
natural mineral crystal growth characts. 8-32072
negative molecular ions, theoretical calcs. 8-37552
nerves, electrochem. theory, steady and transient pots., in book, for teaching 8-8202
neutron dosimetry with solid state nuclear track detectors, brief review 8-33299
neutron inelastic scatt. expts., book contrib. 8-1959
NMR, of liq. metals and alloys 8-2755
NMR in coupled spin systems 8-48072
noble metal complexes, hexafluoro, review of struct. obs., pseudorot., press. effects 8-6045
noise and vibration control systems 8-30127
noncrystalline materials, properties, current and potential applications 8-30539
noncrystalline solids, struct. models and exptl. methods 8-22655
nonfilm TV method of high-speed process coords. meas., review 8-5093
nonlinear high resolution laser spectroscopy, review of techniques 8-29171
nonlinear photoelectric emission from metals by high power layer radiation review 8-48288
nonverbal thought in technology 8-8210
novae, 50 years research 8-4239
nuclear, vertex constants *(Russian)* 8-33155
nuclear astrophysics, recent developments 8-4100
nuclear collective props., rotation effects *(Russian)* 8-37299
nuclear decays as test of elementary particle theory, review 8-21361
nuclear isobar configurations in few nucleon systems 8-37294
nuclear moments, elec. and mag., review of data 8-37266
nuclear orientation, induced by laser, at. and nucl. applications 8-37310
nuclear power station response to aircraft impact 8-41875
nuclear reaction polarisation phenomena *(Russian)* 8-33162
nuclear reactor accident, human exposure to radiation, biological consequences 8-7407
nuclear reactor fuel elements, struct. anal. 8-41814
nuclear reactor reactivity determinations for performance of reactor safety, economics, operability *(Japanese)* 8-17332
nuclear spectroscopy techniques in at. and mol. physics 8-22055
nucleation theory, fundamentals *(Spanish)* 8-43101
nucleic acid-water interactions 8-44448
nucleon-antinucleon systems, nonrelativistic scatt., quasinucl. systems 8-25065
numerical modelling of fatigue, crack, creep and corrosion test results, review 8-30243
observational cosmology since 1958, progress and problems 8-28873
ocean current meas. near surface, general problems, review 8-45048
ocean current meas. with moored meters, intercomparisons 8-45050
ocean-atmosphere momentum, heat and H_2O vapour fluxes, meas. methods 8-32213
odd mass nuclei, $59 \leq A \leq 149$, E2, M1 multipole mixing ratios 8-4911
one-dimensional charge transfer conductors, press. effects on mag. props. 8-6505
one-dimensional conductors, struct. aspects, book contrib. 8-10429
optical centering devices, vertical collimators, for geodetic appl. 8-13807
optical communication status and prospects *(German)* 8-33855
optical fibre system connectors 8-42414
optical fibre systems for civil telecommunications, state-of-the-art review 8-25979
optical fibre technology for military aeronautic appl. *(French)* 8-46813
optical fibre theory 8-1351
optical fibre transmission systems comparsion, 0.8 to 1.4 μm 8-46824
optical lenses, technological development trends *(German)* 8-33805
optical precision expts. using lasers 8-42246
optical pumping of gaseous atoms *(Japanese)* 8-25489
optically pumped waveguide gas lasers 8-5490
optics of condensed matter, linear and nonlinear lecture 8-25918
organic reaction mechanisms, generalised mol. orbital theories 8-44366
orographic effects on SW.monsoon 8-44962
Orsay MP tandem 8-13352
oscillator strengths for atoms, calc. methods 8-17616
oxide, solid electrolytes, thermal and mech. props. at steelmaking temps., review *(German)* 8-15418
oxide and related single crystals, melt growth 8-31322

reviews continued
  paramagnetic impurity ions in crystals, Jahn-Teller effects, review 8−34809
  parametric processes in CTR plasmas, review 8−30430
  phase microscopy techniques 8−45684
  phase transformations of minerals and Earth's deep interior materials *(Japanese)* 8−28225
  Philippines, high wind study 8−36257
  photoacoustic spectroscopy, operation of instruments and test results 8−4705
  photochemical formation of self-sustaining coacervates, rel. to origin of life 8−11611
  photochromic inorganic materials for hologram storage, book contrib. 8−25835
  photoelectrolysis of water with semicond. surface *(Japanese)* 8−6440
  photoelectron spectroscopy of adsorbed atoms and molecules 8−27372
  photoelectron spectroscopy of valence bands in solids 8−39668
  photographic sensitometry, black and white, photographic testing procedures, film evaluation 8−29191
  Photoinduced heterogeneous catalysis 8−40080
  photoplastic effects *(Japanese)* 8−6121
  photoresists for relief phase hologram recording, book contrib. 8−25837
  physical chemistry, annual review, vol.28 (book) 8−40019
  physical mechanisms of adhesion of solids *(French)* 8−6231
  Pi3, long-period irregular mag. pulsations, reviews 8−45164
  picosecond spectroscopy 8−37081
  pion radiotherapy, review *(Japanese)* 8−40321
  pion-nucleus absorption and scattering, pion condensation 8−8858
  planetary atmospheres, review 8−32377
  planetary dynamo theories *(German)* 8−40852
  planetary nebulae 8−16510
  plant growth and development regulation, role of light 8−11695
  plasma, high-temp. anomalous transport, solenoidal fusion system appls. 8−22460
  plasma indicator, moving-coil type, construction, characts. *(German)* 8−8393
  plasma microinstabilities nonlinear effects 8−14150
  plasma wave propag. linear effects 8−14149
  plasma waves in magnetosphere 8−28451
  plasma waves stimulated in ionosphere by RF topside sounders 8−45128
  plasmons, general theory 8−26826
  plastic, metal electroplated, durability and struct. 8−3242
  plastic deformation during freeze-cleavage 8−14400
  point defect chemistry, book contrib. 8−10044
  point defects and interactions, book contrib. 8−10043
  polarographic methods of analysis 8−35769
  polyatomic molecules, photodissociation dynamics, review 8−37697
  polymer, amorphous, bulk, structure models and exptl. methods 8−22671
  polymer gels, thermodynamic props. *(German)* 8−20073
  polymer molecule, flexible chain shape measures 8−17832
  polymer orientation measurement methods, review 8−48589
  polymer science, contribution of neutron scatt. 8−14245
  polymer solutions, thermodynamics *(German)* 8−18530
  polymeric alloys, props. and struct. 8−44076
  polymeric liquids, rheology and kinetic theory 8−38611
  polymeric materials, stress meas., X-ray diffr. technique, review 8−5713
  polymers, and molecular solids, surface props. 8−34886
  polymers, elec. props. and morphology, correl. 8−43786
  polymers, thermal cond., temp., crystallinity and orientation depends. 8−10234
  polyolefins, elec. cond., 8−26867
  powder, dynamic compaction, review 8−3071
  powder science *(Japanese)* 8−15326
  power sources for biomedical appl., progress survey 8−15917
  powerful VLF waves, nonlinear effects on magnetosphere/ionosphere plasma *(Russian)* 8−32287
  pressure vessels, multicavity PCRV, design and anal. for ultimate strength calc. 8−44182
  probabilistic ideas in field theory and statistical mechanics 8−8230
  protective coatings for metals, chemically vapour deposited 8−44261
  protein structure prediction from amino acid sequence 8−24026
  pulsars, book 8−8035
  pyroelectricity, 1976-7, literature guide 8−43797
  QED, review of classical limit 8−8563
  QED and general relativity, physics of strong fields 8−8561
  quantum chromodynamics, review 8−37146
  quantum field theory, classical soliton solns. and semi-classical quantisation techniques 8−8255
  quantum field theory, notes for history 8−28904
  quantum field theory, solitons and instantons 8−8495
  quantum field theory methods for many-body isotropic Fermi systems 8−8338
  quantum mechanical perturbation theory, convergence props., energy series 8−80
  quantum theory, boson expansion method, appls. 8−36884
  quark model, implications of magnetic field topology in particle physics 8−8583
  quarks, monopoles, tachyons etc., review of expts. 8−12872
  quasars and young galaxies 8−32582
  quasi-one-dimenional organic conductor, chem. trends and stabilisation of nearly one-dimens. state 8−10328
  Quaternary of Chile, state of research 8−44980
  radiation, public health aspects 8−35895
  radiation chemistry, present status, future trends and applic. *(Japanese)* 8−31659
  radiation injury, repair and sensitisation of micro-organisms 8−11700
  radiative polarisation in particle accelerators 8−33335
  radioactive tracer appls. to ventilation and air pollution studies 8−28306
  radioisotope emission computed tomography 8−44599
  radioisotope scanning in thromboembolic disease diagnosis 8−7434
  radiology instrumentation, new industrial contributions 8−31924
  radionuclide venography for investigation of thromboembolic phenomena 8−7439
  Raman effect, interacting elementary excitations in solids 8−43846
  Raman high-resolution molecular spectroscopy, rot. and rot.-vibr. spectra 8−42064

reviews continued
  Raman laser, IR source, physical processes, theory 8−17943
  Raman spectroscopy, recent advances 8−41359
  Raman spectroscopy, vap., medium resolution, appls. 8−42065
  rare earth iron garnet single crystal films, synthesis and props., review 8−48013
  rare earth metal-B systems, phase equilibria, phase diagrams, book contrib. 8−48389
  rare earths in metallic environment, mag. moments 8−6515
  rare gas liquids, ionisation and scintillation, appl. to radiation detectors *(Japanese)* 8−35206
  reactor cooling and heat recovery methods *(Italian)* 8−4978
  real-time optical Fourier spectrum analysis using acousto-optic diffr. 8−5430
  receiver design for optical fibre communication systems 8−30077
  Regge phenomenology 8−24979
  Regge pole theory, reasons for survival, review 8−24977
  Reggeon field theory, recent developments 8−41439
  relativistic strings and dual models of strong interactions 8−439
  residual stresses, methods of detecting, review *(German)* 8−44291
  retinal diseases, literature review (1975-76) 8−35836
  reversible temper embrittlement, book contrib. 8−11334
  review of reactions involving few-nucelon systems at intermediate energies 8−13054
  rigid body, vector anal. of finite rotations, literature review 8−36819
  rotating fluid dynamics *(French)* 8−30300
  San Andreas fault, California, Palmdale Bulge as precursor event 8−36114
  SAW device materials development 8−6636
  scintigraphy in paediatrics *(French)* 8−44590
  Scorpius X-1 review 8−16576
  Second European Conference on Optical Fibre Communication, September 1976 *(Italian)* 8−5552
  secondary cells, membrane appls. *(French)* 8−3374
  selective surfaces for high temp. photothermal conversion 8−1364
  SEM, state-of-the-art review and future trends 8−21282
  SEM contrast mechanisms 8−21296
  SEM field emission sources 8−21299
  SEM specimen chamber use for dynamic expts., state-of-the-art review 8−23918
  semiconducting solid solutions, optical transitions 8−2908
  semiconductor, Wannier-Mott polaritons in mag. fields 8−2437
  semiconductor cyclotron resonance 8−6575
  semiconductor device characterisation using electron beam induced current technique 8−21302
  semiconductor lasers, recent progress, review 8−17938
  semiconductor oxide crystals, forbidden energy gap, spectroscopic props. 8−2876
  semiconductor waveguide switches, and modulators, review of development progress 8−38045
  semiconductor with anisotropic conductivity, elec. and photoelec. props., review 8−10447
  shock waves, terrestrial and cosmic 8−15967
  shock waves on Earth and in space 8−3897
  skin friction in turbulent boundary layers, meas. techniques 8−1770
  small particle identification 8−48739
  solar and stellar flares 8−7973
  solar atmosphere, bound-free and free-free electron transitions 8−33563
  solar coronal holes and high-speed wind streams 8−12187
  solar fine structure radio bursts at meter wavelengths *(Russian)* 8−16386
  solar wind theoretical research (since 1958) 8−49281
  solid state nuclear track detectors, past and future uses 8−17484
  solid surface characterisation techniques 8−22945
  solid surfaces, scattering of atoms and mols. 8−31291
  solitons, lecture 8−24690
  solitons in dispersive media, nonlinear evolution eqns. soln. 8−60
  sound propagation in atmosphere, historical review 8−15
  Soviet 6 metre reflecting telescope, review *(Norwegian)* 8−36456
  Soviet meteorological satellite development 8−16266
  space exploration and astronomical research, first 20 years *(Russian)* 8−16267
  Space Shuttle, history, principle features and uses 8−36427
  Space Shuttle, operational features 8−36428
  space stations for the international future 8−32322
  speckle, properties and applications *(Japanese)* 8−22085
  spectral sensitisation of Ag halide emulsions 8−4719
  Spectrochemical properties of certain light emitting sources *(French)* 8−3426
  spectroscopic instrument developments, overview *(French)* 8−293
  spectroscopy, RF, of positive ions, using optical pumping 8−1107
  spin glasses, random ordered phases, review *(Japanese)* 8−47993
  spin glasses, theory 8−2696
  spin-flip Raman laser spectrometer as source for high resolution mol. spectroscopy and photochem. 8−32894
  standard specimens for spectral analysis of metallurgical substances 8−7273
  star formation, IR obs. 8−7988
  steady state evoked potentials, recording and appls. review 8−35823
  steel, atom probe microanalytical expts. 8−35622
  steel, cast, mech. props., fatigue behaviour, influence of microdiscontinuities, review 8−35512
  steel, solidification of castings in mould *(Russian)* 8−27502
  steels, stainless, effect of metallic second phases 8−31503
  stellarator fields 8−30467
  STEM optical system, practical considerations 8−21301
  stratosphere and mesosphere, general circulation, radiative transfer, transport processes 8−49105
  structure and crystallisation, review 8−2008
  Struves of Pulkovo, family of astronomers 8−24632
  submillimetre wave laser waveguides 8−5505
  submillimetre wave mixers 8−45712
  submonolayer films on metallic surface, struct. and props. review 8−38972
  subsoil liquifaction during earthquakes in Japan 8−36118
  Sun, active and quiet, atm. and interior struct, solar energy 8−40895
  superconducting A15 compounds, martensitic and supercond. transition models, anisotropy of vortices and US anomaly *(Japanese)* 8−23216
  superconducting film, geometrical reson. effect, electron tunnelling density of states meas. *(French)* 8−2626

reviews continued
superconducting properties of $(SN)_x$ 8−6474
superconductivity coexistence with mag. order 8−19177
superconductivity in thin films *(Russian)* 8−19172
superconductor metal interface proximity effect *(French)* 8−2625
superionic conductors, dynamics *(Japanese)* 8−30791
surface characterisation, state-of-the art and need for standards 8−38916
surface defects 8−14551
surface lattice vibrations, interaction with low-energy electrons 8−30820
swirl flows in combustion 8−1755
synchrotron radiation, appls. 8−9010
synchrotron radiation for VUV and X-ray spectroscopy, lecture 8−24870
synchrotron radiation sources and utilisation 8−41390
tandem accelerators 8−13351
tectonics and mineral resources of USSR *(Russian)* 8−40536
TEM, STEM, and SEM: microscopy to microfabrication 8−32936
ternary semiconductor crystals for nonlinear optical applics. 8−33782
ternary semiconductor device applications 8−39207
ternary semiconductors, review of developments 8−34737
testing materials and structures 8−3298
thermal methods of NDT, review of theoretical and experimental problems 8−44325
thermodynamic parameter changes in solids and resultant processes 8−22868
thermodynamics appl. to fundamental Earth physics 8−36125
thermogravimetric methods 8−3408
thermonuclear fusion by lasers, state-of-the-art review *(Japanese)* 8−21768
thermoplastic hologram recording, book contrib. 8−25836
thermotropic liquid crystals, NMR relax. 8−39436
thin film and integrated optics review, theory, expt. techniques, waveguides 8−22220
three body systems in nuclear physics 8−517
thrombus detection radiopharmaceuticals, selection, prep. and evaluation 8−11731
time-domain reflectometry 8−37038
Tokamak hydromagnetic stability, ideal and resistive, review 8−34358
Tokamak plasma diagnostics 8−47163
Tokamaks, small-scale 8−42831
transient X-ray sources, review 8−12425
transition metal borides, cryst. struct., prep. methods, chem., elec., mag. props., appls., book contrib. 8−47307
transition metal compounds, band struct. calc. 8−18956
transition metal diborides, C32-type, phys., chem. props., appls., review, book contrib. 8−47308
transition metal dichalcogenides prep. and growth, book contrib. 8−19650
transition metal layered dichalcogenides and their intercalation compounds, physical props., review 8−27443
transition metal pyrites, mag. and elec. props., review *(Japanese)* 8−47941
transition metals, chemisorption of H, O and CO 8−2378
transparent conducting coatings, book contrib. 8−10587
triboluminescence 8−19581
TRIUMF meson factory, basic and applied research 8−21792
troposphere, composition, natural and effects of pollution 8−28262
TTF-TCNQ, optical evidence for Coulomb interactions 8−6704
TTF-TCNQ and $(SN)_x$ polymer, electronic props. 8−6306
tunable acousto-optic filters 8−5570
turbine flowmeter, for gaseous hydrocarbon, construction and performance, review 8−34244
two-phase flow, mixing and condensation in high-speed flow 8−47014
ultrasonics, trends in research work *(Japanese)* 8−33946
upper limb joint replacement 8−3674
US in medical diagnosis, appls., principles and equipment 8−11709
US National Shoreline Erosion Control Demonstation Program 8−16163
US tomography 8−31876
vapour growth, element incorporation 8−30556
variational principles, complementary 8−41135
vesicular film sensitometry, review 8−16878
Viking orbiters, scientific missions 8−20612
Viking project, summary 8−20611
vision, light deprivation and maturation, bibliography 8−15843
visual evoked cortical potentials, transient response, techniques review 8−35844
visual system variability and periodicity, bibliography 8−27936
void swelling simulation in reactor materials 8−8906
vortex shedding research 8−14021
water, density, effects of isotopic comp., temp., press., and dissolved gases 8−26616
water, liquid structure *(French)* 8−26424
water, viscosity, international formulation 8−26714
water at biological interfaces, struct. and functional aspects 8−40121
water solution calorimeter, determination of energy equivalent, with standard substance 8−23961
water supply in United States, effects of climate and climatic changes 8−49044
waterdrop interaction experiments 8−11974
weak electron-nucleon interactions, testing Laporte's rule, review 8−37564
weak shock propagation in liquid-filled tubes 8−26004
wear, delamination theory, review 8−3229
wind characteristics in Japan 8−36253
X-ray analysis in the TEM/STEM 8−24014
X-ray and synchrotron radiation inelastic scattering in crystals 8−39625
X-ray astronomy, 1960-1980 period 8−49567
X-ray astronomy 8−32604
X-ray binary stars, optical photometry and spectra 8−12429
X-ray binary stars *(Italian)* 8−32516
X-ray burst sources, review 8−12427
X-ray burst sources, review 8−49566
X-ray burst sources 8−12416
X-ray fluorescence analysis, overview 8−3425
X-ray optics in 1 to 300 Å wavelength range 8−29221
X-ray sources, periods 8−12424
X-ray sources in globular clusters, review 8−12428

reviews continued
X-ray spectral analysis 8−23981
Zircaloy 2 and 4, oxidation kinetics appl. to loss of coolant accidents, data review 8−19958
Zwicky's compact galaxies, properties 8−49542
β-decay, time reversal invariance and second class weak currents 8−37309
e^-e^+ annihilation, >2 GeV, production of charmed particles and charged τ lepton, review 8−17006
π factories, multidisciplinary role 8−21791
πN scattering, low-energy, nonlinear chiral dynamics description *(Russian)* 8−17043
Ag halide photographic materials for holography, book contrib. 8−25832
As_2S_3, amorphous semicond., photo-induced optical and structural changes *(Japanese)* 8−47244
B, and borides, cryst. chem., struct., B cryst. growth, review, book contrib. 8−47278
B, and refractory borides, book 8−48292
B, chem. props., reacts., review, book contrib. 8−48653
B, filament CVD technology, book contrib. 8−48352
β-B, rhombohedral, EPR, book contrib. 8−48041
α-B, rhombohedral, prep. methods, book contrib. 8−48295
B-O(S)(Se)(Te)(Po) compounds, prep. and struct., book contrib. 8−47306
BC, EPR, book contrib. intensity correl. with elec. cond., Hall coeff., book contrib. 8−48041
BN, EPR, book contrib. 8−48041
BN fibres, prep., struct., thermal, mech. and elec. props., appls., book contrib. 8−48360
C fibre reinforced plastic aircraft structural appl., non destructive testing 8−35599
CO laser, theoretical and experimental developments *(Japanese)* 8−25857
CO_2 laser, non-self sustaining discharge for CW laser excitation, review 8−42849
^{12}C, 3-α struct. in boson model 8−17124
^{13}C, NMR of peptides and proteins, review 8−24023
^{14}C analysis of soil, dating 8−36299
CrO_2 and tetravalent Cr oxide derivatives, chem. and phys. props. 8−31069
Fe-group, atoms and singly ionised, f-value meas., review 8−17617
Fe-Ni alloys, thermal props., let. review *(Russian)* 8−18805
FeS_2, cryst. growth, literature review 8−31318
GaAs, elec. props. of dislocations *(Japanese)* 8−6325
GaAs, ion implantation 8−6080
GaInAs-InP injection lasers with longer wavelengths for optical fibre communications *(Japanese)* 8−25892
H II regions, dust content 8−16508
H lines, Stark broadening in plasma 8−42001
He film, from two to three dimens. 8−47633
^3He, solid, mag., theory 8−38906
HgI_2 detectors, state-of-art crystal growth and nucl. spectroscopic evaluation 8−41895
^{125}I-fibrinogen uptake test for detect. of deep vein thrombosis, review of current practice 8−7436
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, one-dimensional cond., phys. props. *(Japanese)* 8−30916
Mn, energy levels, Mn I to Mn XXV 8−21841
Ne, nonlinear laser spectroscopy, inside Doppler line *(Russian)* 8−21231
^{208}Pb region, finite Fermi systems 8−537
S-S bond chirality, biomolecule struct. and activity depend., review 8−27889
$(SN)_x$, preparation and properties 8−27389
Si, interstitials and lattice vacancies 8−10038
Si, oxidation, oxidation-induced lattice defects, review *(Japanese)* 8−39931
Si-SiO_2 interface, electronic states 8−30992
Si-SiO_2 interface, props. 8−23170
SiO_2 on Si, thermally grown, breakdown 8−23172
Sm monochalcogenides, valence related optical and other studies, review 8−31215
$TiS_2(Se_2)$, modelling contrasting semimetallic characters 8−43393
Tm monochalcogenides, valence related optical and other studies, review 8−31215
UO_2, review of diffusion coeff. of fission product rare gases 8−33248
^{238}U, proton-induced fission, asymm. region, nucl. charge distrib. 8−4967
YIG, single cryst. growth from high temp. soln. 8−31315
Zn, elastic properties, compilation and review 8−27551
Zr alloys, crystallographic texture, quantitative charact., review 8−21647
Zr-Nb (2.5 wt.%), oxidation kinetics appl. to loss of coolant accidents, data review 8−19958

revolution *see rotation*

revolving *see rotation*

rewinding *see winding (process)*

Reynolds number *see flow*

r.f. heating *see radiofrequency heating*

r.f. sputtering *see radiofrequency sputtering*

r.f.i. *see radiofrequency interference*

RHEED *see reflection high energy electron diffraction*

rhenium
see also nuclei with ......
adsorption of Au on low index planes, FEM 8−14597
adsorption of CO, effects of surface steps on CO β state *(French)* 8−43250
adsorption of CO on basal (0001) and stepped $|14(0001)\times(10\bar{1}1)|$ planes 8−14594
adsorption of ethylene and acetylene on polycryst. and (0001) single cryst. Re surfaces 8−38947
Anderson-Gruneisen parameter, bulk modulus and compression curves 8−30690
cermets with rare earth oxides, prep. and props. 8−27466
electrical resistance and Hall effect at low temp. *(Russian)* 8−47760
emissivity, integral hemispherical degree of blackness, 1200-3000K 8−43154
epitaxial film growth on sapphire *(Russian)* 8−35311

rhenium continued
field emitter tip, condensation remoulding, field emission microscopy 8−2995
field evaporation, search for high ionic charges 8−35269
flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
HCP, elec. field gradient 8−14698
nuclear quadrupole alignment of ^{183,184,186,188}Re in single cryst. at low temps. 8−48091
plastic deform. rel. to low temp. sp. ht., supercond. *(Russian)* 8−31005
sulphiding with H_2S 8−3078
superconducting film, T_c and residual resist., variation with coating thickness 8−47900
surface, interaction with F_2 and fluorides at low temp. and high press. 8−39700
thermal desorption of CO and NO from Re single crystal surface *(French)* 8−22959
vapour deposited tubes, hot burst strength, thrust motor appl. 8−44021
W-C-Re, vacuum melted, phase composition, struct. and props. 8−31403

rhenium alloys
see also rhenium compounds
La-Re-B, annealed and quenched, X-ray structural and phase anal. 8−11207
Mo-Re, cold worked, strength 8−31426
Mo-Re, integral hemispherical degree of blackness, 1200-3000K 8−43154
Mo-Re, solid soln., dislocation internal friction *(Russian)* 8−23748
Mo-Re (5 at.%), enhanced lattice sp. ht. due to LF reson. modes 8−14882
Mo-Re alloys, fractography of deformed samples *(Russian)* 8−19889
$Mo_{1-x}Re_xCo$, mag. state of Co impurity, NMR exam. 8−27100
Pt-Rh thermocouple, Ta-sheathed, Al_2O_3-insulated, large decalibrations above 1330°C 8−24790
Re-Al-Si , X-ray determ.of system *(Russian)* 8−19763
Re-Al-Si system, phase equilibria, $ReAl_{1.2}Si_{0.8}$, $ReAl_{1.25}Si_{0.75}$ prod., struct. 8−35357
Re-Fe-Al, physical-chemical investigation *(Russian)* 8−15362
Re-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
Re_5Ge_3, RF sputtered, supercond. crit. temp. 8−14853
W-Re, integral hemispherical degree of blackness, 1200-3000K 8−43154
W-Re, optical props., temp. depend., 4.2-300K 8−2874
W-Re, phase form. and diffusion interaction with liquid Al, under weightlessness *(Russian)* 8−22876
W-Re, sigma phase stability and irrad. effect 8−11200
W-Re alloy, effect of thermal prehistory on resistivity meas. 8−3241
W-Re wire, CVD coatings of SiO_2 and Mo, for neurological electrode, elec. cond. and bending props. 8−11752
Y-Re-B, annealed, and quenched X-ray structural and phase anal. 8−11207
Zr-Nb-Mo-Re, alloying effect on dislocation core struct., determ. by discrete lattice modelling 8−30618
ZrC-Re, in H_2, thermionic emission residual gas effects 8−48269

rhenium compounds
see also rhenium alloys
$KCl(Br):ReO_4^-$, vibronic absorption spectra 8−10924
K_2ReCl_6, displacive phase transition, thermal expansion meas. 8−10188
$Re_3Cl_9^-$, electronic struct. and metal-metal bonding, HMO calcs. *(Russian)* 8−1118
ReF_6, cryst., Raman and absorpt. spectra, Jahn-Teller effect 8−6675
ReO_3, elastic stiffness const. determ. by Brillouin scatt. 8−19494
ReO_3 related oxides, elastic strain energy of matrix between shear planes, array microstruct. 8−43033
ReO_3 related oxides, formation energy of isolated crystallographic shear planes 8−43032
$V_{1-x}Re_xO_2$ ($0 \leq x \leq 0.15$), insulator-metal transition, DTA, X-ray, mag. and elec. meas. 8−10353

rheology
see also plasticity; viscoelasticity
blood vessel wall rheological properties, continuum-mechanical analysis *(Hungarian)* 8−35875
burn-scarred human skin rheological props. in vivo meas. 8−31935
cement paste, mathematical model relating flow curve to water/cement ratio 8−34100
cervical mucus spinability automatic meas. device 8−31928
condensed systems *(French)* 8−22310
cone and plate oscillatory motion, secondary flow effects, perturbation anal. 8−1618
dispersed system, concentrated, rheology and principle of minimum dispersed energy *(French)* 8−22313
dumbbell kinetic problem, rheology, Langevin approach 8−42633
erythrocyte, rheological models *(French)* 8−24083
fibre suspension, rheology, rel. to turbulent drag reduction 8−22315
fibrous structures, mech. relax. theory 8−13916
l *(German)* 8−13982
non-Newtonian fluid, kinematical tensors, rheological eqns. of state 8−30326
non-Newtonian liquid, hydraulic behaviour *(Italian)* 8−38376
olivine, rheology rel. to thermal stability or instability of asthenospheric shear flow 8−20370
olivine in mantle, local nonsimilarity boundary layers rel. to shear flow beneath oceanic plates 8−40521
polyamide in isoamyl alcohol solutuibs, spin coating process modelling and appl. 8−27655
polyethylene film-resin melts, rheological props., prep. method depend. 8−34099
polyisoprene, rheological props., accelerator and temp. effects *(German)* 8−34101
polymer soln., viscoelasticity, rheological props., prep., transport and processing effects, tensile and shear flow *(German)* 8−13982
polymer solution, laminar capillary tube, critical shear rate 8−34170
polymer solution, mechanical model for flow, extensional viscosity 8−22378
polymer solution, rheology, rel. to turbulent drag reduction 8−22315

rheology continued
polymer solutions, intrinsic stress, birefringence tensor, bead/spring model, freq. depend. 8−42574
polymer solutions, rheology, finitely extensible nonlinear elastic dumbbell theory 8−9617
polymeric liquids, rheology and kinetic theory, review 8−38611
polystyrene, non-isothermal rheological response during elongational flow 8−38262
propergol, during polymerisation *(French)* 8−23762
prosthetics, haemodynamic design considerations 8−40428
rocks, growth of banded perturbation structures 8−36152
rocks, partially melted, critical phenomena 8−32080
shearing motion, unidirectional simple, analysis of automorphous model 8−5718
suspension of charged rigid spheres, suspension mechs. 8−40086
suspension of spherical particles, Brownian motion effect on bulk stress 8−7246
thermorheological problems, numerical soln. 8−13910
viscoelastic fluid, rot.-oscill. flow, rheological consts. determ. 8−30251
viscoelastic material, rheological relations invariance with rel. to orthogonal time depend. transform. of coords. 8−1623

rho mesons
$\pi N \rightarrow \rho X$, trajectory data, reson. and scatt. regions, compatibility *(Russian)* 8−8703
Deck model, rescattering effects for diffr. dissociation of hadrons 8−4844
EM form factor, elec. quadrupole and mag. dipole moments 8−12913
exchange in $^2H(\pi,\pi)$ and $^4He(\pi,\pi)$ 8−21610
magnetic moments of light nuclei, ρ-meson exchange 8−17100
progenitor sum rules, π-nucleon coupled fields, ρ-mesonic effects 8−17111
quark effective-bare mass distinction 8−12866
SU(8) symm. mag. moments of charmed vector bosons 8−4794
time quantisation, relation between proton mass and ρ-meson lifetime 8−76
e^+e^- annihilations, radial excitations of ρ, ω, φ mesons 8−4866
$e^+e^- \rightarrow \pi^+\pi^-$, 4π, dispersion anal., $\rho^\circ(1250)$, $\rho''(1600)$ prod. 8−8677
$e^+e^- \rightarrow x\pi$, even G parity hadronic cross section, $\rho'(1600)$ 2π branching ratio 8−12921
$\gamma d \rightarrow \rho d$, double scatt. at high energy, unstable particle scatt. amplitude 8−45929
γN, 7.5-10.5 GeV, inelastic ω and $\rho^\pm$ prod. 8−45930
$\gamma p \rightarrow \pi^+\pi^-p$, Lagrangian model, ε(700), ρ(770), f(1260), Δ(1236) resons. 8−17028
K^0N interaction, 10 to 50 GeV/c, residue of partial ρ amplitudes *(Russian)* 8−41590
μN deep inelast. scatt., inclusive ρ^0 prod. 8−37216
$\bar{p}N \rightarrow N(N\pi)_{I=1/2}$, 5.7 GeV.c ρ exchange contrib., cross channel isospin amplitude anal. 8−45938
$\bar{p}p$, 100 GeV/c, inclusive ρ^0 and f^0 prod. 8−41605
pp inelastic collisions, ρ-dominance in collision model 8−37238
$pp \rightarrow n\Delta^{++}$, 6-1500 GeV/c, differential cross-section 8−8700
$\bar{p}p \rightarrow \pi^+\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
$\pi^- + C(Al)(Cu)(Pb)(H)$, 3.7 Gev/c, incoherent prod. of ρ^0 mesons *(Russian)* 8−33084
πN data, energy depend. of ρ trajectory intercept 8−45959
$\pi^-n \rightarrow p\pi^-\pi^-\pi^0$ or $\rho^-\pi^-p$, 5, 9 GeV/c, model independ. anal. of final states 8−25071
πp charge exchange reactions, model of ρ Regge trajectory 8−37226
π^-p interactions, 15 GeV/c, vector meson prod., polarisation props. 8−37251
$\pi^-p \rightarrow p\pi^-\pi^0$, 9 and 12 GeV/c, backward e^- prod. 8−8704
$\pi^-p \rightarrow p\rho^-$, 6 GeV/c, line reversed reaction, Δ exchange, ρ^- decay 8−12926
$\pi^-p \rightarrow \rho^0n$, Reggeon cuts and reaction description *(Russian)* 8−45947
$\pi^+p \rightarrow \pi^+p\pi^0$, p diffractive dissociation, ρ^+ prod., one-pion-exchange model 8−21451
ππ S-wave phase shift, lower bounds, ϵ° and ρ poles 8−45953
$\rho \rightarrow e^+e^-$, decay widths from QCD *(Russian)* 8−45812
$\rho \rightarrow \eta\gamma$ radiative decay width determ. 8−467
ρ^0, production cross section in π^-p inclusive interactions *(Russian)* 8−33098

rhodium
see also nuclei with ......
adsorption of $CO+H_2$ mixtures, reflection-absorption IR and thermal desorpt. obs. 8−6226
adsorption of H_2, mass spectra 8−38970
chemisorption of CO on (110) face 8−6225
surface, (100), structural determ. using reliability factor proposed for LEED 8−43224
surface, (111) and (100), chemisorption of H_2, O_2, CO, CO_2, NO, C, ethylene, acetylene, LEED, AES and thermal desorption meas. 8−38951
X-ray reflection intensities, charact. temps. 8−18731
Si-Rh Schottky diode, X-ray irradiated, radiation-accelerated diffusion of Rh in Si 8−26952

rhodium alloys
see also rhodium compounds
$ErRh_4B_4$, reentrant supercond., mag ordering, neutron diffr. obs. 8−14879
$EuRh_2$, H_2 absorbing, degradation by cycling 8−34628
$EuRh_2$, mech. of H absorption, Mossbauer, mag. and X-ray diffr. meas. 8−38846
FeRh, antiferromag., band struc., off-stoichiometry effects 8−10341
$Gd_{0.99}Ho_{0.01}(Rh_{1-x}Fe_x)_2$, spin echo meas. on ^{165}Ho, quenching effect of Fe substitution 8−48079
Li-Rh-H system, intermetallic cpds. and phase relationships, cryst. struct. 8−44084
Mo-Rh, secondary electron emission and inelastic refl. coeffs. 8−15264
Pt-Rh-W alloy corrosion by radioisotopic power system insulating and thermoelec. materials 8−7094
Rh-Cu(Si), melts, surface props. *(Russian)* 8−26750
Rh-Pd-Co, dil., local moment formation 8−43562
Rh_2CoSn, ferromag., mag. hyperfine fields of ^{119}Sn, Mossbauer meas. 8−10816
Rh_2FeSn, ferromag., mag. hyperfine fields of ^{119}Sn, Mossbauer meas. 8−10816
Rh_2MnSn, Heusler alloys, hyperfine mag. field at Sn 8−39482

rhodium alloys continued
- Rh_2MnSn, mag. hyperfine fields at Rh and Sn sites, and their temp. depend. 8−43708
- Rh_2NiSn, Heusler alloys, hyperfine mag. field at Sn 8−39482

rhodium compounds
- *see also rhodium alloys*
- $ErRh_4B_4$, supercond., electronic struct. and reentrant magnetism 8−10340
- $HoRh_4B_4$, electronic struct. and reentrant magnetism 8−10340
- Li-Rh-H system, intermetallic cpds. and phase relationships, cryst. struct. 8−44084
- $RhBr_3$, bond distances exam. by EXAFS 8−26525
- YRh_4B_4, supercond., electronic struct. and reentrant magnetism 8−10340

Richardson effect *see thermionic emission*

ridge waveguides *see rectangular waveguides*

Riemann-Cristoffel tensors *see general relativity; tensors*

Righi-Leduc effect *see thermomagnetic effects*

rigidity *see shear modulus*

ring lasers
- angle meas. appl., principle 8−16777
- beat regime with nonlinear absorber, appl. to ang. vel. sensor *(Russian)* 8−1273
- Brillouin optical fibre ring oscillator 8−1275
- capture zone minimum, in dynamic beat regime *(Russian)* 8−29987
- cavity dumping using antiresonant ring and electrooptic phase modulator 8−17980
- CW oscillation in presence of passive medium, stability 8−37913
- dye laser, CW, feedback controlled pulse self-excitation 8−22152
- dye laser resonator, CW, astigmatism compensation using lenses 8−29978
- frequency characteristic distortion, by two sinusoidal signals *(Russian)* 8−22155
- gas laser, mode self-locking 8−1283
- gyro progress 8−46704
- gyros system, military appl. 8−42370
- high-power, single-mode, CW dye ring laser 8−13731
- misalignment sensitivity analysis for non-planar resonator 8−29985
- mode competition at line centre 8−25898
- mode locked ring-laser with two isotope medium, two-mode emission 8−1278
- modes of resonator with additional return mirror 8−46677
- multilayer light scattering and laser gyro 8−33764
- nonreciprocal effects, longit. mag. field effect 8−17986
- self-locking type II mode, freq. depend. effects 8−5506
- solid-state, interactions between opposite waves, self-modulation and beats 8−17983
- synchronisation region width calc. *(Russian)* 8−46681
- travelling wave, operation with periodically varying resonator parameters 8−46678
- travelling wave lasers with periodically varying cavity parameters, operation anal. 8−37917
- ultrashort-pulse generation by lasers with saturable absorbers 8−46687
- He-Ne, rapidly pumped, competition between opposite waves 8−17985
- He-Ne, rotating, output characts. 8−29982
- He-Ne, with nonlinear absorber, competition of orthogonally polarised modes 8−17984
- He-Ne laser, two-mode ring laser power resons. 8−1211
- He-Ne ring laser, Ne isotopic composition changes during prolonged discharge *(Russian)* 8−22110
- He-Ne two mode ring laser for interferometry 8−1260
- He-Ne-methane stabilised ring laser, freq. stability calcs. *(Russian)* 8−9401
- Nd:glass, continuous dynamic freq. tuning of pulse radiation 8−29986
- Nd:glass laser, with nonlinear absorber, pulsed Q switching 8−9400
- Nd:glass synchronised ultrashort laser pulse, appl. to diagnosis of CO_2-produced plasmas 8−42825

ringers *see bells*

riometers *see ionospheric measuring apparatus*

rivers
- *see also lakes*
- aeration system subject to random disturbances, optimal control 8−16078
- alluvial bed load transport estimation 8−20444
- aqueous heavy metals, adsorption on inorganic minerals 8−49006
- artificial aeration optimal control methods 8−36203
- Baltic Sea sedimentation, role of river suspensions *(Russian)* 8−7616
- beach sediments, lower St. Lawrence Estuary, Quebec, frost effects 8−7609
- bed shear stress and vel. profiles over various bed configs. in river bend 8−20439
- Belorussia, annual runoff, land reclamation effects 8−16076
- Biya and Katun rivers, evolution of river bed in confluence node 8−3839
- currents in fjord-type lake 8−49051
- delta evolution, sediment transport modelling 8−15993
- drainage basins, computer, analysis *(French)* 8−7786
- East Fork River, Wyoming, 1976 bedload meas. 8−49055
- Elta reservoir, rock slide stability, geological survey *(German)* 8−7636
- estuaries, chemical speciation of Cd, Cu, Pb and Zn in mixed freshwater-seawater solns. 8−20409
- estuaries, transport, erosion and deposition of cohesive sediments, modelling 8−15994
- estuarine flow, nonlinear partial differential eqn., finite element anal. *(Japanese)* 8−8233
- estuary, flow onto continental shelf, simple theoretical model 8−49030
- estuary mapping, classification algorithms for Landsat data 8−40567
- estuary with uniform reversing tidal flow, suspended sediment model 8−7648
- evaporation from water surfaces in Armenian SSR 8−7673
- fall height rel. to water vel. 8−7678
- flood calculations, analogue rivers selection 8−16073
- flow, bed topography, grain size and sedimentary struct. in open channel bends 8−20443
- Grand, Ontario, geomorphic effects of catastrophic flood 8−28248
- gravity waves propag. over permeable bed *(Polish)* 8−38353
- Great Miami River, Ohio, behaviour and transport of industrially derived Pu 8−16061

rivers continued
- Hudson, ^{226}Ra flux from estuarine and continental shelf sediments 8−32061
- Hudson River estuary, ^{222}Rn distrib. and transport across sediment-water interface 8−16064
- Hunter, sand supply at New South Wales coast 8−16066
- hydrograph calc. problems for mountain river 8−7676
- hydrologic data set distribution functions, extremes and confidence intervals 8−24313
- hydrological forecasts, automatic processing of operational information 8−3842
- hydrometeorological series stationary properties study, Oise river basin appl. *(French)* 8−36210
- hydrophysical apparatus, channels with automatic transfer function correction *(Russian)* 8−16193
- Isar River, Bavaria, trace elements distrib. in sediment, suspension and water samples by neutron activation analysis 8−3834
- Kuskokwim River drainage, Alaska, Hg dispersal from lode sources 8−40600
- Lithuanian lake overflow influence on river runoff *(Russian)* 8−16070
- Macdonald Valley, NSW, catastrophic channel changes in 1949-1955 period 8−16065
- Mackenzie, Canada, asymm. transverse valley profiles 8−20446
- Mackenzie, Canada, ice-push features stability 8−28247
- management operational system development using weather radar 8−40718
- meandering and braiding of alluvial rivers, stability theory 8−36212
- Mississippi, Ba non-conservative behaviour during mixing of river and Gulf of Mexico waters 8−32120
- morphometric and hydraulic channel characteristics, in integration of St. Venant eqns. 8−3838
- mountain basin morphology, river branches and sides, models *(Italian)* 8−3829
- mountain rivers, evaluation of max. discharges distrib. parameters 8−3840
- mountain streams, channel roughness coeffs., Chezy-Manning relation 8−49045
- multi-inflow reservoirs, flow dynamics 8−20452
- neutron activation analysis of Cr after preconc. on activated C 8−3993
- open streams, hydraulic-hydrometric method for water flow determ. 8−7672
- Ottawa, methylmercury equilib. concs. in sediments 8−11923
- Otway region, palaeocurrent directions in S.E.Australia 8−20449
- outflow to sea, 3D model, Herault river example *(French)* 8−36209
- radioisotope applications in agriculture, hydrology, medicine industry etc., booklet 8−35947
- runoff dependence on climatic factors in Lithuania and Kaliningrad region *(Russian)* 8−16067
- runoff in Lithuania rel. to lake level oscills. *(Russian)* 8−16068
- sand-wave motion of sediment along nonerodible bottom in open channel flow 8−16074
- Saruhashi River, Japan, heavy metal pollution *(Japanese)* 8−40599
- Sava River and Lake, possible interconnection with Ranney wells determ. by environmental T meas. 8−20447
- Sava water pollution influence on ranney wells in Belgrade 8−40602
- sediments, suspended, in translational flow, vertical distrib. 8−3841
- Silica Springs, New Zealand, spring water and alumino-silicate deposit anal. 8−32124
- spring break-up of estuaries on Hudson Bay 8−11930
- stream sediments, Cd content determ., geochem. 8−36170
- streambed particles, erosive forces *(French)* 8−36211
- streamflow, max. expectation levels, standards improvement 8−7674
- streamflow, multiple monthly series, reconstruction and prediction 8−24373
- streamflow data, Pearson type 3 distrib. fitting 8−49061
- streamflow of large Soviet rivers, agricultural afforestation effects 8−7675
- surface water chemistry and weathering processes, Absaroka Mts., Wyoming 8−32125
- Susquehanna River system, use of ^{210}Pb as heavy metal tracer 8−49046
- Thames Estuary, Flandrian sea level changes rel. to land subsidence in England and Wales 8−24304
- Thompson River effects on Kamloops Lake, B.C. 8−49051
- tidal computations, explicit-implicit water level model 8−44886
- tidal currents calc. in homogeneous estuaries 8−7654
- Tokyo Bay, central Japan, buried river valley system 8−44818
- Tolaga Bay Flats basin, recent alluvial infilling estimation using tephra marker beds 8−11925
- trace elements determination using routine neutron activation analysis 8−3992
- turbulent channel flow, energy aspects 8−7677
- Volga, spring floods long-range forecasts, study of effectiveness 8−3837
- water resources planning, use of multiattribute utility theory 8−11932
- watershed geochemistry, aqueous solns. control by soil materials 8−20445
- Yamuna and Damodar, India, raingauge station network for flood forecasting 8−32126
- Fe removal in estuaries, mechanism 8−20437
- ^{3}H, environmental transport from atm. release of mol. ^{3}H 8−11987

RKKY interaction
- dilute RKKY spin glass, Bethe-Peierls theory 8−39351
- Heusler alloys, ionic spin distribution and RKKY interactions 8−27028
- magnetic semiconductor, doping effects on exchange interaction mechanism 8−31064
- paramagnetic impurities in conductors, relaxation and indirect exchange interaction 8−2728
- scalar interactions, microscopic, histogram collection by FORTRAN program 8−34958
- spin glass, generalised mean field theory with spin correls. 8−2691
- $Ag_{0.6}Au_{0.4}Mn$, dil., effect of mean free path on strength of RKKY interaction 8−39291
- Au-V, dil., ^{51}V CW NMR line width anal., RKKY broadening 8−15033
- Cu-Mn, classical RKKY model, thermodynamic props. 8−39333
- EuSe:Gd, mag. props. explained by band struct. 8−43324
- $(La,Ce)B_6$ dil. alloy, Kondo effect, impurity-impurity interaction, mag. susceptibility, mag. to non mag. transition 8−47948

RKKY interaction continued
- $(La,Gd)B_6$, dil. alloy, spin glass behaviour, 4.2 to 200K AC mag. susceptibility, RKKY calcs. 8−47994
- Mo-Fe, dil., Kondo effect of RKKY interaction 8−31052
- Ni_2MnSn alloy, ionic spin distribution and RKKY interactions 8−27028
- Pd_2MnSn alloy, ionic spin distribution and RKKY interactions 8−27028

road traffic
- highway noise shielding methods 8−9492
- Hong Kong, roadside noise meas. 8−30125
- noise, attenuation around buildings 8−1498
- noise, equally spaced line sources model *(Japanese)* 8−33954
- noise, individual diffs. in sensitivity from public surveys 8−33953
- noise, reduction by multiple acoustic screens *(French)* 8−13844
- noise, test procedures *(Japanese)* 8−38141
- noise generated by single vehicles in freely flowing traffic 8−38139
- noise prediction *(Japanese)* 8−13853
- noise reduction by closed balcony shielding on buildings 8−33951
- tyre noise, meas. and anal. technique 8−33969
- urban traffic noise, contrib. of heavy vehicles 8−38136

road vehicles
- linear one degree of freedom system with random excitation 8−34057
- microphone windscreens, acoustic sensitivity 8−38133

Rochelle salt
- phase transitions, high-resolution sp. ht. meas. 8−48128
- positron lifetime meas. during phase transitions 8−6644
- rectilinear system of transition parameters 8−48126

rock magnetism
- *see also palaeomagnetism*
- abyssal sediments, effect of particle size var. on DRM/ARM ratio 8−32067
- anomalies and magnetizations in Coast Mountains, British Columbia, rel. to subduction 8−11796
- basalts, from N Pacific, mag. props. rel. to Pacific plate tectonics 8−40543
- basalts, mag. susceptibility anisotropy meas., torque and spinner magnetometer comparison 8−21185
- basalts from Nazca Plate, mag. props. and opaque mineralogy 8−20396
- E.Canada ophiolites, thermomagnetic evidence for native Fe 8−3760
- Curie isotherms in deep crustal mag. anomalies, mineralogical constraints 8−44805
- ferruginous quartzites of Ukrainian shield, magnetic props. at high press. and temp. *(Russian)* 8−15999
- Late Cretaceous polarity sequence, Scaglia Rossa limestone, Italy, rock and palaeomag. studies 8−11803
- lodestones, magnetic and microstructural props. 8−16004
- magnetite, depth calc. of piezomagnetic effect rel. to earthquake prediction 8−11816
- magnetite, TRM props. of single-domain, pseudo-single-domain and multidomain particles 8−40544
- multiphase magnetizations, recognition and separation techniques 8−28349
- remanent magnetization, reversible effect of small uniaxial stress, single-domain theory 8−20393
- sedimentary rocks, magnetisation rel. to palaeomagnetism and Cretaceous-Tertiary extinctions 8−32013
- sediments, fine-grained, compaction effect on acquisition of detrital remanent magnetization 8−20395
- stressed rocks, mag. behaviour rel. to earthquake prediction 8−32068
- Swedish Ordovician limestones, mag. directions 8−28169
- Yellowstone and Jackson Lakes, mag. props. and secular var. in sediment cores 8−48968

rocket vehicles *see rockets*

rockets
- *see also missiles; space vehicles; weapons*
- Ariane launch vehicle, model firing tests, acoustic field, heat flux, press. distrib. 8−4062
- attitude control, solar sensor system pointing accuracy *(Japanese)* 8−24420
- conducting tubes in polarized plane wave fields, surface currents and charges 8−42256
- geomagnetic aspect horizontal component sensor *(Japanese)* 8−24421
- monoaxial controlled solar pointer for atmospheric occultation meas. *(Japanese)* 8−32312
- nuclear gas-phase rocket motor, MHD rot. of conducting fluid in crossed field *(Russian)* 8−47059
- orbit transfer of rocket between elliptic orbits, globally optimal solns. 8−8236
- propulsion and dynamics theory, early stages 8−16
- rocket and satellite space obs. (1966-76) *(Japanese)* 8−28481
- solar sensor data processing cct. *(Japanese)* 8−24423
- sounding rocket attitude stabilisation H_2O_2 jet system *(Japanese)* 8−28482
- sounding rocket three-axis attitude control system *(Japanese)* 8−24422
- thrust limited relativistic, interstellar drag effects on minimum time trajectory 8−49286

rocks
- *see also geology; minerals; rock magnetism*
- acoustic emission techniques appl. to rock mechanics, rel. to earthquake prediction *(Chinese)* 8−24279
- acoustic emissions, meas. at high temp. and press. by wide-band optical-mechanical system 8−1525
- active hydrothermal systems, intrinsic fluid and rock resistivity anal. 8−40480
- Amitsoq gneiss, W.Greenland, initial Pb isotopic comp. and implications for Earth age 8−20371
- analysis by instrumental neutron activation, automated method 8−3769
- ancient deep-sea fan in Cantabrian Mountains, growth 8−44813
- Antarctic rocks, seawater dissolution rate rel. to silica budget of Antarctic waters 8−20436
- Archaean basalts and peridotites, rel. to mantle heterogeneity and Earth comp. 8−11844
- Archaean clastic metasedimentary rocks, $^{18}O/^{16}O$ as petrogenetic indicator for Archaean gneisses 8−20410
- Archean supracrustal Rb-Sr ages, Rocks and Amitsoq gneisses, Isua, Greenland 8−16013
- Archean variolites, quenched immiscible liquids, discussion 8−20394

rocks continued
- assay-activation analysis, use of Au and Ag standards based on phenol formaldehyde resin 8−3419
- Australia and Timor Trough, facies rel. to topographic wave migration during past 3 million years 8−49018
- axial-plane slaty cleavage and schistosity development, expt. 8−7625
- Baikal rift zone, petrochem. of Cenozoic basalts and assoc. rocks 8−36171
- banded deformation structures description and origin, regional strain, local perturbs. 8−7629
- banded perturbation structures, growth, rheology 8−36152
- Barberton region, South Africa, Archaean granitic rocks, trace element geochemistry 8−11895
- basaltic andesite dykes, Iritono, central Abukuma plateau, plagioclase grain size 8−7618
- basalts, deep sea, trace element distrib. pattern, neutron activation anal., rel. to genesis 8−11879
- basalts, stability region of ferromagnetic minerals 8−16000
- basalts from Reykjanes Ridge and Iceland, Cl and Br contents rel. to degassing 8−36136
- Belingwe Greenstone Belt, Rhodesia, petrogenesis of peridotitic komatiites 8−32087
- Bouvet triple junction, S.Atlantic Ocean, geochem. and petrology of dredged basalts 8−11877
- charnockite series, form. temp. and press., evidence for geothermal gradients 8−40553
- clastic rock softening characteristic tests *(Japanese)* 8−49013
- colour values from diffuse reflectance spectra *(French)* 8−11881
- compressional and shear wave velocities, temp. depend. 8−7579
- concretions in Otway sediments, S.E.Australia 8−20417
- cooling plutons, transport phenomena in assoc. hydrothermal systems 8−36206
- cordierite-garnet bearing assemblages in granulite facies terrains 8−44810
- cracked, slip surface development 8−15480
- critical dilatant volume at tertiary creep onset 8−28220
- deformation, time-dependent, not purely elastic specimens 8−32075
- deformation and failure of rock masses, time-dependent multilaminate model 8−16002
- Early Precambrian rocks of W.Greenland and Minnesota River Valley, U-Pb ages on single zircons 8−11845
- eclogite, garnet content *(Chinese)* 8−20413
- external environmental radiation levels of naturally of occurring radioactive sources 8−9001
- failure, scale invariant properties 8−3758
- fault gouge, structural changes during stable sliding and stick-slip 8−32079
- fault gouge composition effect on frictional sliding stability 8−3759
- finite strain anal. using lines with initial random orientation 8−20568
- fold propagation in viscous layer, finite element model 8−32083
- folding in simple shear, expt. anal. 8−32077
- folding of single viscous layer, role of initial perturbs., finite element anal. 8−49003
- folding under confining pressure, anal. of faulted drape-folds 8−7626
- fracture, assoc. microacoustic signals anal. 8−32070
- Franciscan complex, California, compressional vel. 8−40548
- French Western Alps, internal mineralogical and petrological investigations of Alpine metamorphism 8−36157
- Gassetts schist, Vermont, prograde reaction histories from compositional zonation and inclusions in garnet 8−36159
- geological anal., nuclear track technique, B, Li, U, Th mapping 8−20553
- gneiss domes structural analysis, Saint Malo massif example *(French)* 8−7627
- Gondwanaland Mesozoic tholeiites, Rb-Sr mantle isochrons and lithosphere chemistry vars. 8−28201
- granite, critical dilatant vol. at tertiary creep onset 8−28220
- granite emplacement in Outer Zone of S.W.Japan 8−3767
- granites from Hyderabad, US profiling 8−44786
- granulite xenoliths from Lesotho kimberlites, chemistry rel. to lower continental crust comp. 8−24268
- SW Greenland, Fiskenaesset, Archaean aluminous ultrabasic rocks 8−11892
- high-pressure metamorphism in New Caledonia, phase equilib. in Ouegoa district 8−44811
- Himalayan granites, origin 8−44809
- hydrostatic loading and unloading relation for porous materials with various fluid contents 8−28222
- hydrothermally altered and unaltered rocks, discrimination in visible and near IR 8−7641
- igneous and metamorphic, ^{18}O distrib. among mineral triplets 8−32071
- immiscible picritic liquids, Ni partitioning 8−32069
- impact and comminution processes in soft and hard rock 8−3763
- inclined asymmetric upward-moving gravity structs. 8−7637
- Isle of Skye granites, rare earth elements and origin 8−11890
- Isua supracrustals, Greenland, Sm-Nd isotopic investigations and implications for mantle evolution 8−36129
- Japanese island arc volcanic rocks, relation between chemical comp. and gravimetric data 8−32102
- Jura type platform folds, centrifuge expt. 8−49001
- kimberlite nodule data on palaeogravity since late Precambrian 8−24217
- kimberlites and plate tectonics in W. Africa 8−11868
- Laxfordian deformation in Carloway area, Isle of Lewis, Scotland 8−7638
- limestone, complete refr. index meas. in visible and IR 8−40541
- limestone, crystalline, variation of elastic wave velocity *(Japanese)* 8−11887
- limestone, finegrained, superplastic flow 8−20398
- mafic belts along margins of Japanese Islands, origin, geophys. survey 8−32100
- Marda calc-alkaline suite, rare earth elements, Archean geochem. analogue of Andean-type volcanism 8−11898
- metabasalts from Point Sal ophiolite, California, rare earth and trace element geochemistry 8−32092
- metamorphic rocks of Yap arc-trench system, petrology and geochemistry 8−32093
- metavolcanic rocks, Montauban-Les-Mines, Quebec, geochem., mineralization 8−36161
- meteorite impact, craters, internal struct. model 8−44825
- Mexican andesites, Sr isotope evidence for petrogenesis 8−28203

rocks continued
- microfracture *(Japanese)* 8−7020
- Mid Atlantic Ridge, FAMOUS area, petrogenesis of basalts 8−11891
- mid-ocean ridge basalts, rel. to Earth comp. and mantle evolution 8−11844
- Middle Ordovician volcanic rocks from Quebec, palaeomagnetism 8−15965
- movement monitoring using inclinometers and tiltmeters 8−28318
- Mt. Burnet Dunite, high-temp. creep meas. 8−7624
- multielement anal. by sequential instrumental and radiochem. neutron activation 8−7798
- multielement analysis by photon or neutron activation 8−12018
- mylonites from Grenville Front Tectonic Zone, Ontario, distortional strain estimation 8−7628
- nepheline syenite, dating, Rb-Sr internal isochron, ^{39}Ar-^{40}Ar plateau age methods *(French)* 8−32031
- neutron activation analysis, accuracy 8−11589
- Newfoundland Basin seamounts, rocks rel. to Mesozoic evolution 8−32045
- NW.Nigeria, calc-alkaline volcanics and possible Pan-African suture zone 8−32086
- NIMROC reference materials, for neutron activation anal. 8−7288
- nondestructive neutron activation analysis of environmental samples using low-energy photon spectrometry 8−3995
- ocean-floor hydrothermal metamorphism of ophiolitic metabasic rocks in Italy 8−7613
- ocean-floor hydrothermal metamorphism of ophiolitic rocks of Troodos Massif 8−7614
- Onverwacht Group, Transvaal, sedimentology rel. to early Earth characts. and evolution 8−44812
- P- and S-wave velocities in dry and saturated rocks, influence of cracks, model 8−20366
- peralkaline rhyolites, assoc. with andesitic arcs of SW.Pacific 8−32043
- permeability and penetrating water zone propag. 8−7671
- S.Peruvian coast, two-billion-year granulites in Late Precambrian metamorphic basement 8−28204
- petrology, error assoc. with point-counting 8−32232
- petrology rel. to extreme metamorphism, symposium (Sydney, August 1976) 8−44821
- phosphate rocks, processing for fertiliser prod. and byproduct U recovery 8−17398
- pink westerly granite, wave propag. study by holographic interferometry 8−20536
- plastic deformation, fabric development simulation, appl. to quartzite 8−49015
- Pliny Range, New Hampshire, intrusive complex, mineralogy and petrology 8−36158
- polygonal strain markers adaption 8−20567
- porosity and permeability, rel. to transport phenomena in hydrothermal systems 8−36205
- Precambrian igneous rocks, Pb isotope inhomogeneity in K-feldspars 8−32095
- Precambrian surface rocks, rel. to earthquake hazards in East-Central USA 8−11834
- quartz-bearing and quartz-free, high temp. and press. effects on compress. wave vel. 8−32081
- quartzite, critical dilatant vol. at tertiary creep onset 8−28220
- Quaternary lavas, Snake River Plain, Idaho, mineralogy and petrology 8−20402
- Quaternary volcanic rocks of New Hebrides geochemistry and origin 8−20375
- rapakivi granite, anorthosite and charnockitic plutonism 8−28234
- rare earth elements, determ. by neutron activation anal. 8−27870
- rare earth elements, determ. in geological materials, using thermal and epithermal neutron activation 8−7797
- resedimented conglomerates of Huronian age, Lake Huron north shore, deposition from sediment gravity flow 8−36164
- rheology of partially melted rocks, critical phenomena 8−32080
- rupture rel. to Rn content var. before earthquakes, model expt. *(Chinese)* 8−24225
- Sabaloka Igneous Complex, Sudan, petrography and chem. analyses 8−32097
- sample f/α particle track anal. for U, Th and isotopic disequilibria 8−7799
- sandstone, fluid injection effects on fracture 8−7622
- sandstones of Southland syncline, New Zealand, zeolite facies alteration 8−32084
- Scotia Sea Island arc and back arc tholeiites, geochemical study 8−11872
- sedimentary, Cd content determ., geochem. 8−36170
- shear strength of joints 8−28226
- E. Sicily, genetic implications of isotope and trace element variations 8−11893
- silicate, multielement anal. by epithermal neutron activation, detector systems 8−20123
- silicate, X-ray spectral fluoresc. anal. 8−3762
- silicate rocks, Br determ. by epithermal neutron activation anal. 8−35741
- silicate rocks and minerals, instrumental neutron activation anal. 8−20548
- silicates, Zr/Hf determ. by neutron activation 8−20547
- South Africa, kimberlites, rare gases in phlogopite and phlogopite bearing nodules 8−11894
- stick-slip sliding dynamic props. appl. to earthquakes 8−48983
- strain determination using randomly oriented strain markers 8−3765
- strain distribution across experimental single-layer fold 8−32076
- strength tests, irregular specimen versions 8−7791
- stress corrosion theory of crack propag. as earthquake mechanism 8−24235
- stresses and displacement distrib. in body with system of parallel shear cracks 8−49012
- structure monitoring instrumentation 8−7790
- subsolidus attenuation at simultaneous high temp. and press. 8−3764
- supracrustal rocks, Isua area, W.Greenland, least radiogenic Pb occurrence 8−44816
- Surkhob fault zone, rock compression 8−15979
- tephra attributed to Glacier Peak, Washington, electron microprobe data 8−24273
- tephra set W, Mount St. Helens, Washington, electron microprobe anal. of glass shards 8−24274

rocks continued
- thermal conductivity determ. from fragment meas. *(Rumanian)* 8−20563
- thermal conductivity of granular media, results for greisen and granite *(French)* 8−11880
- thermal expansion, effects of cracks 8−28218
- transverse wave vels. in dry and water-saturated samples, up to 2 kbar press. *(Russian)* 8−28219
- Tyrrhenian Sea floor, tholeiitic basalts 8−11873
- ultramafic xenoliths, Baja California, textures, microstructs., deform. 8−20420
- ultrametamorphism and granitoid genesis 8−44808
- upper Palaeozoic rocks of W.Canadian Cordillera rel. to Cordilleran evolution 8−7632
- viscoelastic properties of fluid-saturated cracked solids 8−36154
- volcanic rocks, relation between major element chemistry and tectonic environment 8−16006
- Westerley Granite, changes in seismic vel. and attenuation during deformation 8−28221
- Westerly granite, dry, deform. behaviour 8−36153
- Westerly granite, failure under triaxial compression 8−11884
- Westerly granite, permeability changes during water flow at 100-400°C 8−40546
- Woodroffe thrust, deform. and fold axes reorientation in ductile mylonite zone 8−32101
- $CaCO_3$ production of mare incognitum, upper windward reef slope, Enewetak Atoll 8−7662
- SnO_2, from rocks, quantitative determination by Mossbauer effect *(Rumanian)* 8−49178
- Yb isotopic and elemental abundances 8−32419

Roentgen ray *see X-rays*

rolling
- *see also cold rolling*
- austenitic steel, 45G17Yu3, structure and loss of strength after hot deform. by rolling *(Russian)* 8−39794
- brass, shear band development during rolling, twinning, metallographic obs. *(Japanese)* 8−39849
- crystallite deformation in rolling, computer simulation *(French)* 8−31421
- extrusion and forming of solids, plastic deform., nonNewtonian flow, numerical solns. 8−19824
- metal, flow during rolling *(Russian)* 8−27561
- Ni-Cr alloy Kh20N80, sintered sheet material, stopping power and pore size relationship 8−19693
- rubber, loaded, effect of polyfunctional nitro-oligomers on relaxation props. *(German)* 8−48436
- gteel, AISI 4340, sulphide inclusion behaviour during thermomechanical treatment 8−3151
- steel, case-carburized, low alloy, rolling contact fatigue 8−35518
- steel, high-speed, 30Kh2N2SMKt, deform. effects on physicomech. props. 8−23741
- steel, laser erosion value depend. on metallic props. anisotropy during plastic deform. *(Russian)* 8−31452
- steel, low alloy, strengthening by strain tempering, deform. effects 8−15424
- steel, low C, deform. form effect on texture *(Russian)* 8−3141
- steel, low C, hot rolling effects on struct. *(Russian)* 8−19793
- steel, martensitic, low C wire, strain tempering by rapid heating *(Japanese)* 8−31428
- steel, rolled, low-cycle torsional and push-pull fatigue anisotropy 8−27589
- steel, stainless, deformation temp. determ. for high yield strength 8−44177
- steel, stainless, hot rolled texture, effect on cold rolled and annealed textures *(Japanese)* 8−48425
- steel, stainless, sintered sheet material, stopping power and pore size relationship 8−19693
- steel, tensile prestrained strength of anisotropic rolled steel, rot.-bending fatigue tests, slip bands 8−27590
- steel, transformer, EM losses, influence of charact. of substruct. distrib. *(Russian)* 8−7058
- steel, very low C, delamination study by impact testing 8−3218
- steel M16C, low C, natural discrete microlamellar composite *(Russian)* 8−39810
- steel rolled, low-cycle torsional and push-pull fatigue anisotropy 8−27589
- steel ShKh15, fatigue strength and residual stress distrib., machining method effects 8−31528
- AlZnMgCuO.5, static crack growth, stress state effect, elec. pot. meas. 8−7007
- Cu, plane strain deformed, electron microscope obs. of morphology 8−31424
- Cu, strip, formed by high deform., mech. props. charact. *(Russian)* 8−27534
- Cu-AL(Zn), effect of original grain size on struct. and props., after deformation and annealing 8−44178
- Fe-Ni, crystallization texture, rolling, effect of impurities 8−15425
- Fe-Ni-C (19.5, 0.73 wt.%), banded struct. formed by deform., TEM and optical obs. 8−39869
- Fe-Si (3 wt.%), mag. anisotropy induced by rolling in (110) plane *(Russian)* 8−34978
- Fe-Si-MnS-Al, Al effect on hot rolling struct., recrystallization, texture magnetic props. *(Chinese)* 8−11237
- MO-B, B effects, rolled, segregation of implanted elements, Auger spectroscopy exam. *(Russian)* 8−35389
- Mo, proton irradiated, annealed and rolled, void form. 8−22774
- Ni, electrolytic and carbonyl grades, sintered sheet material, stopping power and pore size relationship 8−19693
- Pb, sample length effect on plasticity 8−44179
- Pb-Sn (62 wt.%), superplastic eutectic, exceptional ductility 8−27579
- Ti alloy, VT22, thermomechanical treatment, effects on struct. and props. *(Russian)* 8−19785
- Ti alloys, texture strengthening 8−23724
- Ti, sintered sheet material, stopping power and pore size relationship 8−19693
- Zr-Mo(-Al) (3, 1 wt.%), β-phase stability 8−39742

rolling mills
- force meas., using semiconductor strain gauge based extensometer 8−41296
- non-Newtonian or Newtonian liqs., two-roll mill problem 8−42616

roots of polynomials *see polynomials*

rotating bodies
see also angular velocity measurement; centrifuges; gyroscopes
- angular acceleration and velocity meas. by miniature linear accelerometers 8−12679
- Ap stars, orientation of mag. and rot. axes, decentred mag. dipole theory 8−4241
- asteroid 1978 CA, rotation period from UBV photometry 8−36486
- asteroid 52 Europa, photometry and rot. period 8−12133
- asteroids, synodic rotation periods from photoelectric lightcurve 8−45259
- asteroids 1978 CA and DA, UBV photometry, rotation periods, albedos and diameters 8−36489
- asymmetric top, rotational Brownian motion 8−8349
- axisymmetrical body, translational-rotational motion in gravitational field of sphere, averaging methods applic. *(Russian)* 8−21049
- bars, extensional vibrations 8−30213
- blade, vibr. analysis using holographic interferometry 8−32807
- 3C 33, rot. axis. of assoc. optical galaxy 8−4355
- celestial body, rotating electrically conducting sphere behaviour in time-independ. homogeneous external mag. field 8−49309
- compound pendulums, teaching appls. 8−12474
- Cygnus A, rot. axis of assoc. optical galaxy 8−4355
- cylinder, fatigue fracture 8−30238
- cylinder, rotating, non-steady temp. distrib. *(Polish)* 8−13885
- cylindrical annulus, model for Earth mantle-core interface 8−28194
- discs, stability under edge load 8−38219
- 200 Dynamene, photoelec. light curve, rot. period, low spin rate object 8−32383
- Earth, liquid core convection model 8−28193
- electrically conducting sphere behaviour in time-independ. homogeneous external mag. field, lab. approx. *(German)* 8−37785
- elliptical galaxies, rot. meas. rel. to oblate models 8−16529
- finite rigid-body rotations, kinematics 8−12482
- free asymmetric rotors, vectorial correl. functions for classical system 8−20960
- galaxies, distrib. of ang. momenta 8−20886
- galaxy M31, rotation of nuclear region 8−45395
- gas cloud, accretion onto point gravit. source, rel. to Jupiter formation 8−20630
- gyroscope, stability of Staude's permanent rot. with damping 8−21126
- gyroscope, strong field precession from d'Alembert's principle appl. in general relativity 8−40812
- gyrostatic bodies, control of motion by means of gyroscopes *(Italian)* 8−12549
- helical motion of rigid body, meas. by double exposure speckle method 8−16775
- inertially spinning rotor, for dynamic meas. of matter creation 8−28868
- interplanetary dust, effect of spin and solar radiation on motion *(Japanese)* 8−20732
- M87, rot. and dynamical evidence for central mass concentration 8−49529
- magnetic field meas., effects and properties 8−17837
- magnetic stars, equatorially symmetric rotator model 8−8020
- Mars, rot. axis orientation and rot. period from Viking landers tracking data 8−20685
- Mercury, reson. rot. rel. to internal convection 8−12127
- Mercury, slow rot. rel. to escape of natural satellite 8−16323
- nebula Barnard 213 NW, rotation and vel. structure rel. to parent cloud 8−41007
- Neptune, rotation period from IR photometric light curves 8−40869
- NGC 3379, elliptical galaxy, spectroscopic obs. rel. to rot. and vel. dispersion 8−49529
- NGC 4594 (Sombrero Galaxy), rot. vels. and mass 8−36685
- NGC 4762, S0 galaxy, rot. curve and dynamics 8−28774
- NGC 5383, barred spiral galaxy, vel. field 8−24549
- nonholonomic system, motion eqns. derivation *(Russian)* 8−20956
- open cylinder, internal flow, wave-transition spectra and vacillation 8−14020
- planets, differentially rotating, gravit. field and figure 8−7893
- polytropes, uniformly rotating, equilib. struct. investig. using iterative method 8−32441
- projectile, axisymmetrically rotating, stability of nonstationary motions *(Russian)* 8−24659
- relativistic rotating body, initial value eqns. 8−95
- rigid body, vector anal. of finite rotations, literature review 8−36819
- rigid body with fixed point, Riemannian struct. of continuum of configs. *(Italian)* 8−12548
- rigid shaft in short journal bearings, aperiodic behaviour 8−46905
- sample holder with voltage readout, for low-temp. CW US expts. 8−13873
- satellites, spin-stabilised, effect of orbital eccentricity and nodal regression on gyroscopic motion 8−45206
- shaft, whirling motion, stability analysis 8−13894
- shaft, with single disc nonlinear inner damping forces, stability *(German)* 8−1562
- shell, rotating, conducting, in mag. field, forces and moments 8−37786
- solids, uniqueness and stability under config. depend. loading 8−30194
- stabilisation by passive dampers, asymptotic methods use *(Russian)* 8−20957
- star, rotating 2 $M_\odot$ Fe-O object, gravitational collapse *(Russian)* 8−4199
- Sun, chromospheric rotation during 1972-73, years of declining activity 8−4186
- Sun, equatorial rot. rel. to climatic changes 8−7960
- superlinear Hammerstein operators and nonoccurrence of secondary bifurcation 8−16641
- synchronization mode of rotating solid celestial body 8−7869
- ξ Tauri, high-resolution spectra of λ1920 and λ1720 features rel. to rapid rot. 8−4236
- Uranus, rot. period meas. 8−7920
- Uranus, rotation periods rel. to methane band strength var. 8−49376
- Uranus, rotation velocity determ. 8−36508
- AN Ursae Majoris, nova-like variable, white dwarf rot. rel. to circular polarisation vars. 8−8018
- Venus, slow rot. rel. to escape of natural satellite 8−16323
- vortex noise from rotating blades 8−38143

rotation
see also angular velocity measurement; Earth rotation; molecular rotation; optical rotation; rotating bodies; rotational flow; stellar rotation
- bicycle dynamics, nongyroscopic aspects, lab. demonstration, for teaching 8−36769
- Dedekind ellipsoids, deformed figures in post-Newtonian approximation to general relativity 8−32734
- double group theory, half-shell and two-level systems, rot. and half integral spin states 8−45447
- education, holographic double exposure interferometry for small rot. meas. 8−36758
- Galaxy, rot. consts. and solar motion, from stellar proper motions 8−32440
- knee joint, human, torsional load-displacement characts. in vitro 8−40235
- quantisation in spherical coords. *(Russian)* 8−21012
- swift rotation, appl. in beam choppers, turbine drives, etc., history 8−32643
- teaching, torque and Newton's third law 8−12517

rotation by magnetisation *see Einstein-de Haas effect*

rotational flow
see also vortices
- analytic solutions to nonlinear eqns. 8−1670
- atmosphere and oceans, wave disturbances 8−32209
- axisymmetric equilibrium figures for rotating incompressible fluid 8−18307
- axisymmetric inertial fluid oscillations in cylindrical cavity during spin-up from rest 8−5750
- axisymmetric streaming flow past torus, Stokes eqn. soln. method 8−14026
- Benard convection, asymptotic sidewall effects 8−14014
- between two counter rotating infinite plane discs, numerical soln. by multiple shooting 8−42621
- blade to blade flow, anal. with Thomas algorithm 8−24669
- body force effect on turbulent transport near surface 8−26116
- boundary layer on rot. disc, drop interaction 8−47020
- boundary layer turbulence, streamline curvature effects 8−13998
- cellular convection in rot. fluid annulus steady linear theory 8−38339
- centrifuge, two-fluid spin-up 8−30301
- channel with arbitrary end wall, Kelvin wave reflection 8−5751
- circular channel with centrifugal forces, laser Doppler meas. of vel. field 8−34225
- condensation of laminar film on helical elliptical cylinders, governing eqns. soln. 8−9689
- conical diffuser, with suction, compressible boundary layer swirling flow 8−38360
- cyclone, reverse flow, efficiency anal., using monodisperse methylene blue-uranine 8−34142
- cylinder, rot., with inner cylinder eccentric torque-free rot., viscous flow 8−34144
- deformable medium, rotational dynamics 8−20631
- disc, rot., laminar to turbulent boundary layer shear flow, three dimens. 8−38284
- drag reduction polymer additive in helicoidal flow, screw pump press. head 8−26166
- driven polar cross section cavity, laminar incompressible recirc. flow 8−46988
- eccentric rotating cylinders, flow where clearance is relatively large 8−1667
- Ekman and Hartman layers on plate with variable suction or blowing 8−38416
- flow between rotating discs, finite element anal. using exponentially weighted basis functions 8−16655
- fluid dynamics expts. and problems *(French)* 8−9645
- fluid dynamics on rotating plane, averaged equations 8−42617
- fluidised bed, two-dimensional, with transverse gas supply, fluid dynamics obs. *(German)* 8−34192
- gas, rot. in mass-transfer equipment, eddy contact element radial press. distrib. 8−26126
- gas centrifuge with insulated end walls, Stewartson layer struct., temp. distrib. 8−46973
- gas centrifuge with insulated side wall, Stewartson layer struct., linearised eqns. 8−46974
- heat transfer from rotating short radial blade, laminar and turbulent flow 8−18294
- helical flow in simple fluid, uniqueness 8−14017
- incompressible cholesteric liquid crystal static magnetic field effect 8−6010
- inertial oscillations of rotating fluid in rigid axisymm. container 8−1673
- inertial wave and flow struct. for disturbances at low Rossby number 8−22360
- laminar to turbulent boundary layer stability, rotating disc 8−38283
- liquid film flow regimes, on rot. disc 8−1671
- liquid film flowing over rot. disc 8−38342
- liquid in closed rot. annular cavity, heat exchange, flow regimes 8−5753
- magnetic instabilities of rot. gas in presence of radial gravit. force and azimuthal mag. field 8−47046
- mass transfer from rotating cylinders 8−42613
- mass transfer from rotating wedge-shaped bodies 8−30305
- MHD, Hall effect on unsteady flow due to rotating infinite disc 8−18354
- MHD flow in cylinder, inviscid, axial field and point force 8−18349
- MHD flow over oscillating porous plate, Hall current and rot. effects 8−5803
- non-Newtonian fluid, rot.-oscill. flow, rheological consts. determ. 8−30251
- non-Newtonian or Newtonian liqs., two-roll mill problem 8−42616
- particle migration, in turbulent boundary layer of rot. disc 8−22333
- particles, falling under gravity, in rot. drying drum, turbulent gas flow 8−1728
- plasma, rotation speed measurement, in external magnetic field *(German)* 8−42821
- porous cylinder, rot., lift, torque, appl. to wind power generation 8−46987
- propeller wake, stalling conditions, 3-dimens. flow field obs. 8−46972
- pump, centrifugal, impeller flow, quasi two-dimens. method of singularities 8−46986

rotational flow continued
  radially rotating pipe, heat transfer coeffs. in various flow regimes 8−1668
  rimming flow, numerical simulation of free-surface flow with surface tension 8−22353
  Rivlin-Ericksen flow, between 2 parallel plates 8−30320
  rotating channel with porous walls, heat transfer and temp. distrib. 8−30355
  rotating disc with suction and stationary disc, flow between 8−46975
  rotating fluid dynamics, review *(French)* 8−30300
  rotating sphere, small yaw ang., laminar boundary layer *(Japanese)* 8−38272
  secondary polyvortex currents in rotating elliptical cylinders *(Russian)* 8−38338
  spin up, in cylindrical container, numerical solns. and laser-Doppler meas. 8−46977
  spin-up from rest of fluid in cylinder 8−14023
  stability of flow between two rotating cylinders, effect of thermal diffusion 8−18308
  Stewartson layer, stability in a rapidly rot. compressible fluid 8−46979
  Stokes flow due to body rot. in micropolar fluid 8−38372
  Stokes series, computed extension, circular boundary flow 8−42583
  subcritical steady plane flow past profile with sharp trailing edge, smoothness and circulation *(French)* 8−18312
  superposed fluids, MHD instability, flow through porous medium 8−14089
  swirl flows in combustion, review 8−1755
  swirled flow in pipe entrance, heat transfer law 8−5754
  swirling one- and two-phase liq.-gas flow in tube, heat and mass transfer 8−30339
  three-dimensional flow in highly-loaded axial turbomachine, vorticity effects 8−26130
  topographic effects in rapidly rot. flow over transverse ridge 8−28245
  transitional flow conditions on rot. disc 8−46980
  transonic, nozzle, relaxation solution 8−30312
  tube flow, with spiral blades, heat transfer, drag resistance 8−1672
  turbulence in rotational Couette flow, power spectra of nonlinearly coupled waves 8−30261
  turbulent flow, curved and rot., press. gradient-vel. correls. 8−26128
  turbulent transport coefficient, rot. fluid, rel. to stellar interiors 8−36452
  viscoelastic fluid film, flow along conical rotor 8−1697
  wave-transition spectra and vacillation in open rotating cylinder 8−14020

rotational isomerism
  acetic acid, methyl group dynamics, NMR 8−29802
  alcohol, dielec. const., hindered mol. rot. influence 8−43767
  alkane chain internal rot. correlation times, from ^{13}C T_1 data 8−17688
  alkyl trichloroacetates, solns., intramol. rot., permittivity and dielectric loss, microwave meas. 8−31145
  allene, C-C double bond rot. barrier, ab initio open-shell restricted SCF calc. 8−1099
  allene, transition state for internal rot., HF/STO-3G calcs. with correlation energy corrections 8−25430
  anisole and $-d_3$, Raman spectra, low freq. vibrs., torsional barrier 8−25543
  p-(9-anthryl)-N,N-dimethylaniline derivatives, excited emitting states in polar solvents, fluoresc. 8−5263
  aziridine, anhydrous and hydrated, inversion calc. 8−9272
  benzaldehydes in EBBA liq. cryst., NMR, mol. struct., reorientation and order matrix 8−5251
  benzenesenol, CCl_4 soln., PMR, barrier to internal rot. 8−1006
  benzyl carbonium ion, internal rot. barrier, MINDO/2(3) forces method 8−9078
  1,1′-binaphthyl, conformational changes, picosec. dynamics 8−25625
  bis(trifluoromethyl)peroxide, gas and solid, Raman, IR spectra, internal rot. barrier of CF_3 8−29789
  2-bromopropene, barriers to internal rotation 8−9273
  bromtrinitromethane, electron diffr. study of gas phase mol. struct., rot. isomerism 8−1080
  3-chlorodiphenyl, in dipolar aprotic solvent, internal rot. barrier, ^{13}C T_1, obs. 8−29860
  chlorotrinitromethane, electron diffr. study of gas phase mol. struct., rot. isomerism 8−1080
  condensed phase mol. reorientation, correlation times, librational model 8−1968
  coupled molecular rotational diffusion and conform. change 8−22613
  cyclopropyl carbinyl cation, internal rot. barrier, MINDO/2(3) forces method 8−9078
  diamond clusters and corresponding saturated hydrocarbon ab-initio HF and PCILO calcs. 8−42951
  3,5-dichlorobenzyl mercaptan, PMR, barrier to rot. about C-C bond 8−17696
  diethylcarbonate, liq., alkoxy group internal torsion, extended microwave/far IR anal. 8−19457
  1,2-difluoroethane, gauche-trans conformers, IR and Raman spectra, vibr. 8−17667
  dimethylallene, excited states, microwave spectrum and strong Coriolis coupling 8−9141
  dimethylboric anhydride, IR and Raman spectra, vibr. and struct. 8−25531
  dimethylcarbonate, liq., alkoxy group internal torsion, extended microwave/far IR anal. 8−19457
  1,1-dimethylcyclopropane-d_0,-d_6, internal rot., Raman spectra 8−985
  3,3-dimethyloxetan, far IR spectra, ring puckering vibration 8−42058
  dimethylphosphine, microwave spectra, internal rot. barrier 8−5205
  ethane, barrier and one electron charge transfer states in strong orthogonal group function theory 8−13421
  ethanes, substituted, dielec. relax. by intramol. motion 8−23391
  ethylene, C-C double bond rot. barrier, ab initio open-shell restricted SCF calc. 8−1099
  o-fluoroaniline, conformation by microwave spectroscopy, rot. consts. 8−9144
  guanidinium ion, rot. barriers, ab initio calcs. 8−41923
  1-halo-1-n-propylcyclohexanes, conform. equilib., and pot. barriers, IR spectra *(Russian)* 8−21928
  hydrocarbon chain, gauche-trans isomerisation, ^{13}C relax. times and nucl. Overhauser enhancement model 8−33520
  2-iodopropene, barriers to internal rotation 8−9273

rotational isomerism continued
  IR molecular absorption spectra, effect of rotational coupling on torsional bands 8−13497
  isobutene-d_0, $-d_6$, torsional pot. functions, spectra anal. 8−25528
  lithium acetate, methyl group dynamics, NMR 8−29802
  methanol molecle enclosed in β-quinol clathrate, O-H group rot., dielectric meas. 8−2026
  methanol-water, assoc. mixture, rot. barrier solvent effect, CNDO/2 calc. 8−29861
  methyl alcohol, and $-d_3$, far IR spectra of internal rot. 8−5222
  methyl group, proton spin relax. due to intermol. proton coupling, reorientation 8−25564
  methyldisilylamine, and $-d_3$, vibr. assignment and barriers to internal rot., IR and Raman spectra 8−13496
  monothioformic acid, cis-, trans-rotamers, rot. spectrum, force consts. and isotopically substituted struct. 8−9145
  nonbonded interactions, density response theory, appl. to rot. barriers 8−41913
  perfluoro-1,3-butadiene, vibr. spectra, struct. and barrier to planarity 8−9147
  polydimethysiloxane, conc. soln. in benzene, polarised Raman scattering 8−9286
  polyene derivatives, horizontal radiationless transitions, singlet-pot. and rot. angle, semi-empirical model 8−42109
  polyethylene, elongation, conform. set change IR obs. *(Russian)* 8−37778
  polyethylene, perdeuterated, skeletal vibr. spectrum 8−23445
  polyethylene terephthalate, elongation, conform. set change IR obs. *(Russian)* 8−37778
  polyoxide chains, config. partition functions, entropy, $(CH_2)y$-o- repeat unit 8−17829
  Raman spectroscopy, vap., medium resolution, appls., review 8−42065
  semirigid molecules, Stark effect, isometric groups, elec. dipole moments theory 8−29815
  silacyclopentane, Raman spectra, pot. energy surface, barrier to interconversion 8−25541
  Δ^5-steroids, methyl group rot. barriers from ^{13}C relax. data, geometry effect 8−13626
  stilbene, horizontal radiationless transitions, singlet-pot. and rot. angle, semi-empirical model 8−42109
  stilbene, trans-, cis-forms, singlet excited state, picosecond dynamics 8−17677
  N-sulphinylaniline, microwave rot. spectra, torsional freq., dipole moment and internal rot. barrier 8−973
  symmetric top, rigid, rot. partition function 8−46260
  thioacetamides, CNDO calcs., internal rot., ionisation pots., photoelectron spectra 8−5143
  thioacetic acid, $-d_1$, principle axis method anal. of microwave spectra 8−9139
  thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8−25520
  torsional vibrs., effect on gas electron diffr. determ. of molecular configuration 8−25743
  trinitromehtane, electron diffr. study of gas phase mol. struct., rot. isomerism 8−1080
  trithiane, Raman spectrum, press. effect on internal rot. angle 8−37642
  AsH_3, inversion barrier calc. 8−9271
  BCl_2SH, BCl_2SD, Raman and IR spectra, barrier to internal rot. 8−5223
  Cu complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
  NCl_3, ab initio LCAO SCF calc. for ground state, inversion barrier 8−25426
  NH_3, and $-d_n$ IR matrix isolation spectra, rotation and inversion 8−5218
  NH_3, geometry changes during inversion, ab initio calcs. 8−5154
  $^{15}NH_3$, inversion doublets, T_1 and T_2 M depend. 8−13489
  NH_xF_{3-x}, geometry changes during inversion, ab initio calcs. 8−5154
  $(NH_4)_2S_5$, Raman spectra, vibrs. and rot. isomers of Sn^{2-} (n=4-8) *(German)* 8−13504
  $NbCl_5$, mol. struct., vibr. assignments, barries to pseudorotation 8−29858
  PH_xF_{3-x}, geometry changes during inversion, ab initio calcs. 8−5154
  Pd complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
  S_4Cl_2, Raman spectra, vibrs. and rot. isomers of S_n^{2-} (n=4-8) *(German)* 8−13504
  SeH_3^+, inversion barrier calc. 8−9271
  $(SiH_3)_2S$, rot. consts., internal rot. parameters, anal. of microwave spectra 8−46316
  $TaCl_5$, mol. struct., vibr. assignments, barries to pseudorotation 8−29858
  XeF_6, energy levels, nonrigid mol. effects 8−41931
rotator phase in solids *see nuclear magnetic resonance; plastic crystals*
rotatory dispersion power *see optical rotation*
rotons
  Bose fluid, structure factor determ. 8−34667
  ^3He-^4He, liq., excitation spectrum and quasiparticle interactions, perturbation theory 8−10250
  ^4He, elementary excitations, Brillouin-Wigner perturbation theory with correlated basis functions 8−2319
  ^4He, liq., excitations produced by impinging ^4He atomic beam 8−10241
  ^4He, superfluid, velocity-field characts. of negative ions, effect of one-roton emission process 8−47622
rotors
  noncrystalline solid, dispersion relation of phonon-like excitations 8−18727
roughness measurement *see surface topography measurement*
rovibronic levels *see molecular rotation-vibration*
RPA calculations
  amorphous semiconductor, non-polar, mobility gap temp. variation calcs. 8−10339
  antiferromagnetism itinerant electron theory, spin susceptibilities 8−6504
  atomic oscill. strength, gauge props. of HF and RPA approx. 8−950
  butadiene, oscillator and rotatory strengths, RPA in ab initio calc. 8−25617
  closed-shell systems, interactions, correl. energy, RPA calcs. 8−25646

RPA calculations continued
- dense electron gas response at any degeneracy, RPA calcs., plasma modes, screening 8−36930
- dielectric function, inverse RPA calcs. at metal-vacuum interface 8−14789
- electron gas, interacting, quadratic electronic polarizability 8−6310
- electron gas, paramag. susceptibility, RPA calc. 8−43559
- energy-weighted moments, relations between nucl. collective theories 8−33130
- ethylene, π-electron system, self-consistent many-body theory 8−25432
- excitation operators and extended RPA 8−13412
- fluids, critical-point universality 8−22826
- Frenkel exciton system, phase transition and exciton-photon coupling 8−23024
- giant electric and magnetic multipole resonances in closed shell nuclei 8−538
- Heisenberg, ferromagnet, spin-one, uni- and biaxial anisotropy, RPA and mol. field approx. 8−34989
- Heisenberg anisotropic ferromagnet, longit. correl. function, generating Green functions 8−6500
- Heisenberg antiferromagnet, second order Green's function 8−43545
- Heisenberg ferromagnet, dil., CPA theory, spin-wave stiffness and Curie temp. 8−31080
- interacting many-level system, thermodynamics, from RPA Green's functions 8−43549
- linear Hubbard model, RPA and CI test calcs. 8−25411
- metal, quasi one dimens., plasmon dispersion relations, RPA and HF calcs. 8−34789
- metals, density of states and spin susceptibility, normal and giant surface effects 8−10322
- multihadron production processes, high energy, strong correls., RPA scheme 8−41506
- multipole excitation of doubly-open shell spherical nuclei 8−21507
- nuclear, oblate high spin isomers, pairing Hamiltonian anal. 8−12996
- nuclear microscopic model, wobbling motion in fast rotating nuclei 8−21505
- Peierls transition, interchain bandwidth effect at low temp. 8−10352
- perturbative anal. of two-body effective interactions from large matrix diagonalisations 8−41644
- plasma oscillations, higher surface modes near plane metal-vacuum interface 8−42760
- polyene band struct. calc., excitons in polyene chain 8−26816
- semiconductors, free electron scattering and dynamical cond. 8−2476
- structural phase transitions and anharmonic phonons 8−14433
- superconductor, dynamical electrical conductivity below transition temp. 8−2623
- TTF-TCNQ electronic props., PMR 8−2763
- two-dimensional classical plasma, on dielectric film, collective excitations *(Russian)* 8−34788
- two-electron systems, RPA eigenvalue eqns., excitation frequencies and oscillator strengths 8−17570
- π-electron systems, self-consistent many-body theory 8−25432
- Al, plasmon dispersion, effect of band struct., dielec. function calc. 8−26825
- Al, polycryst., anisotropy of plasmon dispersion, RPA dielectric function 8−23039
- Ar, isoelectronic sequence, many-body photoionization calcs. 8−17631
- Cd(p,p)Cd, A=110, 112, 5-9 MeV, isobaric analogue reson., QRPA calc. 8−576
- ^{124}Cs, β-decay props. of collective 1^+ states 8−13028
- ^{126}Cs, β-decay props. of collective 1^+ states 8−13028
- He, photoabsorption, modified RPA calcs. with exchange 8−13477
- He, RPA eigenvalue eqns., excitation frequencies and oscillator strengths 8−17570
- He-like ions, oscillator strengths of transitions between low-lying S and P states 8−13470
- ^{3}He, liq., elementary excitations, RPA model using extended Landau theory 8−14527
- ^{4}He, liq., HF cond. of electrons trapped at surface 8−10238
- Mg, isoelectronic series, oscill. strengths and excitation energy, RRPA calcs. 8−13471
- Ne, isoelectronic sequence, many-body photoionization calcs. 8−17631
- Ni-V(Mo)(Ru)(Cr), weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8−31063
- ^{208}Pb region, finite Fermi systems, review 8−537
- ^{208}Pb(α,α′), RPA calcs., existence of breathing mode 8−25163
- ^{208}Pb(d,d′), RPA calcs., existence of breathing mode 8−25163
- ^{208}Pb(e,e′), RPA calcs., existence of breathing mode 8−25163
- Si inversion layers, stress effects on electronic props. 8−43476
- Tl, photoionis. cross section, spin polaris. and ang. distrib. of photoelectrons, RPA calc. 8−13478
- Xe, atom, photoionis., collective level existence RPA with exchange calc. 8−42025
- Zn isoelectronic sequence, RRPA calcs. of resonance transitions from $4s^2\ ^1S_0$ 8−17612

rubber
- adhesion on Perspex, surface topography effects 8−15644
- adhesive bonds, physical modelling, US attenuation effects 8−7141
- amorphous solids, time-temperature-pressure superposition phenomena, free volume theory 8−26059
- angle tearing testing appliance 8−7140
- belt, cord reinforced, finite cylindrical deformation, stresses 8−38203
- bonding to metal, XPS appl. 8−15648
- butadiene nitrile rubber, air permeability, subject to high press. 8−27823
- butadiene styrol rubber, effect of polyfunctional nitro-oligomers on relaxation *(German)* 8−31441
- butadienepstyrene, surface phenomena in struct. rearrangement after deform. *(German)* 8−19913
- contact charge density, true meas. using soft rubber 8−43462
- elasticity theories, statistical, applicability to polymer melts 8−42579
- ethylene-propylene rubber, highly deformable, fracture surface roughness 8−44197
- gas permselective membranes, irrad. effects on permeation and separation performances 8−29591
- loaded, effect of polyfunctional nitro-oligomers on relaxation props. *(German)* 8−48436
- natural, viscosity meas. when various accelerators were added *(German)* 8−30688

rubber continued
- natural, with furnace soot or acetylene black, natural ageing and dielectric props. *(German)* 8−19795
- natural rubber vulcanizates, vulcanization temp. and systems effect on struct. 8−19705
- rubber, nondestructive testing during production, portable instrument 8−23892
- rubber-epoxy resins, heterogeneity analysis, light scatt. and statistical methods 8−2024
- styrene-butadiene rubber, highly deformable, fracture surface roughness 8−44197
- styrene-butadiene rubber, reinforcing effect of fillers, strain energy meas. *(Japanese)* 8−31468
- thermoplastic rubber morphologies and applications 8−26457
- urethane rubber, viscoelastic disc, contact problem, photoviscoelasticity obs. *(Japanese)* 8−30202
- vulcanized-rubber protection and waterproofing in seawater environment for strain gauge 8−16787

rubbing (abrasion) *see abrasion*

rubidium
- *see also nuclei with ......*
- atom, 1st reson. level, effective electron-ionis. cross sections, plasma discharge method 8−13603
- atom, electron excitation cross sections for six autoion. config., Born approx. calc. 8−25713
- atom, electron impact excitation velocity consts. for reson. levels, meas. *(Russian)* 8−1086
- atom, HFS, many-body and relativistic effects 8−37565
- atom, inner core neutral binding energies, relaxed orbital relativistic Hartree-Fock-Slater calc. 8−13433
- atom, isotopically selective ionisation through Rydberg states 8−5186
- atom, polarisation transfer collisions with inert gases, NMR of inert gases 8−33453
- atom, Rydberg states, detection using freq. doubled CW dye laser 8−17592
- atomic HFS of optically inaccesible excited states 8−37582
- Fermi surface, de Haas-van Alphen meas. 8−2411
- Gruneisen parameter temp. var. for BCC struct. 8−6137
- intercalation compounds with graphite, Raman scatt. from in-plane lattice modes 8−15168
- lattice sp. ht. and thermal vibrs. 8−30768
- liquid, coherent scatt. function calc. 8−22635
- liquid, coherent scatt. function calc. 8−42875
- liquid, density fluctuations, coherent scatt. function, SCF method 8−18527
- liquid, dynamic struct. factor 8−30533
- liquid, dynamical struct. factor 8−38612
- liquid, long wavelength collective motion 8−38601
- liquid, phonons, collective modes calcs. 8−2218
- liquid, shear viscosity coeffs., model calcs. 8−47549
- liquid, shear viscosity correlation function 8−47460
- liquid, struct. factor and compressible rel. to metal-nonmetal transition 8−2529
- liquid, T_c, P_c, V_c, from eqn. of state 8−2228
- methyl iodide+K(Rb), reaction cross sections 8−40043
- molecular beam, I_2 surface chemi-ionis. 8−7231
- nepheline syenite, dating, Rb-Sr internal isochron, ^{39}Ar-^{40}Ar plateau age methods *(French)* 8−32031
- phonon dispersion, modified de Launay model 8−34573
- resonance cell frequency standard XSRM 8−41281
- separation from potash salts, ion exchange methods *(German)* 8−23940
- vapour, spectral profiles of D-lines, spherical lamp case *(French)* 8−18032
- AgCl:Rb^+, impurity effect on plasticity, brittleness 8−14398
- K-Rb arc lamp development for space laser communications 8−46646
- $(NH_4)_2SO_4$:Rb, ferroelec. transition, light scatt. meas. 8−43822
- Rb, $5^2P_{1/2}\rightarrow 5^2S_{1/2}$ resonance line perturbed by inert gases, depolaris., broadening and shift 8−21880
- Rb I, lifetime meas. of lowest ^{2}D-states, elec. quadrupole excitation 8−42004
- Rb I isoelectronic series, transition probabilities, oscill. strengths, lifetimes, branching ratios 8−33470
- ^{85}Rb, $5^2P_{3/2}$ state, Hanle effect *(French)* 8−42018
- Rb+He(2^3S_1), Penning ionis. in stationary afterglow 8−42184
- Rb+Mg^+, charge exchange and excitation processes 8−17772
- Rb+Na, spin exchange cross section 8−33637
- Rb+Xe, interatomic spectrum, theoret. and exptl. obs. 8−9112
- Rb_2, absorpt. spectrum in visible and near visible 8−46356
- Rb_2, vapour, laser radiation absorpt. superradiance 8−46553
- Rb_2, $X^1\Sigma_g{}^+$ state, Raman spectra, fluoresc., vibr. energy 8−46345
- $Rb_2{}^+$, core-core interaction potential calc. 8−25645
- ^{85}Rb, HFS affected by strong mag. fields 8−37759
- ^{87}Rb, decay consts. for use in geochronology and cosmochronology 8−28189
- ^{87}Rb resonant frequency change, due to spectral profile of pumping light 8−45590

rubidium alloys
- K-Rb, dil., anisotropic scatt. of conduction electrons by impurities 8−18944
- K-Rb, dil., anisotropy of electron-impurity scatt., de Haas-van Alphen effect meas. 8−18943
- K-Rb, dil., calc. of press. depend. of low-temp. transport props. 8−30905
- K-Rb, liq., elec. resistivity, temp. depend. 8−39084
- Pb-Rb, phase diagram *(Russian)* 8−19720
- Rb-Cs, liq., elec. resistivity, temp. depend. 8−39084
- Rb-K alloys, localised phonon modes, classical mol. dynamics compuer simulation 8−10147
- Rb-Se system, phase equilibria 8−44079
- $Rb_{1-c}K_c$, phonon spectra, single site CPA 8−10142

rubidium compounds
- *see also rubidium alloys*
- graphite, intercalation compound, C_8Rb, elastic and inelastic neutron scatt. 8−30597
- graphite intercalation compounds with Rb Raman scattering 8−35130
- halides, polymorphic transitions, temp. depend. of transition press., thermodynamical data *(French)* 8−38843
- intercalation compound with graphite, resistivity anomalies and phase transform. 8−26839

rubidium compounds continued
  TCNQ salt, Rb-TCNQ, ^{14}N NQR, Zeeman perturbation study, charge transfer 8−39438
  ternary chlorides, $ABCl_3$ type, optical props. 8−35111
  KCl:RbCl, $SrCl_2$, IR window material, cryst. growth and props. 8−31333
  $Li_{1-x}Rb_xI$, intrinsic optical absorpt. spectra 8−23500
  $MgCl_2$-RbCl, binary melts, surface tensions *(Japanese)* 8−10260
  $RbAg_4I_5$, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
  $RbAg_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
  $RbAg_4I_5$, solid electrolyte, electronic cond. meas. 8−2483
  $RbAg_4I_5$, solid electrolytes, co-ionic cond. 8−26721
  $RbAg_4I_5$, struct. transition at 209K, Ising like behaviour 8−14460
  $RbAg_4I_5$, superionic cond., US absorpt., ionic cond., relaxing sp. ht. 8−14505
  $RbAg_4I_5$-metal interface, photocurrents, photoelectrochem. effects 8−34897
  $RbAlSi_2O_6$, elec. cond. meas. 8−47787
  Rb_3Bi, cubic and hexagonal structs., transition 8−26480
  RbBr, liq., dynamic density fluctuations, diagonalized relax. theory 8−47230
  RbBr, molten, dynamical struct. factor calc. 8−22627
  RbBr, thermal cond. under press. meas. 8−30802
  $RbBr:Ba^{2+},Sn^{2+}$, thermal depolarisation meas., relax. processes 8−23389
  RbBr-Ag, mag. field effect on luminesc. of paired Ag^- ions 8−27313
  $RbBr-CdBr_2-H_2O$, Gibbs free energy, H_2O activity, 25°C *(Russian)* 8−31678
  $RbBr(Cl):Ag^+$, off to on centre defect transitions under hydrostatic press. 8−15199
  Rb_2CO_3, molten, IR emission spectra *(Japanese)* 8−19469
  $RbCaF_3$, 193K phase transition, lattice dynamics 8−10160
  $RbCaF_3$, 193K phase transition, crit. neutron scatt. obs. 8−10161
  $RbCaF_3$, elastic consts. near phase transition by Brillouin scatt. 8−38844
  $RbCaF_3$, lattice consts. temp. depend., X-ray examination, 194K transition *(French)* 8−10184
  $RbCaF_3$, sp. ht. anomaly at struct. transform. 8−14426
  $RbCaF_3:Gd_2O_3$, $Gd^{3+}-O^{2-}$ pair, EPR study of displacive transform. *(French)* 8−27088
  $Rb_2Ca(SO_4)_3$, phase transitions, dielec. props. obs. 8−6643
  RbCl containing K additive impurity, local modes due to U-centres 8−22805
  RbCl, diffusion by $^{20}Ne(^{22}Ne)$, isotope effect 8−18841
  RbCl, diffusion of ^3He (^4He), isotope effect 8−18841
  RbCl, electron beam excited, luminesc. and cond. of nonideal degenerate electron-hole plasma 8−10488
  RbCl, M-centre, lifetime data for excited state 8−35193
  RbCl, third order elastic constants 8−6117
  RbCl, vacuum UV absorption spectra, exciton splitting rel. to exchange interaction 8−23494
  RbCl:Ag(Cu), strong IR luminesc. obs. of Ag^0 centres 8−6736
  RbCl:Au, EPR and optical absorpt. 8−39397
  $RbCl:NH_4Cl$, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
  $RbCl:V^{2+}$, phonon induced zero field splitting 8−39073
  $RbCl-CdCl_2-H_2O$, Gibbs free energy, H_2O activity, 25°C *(Russian)* 8−31678
  RbCl-KCl powder blends, diffusional homogenisation, X-ray diffr. exam. 8−18847
  $RbCl-KCl(H_2SO_4)-H_2O$, water activity, 0 and 50°C, conc. depend. *(Russian)* 8−31679
  $RbCl_2-NiCL_2$, impurity ion and vacancy aggregation, thermally stimulated depolarisation exam. 8−18678
  $RbCoF_3$, single oriented antiferromag. domain, polarised Raman scatt. under uniaxial stress 8−23463
  Rb_2CrCl_4, NMR of ^{53}Cr 8−10798
  Rb_2CrO_4, domain struct., ferroelastic 8−18702
  Rb_2CsSb, evaluation as photocathode material 8−11072
  $Rb(D_xH_{1-x})_2PO_4$, isotope exchange during crystallisation from aqueous solns. 8−18569
  $RbD_3(SeO_3)_2$, phase transform., inelastic neutron scatt. study 8−39514
  Rb_3EuF_6, Rb_2EuF_5, $RbEu_2F_7$, $RbEu_3F_{10}$, cryst. struct., X-ray diffr., equilib. in $RbF-EuF_3$ *(French)* 8−44107
  $RbF-EuF_3$ system, thermal anal. and X-ray diffr., phase equilibria *(French)* 8−44107
  $RbF+Eu^{2+}$, cryst., hyperfine splitting, EPR 8−2733
  RbF(Cl)(Br), shock adiabatic, nonparametric equation of state 8−10121
  $Rb_2FeCl_5(Br_5).H_2O$, antiferromag. props. and struct. 8−31056
  $RbFeS_2^+$, ^{57}Fe Mossbauer hyperfine interaction, covalency effects, point charge model 8−39484
  $RbFeSi_2O_6$, elec. cond. meas. 8−47787
  $RbGa_3Br_{10}$, cryst., vibr. spectrosc. *(French)* 8−6667
  RbH_2AsO_4, acoustooptical and photoelastic props. 8−27181
  RbH_2AsO_4, and deuterated isomorph, ferroelectric mode and molecular vibr. press. depend. 8−19424
  RbH_2AsO_4, and RbD_2AsO_4, IC spectra and phase transitions, under pressure 8−31180
  RbH_2AsO_4, pres. depend., LF dielec. response, ferroelec. props. 8−15120
  RbH_2AsO_4, Raman scatt. near T_c, search for soft modes 8−15114
  RbH_2PO_4, acoustooptical and photoelastic props. 8−27181
  RbH_2PO_4, and RbD_2PO_4, IC spectra and phase transitions, under pressure 8−31180
  RbH_2PO_4, electro-optic props. near ferroelec. transition 8−19445
  RbH_2PO_4, ferroelectric, US propag. near ferroelectric phase transition temp. 8−23417
  RbH_2PO_4, ferroelectric-ferroelastic phase transition, γ-ray diffr. 8−43819
  RbH_2PO_4, harmonic and sum freq. generation, tunable CW UV radiation prod. 8−46712
  RbH_2PO_4, high temp. phase transition, dielec. const., elec. cond. and IR refl. meas. 8−43118
  RbH_2PO_4, Raman scatt. near T_c, search for soft modes 8−15114
  RbH_2PO_4, tetragonal phase disordered struct. 8−42980
  $RbHSO_4$, ferroelec. with small Curie-Weiss const., dielec. props. 8−39496
  $RbHSO_4$, ferroelec. phase transition, US attenuation and velocity 8−39511

rubidium compounds continued
  $RbH_3(SeO_3)_2$, ferroelec., location of H atoms in cryst. struct., neutron diffr. meas. 8−2093
  $RbH_3(SeO_3)_2$, low temp. struct., neutron diffr. 8−38669
  $RbH_3(SeO_3)_2$, piezoelectric effect, near nonintrinsic ferroelectric phase transition 8−2815
  $RbH_3(SeO_3)_2$, Raman spectra meas. 8−10899
  RbI aqueous solution, US study of apparent molar compressibility 8−10125
  RbI, intrinsic luminesc. quenching, by X-ray induced coloration 8−19539
  $RbI:Pb^{2+}$, luminescence under B-band excitation 8−35192
  $RbI-CdI_2-H_2O$, Gibbs free energy, H_2O activity, 25°C *(Russian)* 8−31678
  $Rb_2In_3F_{11}$, crust. struct. *(French)* 8−42966
  Rb_2KTiF_6, bonding, struct., ligand field splitting, electron gas calcs. 8−17557
  RbKr, magnetic resonance meas. of spin-rotational interaction 8−33528
  $Rb_{12}M_{33}O_{90}.(12H_2O)$, cation exchanger with intersecting tunnel struct. *(French)* 8−20014
  $RbMgF_3$, irradiated, thermal conductivity 8−22909
  $RbMgF_3:Mn$, low-temp. radiation damage, optical absorption meas. 8−22761
  $RbMnF_3$, Heisenberg antiferromagnet, paramag. region, NMR, spin pair correl. 8−15032
  $RbMnF_3$, Heisenberg antiferromagnet, spin diffusion below T_n 8−34968
  $RbMnF_3$, nucl. spin waves *(Russian)* 8−34973
  $RbMnF_3$, radiation damage, energy transfer, radiolysis, effect of defect centres 8−2161
  $RbMnF_3$, spin waves, light scatt. lineshape 8−23476
  $RbMnF_3$, zone-boundary magnon energy and damping, Raman scatt. meas. 8−31202
  $Rb^+(NH_3)_n$, gas phase clusters, relative bond strengths, thermodynamic props. 8−35649
  $RbNO_3$, cubic to rhombohedral transition, X-ray diffr. obs. 8−22681
  $RbNO_3$, cubic to rhombohedral transition induced by orientation-shear strain coupling 8−22682
  $RbNO_3$, melt, NO_3^- ion struct., pulsed neutron diffr. obs. 8−22631
  $RbNO_3$, melt, Tl^+ high dilution diffusion, interferometry 8−47546
  $RbNO_3$, molten, X-ray diffr. structural anal. 8−42887
  $RbNO_3$, single cryst., DC cond., dielec. and thermophys. props., temp. depend., transitions interpret. 8−26682
  Rb_2NaTiF_6, bonding, struct., ligand field splitting, electron gas calcs. 8−17557
  $Rb_{12.20}Nb_{33.56}O_{90}$, tunnel cryst. struct., X-ray diffr. 8−18611
  $Rb_8Nb_{22}O_{59}$, cryst. growth from melt, and instability 8−35294
  $Rb_2Nb_6TiO_{18}$, cryst. struct. *(French)* 8−6040
  $RbNiCl_3$, nearly one-dimensional antiferromag., spin-flop transition 8−6527
  $Rb_2O.SrO.4B_2O_3.12H_2O$, real Patterson function determ., method of rhombs. 8−5986
  $Rb_2Pb(MoO_4)_2$, and $Rb_2Pb(WO_4)_2$, domain struct. and phase transition *(Russian)* 8−6159
  $RbRF_4$, R=La, Ce, Pr, Nd, Sm, phase equilib. and cryst. struct. *(French)* 8−44107
  $RbReO_4$, quadrupole coupling, cation electric field gradients 8−35060
  $Rb_2SO_4-(NH_4)_2SO_4$ mixed cryst., ferroelec. transition, structural and dielec. props., proton spin-lattice relax. 8−39512
  Rb_2SnF_6, thermal stability and thermolysis *(French)* 8−10011
  Rb^+TCNQ^-, optical absorpt. spectra of small particles 8−19505
  $Rb_2Ta_6TiO_{18}$, cryst. struct. *(French)* 8−6040
  $Rb_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
  $RbVO_3$, cryst. struct. 8−6043
  $Rb_{22}W_{32}O_{107}$, crystal atomic struct. 8−14313
  $Rb_9(XeO_3Cl_2)_4Cl$, neutron and X-ray diffr. struct. determ., Xe-Cl bonding 8−30591
  Rb_2ZnBr_4, ferroelectricity, hysteresis loops and dielec. const. meas. 8−23416
  Rb_2ZnCl_4, ferroelectricity, hysteresis loops and dielec. const. meas. 8−23415
  Rb_xZrS_2, intercalation cpd., X-ray K absorption edges 8−39627
  $Rb_2[Cu(H_2O)_6](SO_4)_2$, Tutton's salts, stereochem., neutron struct. determ. 8−18609
  $TlNO_3-RbNO_3$, melt, cationic self-diffusion coeffs., temp. and conc. depends. 8−22879

ruby
  abrasive grains, single, wear on steel, exam. *(Japanese)* 8−44230
  coherent transients obs. by Stark switching with narrow optical hole burning 8−37947
  EPR spectrum, temp. depend. 8−15016
  ESR of Cr^{3+} excited state as function of delay time, Zeeman levels explained 8−43695
  excited state spin-phonon interaction, time resolved spectroscopic exam. 8−19549
  fluorescence line shift, appl. to press. distrib. meas. in diamond anvil press 8−12710
  laser, CW, pumping by Ar ion laser 8−1253
  laser, negative feedback, ultrashort pulse generation 8−13714
  laser, pulsed with active spectrum phasing, dynamics and energy characts. *(Russian)* 8−9387
  laser, Q-switched, parameter depend. on ruby quality 8−46608
  laser, Q-switched, photographic film calibration for energy meas. 8−5517
  laser, radiation effects on Xe plasma *(Russian)* 8−22514
  laser rod, absorption coeff., loss coeff. and population inversion *(Japanese)* 8−37888
  lasing action, spectrum, luminesc. spectrum effects *(Russian)* 8−13716
  optical pair spectrum, Stark effect with AC elec. field modulation 8−10911
  optical spectra of Cr^{3+} ions, freq. shifts press. depend., nonperturbative theory 8−23499
  phonon propag., 29 cm^{-1}, reson. scatt. and lifetime *(Russian)* 8−34581
  photon echo, modulation in μs pulse separation regime 8−30029
  radiative spectral transfer, time resolved fluoresc. 8−2900
  Raman transition from optically pumped excited state 8−39531
  ruby:Ni, cross relaxation 8−39389

ruby continued
- ruby, spectral absorption coeff., 0.25-1.25 micron, up to 1800K, and 3.5-5.2, up to 1200K 8−27204
- spectral absorpt. coeff., 1800K 8−27252
- Stark induced optical transients, photon echo 8−33785
- ultrashort pulse attenuation in active medium, calc. *(Russian)* 8−1295
- yield point, under compression and extension, temp.-time depend. 8−6988
- yield stress, compression tests, temp.-time depend. 8−48484
- Zeeman spectra of laser excited E and 2A levels 8−43908

Rudermann-Kittel-Kasiya-Yosida interaction *see RKKY interaction*

Runge-Kutta methods
- celestial mechanics, satellite motion prediction by extrapolation methods *(Russian)* 8−49299
- integration of ordinary and partial differential equations, appl. of semi-implicit Runge-Kutta methods 8−12542
- linear inhomogeneous differential eqn. systems with variable coeff., integration *(German)* 8−8235
- partitioned parallel method for weakly coupled ordinary differential eqns. 8−36806
- pipe, curved, in creep, flexibility 8−34039
- second order hyperbolic differential equations, initial value problems *(German)* 8−20952
- $H+H^+$, classical 3 body collision, cross section, energy transfer, computer calcs. 8−17783
- Na vapour bubble growth in superheated liquid, numerical anal. 8−29576

Russell-Saunders coupling
- multiplet ratios for photoionisation and electron attachment, shell model, LS coupling and correl. 8−17636
- multipole transitions in complex config., matrix elements for operators inc. relativistic corrections 8−5150
- O, isoelectronic sequences, energy spectra inc. relativistic corrections 8−924

rust prevention *see corrosion protection*

ruthenium
- *see also nuclei with ......*
- chemisorption and decomp. on Ru decomp. of NO 8−18903
- chemisorption of NO via mobile precursor state 8−43247
- diffusion in liquid Cu *(Japanese)* 8−10204
- HCP, elec. field gradient 8−14698
- ion plating, crack-free layers, 2-3 μm thick 8−11131
- metallography 8−3289
- stopping power nucl., in ferromag. Gd, transient mag. field 8−34555
- surface, (0001), adsorption of H_2, N_2 and NH_3, AES, LEED and thermal flash desorption meas. 8−38954
- surface, (001), adsorbed CO, electron stimulated desorption, correl. with other meas. 8−47658
- surface, (110), methanol reaction, thermal desorpt. meas. 8−31685
- surface (0001), adsorption and desorption of NH_3, effects of electron beam 8−38955
- thermopower and magnetoresistance meas., mag. breakdown 8−47766
- transport props., anisotropy, high temp. obs. 8−26843
- X-ray reflection intensities, charact. temps. 8−18731

ruthenium alloys
- *see also ruthenium compounds*
- Co-Ru, dil., mag. hyperfine fields, TDPAC meas. 8−43702
- $Gd_xCe_{1-x}Ru_2$, magnetic ordering by ^{155}Gd Mossbauer spectroscopy 8−27139
- $(La,Ce)Ru_2$, supercond. transition temp., its press. depend., and structural phase transform. 8−6473
- Ni-Ru, weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8−31063
- Pd-Ru, electron transport props., 50 mK-4.2K 8−14707
- Pd-Ru-W(V)(Ti), elec. resist. and thermal cond. *(Russian)* 8−19017
- Ru-Cu catalyst, electron spectroscopy exam. 8−44405
- ScRu, UPS exam. 8−48276

ruthenium compounds
- *see also ruthenium alloys*
- acetylacetonate, nucl. spin-lattice relax., electron spin density matrix theory 8−13521
- tris(2,2′-bipyridine) ruthenium(II) cation, IR-optical double reson. and thermal modulation spectra 8−25576
- chemisorption, of O_2, by catalysts, EXAFS obs. 8−15708
- Ru complexes, carbonyl hydrides, pre-reson. Raman spectra, Ru-Ru and Ru-C modes 8−43854
- $Ru(CO)_{5(g)}$, chem. thermodynamics 8−18799
- RuP_2, prep. and characterisation 8−39679
- $RuTe_2$, decomposition press. and thermodynamic props. 8−3366

rutile *see titanium compounds*

S-matrix theory
- *see also dispersion relations*
- $\mathcal{P}(\varphi)_2$ field theory, non-relativistic limit for two particle phenomena 8−16906
- A^4-phonon theory, model S-matrix negative in Brillouin zone 8−41257
- anomalies of quantum conserved currents in exactly solvable models 8−387
- atomic electron scattering, free-free transition of electron, multichannel theory 8−1078
- causality, generalized integral condition for S-matrix, reln. to algebraic approach 8−37150
- causality condition in field theory with momentum space of const. curvature 8−395
- chiral fields, two-dimens., hidden symm. 8−29243
- cluster expansion in statistical mechanics, S-matrix formulation *(German)* 8−41256
- conservation laws, infinite set for Thirring model, massive and quantum sine Gordon model 8−29226
- Coulomb scatt., perturbation theory, renormalised half-off-shell T-matrix 8−32996
- cross section of deep inelastic collisions, general form using S-matrix theory 8−566
- diffraction peak width, upper bound derivation 8−12831
- dispersion relations with two substractions in frames of field localisable theories *(Russian)* 8−41433
- dual unitarisation and baryons 8−16999
- elastic scatt., new semi-classical approach 8−32706
- elastic scatt. amplitudes, asymptotic bounds on derivatives 8−12892
- elastic scattering, Sommerfeld poles and backward peaks 8−21357

S-matrix theory continued
- extrapolation method for perturbative expansion of S-matrix, high energy hadron collisions, φ^4 model calcs. 8−394
- factorized U(n) symmetric S-matrices, two dimens., scatt. of solitons 8−45802
- gravitation, covariant quantisation 8−8327
- Gross-Neveu model, exact S-matrix theory 8−24937
- heavy ion potential scatt., multiple reflection expansion 8−41753
- heavy-ion deep inelastic collisions, general form of cross-section 8−13131
- high energy collisions of heavy nuclei, Glauber rescatt., Reggeon field theory 8−37369
- interacting spin-1 field theories, anomalies, expansion of S-matrix into Feynman graphs 8−45798
- inverse scattering problem, quantum field theory 8−363
- Lippman-Schwinger equation, soln. for n delta-shell pots. 8−41112
- lower bounds on total cross sections and slope parameter 8−32997
- massive Thirring model, complete S-matrix, sine-Gordon solitons 8−16936
- meson interactions, LSZ reduction formulae, soliton asymptotic theory 8−4774
- molecular electron scatt., vibr. struct. of resonances 8−17813
- Moller wave operators for pot. scatt. 8−45495
- multiple Coulomb excitation of heavy ions, semiclassical S-matrix integral representation 8−630
- Muskhelishvili-Omnes integral eqn. with inelastic unitarity 8−8546
- n-body potentials in QED and quantum gravity 8−24969
- N-quantum approximation in Bronzan-Lee extended-source static model 8−8507
- non-Abelian theories, struct. of leading IR divergences 8−4785
- nonlocal continuous potentials, theory of integral operators and eigenvalue anal. 8−8274
- nuclear collision, K-matrix theory, method for compensating for neglected open channels 8−13039
- nuclear reactions, energy ave. and ensemble ave. equality 8−17170
- off-energy-shell T matrix, frame depend., relativistic pot. theory 8−25159
- one-dimensional scatt. theory, stability of direct and inverse problems 8−4523
- photoionisation, relativistic R-matrix theory 8−5184
- pion-nucleon low energy scatt., local and nonlocal pots., inverse scatt. reaction matrix anal. 8−8684
- pole factorization theorem in S-matrix theory 8−12830
- potential scattering , perturbation methods for local and nonlocal pots. 8−16696
- quantisation of relativistic systems with first-and second-class constraints 8−21337
- Regge trajectories families, S-matrix theory, nonrelativistic linear pot. quark binding model, comparison 8−33048
- Reggeon quantum mechanics, Hamiltonian formulation, S-matrix, pomeron Green functions 8−16951
- relativistic factorised S-matrix in two-dimens., O(N) isotopic symm. 8−41432
- relativistic factorised S-matrix in two-dimens. space-time with isotropic symmetry *(Russian)* 8−8547
- relativistic gas of interacting particles, phase vol. approx. 8−41225
- second virial coefficient from the scattering operator 8−24730
- semiclassical Coulomb excitation theory, classical-limit S-matrix, orbital dynamics 8−33205
- Slavnov-'t Hooft identities in Mandelstam's formalism 8−45776
- strong coupling in quantum field theory with nonlocal nonpolynomial interactions 8−21319
- Stueckelberg close-curve-crossing phases 8−22
- Stueckelberg phases, 3-parameter exponential model 8−41440
- supergravity, Hamiltonian formalism, quantisation and S-matrix 8−16972
- two-body spin 1/2 reactions at fixed s and t 8−37149
- two-body transition matrix and UPA model, convergence props. of generalised separable expansion 8−16939
- two-particle scatt., elasticity, factorisation and S-matrices in (1+1) dimens. 8−16937
- unitarity, causality of functional S-matrix in renormalized QFT 8−4793
- Yang-Mills theory, covariant canonical formulation, phys. S-matrix unitarity, phys. state subsidiary conditions 8−37141
- Δ(1232) pole position, stabilized bias free method 8−24968
- KN scatt. length and forward cross sections for S-wave I=0 8−37231
- NN interactions, phase shift anal. *(Rumanian)* 8−45942
- NN scatt., high-energy, effect of anomalous mag. moments in quantum field theory 8−465
- NN scatt. formalism 8−21463
- Nπ scatt., high-energy, effect of anomalous mag. moments in quantum field theory 8−465
- (p,p), isobaric analogue resonances, microscopic and phenomenological parameters, S-matrix eval. methods 8−13045
- pp scattering matrix determ. from scatt. meas., exptl. technique 8−25063
- πN scatt., low energy, determ. of low eqn. 8−8688
- ππ S-wave phase shift, lower bounds, ε° and ρ poles 8−45953
- CO_2, 3.8 eV resonance, vibr. struct. in electron-molecule scatt. 8−17813
- N_2, 2.4 eV shape resonance, vibr. struct. in electron-molecule scatt. 8−17813
- N_2, elastic electron scatt., low-energy, static exchange in R-matrix 8−13601

S-parameters
- complex dielec. and mag. props., modified von Hippel least square fit determ. 8−21179

safety
- *see also accidents; alarm systems; fission reactor safety; health hazards; protection*
- atmospheric electricity, or static electrification hazard, review 8−28283
- biomedical equipment, safe voltage differences, practical equipot. limits 8−44649
- cardiac fibrillation, reduced risk using conductive catheter 8−35972
- cell drying, critical point drying alternatives for specimen prep. 8−24210
- critical point drying theory, practice and artifacts, review 8−24211
- ear protectors, performance estimation 8−40192
- electro-medical equipment, leakage current due to mains transformers *(German)* 8−3625

safety continued
  electro-medical measuring equipment, leakage current protective measures *(German)* 8−3629
  electrode safety models, evoked pots. recorded from cat cerebral cortex 8−31797
  electromedical equipment, reliability *(Croatian)* 8−48901
  EM non-ionising radiation, influence of quality on bioeffects, exposure standards 8−44558
  energy sources, role of health physicist in development of safe sources 8−36088
  fissile material supervision, aspects *(German)* 8−684
  fracture mechanics, fundamental aspects and new developments, evaluation aspects *(Italian)* 8−34086
  fusion reactor large magnet systems safety 8−770
  fusion reactor LOCA accidents in Li cooled fusion blankets 8−777
  fusion reactor magnetic fields, biological implications 8−768
  fusion reactor second generation designs, safety anal. 8−771
  fusion reactors, missile ejection from confining magnets, kinetic energy release 8−779
  fusion-fission hybrid blanket designs, accidental criticality 8−778
  fusion-fission hybrid power reactor, blanket cooling under LOCA conditions 8−775
  hazardous atmospheres, max. explosion press. affected by low ambient temp. 8−44380
  human factor studies, conf., San Francisco, USA (Oct. 1977) 8−48742
  IAEA safeguards, instruments and techniques for nondestructive assay 8−33302
  ice, detection using surface acoustic waves 8−18129
  iontophoresis device for safe elec. administration of ionised drugs 8−31965
  laser beam operation in surgery and treatment 8−35903
  medical equipment, leakage currents meas. and minimising 8−11748
  methane gas interferometer for coal mine safety 8−44423
  microwave radiation, emission and exposure standards 8−44619
  microwave radiation safety, meas. and instrumentation 8−44618
  nonproliferation treaty safeguards implementation, nuclear facilities in USA 8−820
  nuclear fuel reprocessing plant instrumentation for internat. safeguards 8−721
  nuclear fusion, environmental and safety aspects 8−766
  nuclear power, reprocessing and enrichment plants, IAEA safeguards 8−33282
  nuclear power plant, radiation monitoring systems, review 8−33292
  nuclear power plant safety systems, common mode failures, investigation *(German)* 8−694
  nuclear power station, full scale tornado-missile impact tests 8−41876
  nuclear power station earthquake simulator 8−5681
  nuclear power station response to aircraft impact 8−41875
  nuclear reactor protective system, optimum supervision intervals and order of supervision 8−37419
  nuclear safety, national programmes, aspects 8−697
  nuclear wastes as heat source 8−41838
  orthopaedic implants and biomaterials, mech. testing 8−36057
  Philips PW 1360 X-ray diffraction tube shield, mechanical safety interlock device 8−36989
  power leakage from microwave-excited light sources 8−36988
  power line elec. field effect on communication line maintenance personnel 8−40353
  radiation, in high-altitude air traffic 8−44620
  radiation, public health aspects 8−35895
  radioactive, high-level vitrified waste, risk anal. of repository in geologic salt formation 8−17362
  radioactive I adsorption on charcoal filter, safety evaluation *(Japanese)* 8−33267
  radioactive waste, long-term risk assessment of waste disposed in geologic formation 8−17361
  roller pumps, clinical, automatic safety shutdown 8−44720
  science and technology, importance of safety and reliability, in materials testing 8−39982
  SEM laboratory, health and safety hazards 8−21295
  spacecraft external surfaces, conductive materials for grounding 8−45187
  steel components, safety anal. for loading conditions 8−39979
  structural reliability and safety, probabilistic methods 8−39978
  UV and IR radiation effects on eyes, safety measures *(Japanese)* 8−35881
  UV and IR rays, effect on skin, safety measures *(Japanese)* 8−35882
  wood, load bearing capacity, and deformability, evaluation of timber structure safety *(German)* 8−39983
  X-ray production equipment, USA safety standard 8−29223
  Cs sputter source, T beam prod. 8−29684
  Pu inventory verification of ANL, IAEA safeguards 8−821
  U enrichment plant criticality analysis *(Japanese)* 8−46156

safety systems
  see also alarm systems
  device for gamma ray source containers 8−5051
  nuclear, time dependent unavailability anal., FRANTIC computer code 8−29588
  nuclear power plant safety systems, common mode failures, investigation *(German)* 8−694
  reactor safeguard system common-mode failure analysis 8−29618
  ^{4}He pumping lines, low press. safety value 8−32822

salt water conversion *see desalination*

samarium
  see also nuclei with ......
  atom, hyperfine struct. second order effects, on isotope shifts 8−25476
  atom, in inert gas matrix, pseudolocalised vibr. modes, UV/vis. spectra 8−46289
  atomic lifetime meas. by dye laser excitation 8−25465
  divalent surface states, photoemission meas. 8−47841
  ions, hyperfine interactions, decoupling meas. 8−37761
  isotope separation, laser two-step photoionisation 8−46461
  Isua supracrustal rocks, Sm-Nd isotopic investigations and implications for mantle evolution 8−36129
  water assemblies, poisoned, thermal neutron diffusion calc., absorption discontinuity effect 8−13191
  EuO:Sm, electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
  EuS:Sm, electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064

samarium continued
  Sm I spectrum from laser-atomic-beam spectroscopy 8−37578
  Sm XVI, UV spectra, 60-600 Å reson. lines 8−33455
  ZnS:Ag,Sm, recomb. centre interaction, luminesc. quenching 8−10946

samarium alloys
  Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
  Co-Mn, permanent magnetic materials 8−8426
  Pb-Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
  Sm-Al(Fe)(Co)(Pt), hyperfine field exam. by NMR spin echo 8−23365
  Sm-Co, permanent mag., O ion impact, 5.5 keV, secondary Co ion emission, magnetisation depend. *(Russian)* 8−2967
  Sm-Cu phase diagram *(Russian)* 8−27477
  Sm-Ga, phase diagram *(Russian)* 8−27478
  $SmCo_5$ based alloys, dissociation process *(Russian)* 8−27542
  $SmCo_5$, Bloch wall energy determ. *(German)* 8−19271
  $SmCo_5$, magnetic anisotropy, Co contrib., ^{59}Co NMR Obs. 8−43583
  $SmCo_5$, spin polarised energy band struct., APW calc. 8−10342
  Sm_xCo_y, mag. props. 8−43568
  $SmCo_{3.5}Cu_{1.5}$, single cryst., domain wall motion and domain form. 8−39359
  $SmCo_{2.5}Ni_{2.5}$, mag. after effect *(Russian)* 8−6544
  V-Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174

samarium compounds
  see also samarium alloys
  monochalcogenides, valence related optical and other studies, review 8−31215
  oxalate, IR and Raman spectra exam. *(French)* 8−48159
  phthalocyanine solutions, bleaching by ruby laser beam 8−30030
  SmS film, metallic, interpretation of optical absorption spectrum 8−27344
  Al_2O_3-Sm_2O_3, phase diagram at high temps. *(Japanese)* 8−19732
  $Eu_{1-x}Sm_xO$, mag. semicond., thermodynamics of mag. quasimols. 8−19266
  HfO_2-Sm_2O_3 solid solns., prep., crystn. 8−42909
  Sm-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
  SmB_2, high press. synthesis 8−18608
  SmB_6:$Gd^{3+}(Eu^{2+})$, mixed valence compound, ESR g-shifts and linewidths 8−48035
  $Sm_{1-x}Ca_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  $Sm_{0.7}Er_{0.3}FeO_3$ spin reorientation photomagnetic motor 8−2695
  SmF_2-SmF_3 system, four new compounds Sm_mF_{2m+5}, X-ray powder patterns, lattice parameters *(German)* 8−42999
  SmFX mixed halides, synthesis and lattice parameters 8−30594
  $SmFeO_3$, magnetostriction meas. in spin reorientation region 8−2721
  $Sm_3Fe_5O_{12}$, spin reorientational phase transitions *(Russian)* 8−39349
  SmGa garnet film, scratch-modified mag. domain patterns 8−48007
  $Sm_{1-x}Gd_xS$, calorimetric exam. of metal-semiconductor transition 8−18967
  $Sm_{1-x}Gd_xS$ system, equilib. of isomorphous phases and crit. point 8−34772
  $Sm_{1-x}Gd_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  $Sm_4Ge_3O_9(OH_6)$, cryst. struct. 8−14330
  SmS, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
  SmS, divalent and trivalent ion doped, electronic struct., Mossbauer spectroscopy 8−39022
  SmS film, laser beam threshold recording energy density meas. method 8−5520
  SmS, metallic, transmission, refl. and absorpt. spectra 8−19587
  SmS, nonorthogonal orbitals in intermediate valence 8−43323
  SmS, semicond., anomalously high magnetoresist., Hall coeff. and elec. resist. meas. 8−10479
  SmS, single crystals, crystallographic slip 8−18659
  SmS-based alloy, preparation and properties 8−44034
  Sm_2S_3-Sm_3S_4, valence related optical and other studies, review 8−31215
  SmSb, crystal field effect in thermal expansion 8−19305
  SmSe, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
  $Sm_{1-x}Sr_x\ CoO_3$, electronic and mag. props., itinerant ferromagnetism obs. 8−10660
  $Sm_{0.05}Tb_{0.45}FeO_3$, singularities of domain struct. in spin-flip region 8−19272
  SmTe, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
  $Sm_{1-x}Th_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  $(SmY)_3(FeGa)_5O_{12}$, LPE on $Gd_3Ga_5O_{12}$, growth kinetics, 920-980°C 8−3064
  $Sm_xY_{3-x}Fe_5O_{12}$, spin reorientation transitons 8−2686
  $Sm_{1-x}Y_xS$, effect of valence fluctuations on lattice dynamics 8−47493
  $Sm_{1-x}Y_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
  Sm_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
  $(SrCaSm)_2(Cr_xGa_{1-x})O_4$, mag. 2-D oxide, phys. props. 8−47974
  $(Y,Sm)_3(Ga,Fe)_5O_{12}$ film, domain boundary mobility, effect of easy magnetization axis inclination 8−19293
  $(Y,Sm)_3(Ga,Fe)_5O_{12}$ films, growth from melt, growth property control 8−27395
  $Y_{3-y}Sm_yFe_{5-x}Ga_xO_{12}$ film, LPE growth induced mag. anisotropy 8−2709
  $Y_{3-x}Sm_xFe_5O_{12}$, cubic and induced anisotropy, temp. depend., 100-300K, ferromag. reson. obs. *(Russian)* 8−39313
  ZrO_2-Sm_2O_3 solid solns., prep., crystn. 8−42909

sampled data systems
  see also discrete time systems
  conditional sampling, detection and data signal phase relation, turbulent boundary layer appl. 8−24772
  imaging systems, linear gradient model for suppression of aliasing 8−33686
  online real-time data acquisition system design 8−35994
  space variant systems, holography using phase coded reference beams 8−33698

sand
  aqueoglacial deposit lithology of E.Lithuanian upland *(Russian)* 8−16011

sand continued
SE.Baltic shore development due to hydrotechnical constructions *(Russian)* 8−36145
Banks Island, Canada, deposits and aeolian processes *(French)* 8−36163
beach sediments, lower St. Lawrence Estuary, Quebec, frost effects 8−7609
beach slope sand granulometric composition variations during wave cycle *(Russian)* 8−15991
dune ridge morphodynamic characteristics on spit of Kurshyu Nyariya, abrasional section *(Russian)* 8−36149
groundwater flow, unconfined, tunnel opening, 2-D finite element anal. 8−11922
Hunter River, sand supply to New South Wales coast 8−16066
liquefaction during Friuli 1976 earthquakes 8−24280
longshore sediment transport and sediment budget for Malpeque barrier system, Gulf of St. Lawrence 8−36140
Miramichi estuary, New Brunswick, tidal current control of submarine morphology 8−36174
monazite sand, determ. of Th, U, and K from spectrometry of natural γ-activity 8−20408
quartz beach samples, spectral reflectance/grain size relationship 8−16005
quartz sand, pilot tests of acoustic device for dressing 8−7271
river sediment, sand-wave motion along nonerodible bottom in open channel flow 8−16074
sediments of old coast formations of E.Lithuanian upland *(Russian)* 8−16012
shoreline changes due to dredged holes, math. and lab. models *(Japanese)* 8−11878
shoreline evolution, beach sand transport modelling 8−15993
Spit of Kursiu Nerija, morphodynamical characteristics of protectional dune ridge *(Russian)* 8−20389
under-surface temp. pattern estimation by dynamic remote sensing *(Japanese)* 8−36315
White Sea, periodic forms of bottom relief on shelf 8−44804

sapphire
crystallisation from melt, capillary conditions 8−3020
Czochralski crystals, formation of low angle grain boundary macrostruct. 8−47392
dynamic deformation by projectile impact back reference holography obs. *(French)* 8−42307
heat transfer at low temps., lattice thermal cond. 8−34665
leucosapphire, spectral absorpt. coeff., 1800K 8−27252
leucosapphire, spectral absorption coeff., 0.25-1.25 micron, up to 1800K, and 3.5-5.2, up to 1200K 8−27204
leucosapphire crystals, gaseous inclusions 8−2151
optical strength anisotropy, absorbing microdefects effect 8−2952
phonon conductivity, calc., 0.4-4K 8−18852
polishing with colloidal SiO_2 8−39925
ribbon crystal, interface growth feature rel. to voids 8−34456
ribbon crystal growth by edge-defined film-fed growth technique *(Japanese)* 8−27396
shaped single crystals, porosity, microstruct. 8−2125
substrate, surface quality determ. by optical reflectance methods 8−43862
substrate, VPE of GaN, crystallographic aspects 8−2387
substrates, prep. for GaN epitaxy 8−39929
time dependent phonon irrad. of detector area from pulsed incoherent phonon radiator 8−38790
ZrO_2, wear chart, exam. *(German)* 8−35521

satellite links
see also artificial satellites
atmospheric attenuation meas. using radiometer *(Czech)* 8−36351
ATS-6, near horizon meas. over water at 30 GHz 8−24345
attenuation meas., satellite Earth path, in the freq., bands 20 and 30 GHz 8−7822
beacon signals from ATS-6 satellite, ground refl. effects on polarization 8−40612
causing fading, investigation ionospheric radio lenses 8−7833
INTASAT, ionospheric plasma obs., data analysis *(Spanish)* 8−16270
lightning crosspolarisation model 8−11961
low angle transmission effects, VHF and UHF 8−7747
Meteosat for weather data collection, single cabinet telecommunication equipment 8−36419
Meteosat ground facilities, European/W.Indian network *(French)* 8−45183
Meteosat image processing 8−36297
microwave, crosspolarisation phase due to ice crysts. 8−7684
rain attenuation for Earth-space links, comparison between radar- and radiometer-derived data 8−24343
rain slant path attenuation statistics prediction at various locations 8−24344
signal depolarisation, thunderstorms 8−3854
Solar Maximum Mission GSTDN/TDRSS compatible RF system 8−45198
tropospheric fading at low elevation angles, meas. of satellite signals *(French)* 8−49069
VHF, weather radar data transmission appl., expt. 8−20569
weather forecasting satellite Meteosat 8−45196

satellite relay systems
Appalachian Education Satellite Project activities and outcomes 8−12450
atmospheric noise measurement ATS-6 satellite link, 30 GHz *(Dutch)* 8−7742
ATS-6, 30 GHz signal attenuation measurement, effect of weather appl. *(Dutch)* 8−7741
diversity reception results, geostationary satellite ATS-6 *(Italian)* 8−49072
International Microwave Symposium, San Diego, Calif., USA (June 1977) 8−5478
NTS-1, propagation effects near mag. equator 8−7839
radionavigation, plasmaspheric time delay effects 8−7831
synchronous telecommunication and research satellites *(German)* 8−20610
TRANSIT Navigation satellite, phase fluctuation and ionospheric irregularities observations 8−7832
TV instruction system, India, reception systems, overall appraisal 8−8185

satellite vehicles *see artificial satellites*
satellites, artificial *see artificial satellites*
satellites, planetary *see planetary satellites*
saturable absorption, optical *see optical saturable absorption*
saturation control *see chemical variables control*
saturation effects, optical *see optical saturation*
saturation measurement *see chemical variables measurement*
Saturn
A-ring, azimuthal brightness var. and particles size 8−32391
astrolabe obs., 1977 Jan.-April *(French)* 8−32390
atmosphere, far IR spectrum, PH_3 and NH_3 absorpt. lines 8−12147
atmosphere, H_2 content from spectral line equivalent width *(Russian)* 8−12143
atmosphere, inhomogeneous models 8−12149
atmosphere, latit. differences in cloud layer struct. 8−20725
atmosphere, probe flight characts., scale model expts. 8−7854
atmosphere, Raman scatt. 8−28571
atmosphere, thermal profile from IR meas. inversion 8−4144
atmosphere upper layers, physical props. *(Russian)* 8−40867
differentially rotating models, gravit. field and figure 8−7893
dynamics and He distribution, in He-He fluid planet 8−28555
eclipse of Iapetus by shadow of planet and rings (19-20 October 1977) 8−16342
Enceladus, IR photometry rel. to presence of water frost 8−12146
equatorial satellites motion, appl. of problem of four fixed centres 8−28493
far IR spectral obs. of planetary disc and rings 8−16341
Hyperion, IR photometry rel. to membership of new class of satellites 8−12146
Iapetus, radius from 1974 March 30 lunar occultation 8−36505
Iapetus, theory of motion, perturbations 8−28577
interior models, phase separation 8−36507
ionosphere, model, ionization by galactic cosmic rays and solar EUV radiation 8−4142
Love numbers 8−16338
Lyman α emission from disc and ring system 8−12150
magnetosphere, review 8−12145
orbital resonance in dissipative medium rel. to asteroids and Saturn's rings 8−28491
origin and evolution, arguments against Kumar's theory 8−45266
Pioneer 11 post-Jupiter trajectory midcourse manoeuvre sequence for Saturn targeting options 8−7857
radio emission flux density at 102.5 MHz, upper limit meas. *(Russian)* 8−4146
radio emission in H_2O 1.35 cm line 8−20664
ring A, Encke division, photometric confirmation from Iapetus eclipses 8−45273
ring brightness temp. meas. at 8 mm wavelength 8−36502
ring particle composition and size distrib. from radar obs. 8−36501
ring system, statistical mechanics of Keplerian orbits 8−20625
rings, 22.7 μ brightness versus solar declination 8−20724
rings, azimuthal brightness var. 8−36503
rings, azimuthal brightness vars., obs. at intermediate tilt angle 8−4145
rings, five-colour photometry 8−36504
satellite, obs. of possible new satellite 8−7921
satellite system, orbit-orbit resons. 8−4093
satellites, astrometric results from 1974 lunar occultations 8−36506
temperature inversion in atmosphere, model 8−12148
Titan, search for H_2 (3,0) S1 line in spectrum 8−4143
Titan, secular brightness increase, 1972-76 period 8−16346
Titan-Hyperion orbit-orbit resonance, appl. of spin-orbit theory 8−24451
Voyager imaging experiment 8−24427
Voyager IR spectroscopy and radiometry experiments 8−24428
Voyager low energy charged particle experiment 8−20618
Voyager magnetic field experiment 8−24431
Voyager mission objectives 8−24426
Voyager photopolarimeter experiment 8−20616
Voyager planetary radioastronomy experiment 8−24433
Voyager plasma experiment 8−20617
Voyager plasma wave system 8−24432
Voyager radio science experiment 8−24430
Voyager reconnaissance missions *(German)* 8−20619
Voyager spacecraft, receiver for measuring LF planetary radio emissions 8−4075
Voyager UV spectrometer experiment 8−24429
$^{12}C/^{13}C$, evidence for telluric ratio in atmospheres of Jupiter and Saturn 8−20723
NH_3 atmospheric abundance 8−12142
SC (sudden commencement) *see magnetic storms*
scale invariance *see scaling phenomena*
scalers (circuits) *see scaling circuits*
scales *see balances*
scaling circuits
eight-channel 64 bit scalar with static CMOS memory 8−17531
scaling phenomena
see also elementary particle theory; renormalisation
$(\theta^4)_4$ field, Borel summability, renormalization group, perturbation theory 8−16922
asymptotic energy scale factors for pseudoscalar meson scatt. and charmed meson couplings 8−8620
asymptotic free field anal. of μ-p deep inelastic scaling violations 8−4863
asymptotic validity of scaling in the mean, 8−479
asymptotically free gauge theories, scaling violations in leptoproduction 8−4769
asymptotically free theories of deep inelastic muon, and electron scatt. 8−21430
Bloom-Gilman duality, scaling violations 8−21399
canonical scaling in hadronic high-p_t processes, parton Fermi motion 8−45977
charm quark prod. in deep inelastic lepton scatt. 8−21436
colour gauge theory, quark elastic scatt. and large transverse mom. hadron prod. 8−8610
cosmic gamma ray high energy families, f′ spectrum 8−28466
deep inelastic lepton-hadron interactions, scaling deviations 8−32991
deep inelastic scatt. and lepton pair prod., covariant parton model approach to scaling 8−21431
dimensional anal. in renormalised perturbation theory 8−24950

scaling phenomena continued
double-phase representation, fixed-angle and fixed-momentum-transfer scatt. 8−8628
Dreel-Yan processes, gluon corrections 8−8597
duality model, scaling violation in ν and μ interactions 8−8623
EAS, validity of Feynman scaling 8−28469
eight quark model, modified left-handed currents, ν reactions and e^+e^- annihilations 8−16982
eikonal model, multiplicity distribs., KNO scaling 8−41514
Fermi-motion, canonical scaling of partons in hadronic high p_t processes 8−29314
finite size scaling theory, static, dynamic, based on renormalisation group approach, critical phenomena exam. 8−16745
hadron dynamics, multiparticle prod., intermol. pot. in Feynman-Wilson gas 8−477
hadron-hadron interactions, scaling law 8−41606
hadronic amplitudes in scaling region for e^+e^- and e^-+hadron 8−41484
hadronic constituents with size and excited states and scaling violation 8−29299
high energy two-particle interactions, scaling 8−4878
hydrodynamical model of multiparticle prod., scaling solns. 8−8616
inclusive and semi-inclusive scaling-in-the-mean functions 8−4880
inclusive production of hadrons in high energy nucleus+nucleus collisions, scaling laws 8−33204
indefinite-metric fields and renormalisation group 8−8529
Ising model, scaling limit 8−45573
Ising model, surface tension, using real-space renormalisation group methods 8−47985
Ising model amplitudes and extended lattice-lattice scaling 8−6495
Landau hydrodynamical model of multiparticle prod. due to viscosity 8−4836
lepton scatt. off protons and deuterons nonscaling behaviour 8−8642
lepton-hadron inclusive cross sections, kinematical scaling isolation 8−8671
Lifshitz point, critical wavevector 8−36954
mass scale effects in parton model 8−25017
multiple production, scale invariant solution in hydrodynamic theory *(Russian)* 8−45896
multiplicity, average, energy depend. and scaling-in-the-mean 8−29369
multiplicity distribs. for nonasymptotic energies, concept of similarity *(Russian)* 8−41522
neutral currents and scaling violation 8−41529
nuclear reactions, quasi-two-body scaling 8−8791
one-dimensional cascade model of interacting nuclei, scaling law 8−17233
one-dimensional electron-phonon system, renormalisation *(Russian)* 8−43314
one-dimensional Fermi gas model with two charact. energies, scaling theory 8−6287
parton model, mass scale effects 8−21389
parton transverse momenta, scaling violation effect 8−41483
percolation in 1-D, ghost fields, pair correctedness and scaling 8−4560
photoemulsion nuclei, π^+ absorption, up to 114 MeV, nuclear scaling *(Russian)* 8−25247
precocious scaling in field theories 8−8525
proton and neutron struct. functions, parton model 8−16988
QCD, high transverse momentum meson prod., scale breaking 8−45861
quark-parton distributions model, large transverse momentum hadrons, logarithmic scale breaking 8−16989
quark-parton model, with scaling violations, large p_t processes anal. 8−45927
rapidity in distrib. in inclusive reacts. *(Russian)* 8−41518
renormalisation group, scaling factor, 2-D model 8−41237
scaling in the mean, connection with Feynman scaling, semiinclusive reactions at asymptotic energies 8−29363
semi-inclusive single particle cross-sections, upper bounds determ. 8−41442
semi-infinite systems, critical behaviour 8−4563
superconformal unified field theory 8−12848
thermodynamic stability and ctit. points, ferromagnets and simple fluids 8−16766
transverse mass scaling 8−25018
uncorrelated jet model at high energy, quantum statistics, soft pion prod. 8−16995
vector meson-nucleon scatt., scaling 8−45810
virtual Compton amplitude, high-energy deep-inelastic scatt. 8−41550
weak charmed-baryon resonance prod., neutrino inclusive interactions, scaling behaviour 8−8645
$e(\mu)p$, polarised deep inelastic scatt., scaling props. of struct. functions 8−45926
e^+e^- annihilation channel, differential dispersive theory of ψ/J 8−45933
ep deep inelastic scatt., density matrix appl. to scaling props. 8−8673
γ-ray families, multiparticle prod. above 10^{14} eV, Monte Carlo anal. 8−49257
ν deep inelastic scatt., scale-breaking effects from asymptotic freedom 8−45905
$\nu(\bar{\nu})$ inclusive scattering, weak neutral currents with longitudinal cross sections, scaling 8−17007
$\nu(\bar{\nu})N$ scattering, modified GIM model, scaling violations, naive parton model 8−21414
$\nu(\bar{\nu})N \rightarrow l^-(l^+)X$, differential cross section in scaling limit, sea quark contribution 8−37196
$\nu_\mu(\bar{\nu}_\mu)N$ charged current total cross sections, (V-A) interactions, nucleon struct. function scaling 8−25033
νN, $\bar{\nu}N$, y-distributions, nonscaling and longitudinal struct. function effects 8−33053
p-nucleus collisions, $\bar{p}$ and K subthreshold prod., struct. function 8−21564
pp elastic amplitude, geometrical scaling real part effects 8−37232
pp inclusive reacts., 100-400 GeV, $\pi^\pm$, $K^\pm$, p and $\bar{p}$ spectra 8−17059
$pp \rightarrow \pi^0X$, one-gluon-exchange quark scatt. 8−8714
$pp \rightarrow \pi^\pm X$, charge ratio for cosmic pion spectrum in atmosphere 8−28463
φ^3 field theory in $6+\varepsilon$ dimensions, anomalous dimens. calc. 8−134
π EM form factor, asymptotic behaviour in scale-invariant quark model 8−37211
π electroprod., bare mass of nonstrange quarks, scaling functions 8−41556

scaling phenomena continued
$\pi^-p \rightarrow \gamma+X$, 5 GeV/c, scaling obs. *(Russian)* 8−45986
$\pi^-p \rightarrow \pi^0+X$, 5 GeV/c, scaling obs. *(Russian)* 8−45986
τ decay dynamics, scaling prop. and Michel parameter 8−37195
Be+p, 400 GeV/c, two hadron correlation, x_e scaling 8−46060
$pp \rightarrow \mu$ pairs, 200, 300, 400 GeV, test of scaling hypothesis 8−4888

scaling tubes *see counting tubes*

scandium
see also nuclei with ......
adsorbed on 4d or 5d metal, work function, O_2 coadsorpt. effects, thermionic emission obs. 8−11064
atom, HFS and g_j-values, calc. 8−21860
atom, ionisation potential, term value, correlation energy by vertical anal. 8−41964
HCP, elec. field gradient 8−14698
magnetic susceptibility, temp. depend., theoretical explanation 8−47944
proton stopping power meas. at 100 keV, using ion induced X-ray emission 8−48725
XPS, core level binding energies, plasmon peaks 8−6828
XPS, valence bands 8−35249
$LuPO_4$:Sc, Gd^{3+} EPR spectrum, satellite resonances 8−2734
$Sc+{}^{28}Si^{n+}$, K-shell ionisation, projectile charge state depend., theory 8−17786
$Sc+H_2O(D_2O)$(alcohols), O atom abstraction, product internal state distrib., fluoresc. study 8−48643
$Sc+O_2(NO)(SO_2)$, nascent product state distribs., laser fluoresc. detect. 8−7187

scandium alloys
see also scandium compounds
rare earth alloys, mag. phase diagram 8−10684
Gd-Sc, Curie temp. and saturated mag. moment, nonmag. solute effects 8−39301
$(Ni_{1-y}Y_y)_3Al_{1-x}Sc_x$, quarternary γ' ($L1_2$) pseudobinary props., revealed by ionicity modified pair model 8−19725
Sc-Fe-Si system, phase obs. at 800°C *(Russian)* 8−23661
Sc-rare earth, dil. alloy, cryst. field parameter determ. 8−10650
Sc-rare earth, dil. alloy, cryst. field determ. 8−10651
ScAg(Pd)(Ir)(Ru), UPS exam. 8−48276
$Sc(Fe_{1-x}Co_x)_2$, magnetic saturation moment, Co conc. depend., NMR exam. 8−15037
Sc_3In, itinerant electron ferromag., NMR and relax. 8−6586
$Th_{65}Sc_{35}Ce$, supercond., magnetisation of Ce impurities, sp. ht. meas. 8−47904

scandium compounds
see also scandium alloys
hydrides, mag. susceptibility, mag. props. in single-phase region explained by proton model *(Russian)* 8−47961
oxalate, IR and Raman spectra exam. *(French)* 8−48159
CrN-ScN, rhombic distortion of cryst. lattice at low temp. 8−2253
LaB_6-YB_6-ScB_6, thermionic emission 8−11068
NaF-ScF_3 system, ionic equilib., mass spectra 8−7222
$ScB_{\sim 28}$, β-rhombohedral cryst. struct. by X-ray diffr. 8−34464
ScD, emission bands in 5580 and 8603 Å regions 8−990
ScD_2, surface, interactions with reactive gases 8−23964
ScF_3, pyramidal struct. and force field coeffs., electron diffr. obs. 8−9250
$Sc_2Fe_3Si_5$, cryst. struct. determ. 8−18620
ScH, emission bands in 5580 and 8603 Å regions 8−990
ScH_2, optical interband struct. and low energy plasmons 8−31200
ScH_2, XPS, core level binding energies, plasmon peaks 8−6828
ScI_3, mass spectra and vapour press., and thermochemistry for dimerisation 8−27809
$ScNiSi_3$, cryst. struct., X-ray diffr. meas. 8−10027
ScO, fluoresc. spectra, atom+ROH O atom abstraction reactions, fluoresc. study 8−48643
ScO, optical emission spectrum, wave functions and intensity factors, using effective Hamiltonian *(French)* 8−5114
Sc_2O_3, hot pressing characts. 8−27456
Sc_2O_3, XPS, core level binding energies, plasmon peaks 8−6828
Sc_2O_3:MgO, defect struct., X-ray diffr. and pyrometric density 8−34524
Sc_2O_3-ScF_3 system, phase ratios at 100 kbar press. 8−19729
$ScVO_4:R^{3+}$, R=Nd, No, Tm, Sm, Dy, Er, Eu, Tb, electronic struct. and spectra of VO_4, RO_8 clusters 8−10953
ZrO_2-Sc_2O_3, phase system, X-ray and thermal anal. 8−27494

scanning electron microscope applications
cathodoluminescence analysis 8−32949
chemical vapour deposition conditions, quick survey method 8−44019
conference, Chicago, USA (Mar.-Apr. 1977) 8−21281
conference, Lannion, France (June 1977) 8−41378
dynamic SEM with video tape recording 8−32952
dynamic techniques developments 8−32953
electron beam for GaAs FET failure anal. 8−29216
energy-dispersive X-ray microanalysis, background reduction due to backscatt. electrons 8−20121
IC reliability assessment 8−24902
light duty electrical contact reliability assessment 8−29219
Lorentz microscopy, mag. domain images resolution, computer calcs. 8−35004
Lorentz microscopy, thin film and bulk specimen, recent advances 8−35002
microbeam analysis developments, mag. contrast obs. with HV SEM, quantitative analysis by ion microprobe with quadrupole mass filter *(Japanese)* 8−3432
minority carrier diffusion length determ. near p-n junction, SEM appl. *(French)* 8−43466
MOS, capacitors, SEM investigs. using electron beam induced current technique 8−23177
p-n junction, planar, nondestructive determ. of depth by SEM 8−19132
planar diode characterisation using SEM with movable Faraday cup, illuminator and backscatt. diode detectors 8−21292
Schottky barriers use in SEM electron beam induced conductivity obs. of semicond. 8−34898
semiconductor, micron scaled cathodoluminescence with SEM, review 8−23537
semiconductor, TEM/SEM observations comparing diffr., elec. and luminesc. contrast from dislocations 8−38714

scanning electron microscope applications continued
- semiconductor device characterisation using electron beam induced current technique, review 8−21302
- semiconductor substrate surface, low loss electron and Auger images correl. 8−22944
- shift register reliability assessment 8−29215
- stereoscopic observation and three-dimens. meas. instrument 8−21287
- thermistor bolometer failure anal. appl. 8−24795
- thickness meas. 8−29218
- X-ray image processing, quantitative, with SEM, surface meas. appls. *(French)* 8−41379
- Si photodiodes, linear arrays, use for high-energy electrons detection, SEM assessment 8−32951

scanning electron microscope examination of materials
- *see also scanning electron microscopy*
- Allende meteorite, occurrence of Fe-Ni-Cr-S-O compounds *(French)* 8−32411
- biological specimen freeze-drying process obs. by SEM 8−28142
- α-brass, fractographic obs. of cracks in early stages of fatigue *(Japanese)* 8−7023
- cavitation erosion, observation of eroded surface by SEM 8−15536
- cement, hot pressed, type III, role of admixtures on pastes and H_2O cured cement, exam. 8−44073
- ceramic nuclear fuel, porosity characterization, optical and electron microscope exam. 8−44302
- charcoal, active, heat-treated, spiral growth structs. *(German)* 8−44141
- clay soft, increase in shear strength and rigidity due to Fe^{3+} addition *(Japanese)* 8−31463
- colloid-SEM method, fine magnetic domain observation *(Japanese)* 8−37105
- Columbia Resin, CR-39, fracture mirrors, static and impact tests 8−27601
- conference, Chicago, USA (Mar.-Apr. 1977) 8−21281
- conference, Lannion, France (June 1977) 8−41378
- crystalline contrasts from defects in thin and thick specimens 8−22611
- crystalline materials observation using diffr. effects, bibliography 8−22612
- diamond, polycrystalline film growth from gas phase 8−48332
- euglenoid flagellates, sputter and vacuum evap. coating, comparative effects on delicate features 8−24205
- failure anal. 8−27710
- glass, surface flaws, decoration technique 8−14547
- glow discharge and ion-microprobe sputtering, SEM and ion-microprobe mass anal. 8−43977
- graphite, pyrolytic crystals, surface topography, bombarded with Ar^+, N^+, He^+ ions 8−6820
- graphite, surface morphology changes after irrad. with energetic He ions 8−21767
- Hastelloy-X, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
- Haynes alloy 188, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
- laser mirror, SEM obs. of laser induced damage *(German)* 8−37929
- magnetic contrast in SEM with reference to bubble domain struct. 8−18511
- metal-semiconductor contacts, new phases struct. 8−34899
- microcrystals, method for indexing *(German)* 8−22608
- Multimet, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
- nylon, stress cracking induced by $ZnCl_2$ solns. 8−27594
- optical fibres, fractographic anal. of fracture surface, after proof stressing, SEM exam. 8−38093
- orthopaedic implants, SEM study of wear 8−15926
- Phosphate conversion coatings on steel 8−3251
- phosphosilicate glass passivation layer P content, SEM analysis and interpretation 8−35759
- plant material, cryofracturing and low temp. SEM 8−24207
- PMMA-mortar composite, thermocatalytically polymerised, fracture morphology and mech. props. 8−27595
- polydiacetylene single crysts., twinning 8−23777
- polyethylene, high density, crystallisation struct. revealed by solvent extraction 8−42922
- polyethylene total joint replacement, props. improvement by C fibre reinforcement 8−24183
- polypropylene, drawn fibres, SEM and US study 8−47249
- PVC, high temp. creep 8−48453
- quartz, grains, fission track dating, Oklo uranium ore deposit 8−20555
- quartz glass, ^{252}Cf fission fragment tracks 8−17526
- quartz grains of podzols, surface texture, SEM study 8−36151
- replication, NDT anal. and inspection technique 8−11467
- semicondctor diffusion length and surface recombination velocity determ. by intensity modulated SEM 8−10472
- semiconductor defects, SEM in EBIC mode vs. HVEM images 8−9923
- semiconductor impurity distrib. and defect structure analysis by charge collection SEM 8−9924
- semiconductor substrate surface, low loss electron and Auger images correl. 8−22944
- steel, 18% Ni maraging, fracture surface investigation by SEM 8−23805
- steel, C-Ni-Cr (0.6, 1, 1 wt.%), grain boundary segregation of S, N, P, As, Sb and Bi *(Japanese)* 8−15405
- steel, carbide cracking as source of acoustic emission 8−19872
- steel, hard, high speed and tool, linear elastic fracture mech. appl. 8−48518
- steel, heat-exchanger alloys for use in nuclear steam coal gasification plant 8−15589
- steel, high strength, fatigue crack initiation and early growth 8−7009
- steel, hydrogen embrittlement *(German)* 8−19858
- steel, inclusion behaviour investigations using SEM 8−23916
- steel, maraging, 18 wt.% Ni, solution heated and aged, surrface damage during machining, unlubricated 8−15599
- steel, Si-Mn-Cr-C (1.1, 0.9, 1.0, 0.29 wt.%) 30KhGSA, heat treatment effect on strength and toughness 8−15437
- steel, stainless, AISI 304, dislocation substruct. around fatigue cracks, SEM obs. 8−15516
- steel, stainless 304, elevated temp. low cycle fatigue, heat treatment effect 8−27626
- steel, stainless 304, stress corrosion cracking 8−31565

scanning electron microscope examination of materials continued
- steel, stainless 316, low cycle fatigue life, relation with striation spacing, and macroscopic crack growth at 625°C 8−11317
- steel, structural, naturally and artificially weathered, SEM characteris. 8−23882
- steel, type 27KhGSNL, castings, exam. of cracks due to treatment 8−44205
- steel-polymer wear mechanism during fretting corrosion 8−35522
- surface topography, high-resolution polymer replication 8−10264
- thermoplastics, internal stresses revealed by artefacts produced in SEM 8−35634
- 4-vinylpyridine acrylonitrile copolymer membrane, reverse osmosis charact. *(Japanese)* 8−31694
- wood, clean cut surface preparation for SEM studies 8−15935
- Zircaloy-2 cladding, bonding to UO_2 fuel, mechanisms determ. by SEM and EPMA 8−17317
- Ag ion plated film on permalloy, Cu and Vicalloy substrate, AES, SEM and X-ray study *(Japanese)* 8−11128
- Ag-Cu, directionally solidified, obs. of cutting deform. zone *(Japanese)* 8−15422
- Al, cavitation erosion in water flow, initial stage 8−27648
- Al coating, plasma sprayed on steel substrate, microstructural investigation and oxidation effects 8−11426
- Al, coating on steel by thermal decomposition of alkyls 8−15590
- Al, contrast of electron channelling patterns, estimation from low index refl. 8−9921
- Al, high temp. creep, grain boundary dislocations 8−43065
- Al, scanning Auger electron microscopy, Monte Carlo calc. 8−19610
- Al, sliding wear in NaCl of varying pH 8−3240
- Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
- Al-Cu (4.5 wt.%) alloy, controlled electropotential corrosion in NaCl soln., microstruct. exam 8−39948
- $Al-Mg_2Si$ (0.95 wt.%), excess Si effect on ductility 8−27580
- Al_2O_3, fibrous, thermal diffusivity and conductivity 8−10232
- Al_2O_3, sintering with $SrTiO_3$ admixture *(Polish)* 8−19699
- Al_2O_3, unflawed polycryst., tensile failure, SEM and acoustic emission expts. 8−27598
- $Al_2O_3-ZrO_2$ cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
- Au, contrast of electron channelling patterns, estimation from low index refl. 8−9921
- Au_3Si, room temp. dissociation 8−35672
- B fibre reinforced Al, thermal degradation of tensile strength, due to fibre strength degradation 8−39861
- B_4C, effect of fast neutron irradiation on struct. 8−26597
- Be, machining damage, SEM exam. 8−39990
- Be, neutron irradiated, annealed, tensile props. and swelling, effect of He bubbles 8−22765
- C, colloidal layers, sputtering, chem. etching in DC glow discharge 8−27667
- C, morphology and growth mechanism of carbons formed by Ni-catalysed decomp. of hydrocarbons 8−35679
- $3CaO.Al_2O_3-CaSO_4.2H_2O-CaO-H_2O$, citric acid effect on reactions 8−27725
- Cr film, evaporated, on die-cast Zn, microstruct. and intrinsic stresses, substrate temp. effects 8−10304
- Cu alloys, appl. of SEM to brittleness study 8−3214
- Cu, appl. of SEM to brittleness study 8−3214
- Cu, contrast of electron channelling patterns, estimation from low index refl. 8−9921
- Cu, friction and prow form. in scratch process by diamond cone 8−11349
- Cu, point emitter, surface microrelief under explosive electron emission 8−2973
- Cu rich dental amalgams, SEM and energy dispersive X-ray analysis 8−24184
- Cu whisker, H_2 reduction of CuI, growth mechanism 8−30853
- Cu-Ni-Cr (28, 2.8 wt.%), spinodal alloy, microstruct. and tensile props. 8−39858
- CuO-Ag film solar absorbers, mechanism of high-temp. instability 8−22971
- Fe, atomically clean, N_2 treatment, corrosion inhibition 8−19954
- Fe, cast, fracture mech. and fractography *(Japanese)* 8−7031
- α-Fe, cold rolled, hydrostatic press. effect on microstructural changes during creep 8−39871
- α-Fe, creep life, meas. by microstruct. changes 8−35443
- Fe, ductile fracture, fractographic characts. SEM exam. of fracture surface necking obs. 8−35506
- Fe-Cr-Al-Ce, high temp. oxidation *(Japanese)* 8−11413
- Fe-Ni, oxidation, Mossbauer spectroscopy, metallography, SEM and X-ray diffr. anal. 8−15577
- Fe-Si (3 wt.%), grain-oriented, effect of forsterite coatings in domain struct. 8−23293
- Fe-Si (3 wt.%) cores with insulative coatings, morphological and struct. SEM characteris. 8−23881
- $Fe_{72}Ni_8P_{13}C_7$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- GaAs, adsorpt.-desorpt. of Zn, thermal desorpt., at. beam adsorpt., AES, SEM, RHEED 8−14591
- $Ga_xIn_{1-x}P$, real struct. exam. by electron microscopy and channelling 8−2143
- GaN, epitaxial layer, characts. from cathodoluminesc. 8−35208
- GaN, VPE, on sapphire, crystallographic aspects 8−2387
- GaP, epitaxial struct., cathodolum. in SEM 8−10991
- GaP, LEC growth of dislocation-free crysts., microdefects and striations 8−9974
- GaP, minority carrier lifetimes at dislocations, SEM meas. using photon counting 8−23109
- Ge, electrodeposited, X-ray, electrochem., and electrorefl. characterisation 8−14624
- Ge-Au-Ni(Pt)(Pd) trilayered films, annealing, interdiffusion 8−22902
- Ge-Si n-n heterojunction, topography study 8−14804
- $GeSe_2$ chalcogenide film, struct. changes due to laser induced transmittance oscill., SEM obs. 8−6240
- InAs, MBE growth, SEM, RHEED, optical microscopy and elec. meas. 8−18925
- Li_3N, ionic cond., annealing, trans- and intercryst. resist. 8−43176
- Mo alloys, fractography of deformed samples *(Russian)* 8−19889
- Mo film, on SiO_2/Si substrate, effect of heat treatment after deposition on internal stress 8−22973

scanning electron microscope examination of materials continued
- Mo, irradiated by H^+ and H_2^+ ion beams, grain ejection from surface 8−6819
- Mo, mech. props., influence of temp. on singularities of deform. *(Russian)* 8−6970
- Mo, point emitter, surface microrelief under explosive electron emission 8−2973
- MoS_2, RF sputtered, solid lubricant on mild steel, morphology 8−6239
- Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8−10301
- Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
- Ni, blistering by $^4He^+$ bombardment, temp. depend. 8−43967
- Ni monocrystals, struct., effect of stress applied during electrodeposition 8−26777
- PLZT, ferroelectric domain struct. obs. by SEM and optical microscopy *(Japanese)* 8−15136
- $Pb_{1-x}Cd_xS$ metastable epitaxial films, growth and physical props. 8−27417
- $Pd_{781}Cu_{55}Si_{164}$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- Ru layer, 2-3 μm thick, ion plating and characterisation 8−11131
- Si, contrast of electron channelling patterns, estimation from low index refl. 8−9921
- Si multilayer structure dopant distrib. and minority carrier diffusion length, SEM obs. *(Russian)* 8−10543
- Si, pseudo-Kikuchi patterns in refl. expts. during scanning of single cryst. by intermediate energy electrons 8−1964
- Si:B, implanted, oxidation-induced stacking faults, EBIC and TEM expts. 8−39923
- β-SiC, oxidation in CO-CO_2 mixture *(German)* 8−23844
- SiC, pyrolytic particles for high temp. reactor fuel, X-ray and SEM study *(French)* 8−22734
- SiC, reaction bonded, microstruct. characterisation 8−48353
- SiN_x film, d.c. reactive sputtering, and characterisation 8−3047
- SiO_2 grown on polycryst. Si, surface asperity mechanism of cond., SEM obs. 8−19153
- SiO_2-C mixture, nitridation to form. Si_3N_4 additives effects, exam. 8−44068
- SiO_2-Na_2O glass, fracture initiating flaws, depth meas., crack propag., SEM exam. 8−48494
- Sn-Ni electrodeposit, metastable, transform. kinetics, X-ray and SEM meas. 8−38979
- $SrAl_2SiO_8$, micro-crystal, appl. of method for indexing *(German)* 8−22608
- Ti-Al-V (6, 4 wt.%), Widmanstatten, microstructurally sensitive fatigue crack growth obs. 8−27627
- TiB_2 coatings, CVD, electron microprobe, SEM, X-ray diffr. characterisation *(French)* 8−43271
- TiC-Au film, prep. by activated reactive evaporation, struct. and mech. props. *(Japanese)* 8−3252
- VC-TiC coating, high rate deposition by activated reactive evaporation, and characterisation 8−11372
- W wires, KSiAl doped cavity formation *(German)* 8−31524
- WAl_4, diffusive interaction of solid W and Al melt *(Russian)* 8−26735
- WC, crystallite size distrib. of powder, SEM method *(German)* 8−47218
- W_6Co_6C cemented carbide substrate, TiC CVD coating, structure, composition and hardness exam. 8−11425
- YIG, film, LPE, annealing-induced relief of compressive misfit strain 8−2386
- Y_2O_3 film in Y-Y_2O_3-Au junction, defect struct. and local conduction 8−26970
- ZnS striated platelets, SEM studies of local variations in cathodolum. 8−15232
- ZnSe-Ge(GaAs)(mica) epitaxial heterostructs., growth struct. 8−43257
- Zr diffusion in Cu, microstruct. and microanal. study of coating formed *(Rumanian)* 8−19917
- Zr-Al-Fe (8.9, 0.001 to 0.006 wt.%) Fe partitioning to Zr_2Al during peritectoid transformation 8−39784
- ZrO_2-Zr cermet composite, hot pressed, fracture toughness 8−27604

scanning electron microscopes
- *see also scanning electron microscopy*
- accessory for obs. of wet objects in cathodolum. mode 8−11782
- Auger, with beam brightness modulation *(Hungarian)* 8−29210
- Auger digital scanning electron microscope 8−12797
- Auger SEM, spatial resolution *(Japanese)* 8−21278
- backscattered electron image, review 8−21304
- backscattered electrons, contrast mechanisms and detectability limits 8−21305
- Broers type LaB_6 gun design 8−21283
- cathodoluminescence detection system for transmission optical fluorescence analysis 8−23999
- cathodoluminescence in electron beam instruments, review 8−4740
- conference, Chicago, USA (Mar.-Apr. 1977) 8−21281
- cyclic loading stage 8−37106
- electron beam irradiation damage and contamination 8−29217
- electron gun evaluation unit for electron optical parameters meas. 8−21285
- electron microprobe Auger spectrometer with ultra high vac. SEM capability *(Japanese)* 8−27849
- electron scattering influence on detection of fine topographic detail 8−21290
- field emission, enhanced secondary electron detection at small working distance 8−21303
- field emission sources, review 8−21299
- focusing and stigmating system using minicomputer 8−37113
- image formation, phase and amplitude, simultaneous, use of circular solid state detector 8−12795
- metrical features of micrographs, calibration procedure 8−32922
- microradiography stage development and applic. 8−32946
- movable Faraday cup, illuminator and backscatt. diode detectors for planar diode characterisation 8−21292
- multisample stage for SEM 8−4738
- objective lens, spherical and chromatic aberration coeffs., meas. method 8−21286
- on-line stereo processing technique using minicomputer 8−37114
- REhM-200, secondary electron collector for local electric field meas. 8−4736

scanning electron microscopes continued
- review, TEM, STEM, and SEM: microscopy to microfabrication 8−32936
- sampling circuitry for fast repetitive waveform exam. 8−37109
- scintillating substances, YAG *(Czech)* 8−21280
- selected area channelling patterns, optimum instrumental procedures 8−34408
- source imaging detector 8−21284
- spatial resolution enhancement for cathodlum. and electron beam induced current modes 8−21293
- state-of-the-art review and future trends 8−21282
- stereoscopic observation and three-dimens. meas. instrument 8−21287
- stereoscopic viewing technique 8−37112
- three-dimensional stereo data acquisition, presentation and treatment 8−21297
- LaB_5 gun, optimum brightness problem 8−21298

scanning electron microscopy
- *see also scanning electron microscope applications; scanning electron microscope examination of materials; scanning electron microscopes*
- Auger electron microscope, Monte Carlo calc. of spatial resolution 8−41383
- Auger scanning microscopy, backscattered electron lateral resolution effects 8−15262
- auto-zero electrometer for analytical electron beam instruments 8−12721
- automated X-ray microanalysis with electron microprobe and SEM 8−27840
- backscattered, using CdS layer scintillator reflected SEM proposal 8−21291
- bacterial growth obs., improved method 8−15933
- biological specimen-conductivity problem in electron microscopy, review 8−24206
- cathodoluminescence microscopy, mirror detector system 8−24000
- cathodoluminescence probing of biomol. species at 100 Å resolution or below 8−24197
- cell cycle and topography in nonsynchronised monolayers, autoradiography and time-lapse use for rigorous SEM obs. 8−24212
- cell drying, critical point drying alternatives for specimen prep. 8−24210
- channel plate multiplier as emissive mode detector 8−339
- channelling contrast technique for material deform. obs. 8−23917
- channelling patterns, contrast meas. 8−9921
- cold stage microscopy, thin frozen hydrated specimens, temp. rise and sublimation of water 8−24198
- conference, Chicago, USA (Mar.-Apr. 1977) 8−21281
- contrast mechanism of electron channelling patterns 8−1965
- contrast mechanisms, review 8−21296
- correlative SEM-TEM of primate infundibular recess 8−20336
- cover-slip and mounting-slide with graticule for light microscope and SEM exam. 8−29153
- critical point drying theory, practice and artifacts, review 8−24211
- crystalline contrasts from defects in thin and thick specimens 8−22611
- crystalline materials observation using diffr. effects, bibliography 8−22612
- cultured cell preparation for electron microscopy, ethanol and chem. dehydration methods comparison 8−24208
- dislocation density determination using selected area channelling patterns 8−34407
- dynamic experiments in specimen chamber, state-of-the-art review 8−23918
- dynamic SEM with video tape recording 8−32952
- dynamic techniques developments 8−32953
- electron channelling patterns in SEM, contrast depth 8−18512
- elemental mapping techniques in microscopic domain 8−24013
- energy dispersive X-ray imaging techniques and appls. 8−48740
- energy dispersive X-ray particle analysis system using beam blanking and digital scan-stop 8−24004
- field emission instability effects on SEM display, electronic removal device 8−21279
- fundamentals for biologists, bibliography 8−24213
- gradient image processing using on-line digital computer 8−21288
- health and safety hazards in SEM laboratory 8−21295
- history of SEM and electron microprobe *(German)* 8−41381
- instant imaging systems appls. 8−21300
- Kossel diffraction application developments 8−34405
- Kossel X-ray technique, for obtaining crystallographic data in the SEM 8−34391
- linewidth meas. artifact fabrication and calibration 8−41375
- magnetic domain, image profiles and resolution in SEM 8−47996
- minicomputer controlled for image and microtopography anal. 8−29214
- Pacific marine aerosol, continental component identification by combined neutron activation and SEM with X-ray anal. 8−3990
- photomacrography and photomicrography, oblique transmitted light techniques 8−306
- powder crystallite size determ. using SEM *(German)* 8−47218
- power plant stack emissions, trace element analysis techniques 8−3938
- pseudo-Kikuchi patterns in refl. expts. during scanning of single cryst. by intermediate energy electrons 8−1964
- review, TEM, STEM, and SEM: microscopy to microfabrication 8−32936
- sample preparation apparatus for freeze drying and vacuum evaporation 8−335
- scanning Auger electron microscopy, Monte Carlo calc. 8−19610
- selected area channelling patterns, optimum instrumental procedures 8−34408
- SEM cathodoluminescence detection system for transmission optical fluorescence analysis 8−23999
- semiconductor, minority carrier diffusion length meas., primary electron accel. voltage effect *(Czech)* 8−34844
- small particle identification, review 8−48739
- solid surface characterisation techniques, review 8−22945
- specimen carrier storage disc system for SEM of cell culture substratum on stainless steel 8−20328
- specimen preparation ion beam techniques 8−24778
- square wave modulation technique appl. to scanning Auger electron microscopy 8−14257
- state-of-the-art review and future trends 8−21282
- steel, mild, cathode arc craters, oxide thickness effects meas. *(German)* 8−38558

scanning electron microscopy continued
steel, stainless cathode arc craters, oxide thickness effects meas. *(German)* 8–38558
stereoviews and morphological data on microcrystals 8–18510
surface physics experiments with ultrahigh vacuum SEM 8–38925
three-dimensional stereo data acquisition, presentation and treatment 8–21297
tissue dimensional changes during SEM specimen prep. 8–24209
Cu cathode arc craters, oxide thickness effects meas. *(German)* 8–38558
Cu electrodeposition on Su, reliability anal. 8–24901

scanning radiography
see also radioisotope scanning and imaging
biomedical, Somatom fast whole body computer tomograph with direct image reproduction 8–28036
biomedical computerised tomographic head unit, Siretom 2000, operation 8–28037
biomedical computerised tomography, Siretom 2000 initial clinical experience 8–28038
blood pump human fitting studies using computerised axial tomography scanning 8–40432
bone mineral measurement using EMI scanner vs. densitometry 8–24119
computed tomographic image boundary detect. 8–40326
computed tomographic reconstruction noise, effect on detectability 8–40296
computed tomography hybrid system for X-ray transmission and positron tomography using $Bi_4Ge_3O_{12}$ scintillators 8–48876
computer tomography detector vibr. sensitivity 8–35955
computerised, tomography patient diagnosis appl. 8–44588
computerised tomographic image processing 8–35950
computerised tomography, body organ moulded picture representation 8–35951
computerised tomography, dynamic 3D imaging system for cardiac structures and functions 8–44600
computerised tomography, graphic display system 8–3578
computerised tomography, operating principles, image construction, appls. 8–28047
computerised tomography, principles *(German)* 8–3601
computerised tomography, six months experience in chest and abdomen exploration 8–7433
computerised tomography equipment, for intracranial diagnosis 8–31884
computerised tomography for detection of intra-orbital foreign bodies 8–3577
computerised tomography image processing and evaluation using PDP-10 computer 8–44587
computerised tomography spectral artifact correction 8–35953
computerised tomosynthesis, serioscopy, and coded scan tomography, reconstruction 8–35920
computerised X-ray tomography, selective I imaging using K-edge energies 8–24131
digital tomogrpahic restoration 8–40322
EMI computerised tomography brain scanner, patient dose 8–28080
fan-beam scanners, circular artefacts reduction 8–35924
gamma-ray camera using Compton effect 8–10087
Hounsfield number definition and computerised tomography number conversion 8–35952
image intensifier tomography in exam. of larynx 8–40312
image reconstruction, projection completion methods 8–42285
image reconstruction from hollow and truncated projections, theory 8–24912
MTF determination from edge response function, single step calc., appl. to computerised tomography 8–35938
object reconstruction from projections, influence of detector arrays fixed errors 8–4743
optical inverse radon transform, for image construction systems 8–42288
optical reconstruction from projections via circular harmonic expansion 8–42286
physics of computer assisted tomography 8–24173
sampling tomography multi-sectional reconstruction method using computer *(Japanese)* 8–31896
SEM, microradiography stage development and applic. 8–32946
straight-line tomography, linearising mechanisms 8–35934
tomodensitometry, image quality 8–44589
tomographic machines, back projection speed improvement for 3-D reconstruction 8–4742
tomographic machines generalised |ω| filter for 3-D reconstruction 8–4741
tomographic system error propagation, hybrid anal. 8–40327
tomography, computerised, principles and development 8–31945
tomography, proton beams computed reconstruction 8–48870
tomography images, display processing, digital enhancement 8–48875
transaxial X-ray tomography reconstruction using convolution methods, digital simulation *(Japanese)* 8–35931
transverse tomography with incoherent optical reconstruction 8–28052
whole-body computerised tomography appl. to radiation therapy *(German)* 8–35945

scanning-transmission electron microscope examination of materials
see also scanning-transmission electron microscopy
alloy, lamellar multiphase, struct. and spatial comp. variation, analytical STEM 8–24011
plessite structure in Carlton Fe meteorite, analytical study 8–32422
polyethylene spherulites, high density, microstruct. and mech. props. 8–42921
polyethylene spherulites, STEM and microdiffr. obs. of micromorphology 8–34444
semiconductor devices, appl. of STEM 8–23155
Al-Mn (1.8 wt.%), cold-rolled, precipitation and recrystallisation 8–27540
Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8–35380
Cu, extinction distances and anomalous absorpt. coeffs. 8–42872
Cu-Bi alloys, embrittled grain boundary obs. using STEM, Cu-SiO_2 comparison 8–38730
Fe-Ni (3 wt.%) alloys, embrittled, microanalysis of grain boundary segregation using STEM 8–35633
Ni alloy, STEM microanalytical techniques comparison for precip. comp. determ. 8–35790

scanning-transmission electron microscope examination of materials continued
Ni_4Mo alloy, high temp. oxidation, oxide layer growth, struct., mech. behaviour 8–44269
ZnS platelets, cathodolum. analysis using STEM 8–32950

scanning-transmission electron microscopes
see also scanning-transmission electron microscopy
Auger STEM, UHV, for thin foil anal. *(German)* 8–12794
field emission STEM for single atom imaging 8–32923
field-emission gun STEM and microanalysis use 8–32948
linear imaging of strong phase objects by differential phase contrast 8–32959
microanalysis uses of high resolution STEM system 8–24012
optical system, practical considerations, review 8–21301
phase contrast, energy loss effect 8–32960
review, TEM, STEM, and SEM: microscopy to microfabrication 8–32936
transmitted and backscattered electrons use 8–37118
X-ray analysis in the TEM/STEM, review 8–24014

scanning-transmission electron microscopy
see also scanning-transmission electron microscope examination of materials; scanning-transmission electron microscopes
accelerator system, magnetic shielding and voltage divider chain 8–340
asymmetrical dark field detectors, elastically scatt. electrons 8–8477
biological, on-line data processing system 8–24202
biological, specimens, low-dose, using digital data processing system 8–24203
biological thin sections, energy dispersive X-ray analysis, detection limits 8–24215
cathodoluminescence analysis 8–32950
crystal defects, extinction distances and anomalous absorpt. coeffs. 8–42872
energy dispersive X-ray analysis in STEM, optimum kV selection 8–24008
energy dispersive X-ray analysis in STEM, semiquantitative analysis method using ref. spectra and empirical scale factors 8–24005
energy dispersive X-ray analysis in TEM/STEM, sensitivity limits for thin specimen analysis 8–24007
energy loss spectrometry, differentiated 8–35786
field emission, Fresnel fringes 8–8476
high resolution energy filtered images 8–24891
image analysis and beam damage, instrumental aspects 8–32954
lattice imaging, diffr. patterns for periodic specimens 8–34398
Lorentz microscopy using STEM for domain wall profiles determ. 8–35003
magnetic spectrometers, approx. and ideal design, appl. to STEM 8–8475
materials science role, progress and prospects 8–32957
microanalysis uses of high resolution STEM system 8–24012
microdiffraction patterns, effect of cryst. defects 8–22610
orientation and position accuracy of electron diffr. 8–22606
particle mass determination method 8–21294
review, TEM, STEM, and SEM: microscopy to microfabrication 8–32936
semiconductor device characterisation 8–34893
specimen orientation modes 8–34406
thin foil microanalysis using XPS and STEM, surface film effects 8–35789
transfer functions concept appl. to imaging of phase objects *(German)* 8–32931
transmitted and backscattered electrons use 8–37118
two-dimensional molecular assemblies construction 8–24201
unstained biological sections 8–31990
X-ray analysis in the TEM/STEM, review 8–24014
X-ray microanalysis in scanning transmission electron microscope, limitations 8–20122
X-ray standardless thin film analysis in electron microscope 8–24006

scattering
see also acoustic wave scattering; backscatter; electromagnetic wave scattering; potential scattering
algebraic theory, existence of wave operators *(French)* 8–24692
Backlund transformation in language of jet bundles *(French)* 8–28913
continued fraction expansions and statistical nonequilib. mechanics 8–45523
cosmic rays, multiple scatt., energy balance in randomly nonuniform mag. field *(Russian)* 8–49252
inverse scattering transform, Wronskian technique, isospectral flow eqn. 8–8275
multiple scattering in one-dimens. of monochromatic waves 8–4528
ocean internal waves, damping by scatt. on rough bottom *(Russian)* 8–24293
seismic waves, single isotropic scattering approx. for coda waves near hypocentre 8–11828

scattering matrix *see S-matrix theory*

scattering parameters *see S-parameters*

SCF calculations
for MS SCF (MS Xalpha) calculations see Xalpha method
see also HF calculations; Xalpha calculations
adsorbate relaxation energies in XPS 8–15283
alkanes, linear, electronic struct., electronic relax. during photoemission *(French)* 8–5283
alkyl chlorides, proton affinity correl., ab initio SCF calc., MINDO/3, STO and G basis sets 8–33421
all-valence LCAO MO SCF INDO method, for mol. ground and excited state props. 8–37556
allene, C-C double bond rot. barrier, ab initio open-shell restricted SCF calc. 8–1099
allyl radical, ab initio SCF solns., doublet stability 8–33423
α-aminoisobutyric acid, cryst., γ-irrad., cation radicals, ESR obs., SCF-MO-INDO calcs. 8–11537
atom, orbital rel. to total SCF energies, HF SCF approx. formula 8–21837
atomic nonrelativistic binding energy, statistical theory, agreement with SCF calc. 8–25438
azomethane, trans-cis isomerisation, INDO-SCF and CI calc. 8–25440
beryllocene, gas phase struct., ab initio LCAO SCF calc. 8–41942
bromomethane, ab initio SCF MO calcs., ionis. pots., dipole moment, config., electronic props. 8–1104
caffeine, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8–46256

SCF calculations continued
closed-shell SCF calcs., mol. symmetry 8−41930
convergence by level shifters, general many shell theory 8−17548
coupled multiconfiguration SCF perturbation theory, analytic techniques 8−17550
covalent surface, pot. and charge distribs. and dangling-bond state 8−2537
cyclobutadiene(-d_1), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8−13429
cyclopropane, electron correlation, double SCF method 8−17575
cyclopropenyl radical and anion, planar, E state pot. surfaces, CI and SCF calcs. 8−5155
cyclopropyl chloride, ab initio SCF-MO calc., electronic and mol. struct. 8−25425
diamond, (111) surface states and relax., modelling and using mol. SCF calcs. 8−39186
1,1-dichlorocyclopropane, ab initio SCF-MO calc., electronic and mol. struct. 8−25425
diimide, trans-cis conversion in lowest excited states, SCF calcs. 8−46284
doublet and quartet states, abstraction reactions, pot. energy surfaces calcs. 8−31627
electron correlation, double SCF method 8−17575
energy functional, direct minimisation in LCAO-MO density matrix formalism 8−5118
ethylene, C-C double bond rot. barrier, ab initio open-shell restricted SCF calc. 8−1099
ethylene, dimer interaction, lattice energy, multipole expsn., at.-at. pots. 8−9218
ethylene, excited states, continuum embedded, SCF-stabilisation approach 8−928
ethylene+cis-N_2H_2, chem. reaction, intermediate geom. calcs. 8−35655
ethylene glycol, IR spectra, ab initio calcs., vibr. anal., conformations of isotopic modifications 8−5210
ethylene molecules, long range forces in multipole expsn., ab initio calcs. 8−9219
ethylene-LiF complex, molecular orbital calcs., Li bonding exam. 8−29745
ethynol, struct., isomerisation, ab initio SCF MO calcs. 8−41941
fluorene conjugate bases, chem. shift, ring-current and excess-charge effects, semi-empirical calc. 8−33523
fluoromethanes, ionisation pots., SCF-multiple scatt.-Xα calcs. 8−5141
formaldehyde, core ionisation, valence orbital relax. calcs. 8−5135
formaldehyde, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
generalised SCF transition operator 8−41925
H-bonded and H-like bonded systems 8−9068
halogen atom, 1s hole states, ionisation, ab initio SCF calcs. 8−17568
halogen diatomic molecule, 1s hole states, ionisation, ab initio SCF calcs. 8−17568
HAM/3 semiempirical MO theory, correl. energy, self-repulsion 8−13416
HAM/3 semiempirical MO theory, SCF method 8−13413
HAM/3 semiempirical MO theory, unoccupied orbitals, excitation energies and electron affinities calcs. 8−13415
Hartree-Fock wave functions, convergence in Roothaan's SCF eqns., 'level-shifting' method 8−41920
helical systems, energy band calcs. using Hartree-Fock SCF-LCAO formulae 8−10329
interconversion pot. energy surfaces, geometries, electronic structs. 8−35660
ketocarbene-ketene rearrangement, reaction path, ab initio calc. 8−20008
localised orbital construction for calcs. using multiconfigurational SCF methods *(Russian)* 8−922
maximum overlap mol. orbitals versus ab initio HF-SCF-MO calc. dipole energy 8−9070
metal, d-band, generalized pseudopotential theory, density functional formulation 8−10389
methane, ^{1}H and ^{13}C mag. shielding, He and methane intermol. effects 8−37571
methane, core ionis., single orbital relax., LCAO MO SCF calcs. 8−29739
methane, H-X bond position, correlation with electronegativity 8−9069
methane, localised orbital construction for calcs. using multiconfigurational SCF methods *(Russian)* 8−922
methane, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
methyl chloride, ab initio SCF-MO calc., electronic and mol. struct. 8−25425
methyl radical and anion, electron affinity determ., ab initio SCF and CI calcs. 8−5149
methylene, photoelectron spectra, singlet and triplet state calcs. 8−42127
methylene, singlet-triplet separation, configuration interaction study 8−13438
molecular orbital SCF and total SCF energies, approx. relation 8−5123
molecular systems, improved SCF method in representation of basis expansions 8−17567
molecule, electron pair distrib. functions, SCF CI wavefunctions 8−41966
molecule, orbital rel. to total SCF energies, HF SCF approx. formula 8−21837
molecule, orbtial and total SCF energies, Ruedenberg's formula evaluation 8−37537
multiconfiguration SCF theory, modified one-electron Hamiltonian 8−33412
multiconfiguration wave functions, optimisation 8−33411
neutral molecules, total energy and eigenvalue sums 8−21835
open-shell SCF theory, one-electron Hamiltonian method 8−9055
oxiranylidene, struct., isomerisation, ab initio SCF MO calcs. 8−41941
polyacenes, electronic transition bands, Franck-Condon factors, PPP SCF MO/CI calc. 8−33430
polydiacetylenes, electronic structure, bond length variations effect, Xα SCF calc. 8−5378
polyethylene(-d_4), vibr. freqs., MNDO semiempirical SCF calcs. 8−1114
polymer chain, irregular, lattice distortions, SCF perturbation calcs. 8−6018

SCF calculations continued
polymers, connection between Yvon-Born-Green and Kirkwood hierarchies in SCF approx. 8−42882
polymers with defects, energy bands, ab initio SCF crystal orbital calcs. 8−30884
polypyridines, photoelectron spectra, SCF LCAO calcs. 8−33551
porphin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
porphyrin a, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
protoporphyrin, MCD, LCAO MO SCR π-electron calcs., PPP approx. 8−9178
pseudo pot. model Hamiltonian, spin-orbit splitting, intercombination and relativistic orbital reorganisation 8−25424
pyrazine, dimer interaction, lattice energy, multipole expsn., at.-at. pots. 8−9218
pyrrole, ground state, (π-π^*) state, ab initio SCF CI calcs. 8−33438
quasi-relativistic SCF-MO-LCAO methods, CNDO and MWH appls. 8−41953
random binary alloy, self-consistent theory of localisation 8−34805
second-row atoms, SCF loge localised wave functions 8−41932
solid insulator, effective screening function 8−10383
spin optimised SCF general spin orbitals, theoretical formulation 8−5125
superconductivity, theory of collective excitations, appl. of generalized self-consistent field method 8−10598
superheavy molecules, Z=110, Dirac-Slater SCF relativistic mol. calcs. 8−41970
syndnone, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
TCNQ anion, one-electron Hamiltonian method in SCF theory 8−9055
thirene, ab initio SCF calc., thermodynamic stability 8−25420
three-body interatomic forces, electron gas model and SCF calcs. 8−33564
two linear harmonic oscillators, coupled by interaction pot., SCF calc. 8−37625
vinyl alcohol, struct. from ab initio calcs. 8−29857
water+glycine(serine) zwitterions, interaction pots., ab initio SCF LCAO calcs. 8−48747
Al, SCF Xα scattered wave calc. for clusters up to 43 atoms 8−10323
Ar_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
As_3, 3-body nonadditive interaction, nodal struct. 8−1049
Au, energy levels from ab initio effective core pot. 8−33426
BF_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
BH, electron density and localizability partitioning calcs. 8−21847
BH_3NH_3, complexation energies and interatomic distances, SCF and CEPA calcs. 8−25446
Ba I, low-lying, even-parity levels, ab initio relativistic SCF MCDF calcs. 8−37568
Be_3, 3-body nonadditive interaction, nodal struct. 8−1049
Be_3, Be_4, Be_5, atomic clusters, nonadditive interactions, SCF energy anal. 8−25765
$C_2H_2+OH^- \rightleftharpoons C_2H^-+H_2O$, equilib. consts., ab initio SCF and CEPA calcs. 8−3361
CN^-, electron density distrib., SCF mol. orbitals calcs. 8−9058
CO ($^1\Sigma^+$), X-ray and electron diffr. scatt. intensities, electron correlation effects 8−17577
CO and $(CO)_6$, electronic struct. and bonding, SCF-Xα-MSW calcs. 8−25431
CO, core ionis., electric field depend. 8−13424
CO, core ionisation and single orbital relax. calcs. 8−5133
CO, numerical coupled Hartree-Fock parallel polarisability, partial wave SCF calc. 8−9079
CO_2, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8−5209
CO_2, localised mol. orbitals, ab initio PRDDO SCF calc., isoelectronic struct. 8−25441
CO_3^{2-}, localised mol. orbitals, ab initio PRDDO SCF calc., isoelectronic struct. 8−25441
$(Cl_2)_2$, binding, dispersion energy predominance 8−25421
Cr^{3+} in octahedral fluoride lattice, optical spectrum open shell SCF MO cluster CI calc. 8−19501
$Cr(CO)_6$, electronic struct. and bonding, SCF-Xα-MSW calcs. 8−25431
CsH^-CsH^+(CsH), ab initio ground-state pot. energy curves, electron affinities 8−41946
DCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
F compounds, ground states, mol. parameters, MINDO calcs. 8−41955
FNO, ground and lowest excited states, SCF ab initio calcs. 8−37544
$F_4S_4N_4$, SCF-Xα-CNDO/BW calcs., comparison 8−25435
$Fe(CN)_6$, Mossbauer isomer shift const., ab initio SCF calcs. 8−43751
FeF_6, Mossbauer isomer shift const., ab initio SCF calcs. 8−43751
Fe_3O_4, SCF X_α calcs. of one-electron energy levels 8−47727
FeS_6^{10-}, electronic struct., SCF-Xα scatt. wave calcs., rel. to spectra of FeS, FeS_2 8−5138
Ge, effective screening function 8−10383
H_2 chain, infinite, lattice distortions, CNDO/2 calcs. 8−6018
H_2, nucl. mag. shielding, elec. field, accurate coupled Hartree-Fock 8−25434
o-H_2, solid FCC, orientational ordering, SCF approx. 8−2029
H_2, total energy, HF SCF approx. formula, internucl. distance depend. 8−21837
H_2^+, Compton profile and momentum distribution, impulse approx. 8−25626
H_3, spin-optimised SCF general spin orbitals calcs. 8−5125
HC_2, ground state energy surface, ab initio SCF calc. 8−33446
HC_2^-, ground state energy surface, ab initio SCF calc. 8−33446
HCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
HCN, semi-empirical excited state Morokuma's EHP calc., geometry and order of states 8−46256
HCS^+-CSH^+ system, pot. surface for H abstraction, internuclear bending for ground and excited states 8−29744
HCl, one-centre-expsn. SCF calc., electric field grad., Sternheimer effect 8−37550
HD, nuclear spin coupling const. calc., using ab initio LCAO MO SCF method 8−25558
HF, core ionis., single orbital relax., LCAO MO SCF calcs. 8−29739
HF, H-X bond position, correlation with electronegativity 8−9069

SCF calculations continued
HF, mol. hyperpolarisability, second-order SCF perturbation method, coupled Hartree-Fock calc. 8-33422
HF, nuclear spin-spin coupling, ab initio SCF perturbation theory 8-33525
HF, numerical coupled Hartree-Fock parallel polarisability, partial wave SCF calc. 8-9079
$HF+H'\rightarrow H+H'F$, transition state geometry, SCF CI calcs. 8-20009
HNO, ground and lowest excited states, SCF ab initio calcs. 8-37544
HNO_2, isomers, protonation mechanism, electrostatic pot. prediction limits 8-11506
H_2O, core ionis., single orbital relax., LCAO MO SCF calcs. 8-29739
H_2O, double SCF method for electron correl., stretching force const. 8-17575
H_2O, H-X bond position, correlation with electronegativity 8-9069
H_2O, nuclear spin-spin coupling, ab initio SCF perturbation theory 8-33525
H_2O, sum rule props., SCF optimizations of MO and VB calcs. 8-5156
H_2O^+, pot. energy surface, linear approach 8-41978
H_2S, $L(S_2)$-MM Auger energies, MC SCF calcs. 8-21977
He, photoabsorption, modified RPA calcs. with exchange 8-13477
He_3, 3-body nonadditive interaction, nodal struct. 8-1049
He_3 three-body interatomic forces, electron gas model and SCF calcs. 8-33564
HeH^+, bond energy calcs., using density matrix partitioning 8-46417
He_2H^+, quantum-mechanical calculations 8-33424
KCl, polarisability, near-Hartree-Fock limit SCF MO calc., bond length 8-42239
Kr_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8-33443
$Li+H_2O\rightleftharpoons LiOH+H$, equilib. consts., ab initio SCF and CEPA calcs. 8-3361
$Li^++CO(N_2)$, differential cross-sections, classical trajectory calcs. 8-29841
Li_2, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8-908
LiCN, electron density distrib., SCF mol. orbitals calcs. 8-9058
LiF-NH_2 adduct, mol. consts., ab initio SCF LCAO MO calcs. *(French)* 8-13423
LiH, electron correl., double SCF method, mol. dissoc. energy 8-17575
LiH, LiH^-, pot. energy curves, electron affinity, spectroscopic consts. 8-5129
LiH, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8-908
$LiH^-(LiH)$, ab initio ground-state pot. energy curves, electron affinities 8-41946
$Li^+NO_3^-$ ion pairs and hydrated ion pairs, MO calcs., matrix isolation data 8-46267
LiO, struct., spectra, SCF MO calcs. 8-17559
Li_2O (LiOLi, LiLiO), struct., spectra, SCF MO calcs. 8-17559
LiOO, struct., spectra, SCF MO calcs. 8-17559
Mg_2, Mg_2^+, electronic struct., pot. energy curves, multiconfig. SCF calcs. 8-5124
MgO, compressed, SCF electronic struct. calcs., necy. press. for conversion to metallic state 8-43300
Mn-C_2H_2 and Mn-C_2H_4, π-bonded, pot. energy curves, SCF calc. 8-5136
Mo complex, hexadimethylamino molybdenum, electronic description of triple bonds and verification by photoelectron spectroscopy 8-41949
Mo, localized electronic states near $\langle 100\rangle$ edge dislocation compared with perfect lattice 8-30888
$Mo_2(NH_2)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8-41949
$Mo_2(OH)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8-41949
N_2, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8-908
N_2, static polarisabilities, ab initio SCF HF calcs., internucl. separation depend. 8-9073
NCO^+, partial pot. energy surfaces, ab initio SCF CI calcs. 8-37554
NCl_3, ab initio LCAO SCF calc. for ground state, inversion barrier 8-25426
NH_2, X^2B_1, A^2A_1 and B^2B_2 states, ab initio SCF CI calcs. 8-29746
NH_2^+, quintet states, pot. energy surfaces, ab initio SCF MO calc. 8-25419
NH_3, ab initio SCF calcs., force consts., vibrs., pot. energy surface 8-5209
NH_3, core ionis., single orbital relax., LCAO MO SCF calcs. 8-29739
NH_3, geometry changes during inversion, ab initio calcs. 8-5154
NH_3, H-X bond position, correlation with electronegativity 8-9069
NH_3, mol. nuclear spin-spin coupling, ab initio SCF perturbation theory 8-33525
NH_3, photodissoc., ab initio SCF and CI calcs. 8-21984
NH_3-CO_2 complex, matrix isolation IR spectrum, struct., ab initio SCF calcs. 8-5209
NH_xF_{3-x}, geometry changes during inversion, ab initio calcs. 8-5154
NO_2, NO_2^+, NO_2^-, SCF and MC SCF CI calcs. 8-46280
$N(^4S)+O_2(^3\Sigma_g^-)\rightarrow NO(^3\pi_u)+O(^3P)$ doublet surface minimum energy path calcs. 8-7194
$NaH^-(NaH)$, ab initio ground-state pot. energy curves, electron affinities 8-41946
Ne, core ionis., single orbital relax., LCAO MO SCF calcs. 8-29739
Ne, ionisation potential, KLL Auger energies, SCF transition operator calcs. 8-41925
Ne_3, 3-body nonadditive interaction, nodal struct. 8-1049
O_2, $a^1\Delta_g$ and $b^1\Delta_g^+$ state, MCSCF wavefunctions 8-37561
O_2, RH-GTO-MCSCF calc., 1s photoelectron spectra, multiplet intensity ratio 8-5134
OH_n, LCAO-MO-SCF with Gaussian polarisation functions, energetic effect of p-, d-, and f-functions 8-41944
P_4, closed-shell SCF calcs., mol. symmetry 8-41930
PH_xF_{3-x}, geometry changes during inversion, ab initio calcs. 8-5154
$(PtCl_6)^{2-}$, quasi-relativistic SCF-MO-LCAO methods, CNDO and MWH appls. 8-41953
Rb, density functions, SCF method, coherent scatt. function 8-18527
S_8, cyclic, electron deformation density distrib., SCF-Xalpha-scatt. wave method 8-33425
SH_n, LCAO-MO-SCF with Gaussian polarisation functions, energetic effect of p-, d-, and f-functions 8-41944

SCF calculations continued
$(SN)_x$, quantum chem. calcs. of electronic struct. 8-6257
$(SN)_x$, tight-binding SCF MO calcs., interchain interaction 8-30859
S_2N_2, $(SN)_x$, ($x=2$ or 3), minimal STO-3G basis HF ab initio LCAO SCF MOC, geometry 8-903
$S_4N_4H_4$, SCF-Xα-CNDO/BW calcs., comparison 8-25435
SO_2, analytical pot. functions, several surface minima 8-5158
SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8-35661
Si (111) covalent surface, pot. and charge distribs. and dangling-bond state 8-2537
SiH_2, electron affinity, theoretical exam. 8-29863
SiH_4, SiH_3F, SiH_2F_2, CH_3SiH_3, core Auger shifts, ab initio LCAO MO SCF calcs. 8-904
Si_2H_6, bond lengths, photoelectron spectrum, mol. orbitals calcs. 8-5132
$Tc_2Cl_8^{3-}$ ion, visible spectra, electronic struct. 8-5240
Xe, energy levels from ab initio effective core pot. 8-33426
Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8-33443

schizons *see elementary particle weak interactions*

schlieren systems
acoustic field quantitative visualization, using closed circuit TV system 8-46867
boundary layer transition, detection using holography 8-14101
colorisation of schlieren images, using electro-optical technique 8-33904
colour images of inhomogeneous transparent media 8-33905
crossed beam correlation method, localised turbulence props. meas. 8-34223
diaphragm shape var. effect on characts. 8-30080
electrical breakdown in liquid hydrocarbons, high speed laser schlieren techniques 8-15093
high speed photography, in aeroballistic range, track facilities of von Karman gas dynamics facility 8-37094
hypersonic ballistics experiment, application of laser light source 8-38433
laser irradiated solid target, picosecond microphotography 8-42828
light valve projection systems classification 8-33812
microscopic imaging analysis applied to phase, schlieren and interf. microscopy 8-45688
microscopy, colour schlieren technique 8-29151
phase object projection, imaging characts., recording conditions 8-25977
projector, phase image reflection, coherent light source *(Russian)* 8-38025
rapid events, photographic study by picosecond techniques 8-42826
resonant optical schlieren system for plasma flow studies 8-5940
submerged cylindrical target, comparison of schlieren and holographic techniques 8-38157
transient cavitation, on marine propellers, high-speed photography 8-38432
ultrasonic wave visualization using schlieren technique 8-30118
unipolar acoustic pulses, quantitative schlieren visualization 8-38125

Schottky anomaly
Ag-Dy, dil., Schottky effect, sp. ht. meas. 8-34633

Schottky-barrier diodes
see also semiconductor-metal boundaries
I-V impurity profiling under Schottky barrier 8-19148
MIS Schottky barrier and conducting diodes with interface traps, capacitance and conductance 8-10564
solar cell, optimum thickness indicator for barrier metal 8-21120
submillimetre wave mixers, review 8-45712
ternary semiconductor based Schottky diodes with tunnel device characts. 8-39215
uncooled millimeter wave receiver for radioastronomical observations, appl. *(Swedish)* 8-24461
Al-CdSe thin film diode, vac. evaporated, I-V and C-V characts. 8-10555
Au-ZnSe:Ga(Al), Schottky diode, wavelength modulated photoresponse spectra 8-6714
CdF_2-metal, photoemission, capacitance and I-V meas. barrier heights 8-26950
$Ga_{1-x}Al_xAs$ Schottky directional coupler switch, construction and operation 8-25960
GaAs, submillimetre receivers, heterodyne radiometry 8-45713
Ni/Au-Ge/nGaP system, specific contact resistance calc. 8-43474
PbS_XSe_{1-x}, Schottky-barrier IR detector, comp. tuning 8-12752
Pd-Si Schottky barrier chemical sensor, for H_2 detect. 8-44646
Si, planarized solid state epitaxy for Schottky barrier diodes 8-35302
Si Schottky barrier solar cell, V-I characts. and efficiency 8-14828
n-Si, temp. anomalies, I-V and C-V characts. 8-14823
Si-In(Rh)(Au) Schottky diodes, X-ray irradiated, radiation-accelerated diffusion of impurities in Si 8-26952
Si-Ni(Pt)(Al), type II localised interface states, Si surface prep. effects 8-39210
ZnSe-metal contact, elec. props. 8-14826

Schottky barriers *see Schottky effect*

Schottky defects
alkali halides, Schottky defect correl. of form. enthalpy and melting point 8-43015
ionic crystal, defect formation volume, temp. and press. depend. 8-26563
ionic crystals, nonstoichiometric, equilib. with gas phase in mech. vibr. field 8-43388
semiconductor, atomic displacements and enthalpy of vacancy formation 8-38690
NaCl, formation enthalpy, entropy, temp. effects, correction 8-10039

Schottky effect
see also work function
insulator, space charge effect on time dependence 8-14735
ionicity and Schottky barriers 8-30972
MIS tunnelling Schottky barrier, surface state effect on electrical characts. 8-47877
photocathodes, alkali metal multilayers, high field enhancement of photoemission 8-19639
polyvinyl acetate:Cu, and undoped, thermally stimulated currents exam. 8-35083
resonant tunnelling through traps, theory 8-10553

Schottky effect continued
SEM electron beam induced conductivity obs. of semicond. using Schottky barriers 8−34898
semiconductor, TEM/SEM observations comparing diffr., elec. and luminesc. contrast from dislocations 8−38714
transition metal oxide films, dielec. dispersion and polarization 8−2803
Al-n-n$^+$-GaAs, deep centre reson. charging, photocapacitance meas. on Schottky barrier 8−26908
CdS(Se)-metal Schottky barrier form., transition with chemical reactivity 8−30986
CdSe (1120), surface electronic struct. and chem. struct. 8−14788
n-GaAs, Schottky barriers, minority carrier trap meas. 8−26951
GaAs:O, evidence for metastable state of O centre, Schottky barrier photocapacitance meas. *(French)* 8−10556
GaAs-metal contacts, excess capacitance, depend. on nonlinear dielectric susceptibility 8−43475
n-GaAs-W contact, Schottky barrier 8−39213
GaP-Hg, elec. props. using Schottky barrier capacitance techniques 8−47870
n-InP barriers, low leakage, near ideal 8−39212
n-InP Schottky barriers, photocapacitance effects of deep traps 8−43325
InP-Au, semiconductor-metal boundary, effect of interfacial layers on barrier height 8−14824
InP-Au(Ag)(In), electronic structure 8−10554
InP-metal Schottky barriers, effects of heat treatment characterised by SIMS 8−6446
$KTaO_3$, electromech. props. and electron tunnelling 8−23403
$(SN)_x$ Schottky barrier with III-V and II-VI semiconds. prep. and evaluation 8−6442
Si-Au semiconductor-metal boundary, effect of interfacial layers on barrier height 8−14824
p-Si-metal Schottky contact surface state spectra and current transport mechanism *(Russian)* 8−43472
Si-Ni Schottky barriers, thermionic field emission at room temp. 8−6445
n-Si-Ni surface barrier junction, rectifying, struct. and elec. characts., effect of low temp. annealing 8−14821
Si-Pd_2Si Schottky barrier, resistivity, elec. characts., solar cell use 8−14825
Si-PtSi Schottky barrier, resistivity, elec. characts., solar cell use 8−14825

Schottky gate field effect transistors
400 Mb/s optical fibre communications, integrating and transimpedance front end performance comparison *(German)* 8−33879
GaAs, etching soln. system H_3PO_4-H_2O_2-H_2O for MESFET fabrication 8−11379
GaAs, fabrication using dual-bubbler CVD system 8−6856
GaAs, hydride VPE growth for FETs, and characterisation 8−27407
GaAs, VPE by pyrolysis, producing power GaAs MESFETs 8−23623
GaAs:Fe, for FET, VPE and characterisation 8−19672

Schottky noise *see random noise*

Schrodinger equation
alternating direction method 8−21011
analogue computer solution *(German)* 8−28903
anharmonic oscillator with polynomial pot., asymptotic forms of energy eigenvalues 8−45509
Backlund transform. for nonlinear partial differential-difference eqns. 8−16625
bound state continuum, necessary and sufficient condition of existence 8−45496
bound state for one-dimens. operator in weak coupling limit 8−62
bound state systems, kinetic energy and path curvature 8−19998
bremsstrahlung, stimulated, high intensity, convergence of approx. 8−16687
Cauchy problem, classical mechanics of diffusion and Schrodinger eqn. 8−28985
charmonium, ψ and χ states, hyperfine struct. 8−12878
charmonium and similar two fermion systems, effective Hamiltonian 8−21381
classical bounds for energy distribs. of Hamiltonian operators in EM fields 8−45490
continued fraction expansions and statistical nonequilib. mechanics, for asymptotic soln. 8−45523
continuity of generalised eigenfunctions of Schrodinger operator 8−45511
Darboux theory, appl. to construction of general soln. with Poshl-Teller potential *(Russian)* 8−12607
density matrix, coherent-state basis 8−21060
discrete inverse scatt. theory and continuum limit, difference approxs. 8−32724
eigenvalue nonexistence condition 8−24682
eigenvalues of stochastic differential operator, approx. soln. of mean problem *(German)* 8−12540
eikonal theory of high-energy pot. scatt. 8−16675
electron, free, motion in uniform mag. and elec. fields, Schrodinger eqn. soln. 8−24985
electrons in logarithmic pots. 8−41447
energy levels, lower bounds determ. 8−16672
energy levels for linear plus Coulomb-like pot. 8−4521
exponential nonlinearity, soln. of Schrodinger eqn. in time independent case 8−14168
fermion many-body systems, Schrodinger eqn. on (2N+1) spinor space 8−41227
Feynman path integrals, generalised meas. 8−384
fission, asymmetric, nuclear mass parameter 8−13053
free, invariance algebra 8−81
Fues potential, vibr.-rot. spectra, Schrodinger eqn. soln., pot. energy curves *(Spanish)* 8−36784
Gelfand-Levitan eqn. generalisation 8−28984
general relativity, path-integral formulation, DeWitt-Morette measures 8−123
generalisations of finite element and R-matrix methods 8−24676
Hamilton's principle function for Brownian motion, Schrodinger-Langevin eqn. 8−41233
harmonic oscillator, numerical soln., teaching aid 8−8188
harmonic oscillator damped, transitions between pseudostationary states, quantum treatment 8−65
heavy leptons, existence in quantum theory 8−21363

Schrodinger equation continued
invariance group, reln. to conformal extensions of Galilei group 8−36877
inverse scattering transform solvable nonlinear evolution eqns., existence, Lax's method extension 8−32711
inverse scattering transforms, Zakharov-Shabat and Schrodinger-type, connection 8−21006
layered crystal, mag. quantisation investig. *(Russian)* 8−23054
Lee model, V-V sector 8−24967
linear confining pot., soln. with combinatorics functions 8−32719
linear potential hill, incident quantum wave, for teachers 8−12492
linear recursion relns., discrete path approach 8−24678
Liouville-Green uniform asymptotic method, used to obtain eigenvalues of Schrodinger eqn. (3-d), with a radial Gaussian pot. 8−20995
magnetic charges, quantum strings and gauge invariance 8−33009
magnons, nonlinear, multidomain ferromagnets with 180° Bloch walls 8−34967
many-electron systems, electron density, Schrodinger inequalities and asymptotic behavior 8−21845
Monte Carlo solution for molecular systems 8−46255
nonadiabatic transition amplitudes, semiclassical calcs., adiabatic theorem in complex plane 8−20993
nonlinear, perturbation expn. 8−47124
nonlinear eqn., damped, soliton soln. 8−12605
nonlinear eqn., exact stationary soliton soln. 8−12604
nonlinear equation, Cauchy problem soln. blowing up 8−8220
nonlinear evolution equations solvable by inverse spectral transform of rank 4 matrix Schrodinger eqn. 8−41187
nonlinear Schrodinger eqn. and anomalous backward scatt. 8−17232
nuclear single-particle resonances, numerical anal. 8−29436
numerical integration, using WKB approx., eigenvalue estimates 8−12486
one dimens. WKB soln. effect of pot. function defined on finite interval 8−28978
one dimensional, with gradient coupling, quantum mechs. as generalised stochastic theory in phase space 8−45505
one dimensional, WKB approx., numerological anal. to large order 8−16688
one-dimensional eigenvalue problem, bound state solns., numerical methods 8−20992
partial-wave Schrodinger differential and integral eqns., comparison of numerical solns. 8−16671
perturbed boundary conditions, for differential equations in theory of atoms 8−33432
quantum theory equations of motion, deterministic model 8−24689
quasi-particles with variable effective mass *(Russian)* 8−4497
radical eqn. for n-dimensional scatt. 8−24679
Riemann solution in one-dimen. inverse problem 8−28979
Ritz-Givens-Householder method, anharmonicity type λx^{2m}, Schrodinger operator energy levels 8−28970
Schmidt orthogonalisation in the continuum 8−8266
semiconductor doped surfaces, inversion layers, quantum model 8−30961
short-time stochastic electron, modified Brownian particle, Schrodinger eqn. 8−36853
soliton scattering in non-linear Schrodinger theory 8−8256
solitons, lecture 8−24690
solitons as nonlinear magnons 8−6523
spinless particles through one dimens. pot. barrier, formal series method, refl. coeff. 8−32700
stochastic electrodynamics, derivation of quantum mechanics 8−36801
thermodynamics, subquantum 8−24751
third-order JWKB approximation method applic. to absolute continuity criteria derivation, approx. operators construction 8−12591
third-order JWKB approximation method applic. to absolute continuity criteria derivation, approx. operators and estimates 8−12592
time depend. eqn., solutions comparison 8−12596
time dependent Schrodinger eqn. from time evolution in subquantum model 8−41189
time-dependent harmonic oscillator type Hamiltonians, explicit invariants, Schrodinger wavefunctions 8−8259
transformation, for infinite-order perturbation theory 8−12589
transformation to accel. reference frame, equivalence principle, for teaching 8−24614
translation kernels for velocity depend. interactions 8−24680
translation-invariant harmonic atoms, exact solns. 8−32725
triatomic molecule, large-amplitude Hamiltonian for vibr.-rot. 8−25511
Trotter product non-standard formula 8−32710
two dimensional Schrodinger equation, finite element package MAN-FEP 8−36870
ultracold neutrons in traps, damping of quasistationary wave functions 8−9013
water, X^1A, ground state, large-amplitude Hamiltonian for vibr.-rot. 8−25511
water surface, oscillotory waves, Korteweg-de-Vries and Schrodinger eqns. solns. and adsorpt. 8−26131
wave-packet self-modulation, in nonlinear dispersive medium 8−41192
with random. potl., cure. Green's functions 8−86
ψ meson, phenomenology and quark confinement 8−29308
CN ($A^2\Pi$-$X^2\Sigma^+$) transition, Franck-Condon factors, r-centroids, by Langer's approx. method 8−37685
He, Schrodinger eqn. solns., existence criterion, for teachers 8−41117

Schroedinger equation *see Schrodinger equation*

Schwarz-Hora effect
No entries

Schwarzschild metric
see also cosmology
black hole, prob. distrib. of incoming radiation 8−8300
black hole, slow rot., weakly charged, space-time and physical fields perturbs. *(Russian)* 8−36634
black hole, wave scatt. and adsorpt. cross-section 8−8283
black hole in external mag. field, radiation from moving particles *(Russian)* 8−49474
horizon stability in asymptotically flat spacetime 8−29021
irradiated Schwarzschild object, Petrov type-II electrovacuum soln. 8−106
Israel's theorem, uniqueness of Schwarzschild black hole 8−4097
matter-vacuum matching 8−21032
scalar pot. and event horizon 8−101

Schwarzschild metric continued
supergravity, classical solns. 8−122
tachyonic scalar waves in Schwarzschild space-time 8−45558
test particle motion in Schwarzschild field *(Russian)* 8−12612
rel. to Tolman metric *(Russian)* 8−12611
white holes, nonexistence, anal. of star bursting Schwarzschild barrier 8−32506
Schwarzschild space *see Schwarzschild metric*
Schwinger source theory
Lorentz transformation formula correction, Thirring and Schwinger spinor field models 8−12837
science education *see education*
scientific societies *see societies*
scintillation
see also phosphorescence; phosphors
acoustooptic FM and freq. shifted heterodyne CO_2 laser system 8−5568
anthracene, α-particle tracks, excited states, creation and evolution 8−43934
anthracene, scintillation response to deuteron bombardment, energy, temp., and deuteron direction depend. *(German)* 8−6779
AO 0235+164, BL Lacertae object, interplanetary scintillation obs. and radio halo struct. 8−4386
4C 03.59, BL Lacertae object, interplanetary scintillation obs. and radio halo struct. 8−4386
Earth-space-Earth retroreflector link, scintillation statistics 8−11996
EM propag. through troposphere at 30 GHz, scintillation effects meas. on ATS-6 satellite *(French)* 8−49065
interplanetary, m wavelength, bispectral anal. 8−12153
interplanetary scintillation, appl. for solar wind probing 8−45178
interplanetary scintillation obs. and solar wind vel. meas. 8−49278
interplanetary scintillation pattern, nature of temporal restructuring 8−45280
interplanetary scintillations, dispersion anal. of solar wind vel. 8−7852
ionosphere, DNA Wideband satellite expt., complex signal scintillation 8−45133
ionosphere, equatorial scintillation rel. to irregularities 8−36380
ionosphere, F-region irregularities and scintillations in equatorial region, VHF radar maps 8−36382
ionosphere, persistent subauroral scintillation enhancement obs. in Alaska 8−20573
ionosphere, VHF and L-band scintillation over Huancayo 8−36381
ionosphere mid-latit. scintillation rel. to plasma instabilities assoc. with subtrough density gradients 8−40753
ionosphere scintillation, calcs. based on in situ irregularity spectra 8−28415
ionospheric scintillation, critical prop. freq. up to 1 GHz 8−7827
ionospheric turbulent layer, propagation, phase and frequency spectra, after nuclear explosion 8−24405
laser absorption spectrometer, long path length, effect of scintillation and multiwavelength coherence 8−40653
laser aerosol deflector for energy parameters meas., scintillation phenomenon 8−25916
naphthalene single crystal, 4.50 MeV α bombardment, scintillation response, planar channelling, blocking *(German)* 8−6780
organic liquid scintillator system, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
PSR 0531+21, interplanetary scintillations at 74 MHz 8−36625
pulsars scintillation, mathematical anal. of physically thin screen 8−28501
radio sources, extragalactic, varying at low freqs., interstellar scintillation rel. to microsecond, struct 8−16550
radiosources scintillation, appl. to detect. of solar wind whistler turbulence 8−45173
rain gauge, simplified optical path-averaged, based on scintillation detect. 8−40674
rain parameters, meas. by optical scintillation, correl. method simulation 8−36290
solar wind, radial depend. of props. from Helios 1/2 and Pioneer 10/11 radio scintillation 8−28595
subnanosecond X-ray framing camera, fibre array technique 8−41394
thin screen theory for spherical wave 8−13645
Ar, liquid, ionisation and scintillation, application to radiation detectors, review *(Japanese)* 8−35206
$Ce_xLn_{1-x}P_5O_{14}$, UV luminescence lifetimes obs. 8−6775
KCl:Ag, hole capture radius, scintillation luminesc. obs. *(Russian)* 8−39582
Kr, liquid, ionisation and scintillation, application to radiation detectors, review *(Japanese)* 8−35206
Xe, liquid, ionisation and scintillation, application to radiation detectors, review *(Japanese)* 8−35206
ZnS, rare earth activated phosphor, scintillation mechanism *(Russian)* 8−48231
scintillation chambers
see also scintillation counters
No entries
scintillation counters
see also photomultipliers; position sensitive particle detectors
acrylic pieces of small surface area, cementing technique, appl. to light guides 8−13404
Anger rectilinear tomographic scanner 8−20257
Anger scintillation cameras, state-of-the-art in suitable photomultiplier tubes 8−40304
beta counting of $^{90}Y(^{90}Sr)$, improved method with reusable phosphors 8−9024
binary encoded position-sensitive scintillation hodoscope with reduced photomultiplier, pion detection 8−17506
Bonner sphere spectrometer, least-squares technique for extracting neutron spectra 8−33366
CAMAC autonomous system for control of scintillation and Cerenkov counters 8−21833
camera, 3-dimens. gamma-ray imaging 8−11734
camera for ECG-triggered scintigraphy of intracardiac space 8−28033
cameras, large-field-of-view 8−44596
cameras for radioisotope imaging *(Spanish)* 8−7428
CERN OMEGA spectrom., slow proton trigger 8−17467
computer assisted ring detector positron camera system for brain reconstruction tomography 8−40306
computer controlled gain stabilizing system for scintillation spectrometer using LED, processor in feedback 8−17473

scintillation counters continued
cosmic ray neutron detector, efficiency determ. by Monte Carlo method 8−21809
cosmic ray spectrometer, for study of 6 to 50 MeV electrons 8−45235
cosmic ray telescope of Sydney Univ., results 8−25388
discriminator principle slow neutron counting 8−29717
dose equivalent measuring instrument for rapid use in mixed radiation fields 8−15901
ECG-gated scintigraphy, appl. to studies of heart 8−7440
ECG-gated scintillation probe meas. of left ventricular vol. 8−31891
emulsion stack connected with ionis. calorimeter for high energy cosmic ray obs. 8−25386
environmental γ flux meas. method using NaI(Tl) scintillation counter and photomultiplier 8−21786
gain stabilized NaI(Tl) γ-ray detector, electronics, disc-based minicomputer, power shape in LWR core 8−33284
gamma camera, electronically collimated, for single gamma emission computed tomography 8−44603
gamma camera oscilloscope display, performance meas., computer simulation 8−7425
gamma camera performance comparison 8−44595
gas scintillation proportional counter, burst length discrimination system 8−21824
hadron cascade energy and position, large area scintillation counters 8−37512
hodoscope using fibre optic light guides 8−37514
inert gas and mixtures, detection gas suitability for proportional scintillation counter *(German)* 8−41901
integrating counting technique, appl. to ^{197}Au Mossbauer spectroscopy 8−25377
ion detector, Daly-type, plasma ion energy meas. 8−22570
large field scintillation gamma cameras, performance characts. 8−7441
light pulse propagation in pipes, model 8−30068
liquid, single solvent cocktail for counting of ^3H in aqueous samples 8−856
liquid (NE 224) high-efficiency time-compensated neutron spectrom. 8−17468
liquid rare gases, ionisation and scintillation, review *(Japanese)* 8−35206
liquid scintillation alpha particle spectroscopy, pulse-shape discrimination cct. 8−21823
liquid scintillation counting of solns. containing ^{14}C-$NaHCO_3$, prevention of radiocarbon loss 8−21811
liquid scintillation high resolution alpha spectroscopy, optimisation of detector and electronics 8−13370
liquid scintillation spectrometry sample pre-processing 8−21816
liquid scintillation spectrum, (n,γ) thermal react. cross section meas. 8−25382
liquid scintillation system ^{32}P Cherenkov effect detect. efficiency meas. using ^{60}Co external source 8−25387
liquid scintillation tube appls. 8−13383
liquid scintillator containing O_2, selective activation detection of neutrons 8−25392
magnetic large acceptance spectrom. using wire chambers 8−46207
magnetostatic shield fabrication 8−5053
MEA, magnetic detector at Adone 8−33367
Metapol HC100 as non-ionic detergent in liq. scintillation counting 8−21815
Mossbauer spectroscopy, fast γ-ray detection system 8−25376
muon telescope for slow muon spectra and zenith angle depend. meas. 8−49324
NE213 organic scintillators, effect of light output efficiency of charged particles on unfolded neutron spectrum 8−29700
NE 213, Munich pulse shape discrimination cct., low energy performance 8−46233
neutron activation analysis of Sn at nanogram level by ^{121}Sn liq. scintillation counting 8−3693
neutron and γ-ray spectra meas. on radial shielding model of KS-150 reactor *(Slovak)* 8−21624
neutron detection efficiency meas. using Monte Carlo simulation program 8−17045
neutron scintillating glasses, pulse decay time meas. at room temp. 8−46225
neutron spectrometer, with pulse-height discrimination against γ-ray background 8−13378
neutron totally absorbing TOF spectrom. 8−850
opaque metal coatings on plastic scintillator 8−3049
optical fibre-scintillator system, for high bandwidth radiation diagnostics 8−46820
phoswich detector for ^{147}Pm in-vivo meas. 8−28087
phoswich-type scintillation detector system for X-ray astronomy 8−49328
photomultiplier gain stabilization, computer control software 8−13369
photon counting, vacuum UV region, 120-200 nm, detection limit of apparatus *(German)* 8−45691
plasma-ion analyser for H conc. in metals using pulsed laser and thin film scintillation detector 8−15746
plastic, unsaturated response to relativistic heavy ions 8−17502
plastic scintillation counter NE-102A, pulse-height spectrum prod. by 14.8 MeV 8−845
plastic scintillation counter with air light guide 8−29713
plastic scintillation granules, efficiency of α radiation recording 8−9028
portable neutron spectrometer/kerma-rate meter, design, performance 8−33361
positron camera, cylindrical, multilayer hybrid computed tomographic system, $Bi_4Ge_3O_{12}$ scintillation crysts. 8−48876
positron emission transverse tomograph, PETT IV 8−40299
positron imaging system using annihilation coincidence detection, model, design, performance 8−40303
positron lifetime spectrom., improved time resolution in liquid scintillator NE 238 8−29696
positron ring, 280-crystal, design and construction for 3D imaging 8−28063
proportional, built-in K getter 8−29707
proportional large area gas counter for X-ray astronomy 8−49321
proportional large area gas counter for X-ray astronomy 8−49322
proton spectra, high energy, emerging from 680 MeV synchrocyclotron shielding 8−17530
pulse shape discrimination for alpha-gamma separation with trans-stilbene 8−13386
pulsed beam time pickoff system for nanoampere beams 8−13393

scintillation counters continued
radioisotope hybrid scanner, design of detector and collimators 8−7423
rectilinear scanner, large crystal, improved focused uptake probe 8−28053
sawtooth pulse generator cct., for monitoring scintillation counters *(German)* 8−25395
Searle Pho/Con tomographic multiplane scanner, tomographic plane separation and detector distance determ. 8−20258
signal shaper-discriminator 8−33387
subnanosecond lifetime measurements, system using microchannel plate photomultiplier 8−37520
superconducting mag. spectrom. for cosmic ray flux meas. 8−25383
thin film plastic scintillator for light ions 8−29711
three-dimensional scintigram processing algorithm 8−7446
time-resolved coded aperture imaging system, for nuclear fuel motion HCDA conditions 8−45764
TOF high efficiency detectors for high energy neutrons, subnanosec. time resolution 8−37481
TOF spectrom., intrinsic time resolution of detectors 8−849
track-finding trigger processor for mag. detector 8−46244
ultrafast scintillators, response 8−41393
whole-body counter for meas. of radionuclides in large dogs 8−11786
whole-body counter in vivo calibrations for quantitative retention estimation 8−3579
whole-body imaging methods and devices, comparison 8−44597
X-ray detector for radioisotopes low energy radiation meas., absolute method 8−878
YAG, for electron microscopy, using auto emission gun *(Czech)* 8−21280
β-decay surface contamination, comparison of counter efficiency 8−25398
β-γ-γ coinc. spectrom. using GM-Ge(Li)-Na(Tl) counter combination 8−46210
γ-ray pulse-height response of NE-213 scintillation detector 8−17508
π^0 photoprod. on ^{4}He meas. 8−29694
B, liquid scintillation slow neutron detector with n-γ separation cct. 8−862
$Bi_4Ge_3O_{12}$ as potential scintillation detector in positron cameras 8−3586
^{14}C liquid scintillation counting using thick-walled vials 8−857
CaF_2 scintillation counter activated with Eu, ^{85}Kr conc. determ. at high pressures using β-ray count 8−13385
CaF_2(Eu) and NaI(Tl) scintillators in phoswich config., low background β counting 8−37521
CdS, layer scintillator for backscattered SEM, reflected SEM proposal 8−21291
CsI(Tl), characteristics of γ-emission scintillation detection units 8−33365
CsI(Tl) thin film detectors, light output and resolution 8−9030
Gd loaded large liquid scintillator, neutron radiative capture cross-section meas. 8−25380
Ge diode detector telescope for particle spectroscopy, design and performance 8−13384
Ge(Li)-NaI(Tl) Compton suppression spectrom. for low-level activity meas. 8−9022
He-Xe scintillators, fast neutron polarisation expts. 8−13052
^{123}I two-crystal coincidence counting 8−13394
NaI detector calibration using large diam. sources 8−33396
NaI scintillation detectors, efficiency values, point and extended volume source geometries 8−13387
NaI(Tl), ^{237}Pu $T_{1/2}$ determ. 8−8775
NaI(Tl) modularised detector, crystal ball prototype 8−37498
NaI(Tl), pulse shape discrimination of high-energy neutrons and gamma rays 8−33395
NaI(Tl) well type detector calib. for absolute counting of ^{85}Kr and ^{133}Xe 8−9036
Na(Tl), circular ring transaxial positron camera, coinc. electronics 8−31953
Pu-Am survey instrument, β-α-γ-X-ray scintillation detect. probe 8−33376
^{222}Rn concentrations in water, rapid meas. with commercial liq. scintillation counter 8−28339
^{99m}Tc-EHDP accumulation in canine tibia, meas. method 8−20245
U stored in lung, meas. using NaI and solid-state detectors 8−28090
Xe filled gas scintillation proportional counter in space environment, background radiation remection efficiency 8−21819

scintillation detectors *see scintillation counters*
scintillation spectrometers *see particle spectrometers; scintillation counters*
scintillators *see scintillation; scintillation counters*
scintillometers *see scintillation counters*
scorching *see combustion*
Scott effect
Knudsen mol. gas, thermo-mag. force on heated cylindrical body *(Russian)* 8−26235
s.c.r. *see thyristors*
screening *see shielding*
screening, nuclear *see nuclear screening*
screens, fluorescent *see fluorescent screens*
screens, phosphorescent *see fluorescent screens*
screens (display)
see also fluorescent screens
cathodoluminophors, characteristic calcs. 8−10993
Faraday screen, for nuclear magnetic resonance spectrometer with crossed coils 8−4670
CdS single crystal laser screen, photolum., determ. of layer depth disturbed by polishing 8−17977
screw dislocations
alkali halide, screw dislocations in puncture rosettes, motion-starting-stresses, surface-active media effects *(Russian)* 8−10051
BCC metals, influence of screw dislocations on cryst. lattice rotations during deform. *(Russian)* 8−6966
continuum mechanics, non-local, at atomic scale 8−12563
diffraction, optical analogue using simulated models 8−38723
double cross-slip mechanism 8−22720
etch figure rosettes, dislocation interaction in screw rays 8−47376
feldspar, dislocation image contrast in electron microscopy and X-ray topography 8−26573
graphite, single crystal, from Fe-C melt, morphology 8−42932

screw dislocations continued
HCP crystals, dislocation-point defect interactions in slip systems 8−47417
interaction with Wannier-Mott exciton 8−10361
metal, BCC, relation between elastic energies of dislocations and choice of slip system *(Japanese)* 8−18656
metal, HCP, atomic struct. of defects 8−30611
motion, soliton like piecewise linear force model 8−2119
point-force array description 8−18646
pyramids of different slopes, growth on cryst. face at const. supersaturation, model interpret. 8−2050
thermal and thermoelastic fields around moving dislocations *(Russian)* 8−22731
Vibration modes of split screw dislocations in BCC metals 8−22804
Volterra dislocation in nonhomogeneous medium 8−14342
Ag, crystal (100) faces, polynuclear growth mechanism during electrocrystallisation *(German)* 8−18562
Al, anharmonic effects associated with ⟨110⟩ screw dislocations 8−30625
CdS, dislocation charges determ. 8−2136
CsCl crystal, BCC and BCC ordered, core struct. of ⟨100⟩ dislocations, atomistic calc. 8−30637
Cu, etch pit formation on single cryst. planes by dil. H_2SO_4 8−14348
Fe, BCC surface ledge simulation, dislocation-like relaxation 8−30620
α-Fe, internal friction peaks from dislocation relax. in plastically deformed and/or neutron irrad. sample 8−48438
FeAl single crystal, compressed, dislocation arrangement 8−14354
Ge, amorphous, struct., dislocation model 8−42911
n-InP, defects in homoepitaxial layers, on p-type substrate, accurate lattice parameters 8−47675
Mo dislocation a ⟨100⟩ stability, plastic deform. at high-press. 8−43030
Ni-Al, solid soln. and solid soln. hardened, stead state creep 8−27578
Si, self-implanted, ⟨100⟩ and ⟨111⟩, crystallised layers by laser annealing, struct. 8−47644
SiC, eccentric growth spirals 8−26470
Ta, flow stress at superconducting transition, temp. and strain rate depend. 8−2617
Ti, single crysts., recrystallised, X-ray topography obs. 8−10054
$TiS_{1.7}$, hexagonal polytypes form. mechanism 8−9990
V, slip geometry and dislocation struct., rel. to degree and temp. of deform. *(Russian)* 8−38717
W single crystal, creep, excess edge and screw dislocation density calc. *(Russian)* 8−34519
Zr, creep, optical and electron metallographic anal., 473 to 873K 8−39986

scrubbing (abrasion) *see abrasion*
scuffing *see abrasion*
SDI *see information dissemination*
sealing *see seals (stoppers)*
seals (stoppers)
see also glass-metal seals
compression for high-pressure chemical apparatus, sealing characteristics determination *(German)* 8−21160
elastomeric seals for nuclear service, selection 8−46152
elastomers, vacuum compatible, chem. character correl. with physical characts., review 8−24804
flexible plate sealing incompressible liquid, removal of anomaly in perturbation anal. 8−38201
high-pressure low-temperature seal, simple closure 8−4626
O-ring compounds, resistance to heat and ionizing radiation 8−29584
PTFE seal for superfluid He 8−4625
sliding contact seal, thermoelastic instabilities 8−18257
strain gauge protection, sealants suitability determ. 8−4610
Teflon superleaktight gasket seals for use at low temps. 8−16806
vacuum system, break-seal shattering, novel method 8−41322
seawater
N.E.Atlantic, heavy metals and petroleum products 8−3827
E.Baltic upper shelf suspended matter distribution and structure *(Russian)* 8−36187
Black Sea, F content 8−32118
bottom nepheloid layers and bottom mixed layers, obs. on continental shelf off Oregon 8−16027
bromide determ. using bromide ion-selective electrodes 8−3996
corrosion protecting, of Be-Cu alloy, for repeater housings 8−15583
density relation for pure and saline comp. 8−2185
density vertical vars., review of math. models 8−49022
desalination plants using simplified nucl. reactor 8−13315
determ. in coastal sediments and seawater, activity ratios, disequilib. 8−27851
dissolved and particulate organic material meas. using automatic sampling buoy 8−49149
dissolved free amino acids, concs. in seawater rel. to organic pollution 8−44883
electrical conductivity meas., var. with temp. 8−20531
EM properties, at frequencies below 1000 GHz, various Earth surface forms 8−24310
equatorial Indian Ocean, seasonal temp. and density fields caused by monsoons *(Russian)* 8−44839
freezing point depend. on salinity 8−3803
Golf of Fos and Canal Caronte, seawater physical and chemical characts. 8−44877
Gulf of Mexico, aromatic hydrocarbons concs. in seawater at proposed deepwater port sites 8−44880
hydrocarbon pollution detection, caution on use of Niskin sampling bottles 8−45039
hydrothermal water in Galapagos, excess ^{3}He and ^{4}He 8−40593
ice nuclei off Nova Scotia coast during 1975 Summer 8−16104
laser velocimeters appl. to ocean meas. 8−36325
light attenuation index meas. errors *(Russian)* 8−16041
light scattering by particles of different shapes 8−40565
light scattering rel. to size distrib. determ. of spheroids *(Russian)* 8−36279
microwave attenuation by salt water droplets 8−7725
neutron activation analysis of Cr after preconc. on activated C 8−3993
North Sea, N_2O, ^{3}H, chlorofluoromethanes and salinity vertical profiles meas. *(German)* 8−3814
Pacific equatorial zone, water transparency *(Russian)* 8−16043
pollution, industrial waste dispersion meas. technique 8−44884
pollution studies, laser appls. *(Polish)* 8−20528

seawater continued
predominance-area diags. and equilib. ratios for Co and Ni inorganic forms 8−3819
purification, method for obtaining Si-free and PO_4-free water 8−3817
radiobiological protection aspects *(French)* 8−11744
radionuclide migration in seawater and marine sediments *(French)* 8−11916
saline water trace element analysis problems 8−45051
salinity rel. to specific electrical conductivity and temp. *(Russian)* 8−16039
salinity standard, definition and calc. 8−40687
sound absorption, theory 8−1481
sound speed in seawater at high press., meas. 8−13837
suspended particles, rel. to chem. processes in Atlantic and Pacific oceans 8−36201
trace elements determination using routine neutron activation analysis 8−3992
trace metal composition using microprocessor-assisted flow-through anodic stripping voltammeter 8−36324
transfer matrix elements of scattering medium *(Russian)* 8−36181
Ba, non-conservative behaviour during mixing of Mississippi River and Gulf of Mexico waters 8−32120
F conc., potentiometric determ. 8−3820
H_2S, dissociation 8−3816
Hg, dissolved, conc. determ., automated UV digestion-AAS method 8−44414
Hg, in fish and waters of Irish Sea and other United Kingdom fishing grounds 8−36204
Mg-noble metal, sintered, superconducting for heat and H_2 gas generation, seawater reaction 8−15607
Mn conc. and balance, surface samples 8−3815
Mn, hydrothermal, in deep sea, scavenging residence time and Mn/^{3}He relationships 8−32121
Nd, Sr isotopic ratios, rel. to island arcs sources 8−32044
^{231}Pa, determ. in coastal sediments and seawater, activity ratios, disequilib. 8−27851
^{222}Rn in Hudson River estuary, distrib. and transport across sediment-water interface 8−16064
U conc. and ^{234}U/^{238}U activity ratios in open ocean 8−36197
U extraction, around British coastal power stations 8−21788
U extraction, tests of adsorbents 8−36198
U extraction from seawater *(Japanese)* 8−36199

second-order optical susceptibility *see nonlinear optical susceptibility*

second sound
see also liquid helium sound propagation
boson system, struct. factor and sound vel. 8−34668
superfluid, acoustic turbulence, first and second sound kinetic eqn. soln. *(Russian)* 8−43193
He II-^{3}He, ^{3}He diffusion coeff., order parameter relax., second sound 8−30808
^{3}He-^{4}He dilute mixture, ballistic phonons, transition to second sound 8−10249
^{4}He, crystalline, shape anal. of pulsed second sound 8−14537
^{4}He, superfluid, flows, healing and relax., first, second and fourth sound 8−47617

secondary cells
advanced energy systems, future needs and developments 8−8197
membrane appl., review *(French)* 8−3374
mixed conducting electrodes, kinetic parameters determ., method and appl. to Li_3Sb 8−14772
C gas-diffusion O_2 electrode in acid, electrochem. performance 8−31652
Li-Al alloy electrode performance, effects of metal additives 8−23953
Li_3Sb, mixed conducting electrodes, kinetic parameters determ. 8−14772
Pb-H_2SO_4 battery negative plates, impedance, theory 8−27771

secondary electron emission
alkali halide, under bombard. by multiply charged Ar^+-Ar^{5+} and Kr^+-Kr^{5+} ions 8−11046
alkali metal halide electron elastic reflection and secondary emission, 1 to 30 eV obs. 8−11037
angular distribution, cosine law theory 8−35233
conducting surfaces used in multistage depressed collectors 8−31288
copper phthalocyanine, autoionisation in electron energy loss spectra 8−35232
coronene, metastable inert gas atom impact, surface electron emission energy distrib. 8−43970
Faraday cups for laser plasmas diagnostics, secondary emission meas. 8−5941
fast electron irradiated material, defect and secondary electron generation, model 8−11030
gas-filled counters, secondary electron emission, elec. field at cathode 8−17529
ion-electron emission energy spectra in small and large solid angles 8−2964
ionic crystal, ion-electron mechanoemission mechanism 8−3002
kinetic ion-electron emission, ion charge depend. 8−11045
kinetic ion-electron emission coeff., target at. no. depend., and role of recoil atoms 8−2966
mechanical system for multi-specimen cleavage and rotation 8−36987
metal, creep-electron emission relation 8−6994
metal surface, linearised secondary electron cascades, surface and subsurface sources 8−11036
metal surface, linearised secondary electron cascades 8−11035
metals, electron penetration and energy transfer in solid metal targets, film bulk method 8−2963
naphthacene, metastable inert gas atom impact, surface electron emission energy distrib. 8−43970
perylene, metastable inert gas atom impact, surface electron emission energy distrib. 8−43970
solid, cascade emission theory during penetration 8−11033
solid, cascade emission theory during reflection 8−11034
spectrometer for Auger spectroscopy, secondary electron emission effects 8−23564
sputtering, at. excitation mechanism 8−43971
surface AES with secondary emission imaging 8−11475
Au, low energy peaks interpretation 8−39638
CaO epitaxial layer, on Mo, secondary electron emission, struct. effects, LEED and AES expts. 8−2959

secondary electron emission continued
Cs halides, storage layers stability under electron bombardment 8−27355
CsCl, transmission and refl. secondary emission 8−27356
CsI film, secondary emission yield, primary electron ang. of incidence effects 8−2961
CsI, potential and limitations as dynode material for electron multiplier 8−23566
Cu, low energy peaks interpretation 8−39638
Cu, secondary electron yields from ion impacts, stopping power calcs. 8−11053
CuBe, electron emission following ion bombardment of electron multiplier dynode 8−23576
CuBe, emission coeffs. for multiply charged ion bombard. 8−11051
GaAs-Cs-O, negative electron affinity emitter 8−11031
GaAs-Cs-O, negative electron affinity, refl. of slow electrons, 0.4-3 eV 8−11038
GaAs-Cs-O film, polycryst., secondary emission props., activating coating effects 8−2957
GaP, Cs(Cs-O) activated, with negative electron affinity, near UV photoemission and secondary emission 8−11074
GaP-Cs-O, negative electron affinity emitter 8−11031
Ge, ion irrad., accumulation and annealing of struct. defects, secondary emission obs. 8−2167
KCl film, porous, injection mechanism for transmission secondary electron emission 8−19643
LiF, film, characteristic energy loss and secondary electron spectra *(Japanese)* 8−15266
LiF film, secondary emission yield, primary electron ang. of incidence effects 8−2961
LiF, transmission and refl. secondary emission 8−27356
$LiNbO_3$, monodomain ferroelec. cryst., secondary electron emission coeff. 8−11032
MgO film, delayed secondary electron emission 8−19617
MgO film, with high secondary electron emission, growth on Al-Mg alloy 8−35590
MgO secondary emitter, increasing of efficiency by coating with Cs or Li film 8−2960
MgO surface, secondary electron emission effects on voltage breakdown curves in Penning mixture for insulated electrode discharges 8−19616
Mo-Rh, secondary electron emission and inelastic refl. coeffs. 8−15264
Ni, emission coeffs. for multiply charged ion bombard. 8−11051
Si, irrad. by 50 keV N^+ and P^+, depth distrib. of struct. defects, secondary emission obs. 8−2168
Si, secondary electron energy spectra due to He^+, Ar^+ ion impact 8−11049
SrO epitaxial layer, on Mo (110), secondary electron emission and struct., LEED and AES expts. 8−2958
Ta, emission coeffs. for multiply charged ion bombard. 8−11051
Ti, polycryst., chemisorption, of N_2, O_2 and CO, secondary electron yield spectrum obs. 8−38933
W (001), surface resonance bands 8−47843
W, secondary electron yields from ion impacts, stopping power calcs. 8−11053
W, transmission induced struct. in electron emission spectra 8−43965
ZnS, emission coeffs. for multiply charged ion bombard. 8−11051

secondary emission
see also secondary electron emission; secondary ion emission
No entries

secondary ion emission
see also secondary ion mass spectra; secondary ion mass spectroscopy
energy spectra of secondary ions emitted during ion bombardment 8−23573
flooded on noble metal surface, effect on sputtered negative ion yields 8−11056
intensity changes, correction via new total ion monitoring method 8−12796
metal, obs. of initial oxidation stages 8−11386
metal interface of unlike metals, secondary ion-ion emission 8−11050
sputtering, at. excitation mechanism 8−43971
Al, ion bombarded, photon and ion emission, simultaneous meas. 8−15276
Cu matrix, small oxide precipitates, two-phase system, sputtering and secondary ion emission 8−39650
Fe-Cr alloy, Ar ion bombard., O_2 flooded, secondary ion yield as function of original conc. *(French)* 8−39643
Fe-Ni alloy, Ar ion bombard., O_2 flooded, secondary ion yield as function of original conc. *(French)* 8−39643
Ni-Cr alloy, Ar ion bombard., O_2 flooded, secondary ion yield as function of original conc. *(French)* 8−39643
Pb-In films, atom redistrib., ion-ion emission obs. *(Russian)* 8−18926
Sm-Co, permanent mag., O ion impact, 5.5 keV, secondary Co ion emission, magnetisation depend. *(Russian)* 8−2967

secondary ion mass spectra
diamond:B epitaxial layer, SIMS obs. of impurity distrib. 8−19169
mica surface, static SIMS anal. 8−38922
oxidation and O_2 adsorption studies 8−15273
polysiloxane-metal oxide interfaces, bonding mechanism, surface anal. by XPS and static SIMS 8−15643
surface science, conf., York, England (March 1977) 8−14540
yield calculations for oxidised metal surfaces, empirical formula 8−6821
Ag, ion beam plating using mass analysed ions, SIMS and AES expts. 8−19673
Al anodic film, H profile meas. by SIMS 8−27847
Al_2O_3 anodic layer formation in H_3PO_4 solns., surface charact. 8−15603
Au, ion beam plating using mass analysed ions, SIMS and AES expts. 8−19673
CO adsorption on polycryst. metal 8−14585
GaAs diffusion of ion implanted Be, SIMS and electrical profiling 8−47605
GaAs, semi-insulating, effects of heat treatment characterised by SIMS 8−6091
GaAs, single cryst., adsorbed mol. lifetimes and desorption activation energy meas. 8−20072
GaAs:Se, fast diffusion of elevated temp. ion implantation, SIMS meas. 8−34527
GaAs:Se, implanted, depth profile, SIMS obs. 8−30655

secondary ion mass spectra continued
InP (100) substrates, for MBE, ion-cleared, contamination, SIMS meas. 8-11353
InP-metal Schottky barriers, effects of heat treatment characterised by SIMS 8-6446
Mo, chemisorption of CO, low energy SIMS and electron impact desorption expts. 8-38941
Ni surface, adsorpt. and decomp. of formic acid, obs. using combined SIMS-FDS-AES system 8-40076
Si, O_2 adsorption and oxidation 8-15273
Si:H amorphous film, H quantitative depth profiling by nuclear reactions and SIMS 8-14373
Si:P, N implantation through Si_3N_4 film, depth distrib. of knock-on N, SIMS meas. 8-10066
Ta, O_2 adsorption and oxidation 8-15273
W(100)-O chemisorption system, static mode SIMS 8-34712

secondary ion mass spectroscopy
data quantification, theoretical model and sensitivity factor calcs. 8-21255
image quantitation, by microphotodensitometry and digital processing 8-32914
imaging analysis, sensitivity, lateral and depth resolutions 8-48738
intensity changes correction via new total ion monitoring method 8-12796
negative ion formation, by sputtering, work function depend. 8-39645
Cs^+, ion source for secondary ion mass spectrometry 8-32913
GaN, film, secondary ion mass spectrometric qualitative anal. 8-7265
H embrittlement in metals, assessment of techniques for local detection 8-3439

sedimentation
see also disperse systems; sediments; water treatment
aerosol diffusion and sedimentation in horiz. cylinder 8-3385
airborne sea salt sedimentation meas., effects on vegetation 8-3847
ancient deep-sea fan in Cantabrian Mountains, growth 8-44813
aqueoglacial deposit lithology of E.Lithuanian upland *(Russian)* 8-16011
aqueous metals, adsorption on inorganic minerals 8-49006
Baltic Sea sedimentation, role of river suspensions *(Russian)* 8-7616
Biya and Katun rivers, evolution of river bed in confluence node 8-3839
Black Sea, large rockslide formations rel. to Cenozoic sedimentation 8-3751
Cretaceous-Tertiary boundary, sedimentation, geomag. field and extinctions 8-32013
deep-sea sedimentation, time scales and dynamic models 8-15988
deposition, onto rot. disc, convective diffusion, external force field 8-40081
fine grains, compaction effect on acquisition of detrital remanent magnetization 8-20395
gels, non-linear behaviour under strong deform. 8-7240
Grand River, Ontario, geomorphic effects of catastrophic flood 8-28248
Guacanayabo Bay, Cuba, tectonic processes rel. to Holocene sedimentation 8-3752
Gulf of Gdansk, lithodynamical processes, theoretical anal. and scale model tests *(Polish)* 8-40540
heavy metal sedimentation rate in Saanich Inlet, British Columbia, ^{210}Pb technique 8-32063
heavy metals in Susquehanna River system, use of ^{210}Pb as tracer 8-49046
Hercynian front in Ireland, Caledonoid lineaments control on sedimentation and struct. 8-32035
Lake Van tectonic activity and sedimentation study *(German)* 8-3843
liquid-liquid critical solution point, and density gradients, high gravit. field 8-47526
Markov model, three-parameter 8-34183
Markov model for very slow settling of dilute suspension 8-22406
E.Mediterranean Sea, sedimentation rel. to tectonic elements and crustal struct. 8-44801
palaeoenvironmental conditions, organic geochemical indicators 8-40539
particle interactions in fluid suspension, effect on sedimentation velocity 8-23972
particle size distribution measurement by laser Doppler velocimetry technique *(Japanese)* 8-24913
polystyrene solution in benzene, thermodyn. interaction coeff. determ. 8-3367
reservoir sedimentation process and detention structure model 8-44892
river estuaries, Fe precip. mechanism 8-20437
settling convection, obs. and continuum fluid mechs. model 8-14070
settling instability, horizontally homogeneous suspension 8-42652
smoke, natural sedimentation, photographic, visual and laser sonde obs. *(Russian)* 8-32216
speleothems from Britain, palaeoclimatic and geomorphic implications of ^{230}Th/^{234}U dates 8-36128
storm beach sedimentation mechanism 8-20386
supracrustal relics in Archaean of W.Africa, zonation rel. to sedimentary environments 8-44815
water flow, bed topography, grain size and sedimentary struct. in open channel bends 8-20443
Mn, deep sea sedimentation rates from hydrothermal Mn scavenging residence time 8-32121

sediments
see also rocks; sedimentation
α-spectrometric dating method, using ^{210}Po 8-28350
abyssal sediments, effect of particle size var. on DRM/ARM ratio 8-32067
age determination, ^{210}Pb radioactive dating, plastic nuclear track detector 8-20554
alluvial bed load transport estimation 8-20444
S Atlantic Ocean, depositional history during last 125 million years 8-44798
Atlantic Ocean, early Cenozoic calcareous plankton palaeobiogeography and climatic fluctuations 8-16143
N.Atlantic recent sediments, volcanism effects on mineral comp. 8-44802
Australia and Timor Trough, facies rel. to topographic wave migration during past 3 million years 8-49018
Baltic Sea Upper Quaternary sediments, physical props. 8-3753

sediments continued
SE.Baltic shore development due to hydrotechnical constructions *(Russian)* 8-36145
Banks Island, Canada, deposits and aeolian processes *(French)* 8-36163
Barents Sea, morphostructural map of SE region 8-3749
barrier island migration computer simulation 8-20384
beach sediments, lower St. Lawrence Estuary, Quebec, frost effects 8-7609
Beaufort Sea sediment cores, NRM, geomag. excursion record 8-20349
Black Sea Pleistocene clay sediments, physical and mechanical props. 8-3755
Black Sea sediment cores, organic geochemistry 8-49040
calcareous ooze and chalk, Ontong Java Plateau, W Pacific, sound vel., sonobuoy data 8-40542
clays in S.E.Baltic, physical props. *(Russian)* 8-15990
Clear Lake, California, absence of Mono Lake geomagnetic excursion in sediment palaeomagnetic record 8-11801
Cochin Harbour, siltation in outer channel, tidal streams and longshore currents 8-36144
Colombia basin, Caribbean Sea, crustal struct. from profiler-sonobuoy meas. 8-28198
continental margin sedimentation, computer simulation 8-15998
continental shelf sediment transport modelling 8-15995
cycling models, global processes 8-16162
deep-sea cores, ^{231}Pa dating via ^{227}Th counting 8-32238
deep-sea sediments, 20000 yr SiO_2 O isotopes record in diatoms 8-32247
deep-sea sediments, unmixing of O isotope record rel. to deglacial meltwater spike 8-3746
deep-sea sediments cores and Minoan tephra from bronze age eruption of Santorini Volcano 8-24272
deluvial deposits in SE Lithuanian periglacial valleys and ravines *(Russian)* 8-16010
determ. in coastal sediments and seawater, activity ratios, disequilib. 8-27851
Devonian lacustrine sediments, from Caithness, Scotland, palaeomag. and mineralogy 8-28170
East Fork River, Wyoming, 1976 bedload meas. 8-49055
estuarine and continental shelf sediments, ^{226}Ra flux 8-32061
estuary with uniform reversing tidal flow, suspended sediment model 8-7648
fan sedimentation, computer simulation of turbidity current flow 8-15997
fine-grained, compaction effect on acquisition of detrital remanent magnetization 8-20395
Galapagos Rift mounds, deep tow hydrothermal obs. 8-11871
heavy metal sedimentation rate in Saanich Inlet, British Columbia, ^{210}Pb technique 8-32063
Hudson River estuary, ^{222}Rn distrib. and transport across sediment-water interface 8-16064
Hunter River, sand supply to New South Wales coast 8-16066
hydrocarbons in surface sediments on Scotian Shelf 8-49008
inshore submarine slope cross-profile changes and littoral drift balance *(Russian)* 8-15989
Isar River, Bavaria, trace elements distrib. in sediment, suspension and water samples by neutron activation analysis 8-3834
Israel coast, nearshore sediment pollution by trace metals derived from sewage effluent 8-44882
Kuskokwim River drainage, Alaska, Hg dispersal from lode sources 8-40600
Lake Lisan-Dead Sea aragonite, element and isotropic comp. rel. to pleistocene geochemical evolution 8-49047
Lake sediment radioactivity, mixing by benthic organisms 8-16060
Lake Vuokonjarvi, Finland, palaeomagnetic secular variation 8-32004
Lakes Superior, Huron, St. Clair, Erie and Ontario, N. distrib. and C/N ratio in sediments 8-28250
landscape periodicity, slope deposits, soil pattern and erosion in small catchment area 8-11924
lateral textural grading in overwash sediments 8-20385
longshore sediment transport and sediment budget for Malpeque barrier system, Gulf of St. Lawrence 8-36140
magnetic spherules, ^{40}K/^{41}K ratio rel. to possible meteorite origin 8-11874
Mamontova Gore silt, Siberia, radiocarbon dates and late Quaternary nonglacial stratigraphy 8-44819
marine, hydrostatic press. effect on Cl^- diffusion, in situ expt. 8-44878
marine, piston core behaviour recording device 8-20532
marine, radionuclide conc. rel. to residence time near Maine Nuclear Power Reactor 8-49021
marine, sulphate reduction and methanogenesis 8-49009
marine, surface organic layer containing U and Th, thickness meas. 8-40592
marine sediments, cosmic origin of black magnetic spherules 8-24494
marine sediments, in situ acoustic impedance meas. method 8-9519
marine sediments, water-saturated, finite-amplitude wave propag. 8-1476
marine sediments interstitial waters, dissolved organic matter nature and reactions 8-49039
Martinique Beach, Nova Scotia, nearshore currents and beach topography 8-7646
Melanesia Basin deep-sea sediments, palaeomag., polarity reversals 8-36102
Mid Atlantic Ridge, SW of Azores, deep seismic sounding results 8-3747
Miocene, Carpathian Foreland, statistical anal. of repeated borehole meas. 8-49146
Musos Tyrelis (N.Lithuania) bog stratigraphy and palaeogeography *(Russian)* 8-49054
Namibian shelf, I and Br geochem. behaviour in recent sediments 8-32062
nondestructive neutron activation analysis of environmental samples using low-energy photon spectrometry 8-3995
ocean basins, thermal and subsidence history 8-49010
oceans, Atlantic and Pacific, suspended particles rel. to chem. processes 8-36201
Odaka, Japan, Late Pleistocene sediments, reversed magnetozone 8-40486
old coast formations of E.Lithuanian upland *(Russian)* 8-16012

sediments continued

- organic acids in Baltic and Black Seas 8−49007
- Ottawa River, methylmercury equilib. concs. in sediments 8−11923
- Otway sediments, S.E.Australia, analysis of concretions 8−20417
- S.E.Pacific, DSDP Site 319, metalliferous sedimentation history 8−7611
- Pacific Ocean, ^{10}Be dating compared with palaeomagnetic ages 8−32058
- palaeoclimate during last 600000 years, pollen anal. of 200 m core sample from Lake Biwa, Japan 8−24356
- Pleistocene sediments, palaeomagnetism and radiochemical age estimates for Late Brunhes polarity episodes 8−11797
- quartz grains of podzols, surface texture, SEM study 8−36151
- radionuclide distributions in oceans and marine sediments from nuclear weapons testing 8−13344
- radionuclide migration in seawater and marine sediments *(French)* 8−11916
- radiosotope behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
- Recent unconsolidated lacustrine, organic geochemical analysis 8−49016
- resedimented conglomerates of Huronian age, Lake Huron north shore, deposition from sediment gravity flow 8−36164
- reservoir sediments, water and gas removal from Polesine area, surface subsidence study 8−28233
- reservoir under random sediment yield, Bayes design 8−11933
- Romanche fracture zone, limestones rel. to Neogene crustal emergence and subsidence 8−11857
- sand-wave motion of sediment along nonerodible bottom in open channel flow 8−16074
- sandy silts, liquefaction during Friuli 1976 earthquakes 8−24280
- Saronikos Gulf, Greece, trace elements analysis by neutron activation 8−3825
- Seychelles-Mauritius Plateau, mag. anomalies, sediment thickness 8−3750
- streams, Cd content determ., geochem. 8−36170
- submarine canyon heads, relief development processes, Black Sea 8−44803
- suspended sediments in translational flow, vertical distrib. 8−3841
- Thames Estuary, Flandrian sediments stratigraphy rel. to sea level changes and land subsidence 8−24304
- Tolaga Bay Flats basin, recent alluvial infilling estimation using tephra marker beds 8−11925
- trace elements partition patterns in sediments from DSDP Site 219 8−36143
- transport, erosion and deposition of cohesive sediments, modelling 8−15994
- transport for desert watersheds in erodible materials 8−20442
- transport mechanisms, alluvial rivers, braiding and meandering 8−36212
- transport near ocean bed, theoretical flow models 8−15996
- Yellowstone and Jackson Lakes, mag. props. and secular var. in sediment cores 8−48968
- Yellowstone Lake, seismic refl. and refr. surveys and palaeomag. study 8−49049
- ^{10}Be var. in deep sea sediments, critical evaluation 8−7615
- ^{14}C age errors for recent deposits with fluvially transported charcoal 8−36172
- ^{137}Cs movement and loss in small lake 8−24317
- ^{3}H kinetics in freshwater marsh, simulation model 8−24318
- ^{231}Pa, determ. in coastal sediments and seawater, activity ratios, disequilib. 8−27851
- ^{210}Pb, dating, results from Lake Ipea and Lough Erne 8−28202
- Pu, industrial effluent, behaviour and transport in Great Miami River, Ohio 8−16061

Seebeck effect

- anisotropic thermoelectric cooling unit, theory 8−47820
- biopolymers, solid, apparatus for Seebeck coeff. meas. 8−21172
- ferroelectric ceramic, elec. and thermoelec. props. of grains and grain boundaries 8−43382
- metal, degree of deform. effect on thermophys. props. at high temps. 8−26694
- rare earth orthocobaltites, $R_{1-x}Sr_xCoO_3$ and $La_{1-x}M_xCoO_3$, itinerant electron ferromagnetism obs. 8−10660
- rare earth tungsten oxide bronzes, metallic, elec. props. meas. 8−30906
- TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
- thermocell, solid electrolyte, twin, for entropy of O_2 in mixture determ. 8−27812
- C fibres prepared from benzene, thermoelec. power, magneto-Seebeck effect 8−2507
- n-$CdCr_2Se_4$, single crystal, transport props. near Curie temp. *(Japanese)* 8−6406
- $KNbO_3$, thermoelec. effect and phase transitions 8−48123
- $KTaO_3$:Gd semicond., temp. depend. of thermal diffusivity and Seebeck coeff. 8−10481
- $La_{2-x}Sr_xNiO_4$, $(0 \leqslant x \leqslant 1)$, cryst. struct. and elec. props. 8−2088
- MgO, $MgCl_2$ additions effect, ionic role 8−26895
- $NaNbO_3$, thermoelec. effect and phase transitions 8−48123
- $PbTiO_3$, thermoelectric effect and ferroelectric transition 8−48123
- $PbZrO_3$, thermoelec. effect and phase transitions 8−48123
- $Pb(Zr_xTi_{1-x})O_3$, elec. props. effect of proportional composition, morphotropic phase boundary 8−35105
- $Pb(Zr_xTi_{1-x})O_3$, elec. props. temp. and composition depend. 8−47817
- Sb_2S_3, elec. and mag. props., carrier transport mechanism 8−47792
- TiO_2:Nb, rutile, Seebeck effect, 90-300K 8−43427
- TiO_2-P_2O_5 reduced glasses, prep., elec. transport, chem. anal., DC, AC cond., seebeck coeff. 8−30924
- YIG, nonstoichiometry and electronic defects, thermogravimetric expts. and anal. of elec. data 8−6050

segregation

microstructural processes and features only

see also Guinier-Preston zones; spinodal decomposition

- alloy, chemical induced segregation, obs. by Auger fine struct. anal. 8−15416
- alloy, FCC, Monte Carlo simulation of surface segregation 8−31413
- alloy, lamellar multiphase, struct. and spatial comp. variation, analytical STEM 8−24011
- alloys, binary, surface composition, regular soln. theory 8−10265

segregation continued

- alloys, irradiated, effect of defect trapping and solute segregation, on defect recombination rates and void swelling 8−47369
- dl-camphene, self-diffusion, effect of impurities, radiotracer and plastic deform. study 8−43177
- ceramic, grain boundary segregation 8−15410
- cluster model for transition state, electron diffr. study 8−10168
- displacement spike annealing, Mont Carlo method computer expteriments 8−30672
- equilibrium segregation of dil. solutes to grain boundaries, free surfaces, interphase interfaces 8−31411
- FCC metals and alloys, grain boundary energy and self-diffusion, effect of solute segregation 8−15412
- grain boundary cohesion, segregation effects 8−15411
- grain boundary segregation, two dimensional compd. form. and precipitation 8−15408
- grain boundary segregation theory in terms of surface adsorption analogues 8−15407
- horizontal macrosegregation during solidification with a heterogeneous zone *(German)* 8−15381
- p-Hz:o-H_2, clustering rate and NMR obs., 25 mK-2K 8−47635
- impurity ion clusters in a two-dimensional lattice 8−23047
- materials processing in space 8−35296
- metal, polycrystalline, binding energy spectrum approach to grain boundary segregation 8−15409
- metals, influence of a surface coating, on void formation 8−47416
- monodispersed supersaturated solutions, fluctuation instability 8−18783
- polymer mixture, molten, polydispersion effects, crit. behaviour *(French)* 8−42879
- quartz, ion-implanted layers, total X-ray reflection investig. of clustering 8−6081
- reversible temper embrittlement, book contrib. 8−11334
- semiconductor substrate surface, low loss electron and Auger images correl. 8−22944
- solute, radiation-induced segregation, kinetic model, GEAR package of subroutines 8−30673
- solutes, under irradiation 8−48407
- steel, C (1 wt.%), intergranular segregation of C and P in as-quenched state, AES *(Japanese)* 8−19764
- steel, C (1 wt.%), intergranular segregation of Cr, Mn, Sn in as-quenched state, AES *(Japanese)* 8−19764
- steel, C-Ni-Cr (0.6, 1, 1 wt.%), grain boundary segregation of S, N, P, As, Sb and Bi *(Japanese)* 8−15405
- steel, graphite dissolution, segregation and diffusion *(Russian)* 8−11201
- steel, high speed YXM62, heat treatment, mech. props., wear, fracture toughness for cutting tool 8−19864
- steel, low alloy, impurity and strength effect on H_2 induced cracking 8−27625
- steel, low alloy and C, reversible temper brittleness kinetics *(French)* 8−35498
- steel, low-C, coherent precip. of VC 8−35392
- steel, maraging, Ni (18 wt.%), grain boundary precipitation, scanning Auger electron obs. 8−3132
- steel, medium C, static and dynamic stress effect on hardenability and grain growth *(Korean)* 8−35404
- steel, Mn, tempered, sementite crystals, carbide phase segregation, X-ray study *(Russian)* 8−35391
- steel, Ni-Cr-Mo-U, ferritic, B segregation and high temp. embrittlement 8−7040
- steel, temper embrittlement, fracture mech. of grain boundary segregated phases 8−48531
- steel, undirectionally solidifying melt, horizontal macrosegregation during solidification with heterogeneous layer *(German)* 8−19733
- steel low C, Mn surface segregation during annealing, kinetic studies 8−27528
- steel VNS-2, damping capacity, magnetomechanical, phase transform. effects 8−31445
- Surface segregation in alloys: existence of surface miscibility gaps within regular solution theory 8−18882
- Ag-Sn (0 to 6%), equilibrium intergranular segregation and diffusion 8−43130
- Al-Cr(Mn), struct. form. and phase transform. kinetics *(Russian)* 8−15359
- Al-Cu (Mg), vertically solidified, effect of fluid flow on solidification struct., and macrosegregation *(Japanese)* 8−48391
- Al-Si, magnetic susceptibility and elect. resistivity, 500 to 1000°C, struct. sensitive props. *(Russian)* 8−15550
- Al-Zn-Mg, grain boundary surfaces, plasmon loss satellites in Auger spectra 8−15261
- Al-Zn-Mg alloy, welded, solute profiles at weld bead/parent metal interface 8−19942
- Al-Zn-Mg alloy (6, 3 wt.%), grain boundary segregation, AES exam. 8−39783
- (Ba, Ca)(Ti, Zr)O_3, segregation of $CaTiO_3$ and effect on dielec. props. 8−38849
- CdTe:Ge, dopant behaviour 8−22742
- Co (100), clean and C-covered, LEED-Auger expts. 8−38921
- CsI, {100} faces, form. of etch pits of different size and morphology, segregation influence 8−2130
- Cu, (111) and (100) surfaces, Sn segregation 8−14554
- Cu, crysts., absorbed H, strain anal., X-ray divergent beam method 8−15463
- Cu-Be (0.0182 at.%), radiation induced Be segregation 8−23710
- Cu-Mn alloys, Cu-rich, heat treated, segregation obs. *(Russian)* 8−27517
- Cu-Ni, surface segregation, comparison of low-energy ion-scatt. results with theory 8−38923
- Cu-Pt, surface segregation, comparison of low-energy ion-scatt. results with theory 8−38923
- Cu-Sb melt, eutectic struct. by neutron diffr., isotopic substitution 8−47233
- Cu-transition metal alloy, internal adsorpt. and mag. susceptibility, grain size effects *(Russian)* 8−19759
- Fe based binary and ternary alloys, intercrystalline internal adsorption exam. by electrolytic dissolution *(Russian)* 8−35390
- Fe, segregation of ^{119m}Sn at grain boundaries, Mossbauer effect 8−15414
- Fe, single crysts., absorbed H, strain anal., X-ray divergent beam method 8−15463

segregation continued
Fe, surface chemistry during annealing of soft magnet 8–48546
Fe-C (0.25 wt.%), austenitising temp. effect on proeutectoid ferrite reaction kinetics, scanning Auger microprobe exam. 8–44144
Fe-Ni, segregation of inhomogeneities during crystallisation *(Russian)* 8–27521
Fe-Ni (3 wt.%) alloys, embrittled, microanalysis of grain boundary segregation using STEM 8–35633
Fe-Ni-C, martensitic, modulation of local C atom cumulation during ageing *(Slovak)* 8–19790
Fe-Ni-Cr-C, ferritic, P segregation to free surface, 723 to 823K, AES 8–48411
Fe-Ti-Si-Ni-P-C-S, H_2 segregation kinetics *(Russian)* 8–18832
$FeB_5C_{15}SSi_{15}Cr_5$, amorphous, exam. of metalloid atom mobility by Auger spectroscopy 8–47575
$FeO-Fe_2O_3-SiO_2$ $-Al_2O_3-CuO_{0.5}/Cu$ slag-metal system, distrib. equilib. of Sn, Se, Te 8–44111
$FeP_{13}C_7$, amorphous, exam. of metalloid atom mobility by Auger spectroscopy 8–47575
GaAs:Si, current-controlled growth, segregation and amphoteric behaviour 8–31346
Ge-Ga, segregation of Ga due to barometric mol. diffusion in gravitational, centrifugal fields 8–14472
Ge-Si-Sb, segregation of Si,Sb due to barometric mol. diffusion in gravitational, centrifugal fields 8–14472
InP, effects of baking time on purity and morphology 8–6862
KBr:KCN, segregation during physical vapour transport 8–43992
KCl:KCN, and KCl:KOH, segregation during physical vapour transport 8–43992
$LaNi_5$, self restoring of active surface, photoemission, mag. susceptibility study 8–48280
MO-B, B effects, rolled, segregation of implanted elements, Auger spectroscopy exam. *(Russian)* 8–35389
$MgFe_2O_4$:Ga, Sn, Cr, LPE film, segregation coeffs. 8–11136
Mn-Cu, mag. and cryst. struct., neutron and X-ray diffr. meas. *(Russian)* 8–22694
Mo, O segregation at grain boundaries, obs. by atom imaging probe 8–21276
NaBr:Tl, impurity segregation with Kyropoulos growth 8–9977
Ni-Al (6.35 wt.%) precipitate coarsening, redistribution and renucleation during ion irradiation 8–23709
Ni-Si, ion beam irradiation induced Ni_3Si surface film segregation 8–38761
Ni-Ti (12 wt.%), dil. alloys, transform. early stages 8–3096
$Ni_{1-x}Al$ solid solution, vacancy ordering exam. by electron diffr. after annealing 8–3123
Ni_3Al and $Ni_3(Al, Ti)$, S segregation to grain boundaries 8–48410
Si (111), surface reproducibility and impurity segregation ion neutralisation spectra and UPS obs. 8–34688
Si Czochralski growth, large crystal, convection and segregation 8–6843
Si, ion-implanted layers, total X-ray reflection investig. of clustering 8–6081
Si:Sb, dopant microsegregation rel. to crystal and crucible rotation 8–11106
Si:Sb crystal Czochralski growth, radial microsegregation analysis 8–11105
Ti alloy, TA6V, surface segregation, AES exam. *(French)* 8–22941
Ti, surface impurity segregation, quantitative AES 8–19611
Ti-Al, surface segregation, AES exam. *(French)* 8–22941
V-Pd, dil. alloys, surface segreg. 8–18883
ZnS:Ag, struct. and mech. props. 8–22753
Zr-Al-Fe (8.9, 0.001 to 0.006 wt.%) Fe partitioning to Zr_2Al during peritectoid transformation 8–39784

Seidel theory *see aberrations*

Seignette salt *see Rochelle salt*

Seignettoelectric materials *see ferroelectric materials*

seismic waves
see also seismology
attenuation in core containing Fe slurry layers 8–44789
attenuation in nonresolvable cyclic stratification 8–7578
Black Sea basin, crustal struct. from Love and Rayleigh waves dispersion *(Russian)* 8–28192
body wave spectral structure from WWSSN stations long period records 8–28174
body waves, apparent phase vel. determ. 8–16177
body waves, deep seismic zone as upper mantle reflector 8–44790
body waves, short period, propag., isotropic scatt. model including wave conversions 8–40510
compressional and shear wave vels. in rocks, temp. depend. 8–7579
converted shear waves trapped in sediment layer ocean bottom seismometers and surface buoy meas. 8–44776
correlograms, optically generated, noise resistance evaluation *(Russian)* 8–40699
critically refracted rays, numerical tracing 8–7783
crustal P-wave vels. in NORSAR area 8–3728
damping in Crimean region of Black Sea, seismic coda appls. *(Russian)* 8–11824
diffractions for arbitrary source-receiver locations 8–28172
earthquake fault plane soln. optimum search procedure using wave-amplitude data 8–45011
earthquake faulting, HF seismic waves from crack models 8–11821
earthquake magnitude calibration function for core phases, PKP1-PKP2 caustic 8–40509
emergence angle and azimuth, inclined interface effect *(Russian)* 8–11825
Eurasian earthquakes and explosions, discrimination using P codes spectral characts. 8–7576
Fiji-Tonga deep focus earthquakes, relative teleseismic P-wave residuals interpetation 8–36111
generalized ray theory for dipping structures 8–7569
ground displacement vector, polarisation determ. rel. to seismic three-component registrations interpretation *(German)* 8–32017
group velocity and phase velocity relationships for finite discrete obs. 8–44774
Himalayas adjoining Tibetan Plateau and Chinese mountains, crustal struct. 8–7600
infrasonic sea noise from underwater microearthquakes, meas. and experimental problems 8–11902

seismic waves continued
intense multiple waves, freq. selection for CDP method *(Russian)* 8–12012
internal vels. in crustal layers from sonobuoy records of mantle reflections 8–28184
inverse and spatial filtration by reflected wave method *(Russian)* 8–3970
inverse problem soln. using J-fraction expansion 8–11819
Iran, premonitory crustal vel. ratio changes 8–32029
isotropic scattering approx. for coda waves near hypocentre 8–11828
Lamb's problem, generalisation to class of inhomogeneous elastic half-spaces 8–32023
Lamb problem soln. for vertically inhomogeneous elastic halfspace 8–15971
late arrivals in E.Alps from Friuli aftershocks, focal depth determ. 8–24243
layered media, relative intensity of total multiply refl. waves *(Russian)* 8–28176
line migrated reflections, ray modelling and theory 8–40497
Lipari, Eolian Islands, seismic response of local earthquakes rel. to crustal struct. 8–40494
lithosphere beneath New Madrid seismic zone, three dimens. vel. model 8–7573
long-period surface vels. and accels., dislocation source model 8–11829
long-period surface waves, inversion rel. to magnitude scale renormalization 8–15977
longitudinal wave arrival directions rel. to crustal structure *(Russian)* 8–11850
Love wave scattering matrix for continental margin, theory 8–20360
Love wave scattering matrix for continental margin model 8–48982
Love waves, in stratified magnetoelastic solid with material boundary 8–32015
Love-type SH waves, propag. in nonhomogeneous internal stratum between two semi-infinite elastic media 8–32016
magnitude corrections and group vel. dispersion from Simferopol obs. *(Russian)* 8–11826
mantle lateral variations from LF eigenspectra data 8–36123
microacoustic signals assoc. with rock fracture, preliminary anal. 8–32070
multichannel subtracting filters *(Russian)* 8–3969
multiple ray reflections in spherical isotropic Earth model, normal mode representations 8–48981
multiple ScS differential travel times determ. by waveform correl., systematic bias 8–32019
multiple waves suppression methods, comparative evaluation *(Russian)* 8–40515
New Zealand, South Island, regional travel time ratio and near source V_p/V_s ratio 8–40500
North Sea region upper mantle struct. from Rayleigh wave dispersion 8–36122
oceanic crust, continuous seismic profiling, diffr. waves travel time curves 8–3725
one-dimensional, in elastic inhomogeneous media, inverse solns. 8–40518
optimal estimation of wave field parameters *(Russian)* 8–28177
P_n velocity rel. to partial melting in upper mantle 8–3729
P and S waves beyond 95° 8–11818
P- and S-wave velocities in dry and saturated rocks, influence of cracks, model 8–20366
P-wave initial pulse widths rel. to anelastic props. and surface geology, central California 8–44778
P-wave interference recorded at Yellowknife Array 8–7586
P-wave seismograms from continuously varying transition zones, acoustic media 8–20361
P-wave seismograms from continuously varying transition zones, elastic media 8–20362
P-wave velocity anisotropy temporal stability before earthquakes in central California 8–7574
P-waves, low-frequency, effects of crust spectrum characts. on station calibration *(Russian)* 8–49158
P-waves, mean travel time residuals, systematic variations 8–3727
P-waves, short-period, regional amplitude anomalies rel. to anelastic rel. to anelastic attenuation, North America 8–44777
P-waves, vel. determ. in area of unknown crustal parameters 8–7585
P-waves from mining explosions near Centralia, Washington, search for time-depend. travel times 8–44788
W.Pacific, high shear vel. layer 8–3734
peg-leg multiples and dipping reflectors 8–7580
planar dipping structure effect on source and receiver responses for const. ray parameter 8–7571
polarized waveform dectors, matrix and Stokes vector representations, teleseismic waves appl. 8–12008
Precambrian Earth crust, seismic refls. study 8–32034
propagation in two-phase media, interaction model 8–18213
ray tracing, through models of E.African Rift 8–11846
Rayleigh channel waves propag. in coal seams, model seismic expt. *(German)* 8–40513
Rayleigh wave amplitude meas. from earthquakes in distance range 0-150° 8–48979
Rayleigh waves, modelling via broadband acoustic surface waves probe 8–23904
Rayleigh waves, phase-matched filters appl. 8–45010
Rayleigh waves transmission and reflection through a step 8–44775
raypath migration, using programmable pocket calculator 8–7784
real-time kinoform synthesis using chalcogenide glass films *(Russian)* 8–13669
reflection at free surface appl. of Huygens' principle 8–7594
reflection coeffs. and response for horizontally layered media, direct and inverse problems 8–28173
reflector parameter estimation by virtual image technique 8–40681
refraction methods for tectonic dislocation detection *(Russian)* 8–12010
refraction parameters, nomogram for rapid computation 8–7785
self-adaptive wave train subtraction, in linear and three-dimensional surveying *(Russian)* 8–40695
SH wave propag. in two-layered heterogeneous medium 8–48976
SH waves, generation of complete theoretical seismograms 8–40498
shear modes in anisotropic systems, dispersion curves 8–36107
shear wave generator in borehole, construction, expt. results 8–40692

seismic waves continued
shot grouping in marine seismic surveying, potential efficiency *(Russian)* 8–40702
signals amplitude and phase jitter, rel. to optimal multichannel filtering evaluation *(Russian)* 8–40697
signals in wave field, estimate of number *(Russian)* 8–49157
Sinfengkiang Reservoir impounding earthquake, precursory V_p/V_s variations *(Chinese)* 8–3720
soil, shear wave vel. meas. during standard penetration test 8–48978
soil interaction with surface mounted struct. under excitation by plane SH wave 8–22292
Stonely waves, direct meas. at Ni-Pyrex rel. to crustal seismic waves 8–10268
subducting lithosphere boundary determ. using ScS to P conversions 8–7572
surface wave dispersion, digital processing *(Chinese)* 8–24374
surface waves propag. in crystalline media 8–2350
teleseismic Sn, guided wave in upper mantle 8–11823
theoretical seismogram calc. for thinly-stratified absorbing media 8–15973
theoretical seismograms of core phases from freq.-depend. full wave theory 8–7581
transient and impulse responses of one-dimens. linearly attenuating medium, analytical results 8–32687
transient and impulse responses of one-dimens. linearly attenuating medium, parametric study 8–32688
travel time residuals at Gauribidanur seismic array (S.India), rel. to crust-upper mantle heterogeneities 8–32033
tsunami generation and propag. in ocean with real bathymetry, numerical simulation 8–40576
tsunami wave propagation anal., 2-step explicit finite element method 8–40503
tsunamis, local behaviour 8–40577
tsunamis, theoretical research, obs. in Japan 8–40575
W. Turanian platform, reflected and refracted seismic wave data rel. to crustal models *(Russian)* 8–40526
v_p/v_s ratio and hypercentre determs. for aftershocks from 1976 May 6 Friuli earthquake 8–24258
V_p/V_s ratio spatial and temporal changes before earthquakes in Kamchatka 8–32027
velocity along Sanbagawa metamorphic belt in Shikoku area, SW.Japan 8–11830
velocity estimation, arrival time functions and max.-likelihood detector 8–45013
velocity time variance from multiple explosive sources, Hollister, California 8–44779
velocity variations rel. to solid Earth tides 8–28183
vertical time-depth curve, automatic approximation via successive layer detect. *(Russian)* 8–40700
vibroseis signals with prescribed power spectrum 8–40495
wavetrain response to longitudinal excitation, US profiling 8–44786
Westerley Granite, changes in seismic vel. and attenuation during deformation 8–28221
Fe alloy core containing slurry layers, motion and thermodynamics, seismic wave propag. 8–48993

seismographs *see seismometers*

seismology
see also earthquakes; lunar seismology; seismic waves; seismometers
African lithospheric thickness from teleseismic delay times 8–11847
E.African Rift models, seismic ray tracing 8–11846
central Aleutians, seismicity rel. to double Benioff zone and lithosphere unbending 8–32047
Ancona region, Italy, seismo-tectonic considerations *(Italian)* 8–40492
Baffin Bay continential margin and Lancaster Sound, seismic refr. meas., continental/oceanic crust boundary determ. 8–20368
Baikal and continental rift zones, deep struct. from seismic data 8–36130
Baikal rift zone, seismicity and earthquake focal mechanisms 8–36115
Baikal rift zone, seismotectonics 8–36134
Black Sea continental platform, seismic prospecting method appl. *(Rumanian)* 8–20564
Black Sea transverse rise, geological and geophysical data 8–3754
Blanco fracture zone, microearthquakes location determ. using sonobuoy arrays 8–40504
Bucharest, microzoning studies *(Rumanian)* 8–20365
Carpathian earthquake, 1977, March 4, precursory seismic processes rel. to prediction *(Russian)* 8–48985
Charleston-Summerville area of South Carolina, Geological and geophysical studies of seismicity 8–11837
Colombia basin, Caribbean Sea, crustal struct. from profiler-sonobuoy meas. 8–28198
combined spectral analysis of seismic records, for determ. of geologic section props. *(Russian)* 8–40696
common depth point seismogram, signal and noise separation in amplitude spectra *(Russian)* 8–15970
computer-aided seismic analysis and discrimination 8–20530
computerised data processing, petroleum industry appl., automation level analysis 8–28327
Crimea, seismic processes rel. to tectonics *(Russian)* 8–3721
Crimean mountains, crustal structure from deep seismic sounding *(Russian)* 8–3732
crust and mantle, temperature-depth profiles, Poland, from geothermal and deep seismic sounding data 8–48988
crustal uplift prior to earthquakes 8–7575
deconvolution and wavelet estimation 8–20542
deep seismic data processing, digital techniques appl. *(Italian)* 8–40719
deep seismic profiling, Atlantic Ocean, automatic processing of bottom seismograph records 8–45030
discrimination between Eurasian earthquakes and explosions from P codas spectral characts. 8–7576
discrimination between explosions and earthquakes 8–11809
earthquake detectability, estimates for 478 globally distributed seismograph stations 8–15976
earthquake fault plane solution using theoretical P-wave seismograms 8–11822
earthquake location accuracy depend. on number of seismic stations 8–32025
earthquake magnitude scale, renormalisation 8–15977
earthquake occurrence as stochastic event, theoretical models 8–40491

seismology continued
earthquake prediction, search for time-depend. P-wave travel times from mining explosions 8–44788
earthquake prediction, via mag. behaviour of magnetite and rocks stressed to failure 8–32068
earthquake response spectra 8–41871
earthquakes maximum magnitude prediction, geotectonic method and appl. to N.Italy area 8–40493
earthquakes precursor swarm, appl. to long-range forecasting 8–15975
Echzell/Wetterau, earthquake, 1975 November 4, seismotectonics 8–40512
effective seismic input through rigid foundation filtering 8–29659
Farallon Escarpment vicinity, seismicity and tectonics 8–32018
fault gouge composition effect on frictional sliding stability 8–3759
fault rupture model for seismic risk anal. 8–11810
fault-plane soln. from geodetic data inversion 8–12016
free oscillations, amplitudes of split normal modes 8–40508
free oscillations due to earthquake, complex eigenfreqs. improved resolution in analytically continued seismic spectra 8–36106
Friuli, Italy, tilting vars. and seismicity preceding 1976 May 6 earthquake *(Italian, English)* 8–48971
Friuli area (NE.Italy), seismicity 8–24233
Friuli Venezia Giulia region seismicity 8–24234
Friuli-Venezia Giulia region, A.D. 365-1976 earthquake catalogue 8–24230
Fruili area, seismic activity rel. to neotectonic movements 8–24229
Fruili-Venetia Julia region, regional geodynamics and seismicity 8–24227
Gauribidanur seismic array in S.India, quantitative assessment of crust-upper mantle heterogeneities 8–32033
GCFR core and core support struct., seismic model test 8–41869
Georges Bank Basin, stratigraphy, seismic correl. to W.Scotian Shelf 8–28231
geothermal energy prospecting by geophys. methods, review 8–7803
geothermal steam, ^{222}Rn emanations, rel. to seismic activity 8–11832
ground movement reconstruction from earthquake recording 8–49165
Himalayan mountain front NW termination, active tectonics from microearthquakes 8–40505
Himalayas, seismicity, earthquake mechanisms and tectonics 8–40514
Himalayas, seismotectonics, continental plate convergence 8–7593
horizontally layered media, reflection coeffs. and response 8–28173
NE.India, seismicity and focal mechanisms rel. to faults and tectonics 8–24221
Indian Ocean triple junction region, microseismicity 8–32020
interference separation using least squares method *(Russian)* 8–15969
interfering signals in seismic records, combined separation *(Russian)* 8–12011
N.Italy, crustal structure and seismicity 8–24264
NE.Italy, surface geology rel. to seismically active tectonic structures 8–24286
SW.Japan, major earthquake focal mechanisms rel. to tectonics 8–11827
Japan, seismicity index maps, rel. to earthquake risk 8–36117
SW.Japan, Shikoku area, Sanbagawa metamorphic belt, seismic wave vel. 8–11830
Kilauea volcano, Hawaii, three-dim. crust and mantle struct. 8–28205
King's Trough, NE.Atlantic Ocean, struct. from bathymetric, seismic and gravity data 8–49005
Kuril Trench area, evidence for high vel. zone from ocean bottom seismometer obs. 8–48999
La Malbaie area, Canada, upper crustal struct. lateral vars., teleseisms meas. 8–28187
layered system, spectral function, waveform determ. at depth 8–16172
Lipari, Eolian Islands, crustal struct. from seismic response of local earthquakes 8–40494
macroseismic aspects of event intensities 8–24232
Madonna di Buia area (Udine), microseismic zoning 8–24244
mantle partial melting and mineral-stability boundaries, rel. to seismic exploration of lithosphere, Canada 8–36121
marine profiling images, recording, signal amplitude preservation 8–36326
marine seismic surveying, potential efficiency of shot grouping *(Russian)* 8–40702
W.Mediterranean Basin, upper mantle structure from seismic profile 8–11841
E.Mediterranean Sea, seismic refl. data rel. to tectonic elements and crustal struct. 8–44801
Melendy Ranch, Calif., San Andreas fault, search for resistivity variations 8–28185
Mid Atlantic Ridge, SW of Azores, deep seismic sounding results 8–3747
Mid Atlantic Ridge near 45°N, ocean bottom seismograph obs. 8–11875
mining tremors, seismic moment and source size, Upper Silesia, Poland 8–48977
mining tremors, seismic moment and source size determ. 8–3717
mining tremors in anisotropic media, optimal recording 8–3718
Minnesota, crustal struct. and seismicity, rel. to historic earthquakes 8–11840
monofrequency borehole traveltime survey 8–28328
multichannel subtracting filters, construction *(Russian)* 8–49156
multiple waves suppression methods, comparative evaluation *(Russian)* 8–40515
Nazca plate off S. Peru, crustal model from ocean bottom seismometer obs. 8–32032
Nelson River gravity anomaly, SE.Saskatchewan, seismic survey 8–28153
Nemaha Uplift in Oklahoma, Kansas and Nebraska, geological survey of seismicity and tectonic rels. 8–7589
New Guinea-Solomon Islands region, seismicity maps 8–7592
New York area, seismicity and lithospheric stress 8–36113
New York State, earthquakes related to hydraulic mining and natural seismic activity 8–48986
Newfoundland, Bay of Islands ophiolite complex, seismic vel. structure 8–40506
Newfoundland Basin, seismic surveys rel. to Mesozoic evolution 8–32045
Newfoundland Ridge, multichannel seismic refl. profiles of subsided continental crust 8–15980
Ninetyeast Ridge, seismic sounding with bottom seismographs and air guns 8–3748

seismology continued
normal incidence synthetic seismogram fine struct., inverse problems soln. 8−49152
normal mode excitation by collapsing cavity 8−7583
normal modes of simple Earth models, variational type finite element solution 8−11817
North Sea basin, seismic refr. expts., using Pull-Up Shallow Water Seismometer 8−45025
nuclear plant equipment, standardised seismic design spectra 8−41870
nuclear plant seismic design, automated generation of spectrum compatible artificial time histories 8−29661
nuclear power plant, earthquake proof design of components 8−21733
nuclear power plant seismic floor response spectra 8−819
nuclear power station, Caorso plant, dynamic tests and seismic records of RHR building 8−41872
nuclear power stations, seismic qualification of systems, structures, equipment and components 8−41878
nuclear reactor safety anal. 8−41834
nuclear spent fuel elements storage in large pools, seismic load anal. 8−17400
observation network *(Japanese)* 8−28341
oil exploration data processing, white-noise estimates 8−3973
Ondrejov laser satellite-tracking station, regional tectonics and seismicity 8−36418
optimal config. of seismic recording stations for mining tremor analysis 8−20359
optimal multichannel filtering, evaluation taking account of signals amplitude and phase jitter *(Russian)* 8−40697
optimal velocity analysis, in common depth point method *(Russian)* 8−40698
Oslo Rift, crustal structure from seismic refr. study 8−32037
E.Pacific Rise crest structure from multichannel seismic reflection 8−40523
palaeoanisotropy in upper mantle 8−7602
petrovelocity model of crust for Ukrainian Shield 8−7597
physical source parameters determ. from free oscill. data, numerical method 8−11820
Precambrian Earth crust, seismic refls. study 8−32034
prediction error filter, quantitative evaluation 8−40496
propagating strike-slip fault in elastic half-space, near-field motions 8−7568
Rayleigh waves, modelling via broadband acoustic surface waves probe 8−23904
reflected wave surveys for oil and gas in non-anticlinal traps *(Russian)* 8−12013
reflection data dynamic corrections, fast algorithm 8−3966
reflection method, high-resolution near surface, using vertical array technique 8−36306
reflection records, homomorphic deconvolution by log spectral averaging 8−28329
refraction methods for tectonic dislocation detection *(Russian)* 8−12010
refraction parameters, nomogram for rapid computation 8−7785
regional seismic network optimum distrib., algorithm 8−32024
regularization method and uniqueness problems in study of regional flat-layered structs. 8−49161
rock fracture, assoc. microacoustic signals anal. 8−32070
rocks, subsolidus attenuation at simultaneous high temp. and press. 8−3764
safety factor for nuclear siting in earthquake zones 8−11839
salt deposits, seismic prospecting by well logging *(Rumanian)* 8−20566
San Andreas fault, Rn emanation vars. meas. 8−32022
seismic wave field, estimate of number of signals *(Russian)* 8−49157
seismicity in deep-level mine, influence of mine geometry and closure volume 8−3723
seismicity increase prior to moderate rock burst 8−3722
seismograms and images, automatic transform. to seismic sections *(Russian)* 8−49155
seismology, vertical stacking as reflection filter 8−12007
seismomagnetic effects, space correl. method rel. to earthquake prediction *(Chinese)* 8−3719
self-adaptive wave train subtraction in linear and three-dimensional surveying *(Russian)* 8−40695
simulator studies of cylindrical tanks 8−45027
Sinkiang-Tibetan region, seismicity and tectonics 8−32030
W.Slovenia, tectonic structures, rel. to macroseismic effects 8−24254
soil, shear wave vel. meas. during standard penetration test 8−48978
Somali Basin, seismic profiling and bottom topography, possible fracture zone 8−28213
source-receiver arbitrary locations, diffractions 8−28172
source-receiver nonzero separation, diffraction response 8−28171
South Sandwich Islands, seismicity 8−7582
S.Spain, crustal struct. from deep seismic sounding *(Spanish)* 8−44795
S.Spain, deep seismic soundings 8−7587
Spain, seismicity and seismic risk map *(Spanish)* 8−44791
summation base, restriction in seismic section migration *(Russian)* 8−40701
surface motion of layered half-space calc. by Laplace transform method 8−7570
synthetic seismogram construction and reconstruction, weighting factors 8−28330
tectonoelectricity, review 8−36095
three-component registrations, interpretation via orthogonal regression *(German)* 8−32017
time-to-depth conversion for layered medium 8−3962
Transkei Basin, seismic refraction obs. 8−11831
W. Turanian platform, seismic crustal models of major structural zones *(Russian)* 8−40526
Udine area, Italy, seismic shakeability and seismic risk 8−24261
Ukrainian Shield, deep seismic survey profile comparison with gravity and heat model *(Russian)* 8−48991
S.E.USA, earthquake activity data and seismic zones 8−11838
USA, East-Central, geological perspectives of earthquake hazards 8−11834
N.E.USA, rel. of seismicity to geology 8−11836
N.E.USA, seismic risk analysis in rel. to nuclear plant siting 8−11835
USA-Japan studies on wind and seismic effects, conf., Tokyo, Japan (May 1975) 8−36252
vertical time-depth curve, automatic approximation via successive layer detect. *(Russian)* 8−40700

seismology continued
vibroseis deconvolution 8−16171
vibroseis signal similarity, computerized anal. 8−20543
Yellowstone Lake, seismic refl. and refr. surveys and palaeomag. study 8−49049
Yellowstone Lake, submerged hydrothermal explosion crater in Mary Bay, bathymetry, seismic and mag. surveys 8−49050
Yellowstone volcanic plateau, conf., USA (1974) 8−49004

seismometers
see also seismology
with damping factor correction, freq. characts. anal. 8−7800
double-pendulum vibration oscillator or seismograph 8−16200
earthquake detectability, estimates for 478 globally distributed seismograph stations 8−15976
Gauribidanur seismic array in S.India, quantitative assessment of crust-upper mantle heterogeneities 8−32033
horizontal pendulum tiltmeters, recording device 8−40679
long-period seismographs, noises and generating mechanisms 8−12017
marine seismic survey, modified integrating A/D convertor *(Russian)* 8−49142
miniature wideband horizontal-component feedback seismometer 8−24382
near-bottom quantitative seismic profiler 8−16196
ocean bottom hydrophone 8−12020
ocean bottom multipurpose seismograph, design and shipboard operation 8−16187
ocean bottom seismograph development at Hawaii Inst. Geophysics 8−12019
Pull-Up Shallow Water Seismometer design and appls. 8−45025
seismic stations calibration, appl. of crustal spectrum characts. *(Russian)* 8−49158
seismoacoustic station ASS-1, construction, operation principles *(Polish)* 8−24377
SL-1 long-period seismograph at Simferopol, sensitivity *(Russian)* 8−12009
strong-motion accelerograph data management 8−36332
strong-motion accelerograph maintenance and data processing Japan 8−36330
strong-motion accelerograph network, USA, field operations 8−36331
vertical component meas. using quasi-TDF gyroscope *(Japanese)* 8−4006

selective dissemination of information *see information dissemination*

selenium
see also nuclei with ......
amorphous, bulk, DC cond. expts., cond. mechanism 8−43401
amorphous, conducting channel temp., time depend., under monostable switching conditions 8−19109
amorphous, diffusion and electrodiffusion of Ag and its role in switching effect 8−19163
amorphous, memory and threshold switching effects 8−14774
amorphous, relax of sound velocity, struct. determ. 8−38786
amorphous, struct., DSC and X-ray diffr. expts. 8−22662
amorphous, structure, random chain assembly model 8−6015
amorphous, theory of anomalous dispersion of photocurrent transients 8−6412
amorphous, thermal quenching of photocond. 8−23137
amorphous, trap-limited model for dispersive transport of holes 8−6378
amorphous film, between metal electrodes, switching mechanism 8−39172
amorphous films, characts. determ., majority carrier eqn., exponential trap distribution 8−14760
amorphous thin film photodeposition from hydrosols 8−11109
atom, 1897 to 9271 Å region spectrum 8−21869
atom, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
atom, electronically excited, direct obs., quenching by inert gases 8−25461
cathodoluminescence of trigonal Se at 10K *(German)* 8−2923
cubic modification prepared by shock compression 8−34494
Debye temperature, using elastic consts. and Kopp-Neumann relations 8−2220
dielectric function in trigonal phase, model calc., local-field corrections 8−39045
distribution equilibrium between $FeO\text{-}Fe_2O_3\text{-}SiO_2\text{-}Al_2O_3\text{-}CuO/Cu$ slag/metal system 8−44111
film, amorphous, density of localised states 8−34742
film, ion plated on thermally evap., ESCA interface study 8−43269
film, metal ion diffusion during memory switching 8−26976
film, noncryst., controlled vapour deposition, crystn., and optical props. 8−39696
hole drift mobility meas. by light pulse technique 8−19086
layer crystallinity meas., combination microwave resonator method *(Russian)* 8−22652
layer in metal crucible, radiation emissive power theory 8−22874
liquid, Anderson transition, cond., at high temp. and supercrit. press. 8−34869
liquid, US absorpt. meas. 8−2202
liquid, US rel. temp. depend., melting effects 8−38782
magnetic susceptibility meas. rel. to heat treatment 8−34952
metal-insulator transition induced by temperature 8−2529
monoclinic to trigonal transform., DTA, X-ray diffr. and optical microscopy meas. 8−14461
NMR chemical shift, tight-binding calc., trigonal Se 8−2759
oxide glasses with Bi or Se granules, elec. props. and microstructure 8−2490
photoabsorption spectra for amorphous, trigonal and monoclinic samples 8−23551
photocell, high-gain amplifier cct. 8−4679
thermal expansion and Gruneisen coeffs., 10-300K, trigonal or amorphous phase 8−22870
thermodynamic basis for generalisation of melting curves 8−2236
transient photocurrent data, multiple-trapping model of anomalous transit-time dispersion, α-phase 8−34860
trigonal, cryst. growth from CS_2 soln. 8−23596
trigonal, electronic struct., near metal transition, press. depend. 8−34758
vitreous, time dependent thermal expansion 8−14485
xerographic photoreceptor on flexible Ni foil, NiO interface 8−29184
CdS:Se, heavily doped, defect struct. 8−22756

selenium continued
GaAs:Se, fast diffusion of elevated temp. ion implantation, SIMS meas. 8−34527
GaAs:Se, implanted, depth profile, SIMS obs. 8−30655
He-Se^+ three-colour laser engineering 8−46644
KI:Se_2^-, reson. secondary emission, total spectrum *(Russian)* 8−19551
Na_2O-B_2O_3:Se, EPR, γ-ray effects *(Russian)* 8−31109
Se, atom positions, effect of press. 8−34465
Se I resonance lines, new meas. 8−938
α-Se, multiple-trapping model and time-dependent random walk 8−34842
Se XXVI, $2p^5$-$2p^43s(2p^43d)$ transitions in laser produced X-ray spectra 8−13460
Se-Bi bilayers chemical reactions, differential scanning calorimetry technique and obs. results 8−2398
Se+inert gas, ^1S-^1D collision-induced transitions 8−33588
Se_2, dissoc. energies determ. 8−33632
n-Si-Se, ion implantation studied by deep level transient spectroscopy 8−10392

selenium alloys
see also selenium compounds
$NbSe_2$ nonstoichiometry, electrical props. *(Japanese)* 8−10593
$NbSe_x$, nonstoichiometric, thermodynamic props. and crystal struct. *(Japanese)* 8−11206
Rb-Se system, phase equilibria 8−44079
Se-Sb(Bi), liq., diamag. susceptibility, semicond./metal behaviour 8−14927
Sn-Se, melt, density, kinematic viscosity, struct., 900-1400K 8−14395

selenium compounds
see also selenium alloys
selenide systems, binary, glass transition behaviour, model, comp. depend. 8−26673
As-Ge-Se based glasses, refr. index, 1-11 μm 8−39520
As-Se based glasses, refr. index, 1-11 μm 8−39520
As-Se-Ge film, master for hologram copying 8−29912
As-Se-Te glasses, electron transport props. 8−10439
Ge-As-Se, amorphous film, condensation formation and struct. props. *(Russian)* 8−38629
Ge-As-Se glass, appl. to 8 to 12 μm thermal imaging system 8−25935
Ge-Sb-Se glass, physical props., purification method for Sb, Se from surface oxides 8−46735
Ge-Se based glasses, refr. index, 1-11 μm 8−39520
$Ge_xAs_xTe_xSe_{100.3x}$, glassy, IR absorpt. spectra 8−23448
GeSe, amorphous film, optical properties 8−39620
Ge_xSe_{1-x} glasses, vibr. props. 8−2219
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
$(NH_4)_2SO_4$:SeO_3^-, γ-irrad., hyperfine interaction, ferroelec. transition effects, EPR expt. 8−15024
P-Se system, glass form. props., effect of P concentration *(Russian)* 8−2019
$P_2Se_xS_y$ glass, thermophysical props., 303-413K, struct. interpretation 8−47615
S-Se amorphous alloys, crystn. kinetics, elec. cond. meas. 8−34441
S-Se-Te semicond. glasses, mag. suscept. meas., refractive index 8−34952
SSe, dissoc. energies determ. 8−33632
SSe_{20}, crystalline phase growth in amorphous solid and liquid samples 8−43107
SSe_{40}, amorphous alloy, crystn., elec. cond. meas. 8−34440
Se-Bi-I, amorphous, high sensitivity visible-near IR photoconductor development and characterisation 8−39153
SeF_6, IR vibr. band contours, isotope substitution, force consts. 8−17670
SeF_6, isotopically selective IR photodissociation 8−42142
SeH_3^+, inversion barrier calc. 8−9271
SeO, IR bands of 10296 and 10491 Å, rot. struct. 8−5224
SeO_2, free radicals, pulse radiolysis obs. 8−20040
Se_3S_5, cryst. struct. 8−42978
SeTe, dissoc. energies determ. 8−33632
SnSe-Se, p-T projection of phase diag. 8−27485
Te-Se, Debye temp. calcs. using elastic consts. and Kopp-Neumann relation 8−2220
$TeSe_{12.5}$, amorphous alloy, thermal and elec. cond. during devitrification 8−26922
$Te_{43}Se_{30}Sn_7$ in MSM struct., switching effects 8−19164

self-adjusting systems
see also learning systems
neural nets, Caianiello type, self-control 8−20167
thermonuclear device control, automatic feedback parameter analogue simulation 8−26336

self-consistent field calculations *see SCF calculations*

self-diffusion
see also self-diffusion in gases; self-diffusion in liquids; self-diffusion in solids
coefficient at low densities 8−36950
electron gas, self-diffusion (spin diffusion) coeff., proper connected diagram expansion 8−21067
polymethylsiloxane-toluene gels, light scatt., compression moduli, cooperative diffusion 8−23970
two-dimensional transport coefficients, self-diffusion, theory 8−32777

self-diffusion in gases
Lennard-Jones mols., self-diffusion coeffs. at moderate densities, mol. dynamic simulation 8−38440
Ar-SF_6, thermophysical props., second virial and diffusion coeffs., thermal diffusion factors 8−42699
H_2, dense gas, self-diffusion, quasielastic incoherent neutron scatt. obs. 8−22451

self-diffusion in liquids
alcohols, flow meas., 25-65°C 8−2278
alkali metals, liq., self-diffusion coeffs. calcs. 8−2274
automated measurement technique, using NMR spin echo 8−27114
benzene, self-diffusivity data 8−6169
benzene-cyclohexane, solution, self-diffusion, capillary cell meas. 8−34637
benzene-toluene, solution, self-diffusion, capillary cell meas. 8−34637
chlorobenzene, self-diffusivity data 8−6169
cyclopropane, liq., mol. dynamics, self-diffusion, quasielastic neutron scatt. and NMR spin-echo meas. 8−10201
fluid of partially rough spheres, translational and rot. diffusion coeffs. 8−26404

self-diffusion in liquids continued
inert gases, transport props. in mean spherical approx. 8−9927
Lennard-Jones fluid, self-diffusion 8−43163
Lennard-Jones liquid mixtures, mol. dynamics, particle mass and size depend. 8−22615
lithium perfluoro-octanoate-water system, liq. cryst. struct., self-diffusion, NMR 8−15036
macromolecular dilute solutions, self-diffusion and momentum autocorrel. functions 8−33645
methane, liq., compressed, self-diffusion coeff. temp. and density depend. calcs. 8−38864
methyl iodide, liq., expt. comparison with rough sphere rot. diffusion model 8−30532
microemulsion, H_2O-toluol-sodium dodecylsulphate-alcohol, diffusion coeff., light scatt. data 8−15722
nematic liquid crystal, nuclear spin relax., translational self-diffusion 8−43670
poly(methacrylic acid), aq. soln., gelation kinetics under shear stress 8−3387
polybutadiene-n-hexane-n-heptane soln., Rayleigh scatt., diffusion coeff., viscosity 8−15179
polymer chain dynamics in solns. trapped in slit 8−2276
polymer melt, entangled, reptation 8−22669
spherical particles, hydrodynamic interaction, translational, rot. and translational-rot. diffusion 8−26405
TBBA, smectic, spin-lattice relax., self-diffusion, mol. rot. 8−35055
tracer diffusion meas., closed capillary method 8−14491
water, −31°C to 350°C 8−2275
water, diffusive motions near 1°C 8−43156
water, flow meas., 25-65°C 8−2278
CO, solid and liq., vibr. relax. and vibr. diffusion rates, 66-79K 8−17757
CaO-Al_2O_3-SiO_2 melt, at 1723 to 1823K, determ. of inter diffusivities matrix 8−43161
CaO-SiO_2-Fe_xO system, liq., steel making slag, Ca and Fe tracer diffusivities, O_2 press. depend. 8−38863
CdI_2, aq. soln., isothermal transport props., 298.15K 8−18815
CdI_2, aq. soln., transport props., irreversible thermodynamic anal. 8−14490
CdI_2, aq. solns., ^{115}Cd isotopic diffusion coeffs. 8−47545
CdI_3, aq. solns., ^{115}Cd isotopic diffusion coeffs., expt. anal. 8−43160
Cs, transport coeffs., temp. and press. depend., Enskog theory 8−6170
^3He-^4He mixture, near absolute zero, holographic interferometry exam. of phase changes 8−38905
Hg, transport coeffs., temp. and press. depend., Enskog theory 8−6170
Li_2O-SiO_2, cation interdiffusivity, electrochem. determ., 1100-1350°C 8−47544
Na-K liquid alloy, self and mutual diffusion coeff. 8−22877
$^{22}NaCl$, tracer diffusion meas. in aq. NaCl soln., closed capillary method 8−14491
Na_2O-CaO-SiO_2, molten glass, self-diffusion of Ca ions 8−10202
$NiCl_2$, aq. soln., diffusion and struct. 8−14488
PbO-$PbCl_2$-PbS, liquid system, elec. cond. meas. 8−43162
$TlNO_3$, molten, Tl^+ self-diffusion coeff., 230-330°C 8−22878
$TlNO_3$-$NaNO_3$, melt, cationic self-diffusion coeffs., temp. and conc. depends. 8−22879
$TlNO_3$-$RbNO_3$, melt, cationic self-diffusion coeffs., temp. and conc. depends. 8−22879

self-diffusion in solids
see also diffusion creep
adamantane, crystalline, lattice and sub-grain boundary self-diffusion coeffs. meas. 8−6179
alkali halide, diffusion of monovalent ions 8−30790
alkali silicate and borate glasses, ionic motion, ^7Li NMR obs. 8−27107
atomic diffusion mechanisms *(Hungarian)* 8−38868
BCC metals, stressed, computer simulation of vacancy and divacancy migration 8−47573
BCC structures, simulation of vacancy-thermotransport 8−47570
bimetal system, diffusion kinetics taking into account nondiagonal coeff. of Onsager matrix *(Russian)* 8−38871
dl-camphene, self-diffusion, effect of impurities, radiotracer and plastic deform. study 8−43177
Cationic conduction and diffusion and the compensation law 8−18822
crystal vacancy migration induced by subthreshold collisions, computer simulation exam. 8−47365
cubic crystals, random motion, of vacancies, correl. factor and NMR diffusion parameters determ. 8−2284
cubic crystals, randomly migrating vacancies, computer simulation of correlated self-diffusion 8−2283
elasto-diffusive solids, singularity movement, appl. to fracture propag. 8−30235
FCC crystals, close packed vacancy clusters, enumeration of migration, growth and contraction mechanisms 8−47352
FCC metals, self-diffusion calc. 8−10212
FCC metals and alloys, grain boundary energy and self-diffusion, effect of solute segregation 8−15412
ferrite-austenite transition, C diffusion const. determ., rate const. of carburization and decarburization 8−48396
glass, decomposition, phase separation processes, diffusion coeffs. determ. *(Germany)* 8−39736
glass, ion motion and mixed alkali effect analysis 8−30793
grain boundary crack, diffusional growth 8−47471
interstitialcy diffusion, correl. factor estimation 8−43167
ionic crystals, nonstoichiometric, equilib. with gas phase in mech. vibr. field 8−43388
metal, creep movement of dislocations, effect of stress distrib. at grain boundaries *(Russian)* 8−27564
metal, diffusion, correlation with entropy of fusion 8−43109
metal, dynamic study of defect mobility using HVEM 8−47327
metal, non-Arrhenius diffusion and NMR relax. relationship 8−47568
metal, pure, review 8−47561
metal, refractory, BCC, free migration of self-interstitials 8−47574
metal, self-diffusion, atomic jump processes 8−47562
metal, self-diffusion acceleration by dissolved H_2 *(Russian)* 8−34647
migration and formation energies rel. to Debye temp. and melting point 8−22710
migration energies of point defects, in pure metals and dilute alloys, calc. 8−47572

self-diffusion in solids continued
nuclear fuel element, cylindrical analytical soln. to mass transport eqn. 8−21643
paramagnet system, low-temp. diffusive transport for polarons and defectons 8−43174
plastically deforming solid, creep cavitation by vacancy diffusion 8−48471
ruby, rel. to temp.-time dependence of yield point by compression and extension 8−6988
short-lived large energy fluctuations, semiphenomenological collective treatment, Arrhenius approx. 8−43168
steel, austenitic stainless, bulk and grain boundary diffusion of Fe, Cr, Ni, effect of Si content 8−38875
steel, C, rel. to effect of temp., deform. rate and stress state on ductility *(Russian)* 8−35428
steel, cementite migration in temp. gradient 8−44151
steel, low alloy and C, reversible temper brittleness kinetics *(French)* 8−35498
steel, low C, hysteresis loop initiation mechanism under repeated load *(Japanese)* 8−39851
steel, of C, after high-temp. thermomechanical treatment *(Russian)* 8−39813
steel, stainless, thermal transfer of C *(Russian)* 8−6174
theory, connection between D_o and Q for self- and impurity diffusion 8−30777
vacancies, interpretation of data obtained by NMR and Mossbauer expts., mol. dynamics study 8−47567
vacancy formation energy, correl. with compressibility 8−2112
$16Na_2O.12CaO.72SiO_2$, self-diffusion of Ca^{2+} ions *(Japanese)* 8−6173
$40CaO.20Al_2O_3.40SiO_2$ slag glass, self-diffusion of Ca^{2+} ions *(Japanese)* 8−6173
Ag, electron irradiated, exam. of vacancy migration energies, and annealing kinetics 8−47571
Ag-Cd dilute alloy, isotope effect and correlation factor for Cd diffusion 8−14501
Ag-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Ag-Sn (0 to 6%), equilibrium intergranular segregation and diffusion 8−43130
α-AgI, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
β-$Ag_xW_yV_{2-y}O_5$ bronzes, β-phase existence range, elec. cond. and Ag diffusion 8−35373
Al, pressure effect on diffusion, theoretical study 8−47566
Al, quenched, diffusion solution for point defects in stress field, steady state and transient 8−30780
Al, vacancy double jumps and atomic diffusion 8−6175
Al, vacancy double jumps at high temp. 8−47569
Al-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Al-Zn solid soln., controlling creep mechanisms, role of diffusion 8−31469
Al-Zn solid soln., controlling creep mechanisms role of diffusion 8−31470
Al_2O_3, pure and Fe or Cr doped, polycryst., creep, diffusion mechanisms 8−11272
Al_2O_3 single crystal, vapour-grown, self-diffusion coeff. of O 8−30792
β-Al_2O_3-Na_2O, calculation of simultaneous ionic cond. and tracer diffusion 8−43178
As_2S_3-Ag_2S glass, Ag diffusion, 50-120°C 8−18828
Au, electron irradiated, exam. of vacancy migration energies, annealing kinetics 8−47571
Au film, threshold current density and incubation time to electromigration 8−14643
Au, temp. depend. of isotope effect 8−47563
Au, vacancy props. 8−47326
BaF_2, NMR relax., ionic cond. and self-diffusion 8−23362
$BaFe^{2+}{}_2Fe^{3+}{}_{16}O_{27}$, metal deficient, hexagonal with W struct., chemical instability 8−27662
CO, solid and liq., vibr. relax. and vibr. diffusion rates, 66-79K 8−17757
$CeCo_2$, of Co, interdiffusion exam., growth kinetics of intermediate layers 8−2304
CoO, polycrystalline, high temp. deform. 8−3174
$Co_{1-y}O$, self-diffusion and defect struct. 8−22889
Cr_2O_3, O diffusion coeff. from creep meas. 8−18823
CsBr, self-trapped hole, hopping motion, electronic excitation energy, activation energy, calc. 8−10046
CsCl, self-trapped hole, hopping motion, electronic excitation energy, activation energy, calc. 8−10046
CsI, self-trapped hole, hopping motion, electronic excitation energy, activation energy, calc. 8−10046
Cu, electron irradiated, exam. of vacancy migration energies, and annealing kinetics 8−47571
Cu, self diffusion at low temp., low energy ion beam sputtering 8−18821
Cu-Al (15 at.%), vacancy migration, and short range ordering, comparison of exp. results with theory 8−47356
Cu-Au solid soln., Cu rich, meas. of interdiffusion, intrinsic and tracer diffusion coeff. 8−47608
Cu-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Cu-Fe, dil. alloy solubility and diffusion of Fe 8−43170
Cu-Fe, implanted, Mossbauer study, rel. to annealing temp. 8−31135
Cu-Ge solid soln., isotope effect for Ge diffusion 8−2285
Cu-Ni-Zn alloy, at 775 degrees C, diffusional and thermodynamic interactions 8−38883
Fe, adsorbed S effects on surface reaction kinetics and surface self-diffusion 8−7234
2-Fe, ferromagnetic self-diffusion 8−6176
Fe-Ni-Co, diffusion controlled phase growth 8−30782
$FeB_5C_{15}SSi_{15}Cr_5$, amorphous, exam. of metalloid atom mobility by Auger spectroscopy 8−47575
$FeP_{13}C_7$, amorphous, exam. of metalloid atom mobility by Auger spectroscopy 8−47575
$Fe_{1-\delta}S$ chemical diffusivity and nonstoichiometric props. 8−10217
GaAlAs-GaAs heterostructures, electronic excitation effects on mobility of point defects and dislocations 8−2561
GaAs, degraded layer form. by annealing, photolum. obs. of defects 8−10968
Ge, creep and self-diffusion activation energies 8−38772
GeS_2-GeS-Ag_2S glass, Ag diffusion, 50-120°C 8−18828

self-diffusion in solids continued
H_2SO_4:Fe^{2+}, frozen aq. soln., photolysis, H form., distrib. and diffusion 8−20044
^3He solid, paramag., low-temp. diffusive transport for polarons and defectons 8−43174
LaF_3, self diffusion studied with ^{19}F relaxation 8−6180
$LaNi_5H_{6.6}$, $LaNi_5H_{6.2}$, H diffusion NMR spectra *(Russian)* 8−2287
$LiAlSiO_4$, β-eucryptite, of Li, one dimens. co-operative diffusion 8−2294
$LiNbO_{31}$ Li_2O diffusion for chemical control of laser induced optical damage 8−46693
$Li_3Sb(Bi)$, evaluation as electrode material, electrochem. expts., 360-600°C 8−11526
Mg, grain boundary diffusion creep 8−11291
Mo, powder sintering, transition metal activators, 1000-1350°C, heterodiffusion model 8−44044
Na, vacancy double jumps and atomic diffusion 8−6175
Na_2O-K_2O-SiO_2, Na diffusion 8−26724
Nb, diffusion of ^{95}Zr, diffusion coeff., effect on Nb self diffusion isotope effect 8−47602
Nb, meas., and enhancement by Fe addition 8−47590
Nb, self diffusion, 1353 to 2693K, diffusion coeff. 8−47576
Nb, up to 2570K, temp. and O content effects 8−47564
Nb-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
Nb-H interstitial alloys, prep. and props. 8−23669
Nb_2O_5, diffusion of O_2, solid-gas isotope exchange method *(French)* 8−34650
$Nb_{28}O_{70-x}$, O diffusion, rel. to Nb_2O_5 nonstoichiometry *(French)* 8−47583
Ni alloy, Numonic 80A, grain boundary crack diffusional growth, high temp. rupture possibility 8−47471
Ni-Cr (33 at.%), US deform. effect on short range order form. *(Russian)* 8−39839
Ni-Cr-Al aluminised coating, diffusion paths for formation and degradation of oxidation resistant coatings 8−11431
Ni_3Al, refractory transition metal alloying effects 8−26691
Ni_3Al-Ni_3Nb eutectic alloy, ^{63}Ni diffusion rate rel. to struct. defects *(Russian)* 8−2288
Ni_3Al-Ni_3Nb eutectic alloy, aluminide coated, diffusion processes 8−15593
NiO, of Ni, 700-1400°C, rel. to Ni oxidation mechanism 8−27681
NiO, polycrystalline, high temp. deform. 8−3174
β-Ni_3S_2, formed during sulphidation of Ni, defect struct. and chemical diffusion 8−2115
P_2S_5-Ag_2S glass, Ag diffusion, 50-120°C 8−18828
$PdH_{0.76}$, ^1H spin-lattice relax. meas. 8−43672
Pt, Frenkel defect migration and reactions, by subthreshold recoil events, exam. 8−47364
Pt, point defect properties, damage curve anal. 8−47359
Pt, self-diffusion of ^{197}Pt at low temp. 8−30789
Pt-Ba cathode, rel. to vaporisation 8−10272
Pt(Au), ion irradiated alloys, stage II recovery 8−47440
$RbAg_4I_5$, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
Si, creep and self-diffusion activation energies 8−38772
Si, rel. to O_2 partial press. depend. of oxidation-induced stacking faults 8−39922
SiO_2, non crystalline, exam. of O_2 transport phenomena correlations 8−47581
$Sr(NH_3)_6$, PMR linewidth, proton tunnelling and NH_3 rot., rapid NH_3 diffusion 8−35045
$SrTiO_3$ crystals, O ion diffusion, in single and polycrystalline structures 8−22892
Ta-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
Ta_2D, atomic displacements determ. by deuteron magnetic resonance *(Japanese)* 8−15035
Ti_2Ni, determ. of H diffusion coeff., quasielastic neutron scatt. 8−30781
TiO_2, rutile, mass transport mech. determ. by sinusoidal profile decay method 8−6178
$(U,Pu)O_{2-x}$, O_2 thermomigration described by cluster model 8−22888
UO_2, lenticular void migration rate in thermal gradient 8−21642
UO_2, O diffusion mechanism 8−33249
VH_x, NMR, phase transition obs., activation energy for H diffusion meas. *(Russian)* 8−27506
W, fine tip microcrystal, thermal smoothing after critical remoulding 8−27381
W, meas. on thin surface layer by sectioning 8−47565
YIG, anal. of data using results of thermogravimetric analysis 8−6050
$ZrH_mCe_n(PO_4)_2.XH_2O$, cryst., self-diffusion of Ce^{3+} ions 8−34648
α-$ZrH_{0.74}La_{0.42}(PO_4)_2.4.6H_2O$ cryst., self-diffusion of La^{3+} ions 8−34648

self-focusing
see also electrostriction; Kerr electro-optical effect; optical Kerr effect; optical self-focusing
electron beam self-focusing decline by gas breakdown, avalanche and plasma cond. effects 8−18420
extraparaxial region, laser beam self-focusing/defocusing, geom. optics approx. 8−5529
gaseous medium with solid microfilling, theoretical analysis *(Russian)* 8−25797
laser single picosecond pulse, freq. sweeping and self focusing, direct streak meas. 8−25915
plasma, self-focusing generation of high laser flux densities in laser prod. plasma 8−18413
relativistic electron beam focusing using axial loads 8−18464
SELFOC fibre, non-Gaussian laser beam propag. 8−1335
semiconductor lasers, stripe geometry 8−29954
six-level atomic medium, self-focusing of two intense monochromatic waves *(Russian)* 8−25932
(GaAl)As-heterostruct. stripe lasers, light/current characts. and near field shifts, waveguide self focusing effects 8−29952
n-GaAs, laser beam self-focusing in mag. field, carrier mechanism 8−33788

self-induced transparency
exciton part of spectrum self-induced transparency 8−33786
exciton transitions, intraseries and interseries, self-induced transmission and radiation echo 8−5528
excitons, steady-state exciton-photon pulse dispersion law 8−30028

self-induced transparency continued
pentacene, narrow band laser excitation, fluoresc. decay, optical free induction, dipole moment 8−21956
semiconductor, superlattice, EM field nonlinear penetration 8−25930
soliton wave packet propag., superfluidity of Bose condensed excitons and photons 8−22178
solitons, lecture 8−24690
three level medium, ultrashort pulse propag., transient processes 8−18024
three-level atom system, distortionless optical pulse propag. 8−22179
two-frequency pulse in resonantly absorbing medium 8−42390
CdS$_{0.4}$Se$_{0.6}$, reson. excitation of excitons by ultrashort freq.-tunable light pulser 8−46728
Cu$_2$O, two-photon interaction of laser radiation with Frenkel excitons 8−25931

self inductance *see inductance*

self-optimising systems *see self-adjusting systems*

self-organising storage
visual cortex development model, mammal 8−3483

self-organising systems *see self-adjusting systems*

self-trapping
hadrons, relativistic self-trapping 8−21405
one-dimensional crystal lattice, nonlinear interaction of ps light pulses with lattice vibrations 8−30032

SEM *see scanning electron microscopy*

semi-insulating materials *see semiconductor materials*

semiconductor alloys *see semiconductor materials; semiconductors*

semiconductor counters
see also position sensitive particle detectors
CdTe, detection characteristics in gamma-ray spectroscopy 8−41888
charged particle beam homogeneity testing with surface barrier detector 8−25365
cosmic ray spectrometer, for study of 6 to 50 MeV electrons 8−45235
detector array for 4-dimens. reconstruction of radioisotopic activity in brain 8−11732
fabrication techniques for Si and Ge diode structs. 8−46219
gamma camera, electronically collimated, for single gamma emission computed tomography 8−44603
nondestructive neutron activation analysis of environmental samples using low-energy photon spectrometry 8−3995
p-n junction with inhomogeneous impurity distrib., space-charge layer 8−30982
signal coupling of semiconductor detector to cold resistance preamplifier through cable or delay-line transformer 8−33401
spectrometer system, energy resolution, electronic aspects 8−46231
spectroscopy and applied phys. appls. 8−46218
thin window detectors for interplanetary particles, Compton-Getting effect complications 8−49269
TOF spectrom., intrinsic time resolution of detectors 8−849
whole-body counter, shadow-shielded, for detection, identification, and localisation of incorporated radionuclides *(German, English)* 8−20266
X-ray imaging, MOS solid-state detector arrays 8−47180
X-ray semiconductor radiation detector, cooled preamplifier systems *(Slovak)* 8−21813
α, counting chamber, for use with surface barrier detectors 8−873
β-γ-γ coinc. spectrom. using GM-Ge(Li)-Na(Tl) counter combination 8−46210
CdTe, biotelemetry of glomerular filtration rate in man by external detection of DTPA-(Sn)-^{99}Tc^m 8−44591
CdTe, characterisation by light spot scanning 8−41894
CdTe crystal growth for γ-ray detectors 8−41889
n-CdTe, detector material, single crysts., activation energy anal. of defect levels 8−6321
CdTe detectors, depletion layer extension 8−41891
CdTe detectors, gamma and electron irradiation effects 8−41893
CdTe detectors, international workshop 8−41887
CdTe, electron induced defect creation rates 8−41892
CdTe n-type low resistivity detectors, advantages and limitations 8−41890
CdTe semiconductor detector system, ^{133}Xe clearance meas., muscle blood flow in man 8−40305
CdTe, thermal neutron detection 8−17479
CdTe, use in ovum movement measurement in rabbit oviduct 8−36087
Ge and Si detectors, development, construction, operating principles, uses 8−46220
Ge and Si material props., purification, cryst. growth, ion implantation 8−47674
Ge camera, 2-detector, 512 element high purity prototype 8−40301
Ge detectors, calibration using precise relative γ-ray intensities 8−17469
Ge detectors, γ-γ linear polarisation direction correls., ^{110}Ag^m cascade decay *(Japanese)* 8−41903
Ge detectors array, collimated, computer-driven scanning bed, clinical appls., tomography 8−40309
Ge diode detector telescope for particle spectroscopy, design and performance 8−13384
Ge diodes, γ-radiometric appl. 8−33385
Ge, fast and slow quenching defects 8−39052
Ge γ-ray detectors, materials props., appls., radiation damage 8−13392
Ge, high parity detectors, 6 GeV/c proton irradiation 8−37508
Ge on-line, hyperpure detector, radiation monitoring system 8−37493
Ge, purification by zone refining 8−39683
Ge spectrometer, energy and efficiency calibration in 100 keV to 3000 keV γ-ray energy range 8−17464
Ge, ultra pure, method to determ. composition and struct. of non-elemental acceptor and donor centres 8−39658
Ge:O, intrinsic γ detector, deep level defect connection with O content *(Russian)* 8−43331
Ge(Li) 50 cm^3 detector, energy response for 4 to 10 MeV photons 8−46211
Ge(Li), automatic anal. of complex γ-ray spectra 8−33370
Ge(Li) commercial coaxial large-volume detectors, time characts. 8−9029
Ge(Li) detector, comparison with Ge(Li)-NaI(Tl) Compton suppression spectrometer for low level activity meas. *(Slovak)* 8−21814
Ge(Li) detectors, efficiency calibration using continuous external bremsstrahlung 8−46228
Ge(Li) diodes, teflon covered for fast neutron detection 8−25384

semiconductor counters continued
Ge(Li) gamma detectors, radial efficiency gradients 8−9034
Ge(Li), in-beam γ-ray spectroscopy at tandem Van de Graaff accelerators 8−13373
Ge(Li) system for low level radioactive gas monitoring 8−9038
Ge(Li) upward looking dip-stick type spectrom., in-situ environmental γ-ray meas. 8−37480
Ge(Li), well-type detectors for low-level radiochemical analysis 8−37119
Ge(Li)-NaI(Tl) Compton suppression spectrom. for low-level activity meas. 8−9022
Ge(Li)-NaI(Tl) Compton suppression spectrometer for low level activity meas., rel. to Ge(Li) detector *(Slovak)* 8−21814
HgI$_2$, characterisation by light spot scanning 8−41894
HgI$_2$ detectors, international workshop 8−41887
HgI$_2$, detectors, novel pulse processing system 8−41902
HgI$_2$ detectors, recent improvements 8−37507
HgI$_2$ detectors, state-of-art crystal growth and nucl. spectroscopic evaluation 8−41895
HgI$_2$, energy response to ^{137}Cs photons, appl. to medical imaging 8−44592
HgI$_2$ in vivo medical probe, DC and pulse counting meas. 8−44593
HgI$_2$ miniature probes for in-vivo medical appls., fabrication, spectroscopic evaluation 8−40308
HgI$_2$ nuclear detectors, bulk homogeneity, spectral response, performance 8−37524
HgI$_2$, nuclear radiation detector, status *(Japanese)* 8−33398
HgI$_2$, photoelectronic props. 8−41897
HgI$_2$, radiotelemetry pill for biomedical meas. of ionising radiation 8−40318
HgI$_2$, resolution lim t in room temp. low energy X-ray spectrom. 8−37479
HgI$_2$, thermally stimulated current meas. 8−41896
Si, defect prod. by GeV muons, thermally stimulated current technique 8−5099
Si detector electrical contact at He temp. to evaporated Au film 8−37019
Si, detector response functions for radioisotopes complex β spectrometry *(Slovenian)* 8−21802
Si detector with p-i-n junction in pulse count mode for γ dosimetry 8−33386
Si detectors, automatic anal. of complex charged particle spectra 8−33370
Si detectors, CERN neutrino beam monitoring by μ flux in Fe shield meas. 8−37523
Si detectors, charge multiplication under dense irradiation 8−37506
Si diode detectors in radiological physics, energy compensating shield development 8−24142
Si diode detectors in radiological physics, high-energy photon dosimetry 8−24143
Si diode neutron detector for meas. near high-energy accelerator, photon and electron response 8−35963
Si diodes, γ-radiometric appl. 8−33385
Si epitaxial detector fabrication, crystal growth and preferential etching 8−37505
Si p-n junction radiation detector behaviour in temp.-compensated cct. 8−33389
Si photodiodes for neutron dosimetry 8−31907
Si solid state detector telescopes, neutral particle background effects 8−28472
Si subnanosecond detector, charcts. 8−9027
Si surface-barrier detectors with Sn electrodes, characts. 8−5097
Si surface-barrier detector in lava or teflon housing, production 8−17481
Si:P, B, α-particle spectrum fabrication by ion implantation 8−33373
Si(Li) detector probe with RFT radiation meas. unit for diagnosis of intraocular tumours *(German, English)* 8−20265
Si(Li), in-beam γ-ray spectroscopy at tandem Van de Graaff accelerators 8−13373
Si(Li), relative photoionisation determ. from X-ray meas. 8−33369
Si(Li) thin window detectors for NASA ISEE-C cosmic ray telescope 8−40819
U stored in lung, meas. using NaI and solid-state detectors 8−28090

semiconductor defects *see crystal defects*

semiconductor device manufacture
Used for commercial manufacture only
substrate spin coating process, rheology and modelling 8−27655
surface contaminant anal. by plasma chromatography-mass spectroscopy 8−3433
ZnO based varistors, evolution and role of chem. constituents rel. to prep. method, influence on elec. props. *(French)* 8−31367

semiconductor device models
diode array SAW correlator model and expt. 8−9508
FET, alloy scatt., high field transport 8−30929
high-power p-n junctions, large-area inhomogeneous, I-V characts. theory 8−47859
J-FET noise model for low-noise photodiode amplifiers in optical fibre receivers 8−37997
MIS Schottky barrier and conducting diodes with interface traps, capacitance and conductance 8−10564
MOS structure, bulk lifetime determ. by voltage step response method 8−47882
MOS system photocapacitance, influence of surface charge fluctuations *(Russian)* 8−43480
MOS system surface charge inhomogeneity modelling and analysis *(Russian)* 8−43479
one-dimensional phenomenological transport equation set 8−39102
p-n junctions, thermally assisted field emission near precipitates 8−14809
SAW p-n diode storage correlator, charging process 8−9500
SAW storage correlator equivalent circuit models 8−9506
secondary breakdown, hydrodynamic instability model *(Russian)* 8−43407
surface CCDs, electron mobility surface diffuse scatt. model 8−47879
surface recombination, effect on steady-state relationships 8−39191
Al$_x$Ga$_{1-x}$As LEDs, nonlinear distortions anal. 8−37992
Al$_x$Ga$_{1-x}$As-GaAs LED design and characterisation for fibre-optic communications 8−46796
Cu$_2$S-CdS heterojunction model 8−39205

semiconductor device testing
see also integrated circuit testing
avalanche photodiode receiver sensitivity, specification and testing *(German)* 8–38015
electron beam induced current technique appl. to semicond. device characts., review 8–21302
laser diode and transmitter unit lifetime tests *(German)* 8–37883
laser diode degradation modes and accelerated life tests 8–1233
MOS, capacitors, SEM investigs. using electron beam induced current technique 8–23177
p-n junction, planar, nondestructive determ. of depth by SEM 8–19132
planar diode characterisation using SEM with movable Faraday cup, illuminator and backscatt. diode detectors 8–21292
GaAs-$Al_xGa_{1-x}As$ DH laser, high-temp. degradation *(German)* 8–37884
$Ga_{1-x}In_xAs_{1-y}P_y$-InP DH lasers, 1000-hour CW operation 8–1265

semiconductor devices
see also field effect devices; Gunn devices; integrated circuits; semiconductor counters; semiconductor diodes; semiconductor junction lasers; space-charge limited devices; thermistors; thyristors; transistors; transit time devices; varistors
1/f fluctuations *(Japanese)* 8–43448
crystal defects, appl. of STEM 8–23155
crystal defects, high voltage TEM obs. 8–10037
gas detector, for gas chromatograph, electroadsorption phenomena *(Russian)* 8–7307
generator current control and stabilization appls. 8–21790
laser output control, monitoring 8–22137
micron scaled cathodoluminescence with SEM, review 8–23537
noise, physical aspects *(French)* 8–19111
particle tracking chamber based on semiconductor detectors *(Russian)* 8–872
radiation effects, conf., Williamsburg, USA (July, 1977) 8–26594
resistance thermometers, for low-temps. 8–223
sensors properties and uses *(German)* 8–36991
STEM characterisation 8–34893
tensoresistor use for extending operating temp. range of press. transducers 8–4608
ternary semiconductor device applications, review 8–39207
thermometer, resistance, thin-film, Ti and Ge, for surface temperature meas., design, fabrication and appl. 8–24792
UHF biased semicond., cylindrical resonator for photoconductivity investig. 8–21117
Si digital Sun sensor electrical and optical props. *(Japanese)* 8–32313
Si strain-gauge device, two-component, for aerodynamic tests on thin assemblies 8–3263

semiconductor diode light emitters *see light emitting diodes*

semiconductor diodes
see also avalanche diodes; BARITT diodes; charge storage diodes; light emitting diodes; photodiodes; Schottky-barrier diodes; solid-state rectifiers; tunnel diodes; varactors; Zener diodes
control circuits using diode switches with switching of nsec pulses 8–8415
double injection p-i-n, negative resistance characts. 8–30983
electron beam induced current technique appl. to semicond. device characts., review 8–21302
gated diode, surface states, density and capture cross section determ. *(German)* 8–23173
low temperature measurement in high mag. fields, instrumentation and methods, review 8–37003
minority and majority mobilities, transit time effects determ. 8–14753
p^+-i-n^+ Si:Au diode, I-V characts., recomb. centre influence 8–19134
p^+-n diode under forward bias, effects of radiation-induced deep levels on admittance 8–23157
p-ν-n Si, for CO_2 laser modulation 8–42364
p-i-n diode, design technique for specific reverse bias characts. 8–34890
p-i-n subnanosecond Si detector 8–9027
planar diode characterisation using SEM with movable Faraday cup, illuminator and backscatt. diode detectors 8–21292
S-diode, Zn-doped, for IR modulation radiometer 8–4694
temperature measurement using double p-n junction diodes *(German)* 8–201
temperature sensor appls., mag. field depend. 8–45623
thermometric characts., 15 to 300K 8–8403
whisker diodes sub-MM receivers, antenna characts. 8–12755
n-GaAs planar diodes with intervalley carrier transfer, dynamics and captive processes 8–47864
GaAs:Cr, high magnetosensitivity of negative resist. region 8–26946
GaAs:Cu(Cr) S-type diodes, thermal quenching of injection currents and current-voltage characts. 8–26942
GaAs-AlAs heterojunction, recombination currents 8–14806
$Ga_xIn_{1-x}Sb$, with Au metallisation, interdiffusion effects of heat treatment 8–14820
InSb, reverse biased diode, negative resist. 8–19129
Si diode, Auger recombination coefficient at very high injection rates 8–47863
Si diode detectors in radiological physics, energy compensating shield development 8–24142
Si diode detectors in radiological physics, high-energy photon dosimetry 8–24143
Si, neutron irrad., displacement damage for monoenergetic neutrons 8–30670
Si:Al lamellar devices, surge protector, solar cell, HV diode and negative resistor appls. 8–10068
SiC, vapour grown, elec. breakdown field 8–19135

semiconductor doping
see also doping profiles; ion implantation
amorphous semiconductors, doped, electronic props. 8–19030
amorphous semiconductors, doping effect and nature of localised states 8–14696
capacitance-voltage profiling tech. 8–38749
combined doping 8–2147
electron beam induced current technique appl. to semicond. device characts., review 8–21302
electronic component and material improvement, ion implantation techniques *(French)* 8–18667
GaAs:O, growth, O_2 solubility determ. rel. to temp. 8–34624
III-V compounds, vapour growth, element incorporation 8–30556

semiconductor doping continued
ion implantation dose meas. 8–2150
ion implantation technique 8–14371
ion implanted impurities, absolute dosimetry using colorimeter-Faraday cup system 8–26590
MBE, doping impurity transport, free carriers effect 8–26793
MOS p-channel transistors, ion implantation effect on threshold voltage 8–34903
predeposition diffusion profiles, errors in iterative numerical calcs. 8–26591
Si (111) face, cryst. film growth, transfer of impurity during condensation of mol. beams 8–10299
ternary semiconductor device applications, review 8–39207
thermomigration method, using molten wires, nonequilib. morphology of migrating liq. inclusions 8–38882
VPE, mol. flow in vac., free carriers effect on doping impurity distrib. 8–47682
$Al_{0.36}Ga_{0.64}As$, LPE films, Te-induced defects 8–43037
$Al_{0.7}Ga_{0.3}As$ layers, diffusion of Zn, comparison with GaAs 8–26589
$Al_xGa_{1-x}As$, epitaxial layer, distribution of Te and Ge impurities 8–43046
$Al_xGa_{1-x}As$, solid soln., synthesis by ion implantation Al^+ ions 8–38741
AlGaSb, growth and characts. for 1.0-1.8 μm heterojunction devices 8–6870
CdS, diffusion of In, 729-1411K 8–22895
CdS:$CuCl_2$, sintered film, dopant conc. effects on carrier mobility 8–2484
CdS:Cu(Se)(Zn), heavily doped, defect struct. 8–22756
CdS:N, P, As, Sb, Bi photoluminescence obs. 8–10965
CdSe:Cu surface layer of CdSe, microstruct., photoelec. props. 8–43221
CdSe:In, epitaxial layer, effect of activator distribution on conductivity 8–43047
CdTe:As^{2+}, photovoi. props. of p-n junction prod. by ion implantation 8–43038
CdTe:Cu, doping effects on evaporation kinetics and electronic props. during high-temp. annealing in vacuum 8–22743
CdTe:Ge, dopant behaviour 8–22742
$CuInS_2$, homogeneity region and intrinsic dopant mechanism 8–34630
Cu_2S:Cd(Zn), effects of doping on elec. and optical props. 8–38743
GaAS, semiinsulating, heat treatment effects 8–6382
$Ga_{1-x}Al_xAs$:Si p-n junction, doping in LPE, elec. and luminesc. props. *(Czech)* 8–47851
GaAs, CVD, S doping behaviour during growth, electron conc. 8–26784
GaAs, donor and acceptor concs. determ. by optical method 8–19525
GaAs, ion implantation, review 8–6080
GaAs, low temp. selective Zn diffusion process using anodic oxides 8–47399
GaAs, produced by VPE using trimethylgallium and arsine, controlled doping 8–6855
GaAs, semi-insulating, effects of heat treatment characterised by SIMS 8–6091
GaAs:Cu, Fe, Cr resistance thermometer expts., 0° to 200°C *(Russian)* 8–45627
GaAs:Fe, for FET, VPE and characterisation 8–19672
GaAs:Ge, LPE growth, Ge incorporation 8–27423
n-GaAs:Ge epitaxial layer, ion-implantation doped, anomalous behaviour of impurities 8–18669
GaAs:Se(Sn), annealing kinetics of implanted donor ions 8–6079
GaAs:Si, current-controlled growth, segregation and amphoteric behaviour 8–31346
GaAs:Sn, LPE, growth rate and temp. depend. of impurity incorporation 8–3063
GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8–6067
$GaAs_{1-x}P_x$, N doping using ionised beam in MBE 8–47400
$GaAs_{1-x}P_x$, solid soln., synthesis by ion implantation P^+ ions 8–38741
GaP, low temp. selective Zn diffusion process using anodic oxides 8–47399
GaP:Cr_2O_3, growth, dopant distribution, elec. resist. 8–34531
n-GaP:In, LPE from In solvent, dislocation density reduction by doping 8–18919
GaP:N, epitaxial layer, determination of nitrogen concentration from cathodoluminescence spectra 8–38744
GaP:N, Zn epitaxial layers for yellow-LEDs, prep. and props. *(Czech)* 8–48234
GaP:Sn, LPE growth from Sn soln., elec. resist. and Hall coeff. meas. 8–2593
GaSb high-purity and doped layers grown by LPE and VPE methods 8–6863
Ge, growth from lightly doped melt, dopant distrib. 8–2039
Ge, p-n junction, I-V curve for microplasma breakdown, at. size difference effect 8–2550
Ge:P, doping of epitaxial layers, in chloride and hydride processes 8–43036
HgI_2, doped, vap. growth by temp. oscill. method 8–39674
InGaAsP, LPE growth, orientation depend. of incorporation of Ga, As, and Zn 8–6869
n-InP, high resistivity layers produced by Fe^+ implantation 8–47404
InP, ion implantation used to create n-type, p-type and high resist. layers 8–6076
InP, ion-implanted n- and p-type layers, characts. 8–6075
InP, n-type conductive regions produced by ion implantation 8–10067
InP, planar Zn diffusion process for p-n junction formation 8–43040
InP:Zn, isoconcentration diffusion of Zn at 800°C 8–6186
InP-metal Schottky barriers, effects of heat treatment characterised by SIMS 8–6446
$Pb_{1-x}Sn_xTe$:Cd, Cd diffusion obs. using Hall mobility and Cd solubility expts. 8–26584
$Pb_{1-x}Sn_xTe$:In(Cd), photoconductivity 8–23129
PbTe:Cd, Cd diffusion obs. using Hall mobility and Cd solubility expts. 8–26584
p-Si, $^{49}BF_2$ ionised mols. obtained by implantation of 8–31003
Si, amorphous, elec. and opt. props., review 8–23094
Si, As diffusion from As doped oxide film, stress effect on film roughening 8–2389
Si, As diffusion from doped polycryst., conc. depend. 8–34656
Si, As implantation *(Japanese)* 8–38738
Si, behaviour of B molecular ion implants 8–47405
Si, complex doping effects on limiting electron conc. 8–22740

semiconductor doping continued
Si, correl. between photolum. spectra and impurity conc. 8−23513
p-Si, doping by Ti diffusion 8−18670
Si, epitaxial growth, impurities incorporation kinetics *(French)* 8−22749
Si epitaxial layers, doping the P cpds., process parameters effect on electrophys. characts. 8−38734
Si, epitaxy lateral autodoping kinetics 8−6087
Si film, sputtered amorphous, P and B doped, elec. cond. and thermopower meas. *(French)* 8−47403
Si, floatzone, P doping by thermal-neutron irradiation 8−22750
Si, impurity conc. from MOS DC transfer characts. 8−2155
Si impurity diffusion through SiO_2 layer, physicochemical processes *(German)* 8−2149
Si, ion implanted Kr migration during anneal 8−18834
Si, MBE, on n^+ Si, with wide range doping control 8−27402
Si, minority carrier lifetime degradation by $POCl_3$ emitter diffusion 8−2496
n-Si, mobility and resist. as functions of dopant density and temperature 8−2487
Si, oxidised surface, irregular growths of $B(OH)_3$ 8−39926
Si, planar technology, insulating thin film preparation and props. 8−10589
Si, polycryst., lateral diffusion of B, influence on submicron MOST fabrication 8−26588
Si, polycryst. film doping during deposition and with diffusion 8−6088
Si, shallow impurities, photolum. anal. 8−23512
Si, SiO_2 diffusion sources under oxidising ambient conditions, solar cell fabrication 8−2148
Si, transmutation doped, deep trap level analysis 8−10471
Si, transmutation doped, stabilisation 8−10449
Si:Al, diffusion, open-tube high-vacuum method 8−6084
Si:Al film, low-temp. diffusion of Al 8−38878
Si:Al p-n lamellar structures, processing by molten Al rich wire thermomigration 8−10068
Si:As, epitaxy, lateral autodoping kinetics 8−39699
Si:As, high conc. diffusion from double-layer sources 8−10075
Si:As, ion implanted, glow discharge optical spectroscopy 8−22755
Si:As, ion implanted, two-step annealing 8−18664
Si:Au, autoradiographic detection of getter effect, Ar ion implantation 8−38739
Si:Au, diffusion, effect of C concentration 8−10076
Si:B, heavily doped, annealing characteristics obs., Ne^+ ions implantation for damage density control *(Japanese)* 8−18666
Si:B, heavily implanted wafers, secondary defect generation suppression by HCl oxidation 8−10069
Si:B, highly-doped polycryst. thin film, growth kinetics and properties 8−44016
Si:B, implantation energy, rel. to dose, Szabo-Bogancs effect 8−38740
Si:B, lattice location of implanted ions after laser annealing 8−30660
Si:B, solubility and precip., and supersat. resulting by thermal predeposition 8−11232
Si:B,P, high conc. diffusion without disloc. generation 8−10072
Si:B deep diffusion at solid solubility limits for p-channel MOS IC 8−10070
Si:B deposition diffusion from B_2H_6, AES analysis 8−6085
Si:B high-temp. diffusion, glass layer formation obs. 8−7069
Si:B(Sb), deform. coeff. due to impurity diffusion 8−18671
n-Si:Cs, ion implanted, minority carrier lifetime and defect struct., annealing effect 8−6395
Si:Ga, As, sequential diffusion, radiotracer obs. 8−10073
Si:K, ion implanted, influence of doping and annealing on carriers 8−38742
Si:Li, amorphous, interstitial doping by in-diffusion and implantation and elec. characterisation 8−26585
Si:O, implanted O location, channelling effect meas. 8−26593
Si:P, and of P diffused layers 8−38736
n-Si:P, doping, by zone melting using solid dopant source 8−43035
Si:P, homogeneous epitaxial layers, production, appl. of neutron transmutation doping 8−38737
Si:P, ion implanted, ionisation enhanced annealing, resist. changes meas. 8−30667
Si:P, N implantation through Si_3N_4 film, depth distrib. of knock-on N, SIMS meas. 8−10066
Si:P, neutron transmutation doped, electron trap annealing, deep level transient spectra 8−14368
Si:P, polycryst., neutron transmutation doped, elec. props. 8−34836
Si:P, sputter-deposited polycryst. films, resist. meas. 8−14842
Si:P Czochralski crystal donor homogenisation by thermal neutron irradiation 8−6108
Si:Sb, dopant microsegregation rel. to crystal and crucible rotation 8−11106
Si:Sb crystal Czochralski growth, radial microsegregation analysis 8−11105
Si-Ge, solid solns., doping characts. 8−22745
n-Si-Se, ion implantation studied by deep level transient spectroscopy 8−10392
SiC, N doping inhomogeneities due to growth conditions 8−22741
SiC:N, conversion factor at high doping levels 8−22744
$^{30}Si(n,\beta)^{31}P$ transmutation doping 8−6107
$^{30}Si(n,\beta)^{31}P$ transmutation doping and electrical characterisation 8−10071
VO_2:Al(W), thin layer prep. by reactive DC sputtering doping effectiveness *(German)* 8−6847
V_3O_5, metal-insulator transition, effect of doping *(German)* 8−30869
(W-Au)-SiO_2-Si:B MOS transistor, ion implantation effect on threshold voltage 8−34903
ZnSe:Al(Ga)(In), single cryst., doping, blue luminesc. 8−39584
ZnSe:B(F), ion implantation, photocond. and cathodoluminesc. meas. 8−26586
ZnSe:N, ion implanted cond. type conversion on annealing *(Korean)* 8−18668
ZnTe:Li(Cl)(Al)(In), ion implanted and annealed, photoluminesc. meas. 8−15208

semiconductor-electrolyte boundaries
anthracene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
CdTe thin polycrystalline film for photoelectrochemical cell 8−23162
chrysene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764

semiconductor-electrolyte boundaries continued
electrodes for light energy conversion and storage 8−14813
film-covered metal electrodes, electron transfer reactions 8−20024
flat band potential from Mott-Schottky plot 8−34896
flatband, potentials, prediction from atomic electronegativities 8−40068
n-type semiconductor, thermodynamic pot. for anodic dissolution, rel. to photoelectrochem. cell efficiency 8−26948
naphthalene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
perylene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
phenanthrene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
photoelectrode kinetics of H_2 evolution reaction at semicond. electrodes 8−44388
photoelectrolysis, role of semicond. props. 8−14816
photoelectrolysis irreversibilities 8−23161
photoelectrolysis of water with semicond. materials 8−2562
photoelectrolysis of water with semicond. surface, review *(Japanese)* 8−6440
photoexcited semiconductor electrode, I-V curve 8−14811
pyrene, crystal-electrolyte interface, ionis. energy of uppermost cryst. mols. 8−27764
semiconducting oxide electrode, O_2 reduction kinetics improvement 8−20029
solar cell, efficiency, electrochemical stability and surface preparation 8−14817
solar cell, minority carrier transfer, energy levels role 8−39209
sulphide minerals, two-layer capacitance meas. *(Russian)* 8−10551
CdS photoanode, for photovoltaic cells, prep. and characts. 8−14818
n-CdS, photoanodic behaviour in acetonitrile-iodide solns. 8−47868
n-CdS-CdSe mixed polycryst. electrode for photoelectrochem. cell 8−47867
CdS-GaAs n-n voltage-enhanced photoanode, solar cell efficiency 8−14810
CdSe photoelectrode, polycrystalline, for solar energy conversion 8−19147
Fe_xO_y electrodes, photoassisted electrolysis of water 8−15683
$FeTiO_3$, Fe_2TiO_4, influence of cryst. struct. on photoresponse of electrodes 8−43471
p-GaP, cathode of photoelectrochemical cell 8−10552
p-GaP electrode, spectral response extension by metal adatoms 8−34895
GaP photoelectrode, role of Au overlayers 8−14812
GaP, single cryst. electrode, impedance, effect of freq., voltage and electrolyte comp. 8−19146
Ge, electrodeposited, X-ray, electrochem., and electrorefl. characterisation 8−14624
n-InP photoelectrode, stabilisation to photoanodic dissolution, in aqueous solutions of Te^{2-}/Te_2^{2-} 8−14814
n-InP photoelectrode, stabilisation to photoanodic dissolution in solns. containing Te^{2-} and Te_2^{2-} 8−19144
Si, ion implanted, in HF electrolyte, characterization by electrolytic reverse current 8−6078
n-Si-electrolyte boundary, selective anodic oxidation 8−15563
$SrTiO_3$, photoanode water photoelectrolysis at high current density 8−15679
$SrTiO_3$ photoelectrolytic electrodes, defect surface states obs. 8−14815
TiO_2 (rutile) photoanode, corrosion suppression by high-energy redox reactions 8−23163
n-TiO_2, crystal, in aqueous soln., electrochemistry and electrolum. meas. 8−48665
TiO_2 electrode, sensitised, photoelectrolysis of water in sunlight 8−19143
TiO_2 photoanode, water photoelectrolysis at high current density 8−15679
n-TiO_2, rutile anode, water photolysis 8−2563
WO_3 electrodes, electrochem. and photoelectrochem. behaviour 8−26949
ZnO (0001) surface, hardness, electrolyte pH and bias voltage effect 8−47654
ZnO electrode, in aq. soln., phototransition at 380 nm, anodic photocurrent obs. 8−19145
ZnO-electrolyte interface, electron transfer sensitisation by salt additions 8−34894

semiconductor electron states *see band structure of crystalline semiconductors and insulators; electron energy states of amorphous solids; electron energy states of liquid semiconductors*

semiconductor epitaxial layers
anodic thinning below avalanche breakdown potential 8−10309
diamond:B, charge transfer and acceptor state 8−19169
evaporated compound films, formation and structure *(Japanese)* 8−22979
III-V epitaxial pseudobinary compounds, lattice deform. determ. by X-ray diffraction 8−6242
III-V semiconductor, MBE and applications 8−11135
III-V semiconductors for optoelectronic appls., review 8−30975
InP-InGaAsP-InP, low threshold laser, threshold density temp. depend., LPE method *(Russian)* 8−22133
ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
laser epitaxial growth with moulded reflectors 8−42347
LPE, Peltier induced 8−48342
LPE, Peltier induced 8−48343
MBE, doping impurity transport, free carriers effect 8−26793
potentially superior method of preparing semicond. devices *(Czech)* 8−44027
VPE, mol. flow in vac., free carriers effect on doping impurity distrib. 8−47682
AlAs-GaAs film heterojunction, VPE growth and characts. 8−6439
AlGaAs layer, epitaxial, grown from pre-heated Ga soln., photolum. study 8−39591
$Al_{0.36}Ga_{0.64}As$, LPE films, Te-induced defects 8−43037
$(Al_{0.42}Ga_{0.58})As$, LPE grown layer, optical absorpt. coeff. meas. 8−6801
$Al_xGa_{1-x}As$, epitaxial layer crystn. from soln. in melt, diffusion limited 8−35321
$Al_xGa_{1-x}As$, epitaxial layer, distribution of Te and Ge impurities 8−43046

semiconductor epitaxial layers continued
n-$Al_xGa_{1-x}As$, nonradiative donor related defect centre obs. 8−23497
$Al_XGa_{1-x}As$, VPE growth and characterisation 8−35315
$Al_xGa_{1-x}As$:Cr, exptl. verification of Cr^{2+} models of photoluminescent transitions 8−27320
$Al_xGa_{1-x}As$:Cu(Ag)(Au), LPE film, impurity levels, elec. and optical props. meas. 8−26862
$Al_xGa_{1-x}As$-GaAs, epitaxial heterostructure, influence of defects on diffusive distrib. of group I impurities 8−43045
$Al_yGa_{1-y}As_{1-x}Sb_x$ LPE phase diagram 8−11137
$Al_xGa_{1-x}Sb$, solid soln., depend. of forbidden-band width on composition 8−39602
AlN film, epitaxial growth by reactive evaporation *(Japanese)* 8−23629
BP, CVD on Si substrate, cryst. imperfections 8−10294
BP on Si substrates, epitaxial growth and device appls. 8−48333
(CdHg)Te, ion implanted graded gap photodiodes 8−39192
$Cd_xHg_{1-x}Te$, VPE on CdTe *(Russian)* 8−11129
CdS, epitaxial layers on (111) Ce, growth and defect struct. 8−18920
CdS film preferred orientation, internal stress, and interface characteristics 8−26795
CdS, on Ge, morphology and six-pointed optic figures obs. 8−2390
CdS, on Si, structural and transport props. 8−6463
CdSe, epitaxial films, carrier scattering temp. depend. *(Russian)* 8−10583
CdSe:In, epitaxial layer, effect of activator distribution on conductivity 8−43047
$CdSe_xTe_{1-x}$, solid solns., epitaxial layer prod. 8−23619
CdTe, on mica, substrate defects effect on epitaxy 8−26794
Ga-In-As-Sb system LPE layers, pseudoquaternary phase diagram 8−10293
Ga-P-Bi(Sb), liquidus isotherms, GaP solubility in Sb, Bi, rel. to epitaxial growth 8−34721
$Ga_{0.9}Al_{0.1}As$, nucleation morphologies on $Ga_{0.65}Al_{0.35}As$ surfaces grown by LPE 8−15323
$Ga_{1-x}Al_xAs$, alternate monolayer crysts., MBE and props. exam. 8−10289
$Ga_{1-x}Al_xAs$ DH laser, LPE surface protective coating 8−35320
$Ga_{1-x}Al_xAs$ epitaxial layers, spectroscopic technique for imaging spatial distrib. of nonradiative defects 8−23498
$Ga_{1-x}Al_xAs$, LPE layer thickness depend. on soln. comp. 8−10295
$Ga_{1-x}Al_xAs$, surface phonon polaritons, frustrated total internal refl. expts. 8−47656
$Ga_{1-x}Al_xAs$:Si p-n junction, doping in LPE, elec. and luminesc. props. *(Czech)* 8−47851
$Ga_{1-x}Al_xAs_{1-y}P_y$-GaAs quaternary heterojunction strains and IR laser diode performance 8−9385
$Ga_{1-x}Al_xP$, LPE grown, green electroluminescence 8−19571
$Ga_xAl_{1-x}Sb$, VPE with I_2 as transport agent 8−48325
GaAs, 1.06 μm two-photon absorption coeff., guided wave meas. 8−46707
GaAs, bulk and epitaxial crysts., hole traps characterisation 8−6392
GaAs, CVD, S doping behaviour during growth, electron conc. 8−26784
GaAs, deep centre reson. charging, photocapacitance meas. on Schottky barrier 8−26908
GaAs, deep trap characts. by photocapacitance spectroscopy 8−6398
GaAs, degraded layer form. by annealing, photolum. obs. of defects 8−10968
GaAs, donor and acceptor concs. determ. by optical method 8−19525
GaAs donor characterisation by far IR photoconductive techniques 8−43501
GaAs epilayers, high-quality, sharp-line transitions due to donor-acceptor recomb. 8−6768
GaAs epitaxial film on GaAs substrate, IR characterisation 8−23544
GaAs, epitaxial growth in $Ga(CH_3)_3$-AsH_3-H_2 system 8−35312
GaAs, epitaxial growth under different intake supersaturations in GaAs-$AsCl_3$ gas transport system *(Russian)* 8−26776
n-GaAs epitaxial layer, planar diode, intervalley carrier transfer, dynamics of capture processes 8−47864
GaAs, epitaxial layer growth by chloride process, μ and subμ thickness 8−23624
GaAs, epitaxial layers, high density electron-hole plasma luminesc. 8−19537
GaAs, epitaxially grown (001), (111) and ($\bar{1}\bar{1}\bar{1}$) surfaces, LEED, AES, photoemission 8−38924
GaAs film on recrystallised Ge film, solar cell appl. 8−19671
GaAs film solar cell fabrication, substrate requirements 8−11125
GaAs, hydride VPE growth for FETs, and characterisation 8−27407
GaAs, LPE, smooth, thin layers on nominally oriented substrate 8−44030
GaAs LPE (001) layer, etching by molten KOH 8−34515
GaAs, LPE growth on O-implanted GaAs substrate, elec. props. 8−2592
GaAs, LPE layers, voids and depressions in facet and terrace growth 8−38974
GaAs, LPE layers, X-ray topographic exam. of defects 8−30844
GaAs layers, heteroepitaxy, grown on Si and Ge from multiple component solns. *(Russian)* 8−15319
GaAs MBE layer, Al_2O_3 film growth 8−39706
GaAs, nonradiative capture, direct obs. of phonons 8−30976
GaAs, optically pumped, absorption spectrum, band filling, hot electron effects 8−31199
n-GaAs, real epitaxial surface, photoelec. spectroscopy, mechanisms 8−34858
GaAs, semi-insulating, thermal conversion, Hall effect and luminesc. meas. 8−6405
GaAs, substrate prep. effect on surface morphology 8−26780
n-GaAs, surface mode phonon amplification, numerical analysis 8−34691
GaAs, ultrathin film growth by cracking of organometallic compounds at 40 to 100 torr *(French)* 8−44023
GaAs, VPE, electron Hall mobility meas., attempted correlation with growth parameters 8−43417
GaAs, VPE, surface defects rel. to technological parameters 8−44015
GaAs, VPE by pyrolysis, producing power GaAs MESFETs 8−23623
GaAs, VPE growth rate variation with distance along substrate within const. temp. zone 8−2384
GaAs, VPE UV stimulated 8−35313
GaAs:Cr, exptl. verification of Cr^{2+} models of photoluminescent transitions 8−27320

semiconductor epitaxial layers continued
GaAs:Cr semi-insulating substrate, photoluminescence obs. of surface degradation during LPE growth 8−6865
GaAs:Cu, LPE, photoelec. meas. of electron density for different Cu introduction methods 8−43437
GaAs:Fe, for FET, VPE and characterisation 8−19672
GaAs:Ge, LPE growth, Ge incorporation 8−27423
GaAs:Ge, VPE, doping, electrophysical characts. meas. 8−43493
n-GaAs:Ge epitaxial layer, ion-implantation doped, anomalous behaviour of impurities 8−18669
GaAs:Mn, LPE layer, near band edge photoluminescence, 2K, low excitation intensities 8−48218
GaAs:Sn, 1.39 eV luminescence, injection level depend., freq. response and thermal quenching 8−19529
GaAs:Sn, LPE, growth rate and temp. depend. of impurity incorporation 8−3063
GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8−6067
GaAs:Te influence of fluctuations of impurity pot. on Burstein-Moss effect 8−48240
GaAs-$Al_xGa_{1-x}As$ films for optical devices, masked MBE 8−38100
GaAs-$Al_xGa_{1-x}As$ heterojunction, MBE, diffusion across interface, optical annealing expts. 8−2305
GaAs-$Al_xGa_{1-x}As$ LPE heterojunction, interface states 8−19128
GaAs-AlGaAs LPE layers, baking effect on surface morphology 8−14625
GaAs-AlGaAs multilayer stack, optical surface wave propag. 8−38090
GaAs-$Ga_{0.8}Al_{0.2}As$ layered struct., LPE, optical surface waves 8−48244
GaAs-GaAlAs heterostructures, growth by metal-alkyl hydride process 8−15313
GaAs-GaAlAs LPE layers, DH material, TEM obs. of crystal defects 8−6241
n-GaAs-GaAs:Cr, interface elec. props., substrate effects 8−6438
$GaAs_{1-x}P_x$ epi-wafer, comp. profile of heterogeneous struct., anodisation-electrorefl. meas. 8−26782
$GaAs_{1-x}P_x$, N doping using ionised beam in MBE 8−47400
$GaAs_{1-x}P_x$, prep. and photoluminesc. and. electroluminesc. props. *(Czech)* 8−48233
$GaAs_{1-x}Sb$, microprocessor controlled MBE growth 8−3058
$GaAs_{1-x}Sb_x$, cryst. growth by steady state LPE 8−44032
GaAs;Cu, epitaxial and bulk conductivities compared *(Russian)* 8−10585
$Ga_{1-x}In_XAs$, VPE layers, main electron trap, transient capacitance spectroscopy obs. 8−34800
$Ga_xIn_{1-x}As$-InP, lattice matched LPE film growth and characts. 8−15320
GaInAsP-InP DH laser grown by newly designed vertical LPE furnace 8−9380
GaInAsP-InP DH laser, relaxation and delay in oscillations 8−13709
$Ga_xIn_{1-x}As_yP_{1-y}$, LPE layers, growth and characterisation 8−38983
$Ga_xIn_{1-x}P$ solid soln. epitaxial layers, stabilisation of composition 8−18933
$Ga_xIn_{1-x}P_yAs_{1-y}$, ($0.5<y<0.9$), LPE on InP, Ga, As distrib. coeffs., lattice matching 8−47673
GaN, cathodolum., 78-300K 8−19575
GaN, characts. from cathodoluminesc. 8−35208
GaN, cryst. quality meas. by channelling 8−38986
GaN epitaxy, sapphire substrate prep. 8−39929
GaN, high-press. VPE and elec. characts. 8−14627
GaN, pure and Zn-doped, luminesc. 8−10955
GaN, VPE, on sapphire, crystallographic aspects 8−2387
GaN:Zn epilayers, growth parameters effect on props., device struct. 8−26975
GaP, epitaxial layers, anisotropy of growth rate from soln. in melt 8−35322
GaP, epitaxial struct., cathodolum. in SEM 8−10991
GaP for yellow-LEDs, prep. and props. *(Czech)* 8−48234
GaP, growth and props. of LPE layers on Si substrates 8−6864
GaP, heteroepitaxial growth on Si, substrate misorientation effects 8−3055
GaP, LPE, cathodo- and electrolum., residual impurity and struct. defect effects 8−19570
n-GaP, LPE, non-radiative recombination 8−19565
GaP, LPE, perfection, effect of dislocation loops in GaP substrate 8−30843
GaP, LPE layer for LED, photoluminesc. distrib. meas. *(Czech)* 8−48209
GaP LPE layers and LEC substrates, correlation between dislocation pits 8−38706
GaP, LPE layers high purity, invest. *(German)* 8−31353
GaP layers, heteroepitaxy, grown on Si and Ge from multiple component solns. *(Russian)* 8−15319
GaP, minority carrier lifetimes at dislocations, SEM meas. using photon counting 8−23109
GaP, non-radiative recombination and structural defects 8−19566
GaP, two-stage vapour/liq. epitaxial growth on Si 8−3054
GaP, VPE Ni contaminant detection, IR photoluminescence of Ni 8−15212
GaP:Cu, LPE, photoconductive props. obs. 8−47836
n-GaP:In, LPE from In solvent, dislocation density reduction by doping 8−18919
GaP:N, determination of nitrogen concentration from cathodoluminescence spectra 8−38744
GaP:Sn, LPE growth from Sn soln., elec. resist. and Hall coeff. meas. 8−2593
GaP:Zn,O, epitaxial p-n junction, IR electroluminesc. exam. *(Russian)* 8−35207
GaP_xAs_{1-x} ($0\leqslant x\leqslant 0.32$) epitaxial film, one-dimens. superlattice, X-ray spectrometer scanning, struct. variations 8−47681
GaSb high-purity and doped layers grown by LPE and VPE methods 8−6863
Ga_2Se_3, vapour phase deposited films, struct. 8−2383
Ga_2Te_3, vapour phase deposited films, struct. 8−2383
Ge, epitaxial, in situ X-ray topography, misfit dislocations 8−47671
Ge epitaxial films, structural perfection rel. to deposition conditions 8−43258
Ge films used in fabricating ohmic contacts for GaAs devices 8−47871
Ge, on GaAs, orientation depend. of interface dipole energies 8−39196
Ge:P, doping of epitaxial layers, in chloride and hydride processes 8−43036

semiconductor epitaxial layers continued
- Ge-GaAs heterojunctions, electronic struct. 8−19138
- Ge-Si, UHV-produced epitaxial structs., electrophys. props. 8−3060
- $Hg_{1-x}Cd_xTe$, surface topographic stoichiometry variations, electrolyte electrorefl. obs. 8−27249
- In-Ga-As-P, phase diagram rel. to lattice matched LPE 8−39708
- InAs epilayers in MOS, carrier transport coeffs. determ. by multilayer model 8−2575
- InAs on GaAs, epitaxial-substrate system, far IR transmission and refl. 8−6802
- $InAs_{1-x}P_x$, high field instabilities, press. and comp. depends. 8−26873
- $In_{1-x}Ga_xAs$, LPE layer on InP substrate, phys., elec. and optical props. 8−39235
- $In_xGa_{1-x}As$, waveguiding at 1.06 μm, losses 8−18052
- InGaAsP, high radiance CW LEDs emitting at 1.30 μm 8−22196
- $In_xGa_{1-x}As_yP_{1-y}$, on InP, heterojunction photodiode characts. 8−14800
- $In_{1-x}Ga_xP$, LPE, on $GaAs_{1-y}P_y$, photo- and cathodolum. 8−19559
- $In_{1-x}Ga_xP$:N(Te), composition depend. of bound state luminesc. transitions 8−39595
- $In_xGa_{1-x}P$, solid solns., gas phase epitaxy from Ga-In-HCl-PH_3-H_2 systems 8−34722
- InGaPAs LPE multilayered DH lasers exhibiting quantum size effects 8−1227
- $In_{1-x}Ga_xP_{1-y}As_y$ LPE films, hot electron and magnetotransport props. 8−26977
- $In_{1-x}Ga_xP_{1-z}As_z$-InP, LPE heterojunctions, lattice matching and dislocations 8−23150
- $In_{1-x}Ga_xP_{1-z}As_z$-InP, single and multiple layer heterostruct., LEDs and lasers 8−46626
- InN, epitaxial layer prep. using $InCl_3$-NH_3 system 8−3056
- InP, deep trap characts. by photocapacitance spectroscopy 8−6398
- n-InP, defects in homoepitaxial layers, on p-type substrate, accurate lattice parameters 8−47675
- InP, effects of baking time on purity and morphology 8−6862
- InP layers, grown by LPE from supercooled solns., thickness meas. 8−10307
- InP very high purity LPE layer growth 8−3061
- InSb film, MBE apparatus and AES 8−47875
- InSb thin films prepared by ion beam epitaxy system *(Japanese)* 8−22976
- $Pb_{1-x}Cd_xS$, metastable epitaxial films, elec. props. 8−26979
- $Pb_{1-x}Cd_xS$ metastable epitaxial films, growth and physical props. 8−27417
- PbS epitaxial film, struct., optical and elec. props. 8−19583
- PbS, struct. perfection, two cryst. X-ray spectrometry 8−26792
- PbSe, monocrystalline film prod. by laser pulse *(Russian)* 8−3059
- PbSe on NaCl, epitaxial-substrate system, far IR transmission and refl. 8−6802
- $Pb_{1-x}Sn_xSe$(Te) epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
- PbSnTe and PbSnTe, epitaxial-substrate system, far IR transmission and refl. 8−6802
- PbSnTe film epitaxial growth on BaF_2 substrates 8−11134
- $Pb_{1-x}Sn_xTe$, interband absorpt. edge for single cryst. epitaxial films 8−43948
- PbTe, continuous epitaxial film, grain size, growth cond. depend. 8−26786
- PbTe, high field drift vel. and Hall coeff. 8−26875
- PbTe, TO phonon mode softening, sub mm spectra 8−6665
- PbTe, uncontaminated films prepared by mol. beam deposition, elec. props. meas. 8−15316
- $PbySn_1$-$_x$Se epitaxial film narrow band photovoltaic detectors, detection at long wavelengths 8−8443
- Si, CVD film, stacking fault nucleation and growth 8−10064
- Si, doping the P cpds., process parameters effect on electrophys. characts. 8−38734
- Si epitaxial detector fabrication, crystal growth and preferential etching 8−37505
- Si epitaxial film concentrated inhomogeneity detection by selective etching *(Russian)* 8−10298
- Si, epitaxial growth on ion-implanted Si:As 8−6243
- Si, epitaxial layer grown by saturated Sn melt undercooling, morphology 8−22969
- Si epitaxial layer substrate junctions, carrier lifetime and abnormal conduction phenomena *(Korean)* 8−47888
- Si, epitaxy by solid phase crystn. of amorphous film 8−19663
- Si, epitaxy lateral autodoping kinetics 8−6087
- Si, heteroepitaxial early growth island morphology rel. to deposition conditions 8−6245
- Si homoepitaxy in high vac., stacking fault nucleation, crit. temp. for SiC growth 8−14620
- Si homogeneous epitaxial layers, production, appl. of neutron transmutation doping 8−38737
- Si, LPE from Sn melt by dipping 8−6871
- Si, MBE, on n^+ Si, with wide range doping control 8−27402
- Si, planarized solid state epitaxy for Schottky barrier diodes 8−35302
- Si polycrystalline p-n junction deposition 8−10549
- Si, solid phase epitaxial growth temp. depend. 8−10305
- Si, solid phase epitaxial growth, crystalline qualities, ^4He backscatt. and TEM exam. 8−10306
- Si, solid phase grown, structural obs. 8−2397
- Si, VPE, fine struct. formation *(French)* 8−43275
- Si, VPE using SiH_2Cl_2/H_2 as source for epitaxial films on insulators 8−48327
- Si:AS, lateral autodoping kinetics 8−39699
- n-SiC, 6H, saturated electron drift velocity meas. 8−19168
- SiC:N, conversion factor at high doping levels 8−22744
- $V_{1-x}Cr_xO_2$, VPE and elec. and optical characterisation 8−3053
- VO_2, VPE and elec. and optical characterisation 8−3053
- Zn_3As_2, solubility in Bi, LPE on $(Cd_xZn_{1-x})_3As_2$ 8−35324
- $Zn_xCd_{1-x}S$ epitaxial layers, elec. resist. and luminescence obs. 8−19540
- ZnO film, longit. elastic wave attenuation, 9.4 GHz 8−18888
- ZnO on Zn (0001), oxide film growth, at. and electronic struct. 8−15587
- ZnSe-Ge(GaAs)(mica) epitaxial heterostructs., growth struct. 8−43257
- $ZnSiAs_2$, synthesis and layer growth by CVD in open flow system 8−15312
- ZnTe MBE thin film growth, elec. and optical props. 8−47887

semiconductor growth
- CVD technology trends, use of low-pressure hot-wall reactor, plasma systems and computer control 8−19670
- Czochralski bulk flow in parameter range appropriate for liquid semiconductors, digital simulation 8−31320
- detector materials, Ge and Si 8−47674
- epitaxial reactors, transport phenomena meas. 8−39701
- evaporated compound films, formation and structure *(Japanese)* 8−22979
- II-VI semiconductor film technology 8−23621
- III-V nitride, preparation technology *(Czech)* 8−3037
- III-V semiconductor, MBE and applications 8−11135
- III-VI compound layered materials, prep. and growth, book contrib. 8−19661
- ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
- IV-VI compound layered materials, prep. and growth, book contrib. 8−19651
- IV-VI film technology, review 8−3034
- IV-VI material production and physical props. for microelectronics *(Russian)* 8−11108
- LPE, multilayer, technique 8−31345
- LPE, Peltier induced 8−48342
- LPE, Peltier induced 8−48343
- LPE, wipingless method *(Japanese)* 8−27422
- LPE edge-growth reduction, by aux. heating of graphite slider sidewalls 8−30848
- LPE pure melt batch production in sliding apparatus 8−44028
- MBE, appl. to II-VI compounds *(Japanese)* 8−15317
- MBE, doping impurity transport, free carriers effect 8−26793
- MBE crystal growth, review 8−39707
- MBE in space 8−35317
- molecular beam deposition apparatus, design and construction *(Japanese)* 8−23632
- narrow band gap semiconducting alloy layers, electron-beam microzone refining, in space 8−35325
- oxide semiconductor crystals, with forbidden energy gap, review of spectroscopic props. 8−2876
- potentially superior method of preparing semicond. devices *(Czech)* 8−44027
- ribbon-to-ribbon growth method and sample characterisation Si 8−11103
- β-SiC, 6H polytype, pure and doped, prep. by pyrolysis of silane cpds. 8−44018
- solar cell materials research to reduce costs, book 8−15306
- Stepanov method, semicond. shaping problem 8−3012
- ternary semiconductor crystals for nonlinear optical applics., review 8−33782
- vapour growth, element incorporation 8−30556
- $AgGaSe_2$, seeded Bridgman growth of crack-free crysts., thermal expansion coeff. 8−11101
- $AgGa(Se_{1-x}S_x)_2$, crystal growth, phase studies, optical props. 8−48305
- AlAs-GaAs film heterojunction, VPE growth and characts. 8−6439
- AlB_{12}, preparation of single crystal 8−43997
- $Al_xGa_{1-x}As$ DH laser, with constricted active region, fabrication and characts. 8−37895
- $Al_xGa_{1-x}As$, epitaxial layer crystn. from soln. in melt, diffusion limited 8−35321
- $Al_xGa_{1-x}As$, epitaxial layer, distribution of Te and Ge impurities 8−43046
- $Al_XGa_{1-x}As$, VPE growth and characterisation 8−35315
- $Al_yGa_{1-y}As$-$Al_xGa_{1-x}As$ laser struct., for integrated optics, MBE 8−13817
- $Al_yGa_{1-y}As_{1-x}Sb_x$ LPE phase diagram 8−11137
- AlGaSb, growth and characts. for 1.0-1.8 μm heterojunction devices 8−6870
- AlN film, epitaxial growth by reactive evaporation *(Japanese)* 8−23629
- AlN, single cryst. growth by sublimation-recondensation technique 8−31310
- As_2Se_3, vacuum evaporation, composition of condensates 8−44012
- BP, epitaxial, CVD on Si substrate, cryst. imperfections 8−10294
- BP-Si junctions epitaxial growth and device appls. 8−48333
- $Bi_2TE_{3-x}Se_x$, solid solution films, prep. and props. 8−44013
- Bi_2Te_3-Bi_2Se_3 solid solns., bladed cryst. growth, electrophysical props. 8−43387
- BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
- Cd_3As_2, vapour phase single cryst. growth, X-ray topographic obs. of perfection 8−9976
- $CdCr_2Se_4$, crystn. from high temp. soln., $CdCr_2Se_4$-$CdCl_2$ phase diagram 8−3009
- $CdGa_2S_{4(1-x)}Se_{4x}$, solid soln., crystallographic studies 8−15301
- $CdGe(As_{1-x}P_x)_2$, crystal growth, phase studies, optical props. 8−48305
- $Cd_xHg_{1-x}Te$, solubility in Hg, rel. to LPE 8−35359
- $CdIn_2S_4$ single crystal growth by two-zone horizontal Bridgman technique 8−27400
- $CdIn_3Se_4$, cryst. growth, photoresponse and optical props. 8−39165
- CdS, cryst. growth from vapour by one-dimens. nucleation on (110) singular surface, model 8−2048
- CdS, epitaxial layers on (111) Ce, growth and defect struct. 8−18920
- CdS film, spray pyrolysis prep., elec. transport props. 8−2590
- CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
- CdS photoanode, for photovoltaic cells, prep. and characts. 8−14818
- CdS sputtered film, photocond. props. 8−10586
- CdSe film, effect of growth conditions on electrophysical properties 8−44024
- CdSe, VPE on ZnTe (111), monocrystalline layers 8−14631
- $CdSnP_2$-$CdSnAs_2$, and $CdSnP_2$-$CdGeP_2$, solid solution form. and elec. characterisation 8−43125
- CdTe crystal growth for γ-ray detectors 8−41889
- CdTe, grown by chem. transport, morphology, struct. and microhardness *(Russian)* 8−22729
- CdTe, LPE in CdTe-$CdCl_2$ system 8−35323
- CdTe, laser window material, vap. deposition 8−27391
- CdTe, on mica, substrate defects effect on epitaxy 8−26794
- CdTe, solubility in Hg, rel. to LPE 8−35359
- $CuGaS_2$, crystal growth and luminesc. *(Japanese)* 8−23515
- $CuGaS_2$-$CuGaSe_2$ system, forbidden-band width 8−35280
- $CuInSe_2$, large single crystals growth by iodine transport and Bridgman methods 8−35300

semiconductor growth continued
$CuInSe_2$, melt-grown, EPR characts. 8−35030
Cu_2O, CVD from Cu-O-H-Cl-N system, thermodynamic anal. 8−39676
Cu_2S film, on rough $Zn_xCd_{1-x}S$ substrate, film substrate lattice mismatch calcs. 8−43263
Cu_2S-CdS solar cells, prep. and stoichiometric control of Cu_2S film 8−2560
Er_2Te_3, films, prep., elec. props. 8−43494
Ga-In-As-Sb system LPE layers, pseudoquaternary phase diagram 8−10293
GaAlAs-GaAs, high efficiency heterostruct. solar cell grown by metalorganic CVD 8−11118
$Ga_{0.9}Al_{0.1}As$, nucleation morphologies on $Ga_{0.65}Al_{0.35}As$ surfaces grown by LPE 8−15323
$Ga_{1-x}Al_xAs$, alternate monolayer crysts., MBE and props. exam. 8−10289
$Ga_{1-x}Al_xAs$, LPE layer thickness depend. on soln. comp. 8−10295
$Ga_{1-x}Al_xAs$, LPE layers, grown under const. cooling rate conditions, cryst. composition 8−39710
$Ga_{1-x}Al_xAs$:Si p-n junction, doping in LPE, elec. and luminesc. props. *(Czech)* 8−47851
$Ga_{1-x}Al_xAs$-$Ga_{1-y}Al_yAs$ DH laser, grown by organometallic CVD, room temp. operation 8−29950
$Ga_{1-x}Al_xAs$-GaAs, CVD laser diodes, operation and growth processes 8−46598
$Ga_{1-x}Al_xAs$-GaAs, room temp. DH laser, CVD growth 8−37912
$Ga_{1-x}Al_xAs$-GaAs DH lasers grown by metalorganic CVD, room temp. operation 8−1248
$Ga_{1-x}Al_xAs$-GaAs laser, DH, grown by metalorganic CVD, room temp. operation 8−13702
$Ga_xAl_{1-x}Sb$, VPE with I_2 as transport agent 8−48325
GaAs (111) substrate, and homoepitaxial layers, characterisation by divergent X-ray beam diffr. 8−31352
GaAs and related cpds., conf., Edinburgh, Scotland (Sep 1976) 8−3039
GaAs, CVD, S doping behaviour during growth, electron conc. 8−26784
GaAs, cryst. prod. in strip and rod form., Stepanov method 8−3017
GaAs, epitaxial growth in $Ga(CH_3)_3$-AsH_3-H_2 system 8−35312
GaAs, epitaxial growth under different intake supersaturations in GaAs-$AsCl_3$ gas transport system *(Russian)* 8−26776
GaAs, epitaxial layer growth by chloride process, μ and subμ thickness 8−23624
GaAs epitaxial layers, substrate prep. effect on surface morphology 8−26780
GaAs epitaxy, ultrathin film growth by cracking of organometallic compounds at 40 to 100 torr *(French)* 8−44023
GaAs film, vapour-grown, effect of gas-phase stoichiometry on deep levels 8−10393
GaAs film on recrystallised Ge film, solar cell appl. 8−19671
GaAs film solar cell fabrication, substrate requirements 8−11125
GaAs growth dual-bubbler CVD system, characts., for MESFET applics. 8−6856
GaAs, hydride VPE growth for FETs, and characterisation 8−27407
GaAs, LEC growth using pyrolytic BN crucibles 8−6841
GaAs LPE, current controlled for optimum doping profiles in LSA diodes 8−35318
GaAs, LPE, growth mechanism and kinetics 8−34726
GaAs, LPE, smooth, thin layers on nominally oriented substrate 8−44030
GaAs, LPE growth 8−18924
GaAs, LPE growth on O-implanted GaAs substrate, elec. props. 8−2592
GaAs, LPE layers, voids and depressions in facet and terrace growth 8−38974
GaAs layers, LPE growth, graphite boat construction 8−31348
GaAs layers and p-n junctions grown by current-controlled LPE, elec. characts. 8−6436
GaAs, MBE of autoepitaxial films, temp. range for growth, RHEED monitoring 8−44025
GaAs MOS device, new method of fabrication 8−47872
GaAs multilayer with abrupt carrier conc. profile, vapour growth technique 8−11123
GaAs, polycrystalline, for solar cells 8−11124
GaAs, produced by VPE using trimethylgallium and arsine, controlled doping 8−6855
GaAs, structural defects in single crysts., first order distribs. eval. *(German)* 8−6049
GaAs, synthesis in pyrolytic BN boat 8−6840
GaAs, VPE, surface defects rel. to technological parameters 8−44015
GaAs, VPE by pyrolysis, producing power GaAs MESFETs 8−23623
GaAs, VPE growth rate variation with distance along substrate within const. temp. zone 8−2384
GaAs, VPE in inert gas-H_2 mixed carrier system, thermodynamic analysis 8−11120
GaAs, VPE UV stimulated 8−35313
GaAs:Fe, for FET, VPE and characterisation 8−19672
GaAs:Ge, LPE growth, Ge incorporation 8−27423
GaAs:Ge, VPE, doping, electrophysical characts. meas. 8−43493
GaAs:Si, current-controlled growth, segregation and amphoteric behaviour 8−31346
GaAs:Sn, LPE, growth rate and temp. depend. of impurity incorporation 8−3063
GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8−6067
GaAs-$Al_xGa_{1-x}As$ films for optical devices, masked MBE 8−38100
GaAs-AlGaAs LPE growth, wipingglass method for DH laser *(Japanese)* 8−48304
GaAs-AlGaAs LPE layers, baking effect on surface morphology 8−14625
GaAs-GaAlAs heterostructures, LPE growth, Peltier effect *(Polish)* 8−6861
GaAs-GaAlAs heterostructure, growth by metal-alkyl-hydride process 8−15313
GaAs-GaAlAs LPE layers, DH material, TEM obs. of crystal defects 8−6241
GaAs-HBr chemical vap. transport system, thermochem. data 8−6854
$GaAs_{1-x}P_x$, chemical transport and crystal growth in closed tube *(Japanese)* 8−39673
$GaAs_{1-x}P_x$ epitaxial layers prep., photoluminesc. and electroluminesc. props. *(Czech)* 8−48233

semiconductor growth continued
$GaAs_{1-x}P_x$, N doping using ionised beam in MBE 8−47400
$GaAs_{1-x}Sb$, microprocessor controlled MBE growth 8−3058
$GaAs_{1-x}Sb_x$, cryst. growth by steady state LPE 8−44032
$GaAs_{1-x-z}Sb_xP_z$, LPE growth, constant compositional grading 8−6867
$Ga_yIn\ _{1-y}As_xP_{1-x}$-InP heterostructure, lattice matching and cryst. perfection 8−6437
$Ga_xIn_{1-x}As$-InP, lattice matched LPE film growth and characts. 8−15320
GaInAsP layers on InP substrate, conditions for lattice matching in LPE growth 8−6866
GaInAsP-InP DH laser grown by newly designed vertical LPE furnace 8−9380
$Ga_{1-x}In_xAs_{1-x}P_x$, VPE growth and characterisation 8−22970
$Ga_xIn_{1-x}As_yP_{1-y}$, LPE layers, growth and characterisation 8−38983
$Ga_xIn_{1-x}P$ solid soln. epitaxial layers, stabilisation of composition 8−18933
Ga_xIn_xP, LPE, with GaP saturation source wafer *(Polish)* 8−23633
$Ga_xIn_{1-x}Sb$, growth by LPE 8−27421
GaN epitaxy, sapphire substrate prep. 8−39929
GaN, high-press. VPE and elec. characts. 8−14627
GaN, VPE, on sapphire, crystallographic aspects 8−2387
GaN:Zn epilayers, growth parameters effect on props., device struct. 8−26975
GaP, chem. vapour growth in closed system 8−35283
GaP, epitaxial layers, anisotropy of growth rate from soln. in melt 8−35322
GaP epitaxial layers for yellow-LEDs, prep. and props. *(Czech)* 8−48234
GaP, growth and props. of LPE layers on Si substrates 8−6864
GaP, growth of epitaxial layers from limited of melt-soln. 8−19676
GaP, heteroepitaxial growth on Si, substrate misorientation effects 8−3055
GaP, LEC growth of dislocation-free crysts., microdefects and striations 8−9974
GaP, LPE layers high purity, invest. *(German)* 8−31353
GaP, solubility in fused Sb, Bi, thermodynamics, rel. to epitaxial growth 8−34721
GaP, two-stage vapour/liq. epitaxial growth on Si 8−3054
GaP:Cr_2O_3, growth, dopant distribution, elec. resist. 8−34531
n-GaP:In, LPE from In solvent, dislocation density reduction by doping 8−18919
GaP:Sn, LPE growth from Sn soln., elec. resist. and Hall coeff. meas. 8−2593
GaSb high-purity and doped layers grown by LPE and VPE methods 8−6863
$GaSb_{1-x}As_x$, MBE RHEED meas. 8−18916
GaSe, growth of crysts. with natural facets at large angles to layers 8−15305
Ge, amorphous film, post nucleation growth, computer simulation 8−34729
Ge, amorphous whisker growth 8−2400
Ge, epitaxial, in situ X-ray topography, misfit dislocations 8−47671
Ge epitaxial films, structural perfection rel. to deposition conditions 8−43258
Ge film, growth on graphite substrate by thermal reduction 8−18934
Ge, growth from lightly doped melt, dopant distrib. 8−2039
Ge, large shaped single cryst. prod., Stepanov method 8−3014
Ge, molten zone movement under influence of Peltier effect 8−44007
Ge, shaped crystals, grown by Stepanov method, struct. perfection 8−2123
Ge shaped single crystal, Stepanov method growth, temp. distri b. 8−2032
Ge, single cryst. growth, supercooling needed for Czochralski and Stepanov methods 8−3015
Ge single crystal of circular cross section, thermoelastic stresses 8−2033
Ge strips grown by Stepanov method, thermoelsatic stress calc. 8−2034
Ge-As-Se, amorphous film, condensation formation and struct. props. *(Russian)* 8−38629
GeTe, nonstoichiometric, homogenisation 8−44004
$Hg_{1-x}Cd_xTe$, homogeneous single cryst., growth by modified Bridgman technique 8−39682
$HgCr_2Se_4$, vapour growth using $AlCl_3+Cl_2$ as transport components 8−35282
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunction, prep. and photovoltaic prop. *(Japanese)* 8−34889
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunctions, prep. and photovoltaic prop. 8−34892
HgI_2 detectors, recent improvements 8−37507
HgI_2 detectors, state-of-art crystal growth and nucl. spectroscopic evaluation 8−41895
HgI_2, doped, vap. growth by temp. oscill. method 8−39674
HgI_2, thermally stimulated current meas. 8−41896
HgI_2, vap. growth by temp. oscill. method in horizontal furnace 8−39675
HgS, cinnabar, chem. vapour growth in closed system 8−35283
In-Ga-As-P, phase diagram rel. to lattice matched LPE 8−39708
InAs, MBE growth, SEM, RHEED, optical microscopy and elec. meas. 8−18925
InAs, soln. in liq. Sn, vapour phase partial press. meas., rel. to LPE 8−34610
$InAs_{1-x}Sb_x$, LPE on InAs substrate, $InAs_xSb_yP_{1-x-y}$ used as buffer layer 8−3065
$InAs_xSb_yP_{1-x-y}$, LPE on InAs substrate 8−3065
$In_{1.9}As_{0.1}Se_3$, growth by chem. vap. transport, characterisation as photoelectrode 8−43994
$In_{0.53}Ga_{0.47}As$, LPE growth on (100) InP, for field assisted photocathode appl. 8−15318
$In_{1-x}Ga_xAs$, LPE layer on InP substrate, phys., elec. and optical props. 8−39235
InGaAsP, LPE growth, orientation depend. of incorporation of Ga, As, and Zn 8−6869
InGaAsP-InP lattice matched DH, growth by two-phase supercooled soln. technique 8−10296
$In_{1-x}Ga_xAs_yP_{1-y}$-InP DH lasers, fabrication and performance 8−5500
$In_{1-x}Ga_xAs_yP_{1-y}$-InP DH laser on InP (100) substrate 8−29965
$In_{1-x}Ga_xP$, homogeneous bulk, growth from soln. with predetermined cryst. comp. 8−11097

semiconductor growth continued
$In_xGa_{1-x}P$, solid solns., gas phase epitaxy from Ga-In-HCl-PH_3-H_2 systems 8−34722
$In_{1-x}Ga_xP_{1-z}As_z$, room temp. visible heterojunction lasers 8−5501
$In_{1-x}Ga_xP_{1-z}As_z$-InP, LPE heterojunctions, lattice matching and dislocations 8−23150
$In_{1-x}Ga_xP_{1-z}As_z$-InP, single and multiple layer heterostruct., LEDs and lasers 8−46626
In_{1-x}GaxAs, MBE, RHEED meas. 8−18916
InN, epitaxial layer prep. using $InCl_3$-NH_3 system 8−3056
In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8−15314
InP (100) substrates, for MBE, ion-cleared, contamination, SIMS meas. 8−11353
InP (111) substrate, and homoepitaxial layers, characterisation by divergent X-ray beam diffr. 8−31352
InP cylindrical magnetron reactive sputtering, for solar cell appl. 8−39693
InP, effects of baking time on purity and morphology 8−6862
InP, expt. studies on meltback morphology 8−31347
InP film, on rough $Zn_xCd_{1-x}S$ substrate, film substrate lattice mismatch calcs. 8−43263
InP, high-purity bulk, prep. from soln. 8−6839
InP, high-purity VPE, by $PCl_3/In/H_2$ technique, progress in control 8−6857
InP, LEC growth using pyrolytic BN crucibles 8−6841
InP layers, grown by LPE from supercooled solns., thickness meas. 8−10307
InP, molten stoichiometric, surface tension 8−39684
InP, soln. in liq. Sn, vapour phase partial press. meas., rel. to LPE 8−34610
InP, VPE, thermodynamics of transfer by water vapour 8−43260
InP very high purity LPE layer growth 8−3061
InP-$Ga_xIn_{1-x}As_yP_{1-y}$ DH, LEDs and lasers, fabrication and operation in 1.5 μm region 8−37893
InSb, Czochralski growth, thermoelec. monitoring of interface temp. 8−31331
InSb, dislocations due to thermal stress, single and composite crysts. 8−2124
$InSbS_3(Se_3)$, prep., polymorphism, cryst. struct. 8−44002
InSe luminescent film, production and characterisation *(Russian)* 8−39581
IrP_2, prep. and characterisation 8−39679
LiV_2O_5, needle cryst. form. by reduction of molten Li_2O-V_2O_5, semicond. props. *(Japanese)* 8−3030
$Pb_{1-x}Cd_xS$ metastable epitaxial films, growth and physical props. 8−27417
PbS, film condensation on amorphous substrate, struct. and growth 8−38981
PbS, sublimation growth, using liq. encapsulation zone-refined source material 8−27399
PbS, vap. deposited film, island growth obs. by optical diffr. from electron micrograph 8−10291
PbSe, monocrystalline film prod. by laser pulse *(Russian)* 8−3059
PbSe, vacuum evaporation, composition of condensates 8−44012
$Pb_{1-x}Sn_xSe(Te)$ epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
PbSnTe film epitaxial growth on BaF_2 substrates 8−11134
$Pb_{1-x}Sn_xTe$, large single crystal growth, on quartz surface, non-seeded 8−48293
$Pb_{1-x}Sn_xTe$, temperature gradient LPE, PbTe substrate 8−3066
PbTe, continuous epitaxial film, grain size, growth cond. depend. 8−26786
PbTe, uncontaminated films prepared by mol. beam deposition, elec. props. meas. 8−15316
RuP_2, prep. and characterisation 8−39679
SbSI, vapour phase growth on seeds 8−11090
Sb_2Te_3-Bi_2Te_3 solid solns., bladed cryst. growth, electrophysical props. 8−43387
Se amorphous thin film photodeposition from hydrosols 8−11109
Se, trigonal, cryst. growth from CS_2 soln. 8−23596
Si (111) face, cryst. film growth, transfer of impurity during condensation of mol. beams 8−10299
Si, CVD, using CO_2 laser for substrate heating 8−39698
Si, CVD growth, high- and low-temp. models 8−6244
Si, CVD on liq. Sn layers in HCl presence, enhanced crystallinity 8−6853
Si, cooling rates of large diameter crysts. 8−35291
Si, crucible-free growth, zone melting in combined heating system 8−3031
Si, cryst. growth, float zone, low ohmic seeds and dislocations 8−27398
Si crystal production and perfection for photodetectors 8−11107
Si, Czochralski and web crystals, transition metal doped for solar cells 8−35297
Si, Czochralski growth, drop form. and crystn. rel. to dislocation struct. 8−2030
Si Czochralski growth, large crystal, convection and segregation 8−6843
Si Czochralski wafer intrinsic gettering by oxide precipitate induced dislocations 8−6092
Si Czochralski wafer oxide precipitate-dislocation complex characterisation 8−14357
Si, dislocation-free crystal point defect condensation 8−6026
Si, dislocation-free single crystals, growth microdefects, etching and X-ray expts. 8−47385
Si, edge-defined film-fed growth of controlled shape crysts. 8−31327
Si, epitaxial, impurities incorporation kinetics *(French)* 8−22749
Si epitaxial detector fabrication, crystal growth and preferential etching 8−37505
Si epitaxial layer, large-area uniform growth through Al film by solid epitaxy 8−3033
Si, epitaxial layer grown by saturated Sn melt undercooling, morphology 8−22969
Si, epitaxy by solid phase crystn. of amorphous film 8−19663
Si, epitaxy lateral autodoping kinetics 8−6087
Si, failure in strong melt grown single crysts. 8−3205
Si, float zone crysts., large diameter, growth parameters 8−31336
Si growth technology, erosion of graphite and vitreous C in molten Si 8−3244

semiconductor growth continued
Si, heteroepitaxial early growth island morphology rel. to deposition conditions 8−6245
Si, high-meniscus ribbon growth, thermal balancing via distributed inert gas streams 8−31329
Si homoepitaxy in high vac., stacking fault nucleation, crit. temp. for SiC growth 8−14620
Si, LPE from Sn melt, kinetics 8−19675
Si, LPE from Sn melt by dipping 8−6871
Si, large single crystal production, using directional solidification tech. 8−35298
Si layers, solid phase epitaxial growth temp. depend. 8−10305
Si layers, solid phase epitaxial growth, crystalline qualities, ^4He backscatt. and TEM exam. 8−10306
Si, low cost production for solar cells, growth from melt 8−3028
Si, MBE, on n^+ Si, with wide range doping control 8−27402
Si, mechanism of cryst. growth during chemical reactions in Si-H-Cl system 8−2392
Si, planarized solid state epitaxy for Schottky barrier diodes 8−35302
Si, polycryst. film doping during deposition and with diffusion 8−6088
Si, polycryst. film from low. temp. pyrolysis of SiH_4 8−31342
Si, polycrystalline, ribbon to ribbon, using laser scanning, solar cell appl. 8−35299
Si production, low-cost low-energy processes 8−11126
Si, production by reduction of SiO_2 with C black in plasma reactor, feasibility 8−27426
Si purification, using silicon fluoride as transport 8−35316
Si, ribbons produced through capillary action shaping, elec. and struct. characts. 8−47804
Si, silicide forming systems, solid phase epitaxy 8−23613
Si, single cryst. ribbon growth, thermal anal. 8−3029
Si single crystal growth advances 8−6842
Si single crystal growth by heat-exchanger casting 8−11104
Si, solar grade, Czochralski growth, solar cell efficiency vs. metallic impurity conc. 8−31330
Si solid phase grown, structural obs. 8−2397
Si, temp. distrib. in working zone of composite heater, heat transfer calc. 8−3016
Si, VPE, pattern shift comparison in vertical, horizontal, and cylindrical reactor geometries 8−27408
Si, VPE using SiH_2Cl_2/H_2 as source for epitaxial films on insulators 8−48327
Si, vapour-liq.-solid growth, using Pt and Au liq. forming agents, kinetics and morphology 8−42935
Si, vapour-liq.-solid growth, using Pt and Au liq. forming agents, struct. perfection 8−42936
Si, wide ribbon crystal growth apparatus 8−48307
Si:As, epitaxy, lateral autodoping kinetics 8−39699
Si:B, highly-doped polycryst. thin film, growth kinetics and properties 8−44016
Si:O, C, impurity conc. profiles and process-induced defects 8−6094
n-Si:P, doping, by zone melting using solid dopant source 8−43035
Si:P, RF sputtered polycryst. film, MOS compatibility 8−6455
Si:Sb, dopant microsegregation rel. to crystal and crucible rotation 8−11106
Si:Sb crystal Czochralski growth, radial microsegregation analysis 8−11105
SiC (2H), vapour grown, growth and deform. faults, X-ray obs. 8−30650
SiC, cryst. growth on oriented seeds by sublimation 8−35279
β-SiC crystals, wetting by Si and growth by vap.-liq.-solid mechanism 8−3005
SiC, eccentric growth spirals 8−26470
SiC film synthesis by plasma deposition process 8−11127
SiC, growth from soln. in fused Si, temp. gradient method in Tb vap. 8−35301
SiC, H_2 effects on epitaxial growth rates 8−22968
SiC, N doping inhomogeneities due to growth conditions 8−22741
β-SiC, polytype stability, $\alpha \rightarrow \beta$ phase transformation during growth 8−6028
SiC, single cryst. ingots, growth using seeds, 1800-2600°C 8−43993
SiC, synthesis by ion implantation of diamond, role of struct. imperfections 8−34529
SiC:N, conversion factor at high doping levels 8−22744
Si_xGe_{1-x}, Ge distrib. in single crysts. grown by zone refining without crucible 8−22754
Si_xGe_{1-x} multitip photofield emission cathode, fabricated by crystn. from vapour, emission characts. 8−2975
SmS-based alloy, preparation and properties 8−44034
SnO_2 CVD film form. mechanism 8−38977
SnO_2, cryst. growth by chem. transport method 8−3004
SnO_2 film, pure and Sb doped, transparent cond., prop., characts., stability, struct. *(Japanese)* 8−47889
Te, single cryst. growth by hydrothermal method *(French)* 8−11096
Ti_nO_{2n-1}, cryst. growth and characterisation 8−31311
$V_{1-x}Cr_xO_2$, VPE, and elec. and optical characterisation 8−3053
VO_2, VPE and elec. and optical characterisation 8−3053
VO_2:Al(W), thin layer prep. by reactive DC sputtering doping effectiveness *(German)* 8−6847
V_nO_{2n-1}, cryst. growth and characterisation 8−31311
WSe_2, single cryst. growth by sublimation method 8−11091
Yb_2Te_3, films, prep., elec. props. 8−43494
Zn_3As_2, solubility in Bi, LPE on $(Cd_xZn_{1-x})_3As_2$ 8−35324
ZnO film, growth rate and defectiveness, rel. to deposition conditions and substrate orientation 8−3057
ZnO film, Zn target, fabrication, properties 8−3040
ZnO, hollow crystals, growth by oxidation of ZnSe vapour, mechanism 8−34733
ZnS, epitaxial growth by Zn-S-H_2 CVD method 8−27413
ZnS, single cryst. vap. growth by sublimation and chem. transport 8−27390
ZnS(Se)(Te) film, on semicond. substrates, early stages of growth, electron microscope obs. *(Russian)* 8−38976
ZnSe, Bridgman growth under Ar press., temp. distrib. in furnace 8−11100
ZnSe, single cryst. vap. growth by sublimation and chem. transport 8−27390
ZnSe-GaAs solid solns., chem. transport cryst. growth, struct. 8−43991
$ZnSiAs_2$, synthesis and layer growth by CVD in open flow system 8−15312

semiconductor growth continued
ZnTe MBE thin film growth, elec. and optical props. 8−47887
ZnTe, single cryst. vap. growth by sublimation and chem. transport 8−27390
ZnTe, vapour growth by closed tube method 8−39703
semiconductor-insulator boundaries
dual-dielectric charge storage cells, electron-electron effects in writing and erasing 8−34900
inversion layers, CDW mag. fields and stability 8−10533
MOS system photocapacitance, influence of surface charge fluctuations *(Russian)* 8−43480
photocell, surface-channel photoelec. characts. 8−26909
polymer photolytic film on semicond., thickness modulation by p-n junction microfield 8−10561
SIS system, mutual drag of carriers 8−6430
GaAs anodic oxide film, direct current-voltage characts. 8−23186
GaAs/SiO_2 substrate/film system, Ga content in SiO_2 after annealing at 730-940°C 8−43255
GaAs-Si_3N_4 structure, photoluminesc. and collective effects 8−6727
GaAs-SiO_2 interface local props. *(Russian)* 8−10567
$GaPO_4$ film growth on GaP, XPS exam. 8−31552
InP-SiO_2, with reduced interface state density near cond. band 8−26954
InSb-insulator boundary, surface wave resonance in transversely magnetised semicond. plasma 8−30948
Si epitaxial layers on insulators, VPE using SiH_2Cl_2/H_2, expt. 8−48327
p-Si inversion layers, hot carrier effects in high mag. field, 1.25-20K 8−34908
Si inversion layers, stress effects on electronic props. 8−43476
Si, planar technology, insulating thin film preparation and props. 8−10589
Si substrate, stress field, induced by Si_3N_4 film edge, indentation-injected dislocation half-loops obs. 8−30839
Si, surface emission of hot electrons 8−30998
Si:B, implanted, oxidation-induced stacking faults, EBIC and TEM expts. 8−39923
p-Si:B-SiO_2 interface in MOS structures, carrier mobility and impurity distrib. 8−34902
Si-Si_3N_4, anodisation into SiO_2, charge in electrophysical props. 8−2574
Si-Si_3N_4(SiO_2) boundary, electrophysical properties, effect of ionic processes in dielectric layers *(Russian)* 8−10562
Si-SiO_2, distinction between donor and acceptor character of surface states 8−39216
Si-SiO_2, effects of processing on radiation damage 8−39223
Si-SiO_2, electron injection, microplasma model 8−23176
Si-SiO_2, growth and thermal evaporation kinetics of oxide film 8−3246
Si-SiO_2, hot electron emission into SiO_2 8−30997
Si-SiO_2, improved RF sputtering technique *(Croatian)* 8−48316
Si-SiO_2, influence of oxidation conditions on elec. props. of ultrathin SiO_2 layers 8−39226
Si-SiO_2, interface groups of states, C-V meas. 8−2541
Si-SiO_2, irradiation behaviour anal. 8−26957
Si-SiO_2, obs. of chem. struct. 8−27654
Si-SiO_2, oxidation induced stacking fault growth, role of point defects 8−10061
Si-SiO_2, oxidation rate constants and role of H_2O 8−7072
Si-SiO_2, oxidation-induced stacking faults, O_2 partial press. depend. 8−39922
Si-SiO_2, oxide growth in HCl-O_2 mixture, ellipsometric meas. 8−7073
Si-SiO_2, polycryst. Si, surface asperity mechanism of cond., SEM obs. 8−19153
Si-SiO_2, SiOH and SiH groups, in SiO_2 film, IR absorpt. results 8−26779
Si-SiO_2, surface states, oxide charge centres, annealing effects 8−2570
Si-SiO_2 barrier height in MOS tunnel struct., SiO_2 thickness depend. 8−14831
Si-SiO_2 bonding layer, EPR exam. 8−15022
Si-SiO_2 interface, anisotropic photoinduced ESR 8−23345
Si-SiO_2 interface, Auger sputter profiling and photoelectron spectroscopy obs. 8−10287
Si-SiO_2 interface, Auger sputter profiling 8−43254
Si-SiO_2 interface, elec. props. and influence on service performance and stability 8−23171
Si-SiO_2 interface, electronic props. of n-Si inversion layers, stress and temp. depend 8−19113
Si-SiO_2 interface, electronic states, review 8−30992
Si-SiO_2 interface, evolution of surface states density during bias temp. treatment 8−14832
Si-SiO_2 interface, props. 8−23170
Si-SiO_2 interface, surface states and elec. defects obs. using ESR 8−23169
Si-SiO_2 interface charge effects and related props. 8−10575
Si-SiO_2 interface charge inhomogeneities effect on surface state density meas. by MOS AC cond. technique 8−14833
Si-SiO_2 interface state density in MNOS structures 8−47873
Si-SiO_2 microsensor, surface conductivity effect of aliphatic alcohol molecule adsorption *(Russian)* 8−34887
Si-SiO_2 new type of interfacial charge 8−23168
Si-SiO_2 structure, oxide charge evaluation, appl. of Kelvin method 8−19157
Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
Si-SiO_2-vacuum system, principal angle and azimuth determ. 8−11009
SiC-anodic oxide, IR spectra *(Russian)* 8−11376
SiO_2 on Si, thermally grown, breakdown, review 8−23172
SiO_2-Si, cathodoluminesc. and AES rel. to struct. 8−43937
SiO_2-Si, Cs doped, distrib. of impurity and oxide depth 8−6395
ZnO-binder system, reciprocity failure, photoconductivity 8−39151
ZnSe-mica epitaxial heterostruct., growth and struct. 8−43257
semiconductor integrated circuits *see monolithic integrated circuits*
semiconductor junction lasers
buried heterostructures, discrete or DFB 8−5499
coherence analysis, meas. system with Michelson interferometer *(Polish)* 8−33762
communications transmitter, multipurpose IR emitters 8−30053
corrugated waveguides and lasers, improved coupled mode analysis 8−46842
coupling to II-VI waveguides, transition struct. fabrication 8−38029
coupling to single mode fibre, by optical transition structure 8−42449
semiconductor junction lasers continued
CW lasers, DH, with specific growth defects, degradation characts. 8−13713
degradation modes and accelerated life tests 8−1233
DH devices, interface recomb. effects on transient response anal. 8−22127
DH I-bar mesa lasers, for integrated optical circuits, selective LPE 8−6868
DH injection laser coupling to optical fibre waveguide 8−33851
DH laser configuration with passive transverse field confinement 8−33746
DH lasers, characts. explanation, multimode field theory 8−37880
DH lasers, effect of impurities on quantum shot noise reson. 8−22132
diode and transmitter unit lifetime tests *(German)* 8−37883
direct PCM improvement by optical feedback 8−1287
distributed Bragg mirror continuous injection laser, operation and construction *(Russian)* 8−29972
distributed Bragg reflector injection lasers for integrated optics 8−42472
electrical characteristic for operation in threshold vicinity, analytic expressions 8−22131
epitaxial growth with moulded reflectors 8−42347
Epitaxial waveguide laser with distributed second-order feedback by electron excitation *(Russian)* 8−29973
excitation generator for GaAlAs semicond. injection lasers 8−33748
external resonator injection laser, threshold temp. depend. at fixed wavelength 8−25882
fabrication reproducibility of laser diodes *(French)* 8−42357
ferromagnetic ordering, radiation polarisation *(Russian)* 8−9384
fibre communication lines, use of semicond. lasers and avalanche photodiodes 8−46793
fibre communication technology, state of art *(Czech)* 8−5575
fibre optic communication systems, sources and detectors 8−42412
fibre-optic LED and laser source and Si photodetector development 8−42430
heteroepitaxial structures based on III-V compounds, appl. in optical electronics, defect form., review 8−23160
heterojunction laser and LED reliability rel. to facet damage and nonradiative centre formation 8−5472
holographic memory readin system parameter optimisation *(Russian)* 8−13670
holographic storage device appl., expt. *(Russian)* 8−37824
III-V semiconductor, MBE and applications 8−11135
injection, performance characts., with external gratings, cavity mounted 8−1274
injection laser automatic level control by optoelectronic feedback *(German)* 8−33883
injection laser diodes for fibre optic communication 8−33751
injection laser transmitter module, emitter unit, driving and control circuits *(French)* 8−46636
injection lasers, theoretical spontaneous emission factor in the rate eqn. using classical EM theory 8−9383
injection lasers operated with HF modulation, intensity fluctuations calc. 8−22123
injection stripe lasers, current carrier conc. distrib. *(Russian)* 8−13712
InP-InGaAsP-InP, low threshold laser, threshold density temp. depend., LPE method *(Russian)* 8−22133
interval modulation semiconductor laser communication system 8−9331
IR, tunable, review 8−13724
IV-VI multicomponent solid solutions for improved lasing 8−1232
lecture on optoelectronic devices 8−25990
linearised LED and laser transmitters, for analogue fibre optical systems 8−46818
long range injection laser radar 8−5549
Luneberg lens for laser diode coupling to graded-index fibre *(German)* 8−33875
magnetic birefringence influence on stimulated emission spectrum 8−17941
mode patterns display and recording, spatial and spectral resolution 8−29955
modulator using bipolar transistor, high speed 8−1288
monolithic integration of laser and laser amplifier or detector, using AlGaAs twin guide structure 8−38082
monolithic integration of LOC-DBR lasers and optical components 8−38081
multichannel GaAs laser array output synchronisation 8−42417
narrow stripe injection laser, voltage and current spatial var. 8−17936
optical communication conference, Munich (1977) *(German)* 8−33854
optoelectric systems on injection lasers 8−42464
photoresist microlens production 8−9398
planar stripe lasers, very narrow, reduction of quantum noise 8−37901
quantum noise, theory 8−1228
relaxation oscillations, suppression, by chemical etching on cleaved facets 8−25881
review of recent progress in cryst. growth, processing and characterisation for reproducibility 8−17938
single heterostructure laser diode, pulse operating, anal. of temp. decrease in active region 8−13706
single laser diode CW output power limitation *(German)* 8−37886
single longitudinal mode oscill. by optical coupling 8−22157
strip-buried heterojunction laser, high-power fundamental transfer mode 8−46618
stripe geometry, launching efficiency into optical fibre determination 8−42406
stripe geometry, self focusing dynamics 8−29954
stripe geometry proton-isolated DH lasers, thermal resistance models 8−37881
stripe laser high-speed modulation, noise, and nearfield meas. *(German)* 8−37923
stripe-geometry, cladded parabolic index profile waveguide model 8−22205
symmetric DH, TE_0 mode radiation confinement factor, analytical approx. 8−46603
thermal impedance measurement technique 8−13705
tunable diode laser, for high resolution matrix IR spectroscopy 8−45739
tunable diode lasers and applications 8−25886
tunable diode lasers for spectrochem. anal., construction, appls. 8−33745

semiconductor junction lasers continued
twin-guide laser, narrow radiation angle for optical fibre coupling 8−46628
(Al,Ga)As DH laser, effect of mounting on pulsed threshold 8−13711
(Al,Ga)As DH lasers, temp. accelerated ageing and degradation characts. 8−22130
AlAs-GaAs, strip heterolaser, O$^+$ implantation optimisation, relative threshold current density *(Russian)* 8−1230
AlGaAs CW injection heterostructure laser, with second order distributed Bragg reflectors, exam. 8−37907
(AlGa)As DH laser degradation due to facet oxidation 8−42336
AlGaAs heterojunction laser, single transverse and longit. mode operation 8−37887
AlGaAs, monolithic integration of laser and amplifier/detector by twin-guide struct. 8−42466
AlGaAs, strip buried heterostruct. laser, linear light-current characts. 8−37908
AlGaAs transverse junction stripe lasers, single longit. and fund. transverse mode oscill. 8−22124
AlGaAs-GaAs, DH, with bent guide of planar struct. 8−1256
AlGaAs-GaAs DH laser, impurity effects on relaxation oscillations 8−13710
n-Al$_{0.3}$Ga$_{0.7}$As, layer of (AlGa)As DH laser, deep levels 8−46605
Al$_x$Ga$_{1-x}$As, CW low threshold, high efficiency injection laser props. 8−22126
Al$_x$Ga$_{1-x}$As DH laser, with constricted active region, fabrication and characts. 8−37895
Al$_x$Ga$_{1-x}$As DH lasers continuously operated, with 70°C lifetimes as long as two years 8−17952
Al$_x$Ga$_{1-x}$As heterojunction laser diode, accelerated step-temperature ageing 8−46599
Al$_x$Ga$_{1-x}$As heterostructure laser, improved light-output linearity by antireflective coating 8−17953
Al$_x$Ga$_{1-x}$As, transverse mode stabilized injection lasers 8−29964
Al$_x$Ga$_{1-x}$As-GaAs heterostructure, nonradiative large dark spots rel. to minority carrier transport 8−9378
Al$_y$Ga$_{1-y}$As-Al$_x$Ga$_{1-x}$As laser struct., for integrated optics, MBE 8−13817
n-AlGaAsSb-GaSb-p-AlGaAsSb binary heterostructure injection laser, room temp. operation 8−9381
CC GaInAs-InP injection lasers with longer wavelengths for optical fibre communications, review *(Japanese)* 8−25892
CdS, combined pulse transformer for electronic pumping 8−1255
(Ga,Al)As transverse mode stabilised laser, direct obs. of saturation behaviour of spontaneous emission 8−46600
GaAS-Al$_x$Ga$_{1-x}$As, DH laser and modulation developments *(German)* 8−37903
GaAlAs CW DH diode lasers, 1/f noise behaviour 8−1226
GaAlAs CW diode laser, external cavity control, 32 MHz single axial mode 8−1271
(GaAl)As DH diode laser, microscale degradation absorpt. centres 8−13704
GaAlAs DH injection laser transmitter, for long distance fibre optics communication 8−42355
GaAlAs DH p-n junction laser, construction and operating characts. 8−9377
GaAlAs DHS laser, direct modulated from 260 Mbit/s to 1.4 Gbit/s, monomode operation 8−46601
GaAlAs, LPE edge-growth reduction by aux. heating in side-walls of graphite sliders 8−30848
(GaAl)As low threshold current proton isolated DH lasers 8−1258
GaAlAs mode-stabilised semiconductor lasers 8−46638
(GaAl)As/GaAs-heterostructure, degradation studies of sawn cavity lasers under pulsed operation 8−29953
(GaAl)As-GaAs, low temp. threshold behaviour 8−46604
(GaAl)As-GaAs heterostructure lasers, factors affecting catastrophic degradation 8−17942
(GaAl)As-heterostruct. stripe lasers, light/current characts. and near field shifts, waveguide self focusing effects 8−29952
Ga$_{0.9}$Al$_{0.1}$As, nucleation morphologies on Ga$_{0.65}$Al$_{0.35}$As surfaces grown by LPE for DH lasers 8−15323
Ga$_{1-x}$Al$_x$As DH laser, LPE surface protective coating 8−35320
Ga$_{1-x}$Al$_x$As injection laser automatic bias control cct. 8−5498
(Ga$_{1-x}$Al$_x$)As LOC DBR laser integration with p-n junction detector 8−38066
Ga$_{1-x}$Al$_x$As-Ga$_{1-y}$Al$_y$As DH laser, grown by organometallic CVD, room temp. operation 8−29950
Ga$_{1-x}$Al$_x$As-GaAs, CVD laser diodes, operation and growth processes 8−46598
Ga$_{1-x}$Al$_x$As-GaAs, DH, grown by metalorganic CVD, room temp. operation 8−13702
Ga$_{1-x}$Al$_x$As-GaAs, room temp. DH laser, CVD growth 8−37912
Ga$_{1-x}$Al$_x$As-GaAs DH lasers grown by metalorganic CVD, room temp. operation 8−1248
Ga$_x$Al$_{1-x}$As DH laser, suppression of output nonlinearities by use of misaligned mirrors 8−17954
Ga$_{1-x}$Al$_x$As$_{1-y}$P$_y$-GaAs quaternary heterojunction strains and IR laser diode performance 8−9385
GaAs and related cpds., conf., Edinburgh, Scotland (Sep 1976) 8−3039
GaAs DH injection laser, modulation behaviour, appl. in high bit-rate fibre optical communications 8−1281
GaAs DH laser, high speed direct modulation, multimode operation effects 8−13738
GaAs DH laser, life test at room temp. 8−17937
GaAs degraded heterojunction lasers, TEM obs. of dark defects 8−14355
GaAs, digital modulation for optical communication systems *(German)* 8−37919
GaAs diode, IR radiation effects on human eye evaluation *(German)* 8−20241
GaAs, distrib. Bragg reflector laser, highly collimated broadside emission 8−13721
GaAs double cavity laser, with branching output waveguides, exam. 8−37918
GaAs double hetero stripe-geometry laser, two-dim. anal. 8−1231
GaAs, electron-beam-pumped, transient waveguide effects and lasing time delays 8−37882
GaAs laser array to channel groove waveguide coupling prism 8−38067

semiconductor junction lasers continued
GaAs laser arrays, Si substrate packaged, thermal performance and limitations 8−46613
GaAs laser source package for multichannel optical links 8−1266
GaAs, optically pumped laser, two-dimensional distributed Bragg reflectors, oscillation *(Japanese)* 8−42350
GaAs pulsed laser terrain profiler 8−49145
GaAs single-freq. injection laser, CW operation 8−46606
GaAs, stripe-geometry, interaction and spectral distrib. of lateral modes *(Russian)* 8−22134
GaAs transverse light coupling, into optical fibres 8−18045
GaAs, wavelength depend. of gain saturation 8−1229
GaAs-(GaAl)As, SiO$_2$ stripe geometry, for wide band optical communication systems 8−42358
GaAs-Al$_x$Ga$_{1-x}$As buried-heterostructure laser, wideband optical sources *(German)* 8−37904
GaAs-Al$_x$Ga$_{1-x}$As DH laser, high-temp. degradation *(German)* 8−37884
GaAs-Al$_x$Ga$_{1-x}$As DH laser, modulation with coherent light injection *(German)* 8−37922
GaAs-Al$_x$Ga$_{1-x}$As injection laser, direct modulation and spectral props. *(German)* 8−37921
GaAs-Al$_x$Ga$_{1-x}$As proton-isolated DH laser, threshold current optimisation *(German)* 8−37905
GaAs-Al$_x$Ga$_{1-x}$As single heterostructure laser diode, pulse operating, anal. of temp. decrease in active region 8−13706
GaAs-Al$_x$Ga$_{1-x}$As transverse junction stripe laser, single-mode oscillation *(German)* 8−37885
GaAs-AlGaAs, fabrication, cleaving process for GaAs wafers 8−37915
GaAs-AlGaAs DH, wipinglass LPE growth *(Japanese)* 8−48304
GaAs-AlGaAs DH laser, impedance meas. 8−17939
GaAs-AlGaAs DH lasers, multipeak freq. response obs. 8−17940
GaAs-AlGaAs half-ring laser, fabrication by deep Zn diffusion 8−17960
GaAs-AlGaAs laser array packaged with fibre lightguide array on Si substrate 8−46611
GaAs-Ga$_{1-x}$Al$_x$As, DH, Al$_2$O$_3$ facet coating effect on degradation 8−13722
GaAs-Ga$_{1-x}$Al$_x$As, DH, characts. exam. for communication appl. 8−37891
GaAs-Ga$_{1-x}$Al$_x$As DH injection laser, curved junction stabilized filament, struct. and characts. 8−33744
GaAs-Ga$_{1-x}$Al$_x$As DH laser, curved stripe, operation and appl. 8−42341
GaAs-Ga$_x$Al$_{1-x}$As, magn. birefr. influence on stimulated emission spectrum 8−17941
GaAs-Ga$_x$Al$_{1-x}$As DH diode lasers, single longitudinal mode operation 8−1243
GaAs-Ga$_x$Al$_{1-x}$As injection laser, large-optical-cavity, with low-loss distributed Bragg reflectors 8−1244
GaAs-GaAlAs, double heterostruct. injection laser, curved junction stabilised filament, exam. 8−37911
GaAs-GaAlAs, grating coupled with distributed Bragg reflectors 8−17934
GaAs-GaAlAs 13 μm wide stripe CW DH lasers linear to more than 10 mW 8−42344
GaAs-GaAlAs DH diode lasers with angled pumping stripes, operation 8−46602
GaAs-GaAlAs DH laser material, secondary dislocation climb in optical degradation 8−17935
GaAs-GaAlAs DH lasers, optical studies of defects and degradation 8−18654
GaAs-GaAlAs DH lasers, single longit. mode operation 8−22125
GaAs-GaAlAs DH laser, unsaturated optical gain spectra above threshold 8−29951
GaAs-GaAlAs heterostructure injection lasers, room temp. operation with curved stripe waveguides 8−37909
GaAs-GaAlAs injection lasers, on semi insulating substrates, using laterally diffused junctions 8−37910
GaAs-GaAlAs injection laser, branching waveguide directional coupler, fabrication and operation 8−38047
GaAs-GaAlAs injection laser sources, for fibre optic communications 8−46637
GaAs-GaAlAs LPE layers, DH material, TEM obs. of crystal defects 8−6241
GaAs-GaAlAs room temp. DBR lasers, highly collimated broadside emission 8−1428
GaAs$_{1-y}$P$_y$-In$_{1-x}$Ga$_x$P$_{1-z}$As$_z$, DH, low threshold visible spectrum 8−5471
GaAsSb-AlGaAsSb DH laser, LPE growth of GaAs$_{1-x-z}$Sb$_x$P$_z$ 8−6867
GaAs$_{1-x}$Sb$_x$-Al$_y$Ga$_{1-y}$As$_{1-z}$Sb$_z$, DH, threshold characts. and extended wavelength operation 8−9379
GaInAsP-InP, broad-area and stripe-geom. DH laser, for fibre optic communication 8−42356
GaInAsP-InP DH laser grown by newly designed vertical LPE furnace 8−9380
GaInAsP-InP DH laser, relaxation and delay in oscillations 8−13709
Ga$_{1-x}$In$_x$As$_{1-y}$P$_y$-InP DH lasers, 1000-hour CW operation 8−1265
GaInPAs, CW strip heterolaser, characts. 8−9382
n-GaP$_x$As$_{1-x}$-p-Ga$_{1-y}$Al$_y$P$_x$As$_{1-x}$ single sided heterolaser, visible emission 8−46607
In$_{0.53}$Ga$_{0.47}$As-InP, 1.7 μm heterojunction lasers and photodiodes fabrication 8−25880
InGaAsP-InP DH lasers, direct modulation 8−42363
InGaAsP-InP lattice matched DH, growth by two-phase supercooled soln. technique 8−10296
In$_{1-x}$Ga$_x$As$_y$P$_{1-y}$-InP DH lasers, fabrication and performance 8−5500
In$_{1-x}$Ga$_x$As$_y$P$_{1-y}$-InP DH laser on InP (100) substrate 8−29965
In$_x$Ga$_{1-x}$P-GaAs lattice mismatched heterojunction, recomb. props. 8−13707
InGaPAs LPE multilayered DH lasers exhibiting quantum size effects 8−1227
In$_{1-x}$Ga$_x$P$_{1-z}$As$_z$ DH laser diode, defect and phonon assisted tunnelling 8−13708
In$_{1-x}$Ga$_x$P$_{1-z}$As$_z$, room temp. visible heterojunction lasers 8−5501
In$_{1-x}$Ga$_x$P$_{1-z}$As$_z$ thin well in InP p-n junction, confined carrier luminesc. and laser modes 8−13703
In$_{1-x}$Ga$_x$P$_{1-z}$As$_z$-InP, single and multiple layer heterostruct., LEDs and lasers 8−46626

semiconductor junction lasers continued
InP-$Ga_xIn_{1-x}As_yP_{1-y}$, DH, fabrication and operation in 1.5 μm region 8−37893
Pb salt tunable diode lasers, wavenumber calibration using etalons 8−45738
PbS-$PbS_{1-x}Se_x$-PbS DH diode laser props., comparison of theory with expt. 8−22128
PbSnSe, for IR heterodyne radiometry 8−267
$Pb_{1-x}Sn_xSe$ diode laser absorption spectrometer, pollution detection equipment 8−40672
$Pb_{1-y}Sn_ySe$-PbSe, ($0 \leq y \leq 0.08$), lasing props. investigation 8−10990
$Pb_{0.93}Sn_{0.07}Te$ tunable diode laser for IR spectroscopy 8−33511
$Pb_{1-x}Sn_xTe$-PbTe, ($0 \leq x \leq 0.2$), lasing props. investigated 8−10990
PbTe, freq. tuning using press. and temp. combination 8−17978
PbTe, MBE homostructure diode lasers with CW operation up to 100K 8−22129
PbTe-(Pb,Sn)Te DH laser, CW operation over 1500 h at 77K 8−17950

semiconductor junctions
see also p-n junctions
electrogradient EMF, V-I characts. *(Russian)* 8−47852
electron beam induced current technique appl. to semicond. device characts., review 8−21302
$Ga_{1-x}In_xSb$, inverted diode, electron irradiation effect on props. *(Russian)* 8−14378
isotypic heterojunction under transient depletion conditions, information-carrying charge 8−26944
n-n^+ point contacts, current-voltage characts. 8−26940
polar semiconductor, optical phonon-magnetoplasmon interface oscills. 8−43467
polar semiconductor-polar semicond. interface, optic-phonon-magnetoplasmons 8−23146
relaxation semiconductors, junction behaviour 8−30977
sublinear current-voltage characts., field-opposed diffusion of free carriers 8−47862
ternary semiconductor device applications, review 8−39207
n-$Al_xGa_{1-x}As$, variable-gap crystal, magnetoresistance 8−34850
CdS-GaAs n-n voltage-enhanced photoanode, solar cell efficiency 8−14810
CdSe-$As_2S_3(AsSbS_3)$ heterostructure, energy bands and interface props., photoelectron spectroscopy 8−2551
GaAlAs-GaAs heterostructures, electronic excitation effects on mobility of point defects and dislocations 8−2561
n-GaAs-GaAs:Cr, interface elec. props., substrate effects 8−6438
GaSb, inverted diode, electron irradiation effect on props. *(Russian)* 8−14378
Ge, high purity, nature of large traps, expt. on p^+-n-n^+ struct. 8−19051
Ge-GaAs (110) interface, relax., self-consistent pseudopotentials 8−30981
Ge-Si n-n heterojunctions, photovoltaic response 8−14804
In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8−15314
Si-$As_2Se_3Ge_4$ heterojunction, elec. props. 8−6434

semiconductor materials
see also amorphous semiconductors; degenerate semiconductors; elemental semiconductors; heavily doped semiconductors; II-VI semiconductors; III-V semiconductors; III-VI semiconductors; IV-VI semiconductors; liquid semiconductors; magnetic semiconductors; many-valley semiconductors; narrow band gap semiconductors; organic semiconductors; polar semiconductors; semiconductors; ternary semiconductors
compound semiconductors, quantitative anal. with ion microanalyser *(Japanese)* 8−7292
light absorption, amplification and luminescence, saturation effects *(Russian)* 8−13771
PbI_2, trapping levels, TSC meas. 8−23107
rare earth monophosphides, K-emission bands, electronic struct. 8−15250
n-SiC, 6H and 15R polytypes, (0001) plane, influence of uniaxial mechanical stress on resist. anomaly 8−10445
β-SiC, 6H polytype, pure and doped, prep. by pyrolysis of silane cpds. 8−44018
vibrational IR excitons, spectra *(Russian)* 8−15173
Ag_2O, forbidden energy gap oxide semicond. crystals, review of spectroscopic props. 8−2876
Ag_2O, photoconductivity of crystals grown under hydrothermal conditions 8−14765
Ag_2S, transport props., 700-1500K 8−47796
AlB_{12}, preparation of single crystal 8−43997
AlH_3, photocond., photocurrent carrier-type 8−34855
AlN-Si_3N_4 mixture film, CVD, characterisation of film props. 8−43496
As_2S_3, crystalline, two phonon vibrational spectra 8−35142
As_2S_3, crystalline and vitreous, nonlinear absorption of ruby laser radiation *(Russian)* 8−22165
As_2S_3, two-phonon vibrational spectra, crystalline and amorphous forms, Raman and IR spectra 8−39537
As_2S_3-Ag system, activation energy for photochem. conversion, 80-340K, radiation intensity depend. *(Russian)* 8−3356
As_2S_3-CdSe heterostructure, energy bands and interface props., photoelectron spectroscopy 8−2551
$AsSbS_3$-CdSe heterostructure, energy bands and interface props., photoelectron spectroscopy 8−2551
Bi-Sb solid soln., crystallisation in capillaries *(Russian)* 8−44006
Bi-Sb solid soln., thermoelectric props., 80 to 300K *(Russian)* 8−43425
$Bi_{12}GeO_{20}$, hopping cond., carrier mobility and density 8−19040
BiI_3, doped, IR photolum. and EPR spectra 8−19558
BiI_3, excitonic shifts of quasiatomic optical core to cond. band transitions, UPS obs. 8−11079
BiI_3, layered semicond., valence bands UPS and XPS obs. 8−11078
BiI_3-$Sb(As)I_3$, phase diags. 8−6905
Bi_2O_3, film, resist. and current controlled negative resist. 8−39238
$Bi_{0.91}Sb_{0.09}$, thermomag. power in strong mag. field, temp. and field depend. 8−43421
n-$Bi_{0.924}Sb_{0.076}$, one-ellipsoid to two-ellipsoid fermi surface transition in extended cryst. *(Russian)* 8−14657
$Bi_{1-x}Sb_x$, magnetoresist., mag. field and ang. depend. 8−19063
Bi_{100}-$_xSb_x$, lattice dielec. const. meas. 8−10490
$(Bi_{0.25}Sb_{0.75})_2Te_3$, opt. props. of bulk and films 8−27206

semiconductor materials continued
$(Bi_{1-x}Sb_x)_2Te_3$, highest valence band struct., Shubnikov-de Haas effect 8−14661
$Bi_xSb_{2-x}Te_3$, 2-dimens. cryst. interface props. of Bi overlayer UPS obs. 8−34881
Bi_2Te_3, lattice vibrs. coherent inelastic neutron scatt. meas. 8−34576
Bi_2Te_3, p- and n-type, free charge carrier mag. susceptibility, 90-650K 8−10643
Bi_2Te_3, thermoelectric p-n junction, pulse refrigeration 8−23156
Bi_2Te_3-Sb_2Te_3 solid soln., deviation from stoichiometric cross section 8−35362
$Bi_2(Ti_{1-x}S_x)_3$, thin crysts., adsorpt. effects on elec. cond. 8−19034
Cd_3As_2 film, crystalline and amorphous films, band structure, optical properties 8−11013
Cd_3As_2, vapour phase single cryst. growth, X-ray topographic obs. of perfection 8−9976
$Cd_3(As_xP_{1-x})_3$, thermoelectric power and Hall effect., mag. field depend. 8−10484
CdF_2: $YF_3(YbF_3)$, photoconversion from insulating to semicond. state, IR absorption and elec. cond. 8−14759
CdF_2:Ge^{3+}, Ce^{3+}, in semicond. state, elec. cond. and Hall meas. 8−10443
CdF_2:YbF_3, conversion processes into semiconductor 8−14730
$Cd_{1-x}Mg_xTe$:P, luminescence centres, photoluminesc. meas. 8−31236
$Cd_{1-x}Mn_xTe$ mixed cryst., giant exciton Faraday rotation 8−27260
CdP_2, birefringence and optical activity 8−15143
CdP_2:Bi,Zn, photolum. and photocurrent stationary characts. 8−27317
Cd_3P_2, band struct., X-ray spectra determ. 8−35225
Cd_3P_2, Cd_3As_2, sp. ht., thermodyn. props. 8−22863
Cd_3P_2, free carrier and interband absorption 8−23446
CdSb:Ge, anisotropy of elec., mag. props. 8−34829
Cd_3X_2, X=P,As,Sb, phys. props. 8−26527
$Cd_{3-x}Zn_xAs_2$, cryst., two-band and impurity conduction, 1.8 to 370K 8−19057
CeO_{2-x}, small polaron mobility, elec. cond. and nonstoichiometry meas. 8−47785
CuCl, biexciton resonant two-photon absorption 8−23491
CuCl(Br)(I), photoelasticity theory, strain polarisability effect 8−10868
Cu_2O, CVD from Cu-O-H-Cl-N system, thermodynamic anal. 8−39676
Cu_2O, cond. filament props. and bistable switching effect *(German)* 8−2532
Cu_2O, forbidden energy gap oxide semicond. crystals, review of spectroscopic props. 8−2876
Cu_2O, photoconductivity of crystals grown under hydrothermal conditions 8−14765
Cu_2O, theory of large-radius excitons 8−47710
Cu_2O, with impurities, exciton absorpt. line shape calc. *(Russian)* 8−10934
Cu_2S film, on rough $Zn_xCd_{1-x}S$ substrate, film substrate lattice mismatch calcs. 8−43263
Cu_2S:Cd(Zn), effects of doping on elec. and optical props. 8−38743
Cu_2S-CdS solar cells, prep. and stoichiometric control of Cu_2S film 8−2560
$Cu_{2-x}S$, carrier mobility rel. to x 8−43389
$Cu_{2-x}Se$, carrier mobility rel. to x 8−43389
$Cu_{2-x}Te$, carrier mobility rel. to x 8−43389
Er_2Te_3, films, prep., elec. props. 8−43494
FeS_2, mag. susceptibility press. depend., bandstruct. calcs. 8−19212
$FeTiO_3$, Fe_2TiO_4, influence of cryst. struct. on photoresponse of electrodes 8−43471
Ga_2O_3:Mg(Zr) single crystals, quenched, ionic and elec. props. 8−30922
α-Ga_2S_3, defect semicond., optical absorption meas. 8−15186
αGa_2S_3, single crystal, lattice phonon exam., Raman and IR spectra of polycrystalline samples *(French)* 8−27229
Ga_2Se_3, vapour phase deposited films, struct. 8−2383
Ga_2Te_3, vapour phase deposited films, struct. 8−2383
Ge-Si system, diffuse scatt. of X-rays by single crysts. *(German)* 8−30517
Ge-Si-Sb solid soln., prod. by 'Universal Furnace' expt. Sb and Si distrib. *(Russian)* 8−23692
GeO_2, forbidden energy gap oxide semicond. crystals, review of spectroscopic props. 8−2876
$GeSe_2$, optical absorption edge 8−43901
Ge_xSe_{1-x}, bonds and band struct. determ., tight-binding model 8−18959
HgI_2, doped, vap. growth by temp. oscill. method 8−39674
HgI_2, phonon-assisted recomb. of free electron-hole pair 8−23521
HgI_2, stimulated emission and optical gain, 80K 8−33738
HgI_2, vap. growth by temp. oscill. method in horizontal furnace 8−39675
$Hg_{1-x}Mn_xTe$, far IR studies of lattice and free carrier effects 8−39544
$Hg_{1-x}Mn_xTe$ mixed crystals, zero gap, effect of exchange on interband magneto-absorption 8−23443
In-Sb-Bi system, solid solns., solubility limits, microhardness, microstruct. investig. 8−35368
$In_{1.9}As_{0.1}Se_3$, growth by chem. vap. transport, characterisation as photoelectrode 8−43994
In_2O_3 film, evaporated, on ferroelec. ceramic, switching characts. 8−19107
In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8−15314
InSb-NiSb, 8 mm band noise generation *(Russian)* 8−39175
In_2Se_3, cryst. struct. determ. by X-ray diffr. *(French)* 8−26501
$(In_2SnTe)_x$-$(2InSb)_{1-x}$ system, semicond., Mossbauer absorption line of ^{119}Sn 8−27146
In_2Te_3-PbTe system, phase diagram, elec. props. 8−35361
In_2Te_5 (II), cryst. struct. determ. 8−26510
$KTaO_3$:Gd, temp. depend. of thermal diffusivity and Seebeck coeff. 8−10481
La_2CuO_4, high pressure phase transformation, small polaron cond. to semicond. transition 8−6156
$La_{1-x}Sr_xCrO_3$, x=0-0.2, AC and DC cond., 77-1300K, hopping of polarons 8−2477
LiV_2O_5, needle cryst. form. by reduction of molten Li_2O-V_2O_5, semicond. props. *(Japanese)* 8−3030
MnO-CoO-O_2, semicond. solid solns., ageing effects on elec. cond. 8−23085
α-MnS, defect energetics and range of homogeneity 8−47317
MnTe film, elec. props. 8−43498

semiconductor materials continued
MoS_2 (2H), elec. cond. press. depend. 8-43394
NiO, elec. cond. meas. at 1000°C 8-10451
PbI polytypes, phase transforms. and electrical behaviour 8-47839
PbI_2, complex dielectric and optical consts., ellipsometric determ. 8-23425
PbI_2, excitonic shifts of quasiatomic optical core to cond. band transitions, UPS obs. 8-11079
PbI_2, layered semicond., valence bands UPS and XPS obs. 8-11078
PbI_2, photolum. and reflectivity temp. depend., cryst. anisotropy effect on electron-phonon interaction *(Russian)* 8-15225
PbI_2, semicond., band struct., angle resolved photoemission meas. 8-15296
$Pb_{1-x}In_xTe$, $0.01 \leqslant x \leqslant 0.2$, elec. cond., Hall coeff. liquid He temp. 8-47815
$Pb_{1-x}In_xTe$, impurity-state conduction and temp. depend. of transport coeffs. 8-47795
PdO, semiconductivity and stability, optical props. 8-43497
$Pt_{0.97}S_2$, optical props. at absorption edge 8-35140
$Sb_{1.5}Bi_{0.5}Te_3$ solid solution, electrical, thermoelectric and thermal properties, temp. influence obs. *(Slovak)* 8-30946
SbI_3-AsI_3, phase diags. 8-6905
Sb_2S_3, elec. and mag. props., carrier transport mechanism 8-47792
Sb_2S_3, galvanomag. props. and elec. resist., temp. depend. 8-43419
Sb_2Se_3, energy gap, light absorpt., elec. cond., photocond. meas. 8-47826
Sb_2Te_3, free charge carrier mag. susceptibility, 300-600K 8-10644
Sb_2Te_3, mag. and elec. props., carrier excitation 8-43395
SiC, 2H→6H transform. mechanism, X-ray diffr. theory 8-30575
n-SiC, 6H, epitaxial layer, saturated electron drift velocity meas. 8-19168
α-SiC, 6H, excited states, photoluminesc. efficiency 8-39604
SiC (2H), vapour grown, growth and deform. faults, X-ray obs. 8-30650
SiC, anodised, IR spectra *(Russian)* 8-11376
SiC, α- and β-phases, isomer shift in Mossbauer spectra of implanted ^{129}I 8-15067
SiC, cryst. growth on oriented seeds by sublimation 8-35279
β-SiC crystals, wetting by Si and growth by vap.-liq.-solid mechanism 8-3005
6H-SiC, dislocation etching 8-22721
SiC, eccentric growth spirals 8-26470
SiC, growth from soln. in fused Si, temp. gradient method in Tb vap. 8-35301
SiC, N doping inhomogeneities due to growth conditions 8-22741
SiC, negative photoconductivity and photoconductivity quenching 8-6414
SiC, p-n junction, vapour grown elec. breakdown fields 8-19135
SiC, semi-insulating in struct. with injecting contacts, cond. in strong elec. field 8-19160
α-SiC, short-wavelength photocond. and capacitance photo-EMF meas. 8-26906
SiC, single cryst. ingots, growth using seeds, 1800-2600°C 8-43993
SiC, struct. of spectrum of excitons bound to neutral B atoms 8-19523
SiC, synthesis by ion implantation of diamond, role of struct. imperfections 8-34529
β-SiC whisker, atom-probe FIM expts. 8-35275
SiC:Al, g-values, spin temp., determ. from Raman spectra 8-43856
β-SiC:B, diffused structures, current-voltage characts. 8-47865
n-SiC:N, O, cathodolum. spectra meas. 8-19573
$SiTe_2$, dislocations and stacking fault energy 8-47378
$Sm_{1-x}Gd_xS$, calorimetric exam. of metal-semiconductor transition 8-18967
SmS, anomalously high magnetoresist., Hall coeff. and elec. resist. meas. 8-10479
SmS, divalent and trivalent ion doped, electronic struct., Mossbauer spectroscopy 8-39022
SmS-based alloy, preparation and properties 8-44034
SnAs, Sn_3As_2, and Sn_4As_3, mag. susceptibility components 8-43551
SnO_2, cryst. growth by chem. transport method 8-3004
SnO_2, forbidden energy gap oxide semicond. crystals, review of spectroscopic props. 8-2876
SnS_2 (2H), band struct. press. depend. 8-43292
SnS_2, band struct., effect of polytypism 8-43293
$SnSe_2$, mag. susceptibility components 8-43551
$SnSe_2$, single crystal, reflectivity, XPS, UPS, and band struct. 8-6701
SnTe-In_2Te_3 system, thermoelec. props., phase diagram, transitions 8-43424
Th_3As_4, prep. and semicond. props. 8-23087
TiO_2 (rutile) photoanode, corrosion suppression by high-energy redox reactions 8-23163
TiO_2, chemisorption of O_2 and H_2O, electron stimulated desorption, AES and charact. loss spectra 8-22963
n-TiO_2, crystal, in aqueous soln., electrochemistry and electrolum. meas. 8-48665
TiO_2 electrode, sensitised, photoelectrolysis of water in sunlight 8-19143
TiO_2, resolved quadrupolar transition, absorpt. spectra obs., 1.6K 8-27259
n-TiO_2, thermodynamic pot. for anodic dissolution, rel. to photoelectrochem. cell efficiency 8-26948
TiO_2:H(D)(T), IR spectra, 300, 77 and 8K 8-35175
TiO_2:Nb, rutile, Seebeck effect, 90-300K 8-43427
TiO_2:Sb(Fe), Mossbauer effect exam. of impurities 8-31140
TiO_{2-x}, slightly reduced semiconducting, channelling expts. with 6 MeV protons, defect structs. 8-2117
Ti_2O_3, semicond., effect of stress on elec. resist. 8-34832
Ti_nO_{2n-1}, cryst. growth and characterisation 8-31311
TiS_2, semicond. charact. under press., in-plane resist. and Hall coeff. meas. 8-23086
$TlCl_xBr_{1-x}$, $TlBr_xI_{1-x}$, polymorphous mixed cryst. layers, opt. props. 8-23490
Tl_2Se, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8-34954
Tl_2Se_3, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8-34954
TmTe, far IR refl. and DC resist., 1-300K, interconfig. fluctuation effects 8-35136
$V_{1-x}Cr_xO_2$, VPE, and elec. and optical characterisation 8-3053
VO_2, semicond. phase, optical spectrum, CNDO CI calc. 8-27258

semiconductor materials continued
VO_2, VPE, and elec. and optical characterisation 8-3053
VO_2:Al(W), thin layer prep. by reactive DC sputtering doping effectiveness *(German)* 8-6847
V_2O_5-water, EPR of $VO_{aq}{}^{2+}$ formed by solar light photoreduction, electrolysis appl. 8-11540
V_nO_{2n-1}, cryst. growth and characterisation 8-31311
WO_3 electrodes, electrochem. and photoelectrochem. behaviour 8-26949
WSe_2 (2H), elec. cond. press. depend. 8-43394
WSe_2, single cryst. growth by sublimation method 8-11091
Yb_2Te_3, films, prep., elec. props. 8-43494
Zn-Ga-P-S quaternary system, p-type conductive alloys 8-39105
Zn_3As_2, solubility in Bi, LPE on $(Cd_xZn_{1-x})_3As_2$ 8-35324
ZnP_2, birefringence and optical activity, dispersion 8-2821
Zn_3P_2, Zn_3As_2, sp. ht., thermodyn. props. 8-22863
ZnSb, band struct. calc. 8-39015
Zn_3X_2, X=P,As,Sb, phys. props. 8-26527
ZrO_2-CeO_2, semiconducting ceramics, electronic conductivity and oxido-reduction *(French)* 8-26919

semiconductor materials testing
airtight cell for simultaneous conductivity and thermo-EMF meas. 8-21168
diffusion length and surface recombination velocity determ. by intensity modulated SEM 8-10472
dislocation Burgers vector exam., birefringence method 8-30626
impurity distrib. and defect structure analysis by charge collection SEM 8-9924
IR laser and defectograph, semicond. flow detection 8-3299
plastic-encapsulated IC, metallisation corrosion test 8-11486
solid solution breakup, anal. by meas. US wave vel. 8-23887
surface potential probe for 77K operation and with nanosecond response 8-12726
GaAs ion implantation parameter determ. by microwave contactless mobility meas. 8-10527
Si, characterisation techniques and trends 8-11487
Si deep level determ. using deep depletion MOSFET test structure 8-10571
Si epitaxial film concentrated inhomogeneity detection by selective etching *(Russian)* 8-10298
Si, high-resistivity, characterisation by Hall meas. 8-10480
Si, minority carrier lifetime and surface recombination velocity meas. by photocurrent 8-10515
Si, spreading resistance calibration, effect of specimen preparations 8-10450
Si, X-ray diffraction characterisation, highly collimated beam 8-9912

semiconductor-metal boundaries
see also Schottky-barrier diodes
contacts, theory and appl. 8-2566
electron microscopic observations of metal-semicond. contacts, new phases struct. 8-34899
electron-hole liq. near semiconductor-metal interface, binding energy 8-30985
film-covered electrodes, electron transfer reactions, mechanisms, theory 8-20023
film-covered metal electrodes, electron transfer reactions 8-20024
flat band potential from Mott-Schottky plot 8-34896
III-V semiconds., ohmic contacts *(Japanese)* 8-47869
light sensitive systems for holographic gratings, characts. 8-13810
luminescence due to photoinduced injection 8-10939
mechanical metal-semiconductor contacts, I-V characts., press. effects 8-2564
molecular crystal-metal interface, exciton decay, random-walk model 8-10356
Schottky barrier form., transition with chemical reactivity 8-30986
Schottky barriers, resonant tunnelling through traps, theory 8-10553
Al-n-n^+-GaAs, deep centre reson. charging, photocapacitance meas. on Schottky barrier 8-26908
As_2S_3-Ag photosensitive film systems, hologram recording 8-1194
Au-semiconductor system, room temp. interfacial reaction, AES obs. 8-18913
Au-Si internal photoemission struct., spatial distrib. of excited electrons *(French)* 8-23166
CdS-Al, ohmic contact stability improved by annealing 8-6443
CdS-Au structure, work function of {0001} faces of CdS, contact pot. difference meas. 8-23164
p-CdTe ohmic contact with Pd and Pt, I-V characts., temp. depend. of cond., activation energy 8-39211
CdTe-metal, diode contact, elec. characts., generation-recombination space charge region *(Russian)* 8-39214
EuS-W interface, electron spin polarisation in field emission 8-35265
n-GaAs, Schottky barriers, minority carrier trap meas. 8-26951
n-GaAs-Al surface barrier diodes, influence of exciton effects on photo-EMF spectrum 8-10557
GaAs-disperse metal film, photoluminesc. at interface 8-26953
GaAs-metal contacts, excess capacitance, depend. on nonlinear dielectric susceptibility 8-43475
n-GaAs-W contact, Schottky barrier 8-39213
$Ga_xIn_{1-x}Sb$ diode, with Au metallisation, interdiffusion effect of heat treatment 8-14820
GaP photoelectrode, role of Au overlayers 8-14812
n-GaP-(Ge-Au)/Ni, specific contact resistance calc. 8-43474
GaP-Hg, elec. props. using Schottky barrier capacitance techniques 8-47870
Ge-Au(Sn)(In), twin lamellas formation due to deposition of metal contacts 8-10060
n-InP Schottky barriers, photocapacitance effects of deep traps 8-43325
InP-Au, O, Cl, interfacial layers, effect on Schottky barrier height 8-14824
InP-Au(Ag)(In), electronic structure 8-10554
InP-metal Schottky barriers, effects of heat treatment characterised by SIMS 8-6446
Mo-Si junctions, metallurgical boundary props. and elec. resistivity 8-2568
Pd_2Si film on Si, substrate temp. effect on microstruct., TEM obs. 8-14621
Si (111), with chemisorbed Al, electronic struct., self-consistent pseudopotential calc. 8-34880

semiconductor-metal boundaries continued
n-Si-Ag(Au) evaporated contact photoelectric props. *(Russian)* 8−43473
Si-Al Schottky diode, type II localised interface states, Si surface prep. effects 8−39210
Si-Au, thin oxide, O, Cl, interfacial layers, effect on Schottky barrier height 8−14824
Si-metal contacts, low temp. reactions 8−2567
p-Si-metal Schottky contact surface state spectra and current transport mechanism *(Russian)* 8−43472
Si-Mo, silicide formation kinetics determ. 8−43261
Si-Ni Schottky barriers, thermionic field emission at room temp. 8−6445
Si-Ni Schottky diode, type II localised interface states, Si surface prep. effects 8−39210
n-Si-Ni surface barrier junction, rectifying, struct. and elec. characts., effect of low temp. annealing 8−14821
Si-Ni surface barrier struct., surface electronic states, annealing effects *(Russian)* 8−6441
Si-$NiSi_2$, ion implantation damage in silicide layer, channelling obs. 8−30676
Si-Pd_2Si, resist. and Hall mobility meas. 8−47886
Si-Pd_2Si ion implantation damage in silicide layer, channelling obs. 8−30676
Si-Pt Schottky diode, type II localised interface states, Si surface prep. effects 8−39210
ZnSe-metal contact, elec. props. 8−14826

semiconductor processing *see semiconductor technology*

semiconductor storage devices
see also integrated memory circuits
cardiopulmonary monitoring of high-risk infants using microprocessor-controlled memory 8−31962
diode array SAW correlator model and expt. 8−9508
dual-dielectric charge storage cells, electron-electron effects in writing and erasing 8−34900
MNOS memory device, charge distrib. of nitride 8−2571
MNOS memory device, charge retention by Frenkel-Poole detrapping 8−47874
SAW space-charge coupled signal processor with storage 8−9507
SAW storage correlator equivalent circuit models 8−9506

semiconductor storage systems
see also integrated memory circuits
SAW information storage and correlation in semiconductor diode arrays 8−9505

semiconductor switches
amorphous covalent semiconductors, choice and fabrication for switching applications 8−2415
chalcogenide glass threshold switch response to pulse burst waveforms 8−10523
control circuits using diode switches with switching of nsec pulses 8−8415
fast IR switch, ultrafast photography, with 10.6 μm radiation 8−38035
laser diode modulator using current switching bipolar transistors 8−1288
light controlled switch with picosecond precision, appl. to high-speed Kerr cell 8−1327
metal-semi-insulating-n-p^+ Si devices, switching expts. 8−26965
metal-semi-insulator-n-p^+ Si device, switching theory 8−26964
optical waveguide switches, and modulators, review of development progress 8−38045
thyristor magnetising current switch for magnetic flaw detector 8−44311
$Al_yGa_{1-y}As$-$Al_xGa_{1-x}As$, electrooptic rib waveguide modulators and switches 8−38046
a-CdAs thin film fabrication for switching applications 8−2415
GaAs ion-irradiated layers switching conduction 8−34868
GaAs-$Al_xGa_{1-x}As$, single-mode rib waveguide switches electro-optical modulation 8−46839
$Ge_{10}As_{40}Te_{40}I_{10}$, chalcogenide glass film, switching delay time 8−26926
Si light-controlled switch, appl. to high speed Kerr and Pockels cells 8−26925
$Si_{12}Ge_{10}As_{30}Te_{48}$, chalcogenide glass film, switching delay time 8−26926
$Si_{12}Ge_{10}As_{30}Te_{48}$ chalcogenide glass threshold switch conductivity in high ohmic state *(Russian)* 8−43502

semiconductor technology
See also under specific device headings
see also semiconductor doping; semiconductor growth
dielectric films on semiconductor devices, review of deposition techniques 8−23611
edge etch process for minimum geometry windows on poly Si surface 8−31550
Electrochemical Society Spring Meeting, Philadelphia, USA (1977) 8−6837
etching characts. by plasma reactive sputter etching of semicond. device materials 8−27661
high pressure pyrogenic oxidation in the production environment 8−35547
III-V nitride materials preparation, powder, thin film and volume crystals *(Czech)* 8−3037
ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
metal silicide growth on Si 8−10230
oxidation, oxidation-induced lattice defects, review *(Japanese)* 8−39931
p-n junction struct., X-ray topography visualisation during prep. *(Russian)* 8−26386
passivation films, advances in deposition processes, review 8−23620
planar technology, insulating thin film preparation and props. 8−10589
plasma etching, process development and monitoring via mass spectrometry 8−35546
plate cutting by electron beam 8−21268
protection of GaAs, $Ga_{1-x}Al_xAs$ and $GaAs_{1-x}P_x$ by reactively sputtered AlN *(French)* 8−23849
substrate, surface quality determ. by optical reflectance methods 8−43862
substrate surface, low loss electron and Auger images correl. 8−22944
surface, AB etch reappraisal 8−6065

semiconductor technology continued
surface deformation meas. in manufacturing, interferometric method 8−32793
surface testing, interf. method with quarter-wavelength sensitivity 8−32870
wafer deformation *(Japanese)* 8−43064
water impurity conc., from MOS DC transfer characts. 8−2155
CdS-Cu_2S heterojunction, pilot line production 8−2525
CdTe, surface layers formed by etchants, XPS meas. 8−44240
GaAs and related cpds., conf., Edinburgh, Scotland (Sep 1976) 8−3039
GaAs, device compatible anodic oxidation technique 8−44236
GaAs, etching soln. system H_3PO_4-H_2O_2-H_2O for MESFET fabrication 8−11379
GaAs, polishing dislocation etch 8−6066
n-GaAs, preferential photoelectrochemical dissolution in Fe(III) based etches 8−7066
GaAs wafers, for semicond. lasers, cleaving process 8−37915
GaAs:Zn, pulsed laser annealing, expt. 8−34828
GaP, polishing dislocation etch 8−6066
Ge, microdefect distrib. due to dislocation injection, selective etching 8−2122
Ge surface, wetting by Sn, Pb rel. to cryst. orientation 8−43211
InSb, ion bombard. and defect annealing, n- and p-type cond. layer prod. 8−26606
Si, clean SiO_2 film prep., use of poly-Si oxidation tubes 8−39924
Si material processing, point defect thermodynamics 8−6054
Si, microdefect distrib. due to dislocation injection, selective etching 8−2122
Si oxidation rate constants and role of H_2O 8−7072
Si, oxidation without stacking fault form. 8−7062
Si, plasma etching using microwave discharge 8−11361
Si, process stress analysis by IR photoelastic meas. 8−11488
Si surface, wetting by Pb, Sn, Ge in H_2+HCl 8−43210
Si, thermal oxidation at 1200°C, effects of trichloroethylene addition 8−27660
Si, thermal oxidation in O_2-H_2O and O_2-Cl_2 mixtures 8−44239
Si-Si_3N_4 system, anodisation into SiO_2, change in electrophysical props. 8−2574
6H-SiC, dislocation etching 8−22721
Si_3N_4 film, CVD, etching in acidic fluoride media 8−39927
SiO_2 layer prod., by oxid. of silane 8−3038
SiO_2, oxide growth in HCl-O_2 mixture, ellipsometric meas. 8−7073
SiO_2, reduction by RF induction plasma torch., Si form. 8−11186
ZnSe, hot-pressed powder LED fabrication and characts. 8−23639

semiconductor thin films
for electronic conduction in crystalline and amorphous films, see "electronic conduction in crystalline semiconductor thin films" and "electrical conductivity of amorphous semiconductors and insulators", respectively
see also amorphous semiconductors; semiconductor epitaxial layers
amorphous thin films, crack networks of voids 8−2399
bound states of electrons and optical phonons 8−39038
CdTe thin polycrystalline film for photoelectrochemical cell 8−23162
chalcogenide glass, reversible photostructural change obs. in IR absorption spectra 8−10897
chalcogenide glass thin film, thermal diffusion of Au electrode layer, α-particle backscatt. obs. 8−10228
condensed, on supercond. film, effect on T_c and residual resist. 8−47900
dispersive properties, effect of multilayer dielec. medium, anal. *(Russian)* 8−31004
dispersive transport, trap-limited model 8−6378
films, amorphous, prep., struct., props., review, book contrib. 8−48321
III-V nitride, preparation technology *(Czech)* 8−3037
III-V semiconductors, film, sample preparation for TEM studies 8−14258
ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
IV-VI film technology, review 8−3034
light absorption in film with impurity centres, quantum size effect 8−27274
Mott exciton spectrum in mag. field 8−34780
narrow band gap semiconducting alloy layers, electron-beam microzone refining, in space 8−35325
photovoltaic and photodiffusion mechanisms responsible for anomalously high photovoltages 8−26910
piezoelectric, surface mode phonon amplification theory 8−34691
preparation and characterization, review 8−2598
quantised, indirect interband absorption rel. to surface irregularity 8−39618
transparent conducting coatings, book contrib. 8−10587
transverse conductivity due to scatt. by acoustic phonons in quantizing mag. field 8−2594
X-ray diffraction in thin cryst. with linear variation of lattice period 8−26373
Ag_2O, film, photocond., annealing and time effects *(French)* 8−23135
Ag_2O film, prep. and effect of O_2, Ar and H_2 gases *(French)* 8−14637
$Al_{0.36}Ga_{0.64}As$, LPE films, Te-induced defects 8−43037
$Al_xGa_{1-x}As$ film, hot photoluminescence spectrum, polarisation depend. 8−31254
AlN, nonlinear optical susceptibility, SHG expts. 8−30012
As-S amorphous film, photo-induced optical changes, annealing effect 8−27345
As_2S_3-Ag photosensitive film systems, hologram recording 8−1194
As_2Se_3, vacuum evaporation, composition of condensates 8−44012
$Bi_{1-x}Sb_x$, semiconductor film, X-ray diffraction in thin cryst. with linear variation of lattice period 8−26373
$(Bi_{0.25}Sb_{0.75})_2Te_3$, opt. props. of bulk and films 8−27206
$Bi_2TE_{3-x}Se_x$, solid solution films, prep. and props. 8−44013
a-CdAs thin film fabrication for switching applications 8−2415
Cd_2As_2, amorphous and cryst., transmission spectra, 0.6-15 μm and band struct. 8−11013
$CdGa_2S_4(Se_4)$, optical absorpt., and energy gaps 8−11012
$Cd_{0.1}Hg_{0.9}Te$, correl. between structure and 1/f noise 8−39234
CdS, dark cond., negative temp. depend. 8−47892
CdS, effect of heat treatment on photosensitivity *(Japanese)* 8−39237
CdS evaporated films, O chemisorpt. kinetics, effects on elec. cond. 8−6464
CdS, evaporated forms n-type layer, substrate ordinary glass with silver layers 8−2525

semiconductor thin films continued
CdS film, chemically sprayed, elec. and photocond. props. 8−34913
CdS films, growth, residual cond., inclusions 8−43492
CdS photoanode, for photovoltaic cells, prep. and characts. 8−14818
CdS sintered film, photolum. and recomb. photocurrent noise spectra 8−6743
CdS sprayed films, elect. and optical props. 8−39241
CdS sputtered film, photocond. props. 8−10586
CdS, surface stoichiometry, vapour deposition 8−2956
CdS:Bi film, spectral response characts. 8−2512
CdS:$CuCl_2$, sintered film, dopant conc. effects on carrier mobility 8−2484
CdS:Li film, photocond., effects of annealing, S vacancies, and O_2 adsorption 8−34854
CdSe film, effect of growth conditions on electrophysical properties 8−44024
CdSe, photoelectron spectroscopy 8−2551
CdSe:Cu surface layer of CdSe, microstruct., photoelec. props. 8−43221
$Cd_{1-x}Zn_xS$ reactively sputtered phtoconductive films for high field applications *(German)* 8−39154
Cu-Sb-S-I amorphous film formation and stimulated crystallisation, electrophysial props. *(Russian)* 8−30838
$CuGaSe_2$ film, optical props. near and above fundamental absorption edge 8−35215
$CuInSe_2$ semicond. films, optical props., 1-3 eV 8−27346
Cu_2S, on rough $Zn_xCd_{1-x}S$ substrate, film substrate lattice mismatch calcs. 8−43263
Cu_2S-CdS solar cells, prep. and stoichiometric control of Cu_2S film 8−2560
Cu_xS chalcocite, solar cell fabrication appl., characts. 8−39240
Er_2Te_3, films, prep., elec. props. 8−43494
EuS, film, intrinsic demagnetising fields 8−10735
$Ga_xAl_{1-x}N$ film, growth and props. 8−39702
GaAs, LPE layers, X-ray topographic exam. of defects 8−30844
n-GaAs thin films carrier wave amplification, external medium stratification effects *(Russian)* 8−34905
GaAs-Cs-O film, polycryst., secondary emission props., activating coating effects 8−2957
GaN, film, secondary ion mass spectrometric qualitative anal. 8−7265
GaSb amorphous film, elec. props. *(French)* 8−14843
GaTe, hexagonal, vacuum deposited, physical parameters and substruct. 8−2393
Ge, absorbing surface of solar collector, vacuum deposited coatings, deposited on metal surfaces 8−5580
Ge, amorphous, high resolution electron microscopy, digital processing use 8−37116
Ge, amorphous and polycryst. layers, sputtered, elec. cond. and thermoelec. power 8−2586
Ge, amorphous film, post nucleation growth, computer simulation 8−34729
Ge, amorphous film, temp. thermal conductivity 8−22994
Ge, amorphous layer on Ge bulk, photoemission during X-ray Bragg diffr. 8−47209
Ge, electrical resistance, long term stability rel. to ambient atmosphere changes 8−2597
Ge, electrodeposited, X-ray, electrochem., and electrorefl. characterisation 8−14624
Ge, electronic struct. charge on ordering, double beam photoemission 8−19634
Ge film, growth on graphite substrate by thermal reduction 8−18934
Ge, inert gas ion refl., semiempirical analysis, compared with expt. , 10-30 keV 8−6823
Ge, optical characterisation, inversion method 8−11008
Ge-Si amorphous film, ferromagnetic interaction between spins 8−2710
Ge-Te alloy films, amorphous, semicond. props., refr. index, struct. study 8−26978
GeSe, amorphous film, optical properties 8−39620
$GeSe_4$ film, self-controlled laser beam chopping effect 8−31266
$Ge_{1-x}Se_x$ film, EPR, elec. and optical props. meas. 8−48038
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
InAs amorphous film, DC sputtered, optical absorpt. 8−19589
In_2O_3:Sn film, RF sputtered, effect of O_2 press. during deposition on props. 8−19664
In_2O_3-SnO_2 thin film, effects of heat treatment on resist. and optical absorpt. 8−43495
InP cylindrical magnetron reactive sputtering, for solar cell appl. 8−39693
InP, on rough $Zn_xCd_{1-x}S$ substrate, film substrate lattice mismatch calcs. 8−43263
InSb evaporation kinetics of InSb, rel. to film growth 8−3050
InSb, film, analysis by attenuation of substrate X-ray fluoresc. 8−27872
InSb, phase transition dynamics, investigating device 8−22967
InSe luminescent film, production and characterisation *(Russian)* 8−39581
MoO_3, film and cryst., long range potential centres 8−30920
$Pb_{1-x}Hg_xS$, IR detector material, struct. and IR props. 8−26775
PbS, absorbing surface of solar collector, vacuum deposited coating, deposited on metal surfaces 8−5580
PbS, film condensation on amorphous substrate, struct. and growth 8−38981
PbS, vap. deposited film, island growth obs. by optical diffr. from electron micrograph 8−10291
PbS-Al coatings, absorptivity, emissivity, as function of PbS thickness 8−46731
PbSe, vacuum evaporation, composition of condensates 8−44012
$Pb_{1-x}Sn_{1-x}Te$, Burstein-Moss effect, absorpt. and photocond. spectra 8−18961
$Pb_{1-x}Sn_xTe$:In film, anomalous elec. props. 8−10477
$Pb_xSn_{1-x}Te$, RF sputtered films, struct., lattice parameter, stoichiometric comp., RHEED 8−38975
p-PbTe film, for IR magneto-optics, 8-30K 8−23543
PbTe film, struct. anal. and sensitisation 8−22982
p-PbTe, magnetophonon effect obs. 8−23115
PdO, semiconductivity and stability, optical props. 8−43497
Se, amorphous, density of localised states 8−34742
Se amorphous thin film photodeposition from hydrosols 8−11109
Se, noncryst., controlled vapour deposition, crystn., and optical props. 8−39696

semiconductor thin films continued
Se-Bi bilayers chemical reactions, differential scanning calorimetry technique and obs. results 8−2398
Si, amorphous, discharge produced, optical and photocond. props. 8−39147
Si, amorphous, high resolution electron microscopy, digital processing use 8−37116
Si, amorphous, optical absorption at high press. 8−35216
Si, amorphous layer crystn., effect of ^{16}O, ^{12}C, ^{14}N and inert gases 8−14623
Si, CVD on liq. Sn layers in HCl presence, enhanced crystallinity 8−6853
Si film, optical characterisation from guided wave optics 8−48245
Si, film on Si substrate, stress meas., X-ray topography technique 8−5710
Si, hydrogenated amorphous film, XPS and UPS 8−19636
Si implanted with ^{31}P, ^{75}As, ^{11}B, amorphous layer reordering 8−14622
Si, laser pulse induced amorphous to cryst. transition, thickness depend. 8−47678
Si, polycryst. CVD film electrical props. 8−6466
Si, polycryst. film doping during deposition and with diffusion 8−6088
Si, polycryst. film from low. temp. pyrolysis of SiH_4 8−31342
Si, polycryst. on Si, disloc. config. under periodic stress field 8−10312
Si, polycrystalline, film thickness meas., visible spectral reflectance analysis 8−32786
Si, polycrystalline, parameters in two absorbing layers effect on reflected light polarisation *(Polish)* 8−21095
Si, surface layer, thin, density meas. by total external X-ray reflection 8−14635
a-Si, vapour species rel. to amorphous film deposition 8−14641
Si wafer, deformation *(Japanese)* 8−43064
Si wafers, preparation of preselected areas for TEM 8−24887
Si:Al film, low-temp. diffusion of Al 8−38878
Si:B, highly-doped polycryst. thin film, growth kinetics and properties 8−44016
Si:H amorphous film, H quantitative depth profiling by nuclear reactions and SIMS 8−14373
Si:H amorphous semiconductors, prep. from SiH_4 and characts. 8−48326
Si:P, RF sputtered polycryst. film, MOS compatibility 8−6455
Si-Ge, amorphous, ESR line intensity anal., rel. to cond. mechanism 8−43645
Si-Ge amorphous films, effects of annealing and crystn., ESR microstruct. and elec. meas. 8−26790
Si-SiO_2-vacuum system, principal angle and azimuth determ. 8−11009
SiC film synthesis by plasma deposition process 8−11127
SiC, synthesis by ion implantation of diamond, role of struct. imperfections 8−34529
$Si_{12}Ge_{10}As_{30}Te_{48}$ chalcogenide glass threshold switch conductivity in high ohmic state *(Russian)* 8−43502
Si_3N_4, film on Si substrate, stress meas., X-ray topography technique 8−5710
SiO_2, film on Si substrate, stress meas., X-ray topography technique 8−5710
SnO_2 CVD film form. mechanism 8−38977
SnO_2 film, pure and Sb doped, transparent cond., prop., characts., stability, struct. *(Japanese)* 8−47889
SnO_2, optical characterisation, inversion method 8−11008
Te, electronic struct. charge on ordering, double beam photoemission 8−19634
Te evaporated film nucleation on Au oriented islands, grain growth 8−2388
Te film, elec. props. effect of deposition rate 8−14844
VO_2, sputtered, switching effects in four-electrode structures 8−2596
VO_2:Al(W), thin layer prep. by reactive DC sputtering doping effectiveness *(German)* 8−6847
V_xO_y, film, preparation by calcining vanadium naphthenate, formation process exam. *(Japanese)* 8−30849
Yb_2Te_3, films, prep., elec. props. 8−43494
$Zn_xCd_{1-x}S$ solid soln., reactive cosputtering, struct., comp. and opt. absorpt. edge *(French)* 8−6237
$Zn_xHg_{1-x}Se$(Te,S) film preparation and props. *(Russian)* 8−11122
ZnO, DC diode sputtering, prep. and characterisation 8−3040
ZnO on Zn (0001), oxide film growth, at. and electronic struct. 8−15587
ZnS electroluminescent films, low energy Mn implantation system 8−30658
ZnS film, Joule heating, I-V characts. 8−2599
ZnS, RF sputtered film, stoichiometry, chem. comp. 8−34727
ZnS:Mn AC electrolum., memory effect 8−15228
ZnS:Mn film, current conduction and light emission, physical mechanism 8−14840
ZnS(Se)(Te), on semicond. substrates, early stages of growth, electron microscope obs. *(Russian)* 8−38976
ZnSe film, thermostimulated polariton emission 8−2436
$ZnSiAs_2$, synthesis and layer growth by CVD in open flow system 8−15312

semiconductors
Generalities and properties of unspecified materials only. For specific materials see semiconductor materials.
see also amorphous semiconductors; degenerate semiconductors; heavily doped semiconductors; magnetic semiconductors; many-valley semiconductors; narrow band gap semiconductors; polar semiconductors; thermoelectric effects in semiconductors and insulators
absorption of EM and sound waves in strong coupling case, effect of acoustic superlattice 8−26630
acceptor spectra, interpretation 8−43332
ambipolar, even galvanomagnetoconcentration effect 8−26889
anisotropic conductivity, elec. and photoelec. props., review 8−10447
anisotropic p-Ge type, carrier scatt. by ionised impurities, theory *(Russian)* 8−39103
anisotropic thermoelement used as heat pump, transverse Peltier effect 8−39098
Auger recombination cross sections associated with deep centres 8−47810
band structure under high stress, nonperturbative calc. 8−10344
binary, estimation of heats of formation from melting temp. 8−27810
binary, solubility of third component, and thermo-EMF 8−43124
broad-band, meas. setup with GDM 1000 grating double monochromator 8−21226

semiconductors continued
broadband Faraday rotation, spectral contour for strong exciton bands 8−27194
carrier distribution function 8−26856
carrier generation lifetime profiles meas. in diffused layers 8−47803
carrier lifetime modulation, effective 8−47807
carrier lifetime modulation, effective 8−47808
carrier lifetime profiles meas. in diffused layers 8−47811
carrier relaxation time and effective masses determ. by microwave photocond. meas. *(Russian)* 8−19071
cathodoluminescence, effect of surface space charge region 8−43939
cathodoluminescence analysis in SEM 8−32949
cathodoluminescence analysis using STEM 8−32950
cathodoluminescence meas. of minority carrier lifetime, appl. to GaP 8−19572
chalcogenide, density of valence-alternation centres, influence of additives 8−47733
charge defects, screened interaction 8−39042
charged dislocation, hole capture cross section *(Russian)* 8−23108
conduction in materials with position depend. band struct. 8−43377
contact emission limited current with weak harmonic distortion of steady bias 8−39127
contact potential and conductivity simultaneous automatic meas. 8−21118
Coulomb screening in semicond. with superlattice 8−14684
covalent, charge density, struct. props. electron-electron interactions 8−47725
covalent, molecular cluster model 8−43283
covalent, single vacancy, relax. energy and form. vol. calcs. 8−38691
current instability due to Bragg scatt., travelling dipole domains, fluctuations 8−26874
cyclotron resonances, transport and surface phenomena 8−6575
deep centres, wave functions and optical cross sections 8−34801
deep impurities, book contrib. 8−10403
deep impurities, photoionisation 8−39061
deep impurity centre, excited state energies calc. 8−18997
deep impurity centres, multiphonon thermal field ionisation *(Russian)* 8−14690
deep level capture, two stage model 8−10396
deep traps, nonradiative multiphonon carrier-capture cross-section, temp. depend. approx. 8−43415
deep-level centre discrimination from capacitance versus time transients 8−10395
deep-level impurities, insulating props. 8−39124
defect and impurity centre detection, junction capacitance and current techniques 8−10550
defect recombination, di-pair model, diffusion-controlled, incorporating Coulomb interaction and annihilation 8−23044
defects, SEM in EBIC mode vs. HVEM images 8−9923
diamond-like, adiabatic pot. in quasimol. model 8−2063
differential thermal EMF measurement device for solid, fusion region and melt states 8−12716
diffusion processes, elastic stresses effect 8−10226
direct band-gap, polariton emission spectrum, exciton kinetics influence 8−14676
direct gap, final state interactions in gain and absorpt. spectra of electron-hole liq. 8−43305
dislocations, TEM/SEM observations comparing diffr., elec. and luminesc. contrast 8−38714
disordered, Coulomb gap in energy spectrum 8−14648
disordered, mobility edge exam. by new perturbation theory 8−47790
disordered, theory of photon-induced DC hopping cond. 8−30952
disordered, with soft Coulombic aperture, screening and absorpt. of long EM waves *(Russian)* 8−23001
displaced Maxwellian distribution function and warm electrons problem 8−26864
doped, with neutral impurities, exciton spectrum, conc. depend. *(Russian)* 8−2894
dynamic polarisation of nuclei due to optical orientation of conduction electrons 8−19376
dynamical effective charges, pseudopotential calc. 8−30881
elastic constants, resonance method for determ. within 80-300K temp. range 8−46918
elastic constants, second-order, of solids with ZnS struct., many-body effects 8−10116
electron mobility in quantising mag. field, effect of overlap function 8−43374
electron relaxation, electron hole interaction effect 8−10437
electron states at planar and stepped surfaces 8−10531
electron-hole plasma drift due to carrier mobility gradients 8−26896
electron-hole system thermodynamics 8−43304
electronic absorption and amplification of acoustic waves 8−39166
electronic band shape, k.p perturbation theory *(Korean)* 8−23020
EM field nonlinear penetration in superlattice semicond., self-induced transparency 8−25930
EM properties, general lecture 8−27173
energy spectrum, optimisation of parameters of neutrality equation *(Russian)* 8−6320
entropy of fusion, electronic component 8−47503
exchange and correlation energies, local field effects 8−39044
exciton absorption, electric field effect *(Russian)* 8−43902
exciton luminescence, free carrier effect 8−48226
exciton states in semiconds. with polytype layers 8−26819
exciton-phonon energy transfer 8−18715
excitons, condensation effects, review 8−2427
extrinsic, parametric reson. of acoustic and optical phonons at low temps. 8−10519
extrinsic semiconductors, negative magnetoresist., Hubbard model *(Russian)* 8−47816
ferromagnet-semiconductor structure, periodic, surface magnetostatic waves 8−27070
filament, phonon drag contribution to thermoelectricity 8−19069
free electron scattering and dynamical cond. 8−2476
gapless, bottleneck effect at low temp., hole heating 8−10470
graded-gap, photoelectromagnetic effect 8−43445
grain boundary barriers, thermal breakdown 8−39171
Hall effect, anomalies under interband scattering conditions 8−6403
heterojunction superlattice, energy spectrum 8−6259
HF EM effects, nonquadratic dispersion law of carriers 8−19078
high-resistivity, SCL current, inhomogeneity effects 8−19047
history of hot electron physics 8−26869

semiconductors continued
homogeneous, Hall effect noise 8−39173
hot carrier oscillatory magnetoresistance phenomena studies, mag. field modulation technique 8−4657
hot carriers, conf., Denton, USA (July 1977) 8−26868
hot electron current voltage curves, in transverse mag. field, account of phonon heating 8−6384
hot electron distribution functions, expts., review 8−27231
hot electron phenomena, calc., review 8−26870
hot electron quantum magnetotransport, review 8−30940
hot electrons in quantizing mag. field and impact ionization of impurities 8−6386
hot-electron energy distrib. in strong mag. field 8−43400
impure, exciton absorpt. line shape calc. *(Russian)* 8−10934
impurity band shift and width in mag. field calc. 8−6329
impurity levels of transition metal ions in cryst. field 8−23059
impurity states, ionisation by elec. field 8−47738
impurity-level assisted two-photon interband absorption of laser radiation 8−23464
inhomogeneous, theory of residual cond. 8−14739
inhomogeneous anisotropic, spectral characts. of transverse Dember effect 8−39161
inhomogeneously doped, computed IR refl. spectra 8−27205
interband tunnelling of semiconductor in constant elec. and mag. fields 8−43405
intrinsic, indirect interactions between localised mag. moments 8−43578
ionic, nonlinear intraband absorpt. and harmonic generation 8−33779
IR modulation by free carrier confinement 8−25969
irradiated, Hall mobility, dark and photo-conductivity calc. 8−47835
kinetic fluctuations, global estimation 8−43376
laser irradiation effects on struct. and props. *(Russian)* 8−30665
laser residual lattice absorpt., freq. and temp. depend 8−25910
layered, electron-hole liq. and metal-dielec. transition *(Russian)* 8−2425
lifetime of carriers recombining in disordered regions, injection depend. 8−14742
light absorption due to electron-electron interaction of electrons occupying Landau levels 8−27195
light beam dynamic conversion by phase shifted free-carrier holograms 8−46547
linearised transport equations, explicit solns. 8−43375
low resistance struct., visual obs. of V-I characts. 8−4646
low-symmetry, modelling of elec. props. 8−19036
luminescence, high-conc. exciton and biexciton emission 8−6725
luminescence and luminescent devices, lecture 8−27323
luminescence quenching by charged defects 8−23531
magnetic susceptibility of hot electrons 8−10648
magneto-optic effects due to optical alignment of electrons and nuclei 8−6654
magnetoabsorption, interband, in mixed semicond. with composition fluctuation and imperfect semiconds. 8−15152
magnetodiode effect 8−6401
magnetophonon oscillation separation techniques, advanced methods 8−2499
magnetoplasmon-polariton surface modes, Voigt geometry 8−43451
magnetoresistance, high field longitudinal, and bound states 8−23113
many-photon absorption by intraband transitions in mag. field 8−27261
many-photon magneto-optical absorption 8−19451
micron scaled cathodoluminescence with SEM, review 8−23537
microwave absorption, near optical phonon creation threshold 8−47823
microwave conductivity meas. by eddy current loss method 8−8417
mixed, EPR theory 8−39402
mobility due to point defect scatt. calc. 8−19029
multiexciton complexes, binding energy *(Russian)* 8−10372
multiphonon electron-hole recomb. processes 8−6750
multiphonon electron-hole recomb. processes 8−6751
multiphonon IR absorption in highly transparent semicond. crysts. 8−10885
n-type, thermionic emission, quasisteady noise effect 8−2974
near intrinsic, magnetoresist. effect, determ. of carrier density and mobility 8−2501
negative cyclotron resonance of hot carriers 8−2492
negative electron diffusivity in high fields 8−30935
Nernst-Ettingshausen effect, thermopower, strong elec. field 8−23122
non-linear optical props. of band charge carrier gas 8−33775
non-radiative processes, multiphonon recomb. 8−6752
nondegenerate, magnetophonon reson. in acoustic relax. of hot electron energy 8−26892
nondegenerate, quantum correction of Einstein reln. at high freqs. 8−19072
nondegenerate semicondcutor, three exciton radiative recomb. producing biexcitons 8−39603
nonequilibrium processes exam. by method of transient holograms 8−23105
nonhomogeneous, dimens. localisation of electrons *(Russian)* 8−19000
nonlinear light absorption in presence of laser wave field 8−13747
nonlinear plasma oscillations in superlattice semicond. 8−26897
nonradiative multiphonon carrier capture and ejection props. of deep traps 8−35190
nonradiative multiphonon carrier-capture cross section of deep traps, low temp. depend. 8−10469
nontrapping isoelectronic impurities, trapping in mag. fields 8−9097
one dimensional, nonlinear optical props. 8−46708
optical absorption of diamagnetic excitons in crossed mag. and elec. fields 8−10874
p-type, effective mechanism of hot electron energy relax. 8−26878
p-type, g-values, spin temp., determ. from Raman spectra 8−43856
photoconductivity, nonequilibrium, in materials with nonequilib. distrib. of traps *(French)* 8−43433
photoconductivity due to phonon scatt. and emission 8−10514
photodielectric effect 8−6413
photoelectric fatigue 8−10513
photoexcitation, high intensity, hot electrons and phonons 8−26905
photoexcitation phenomena, low density 8−27319
photofield emission cathode, potential distrib. and model 8−2977
photoinjection current kinetics in high resistivity semicond. 8−47834
photoionisation of deep impurity centres of quantising mag. field 8−6330

semiconductors continued
- photosensitivity of semicond.-metal system, theory *(Russian)* 8−3357
- plasma, isotropic heated, temp. plasmon oscills. 8−26898
- plasmons, general theory 8−26826
- polaritons in mixed crystals, dispersion relation 8−18977
- positronium atom, small-radius, anomalous props., exciton state 8−2433
- pseudopotential calculation of bending parameters 8−26813
- quantised inversion layer, hot carrier transport 8−30993
- quantum diffusion in crystals, radiation enhancement conditions 8−47607
- quantum electron-phonon system, theory of parametric excitation 8−10489
- quantum transport theory under high elec. field 8−23099
- quasi monopolar, integrally weak diffusion effect of I-V characts. 8−2491
- radiation damage studies on implanted Te, Sb and Sn by Mossbauer spectroscopy 8−2176
- radiation damaged, residual defects rel. to back reaction annealing kinetics 8−3161
- radiative spectra from hot photocarriers 8−31249
- recombination, three electron processes 8−43413
- recombination effect, spin depend. 8−34841
- recombination wave instability threshold, external load, boundary condition depend. 8−19053
- relaxation of nuclear spins interacting with holes 8−48073
- resistivity meas., influence of space charge 8−23076
- saturated, dielectric response 8−10384
- secondary breakdown, hydrodynamic instability model *(Russian)* 8−43407
- SEM electron beam induced conductivity obs. of semicond. using Schottky barriers 8−34898
- semiconducting surface inversion layer, cyclotron reson. of interacting electrons 8−34885
- semiconductor, carrier number and effective bandwidths *(Spanish)* 8−18954
- semiconductor, drift mobility temp. depend. in presence of trap-recombination centres *(Russian)* 8−26880
- semiconductor, photo-field ionisation of deep centres allowing for Coulomb action *(Russian)* 8−27376
- semiconductor, surface properties, investigation by laser and photovoltages *(Russian)* 8−23130
- semiinsulator, minority carrier injection effect on TSC 8−10466
- short range impurities in two band model 8−34803
- size quantised, superlattice state 8−39142
- spin orientation, violation of σH invariance *(Russian)* 8−35068
- spin-polarised electron-hole liquid, theory 8−43307
- static conductivity change under quantum cyclotron reson. 8−39143
- subthreshold effects, influence of electronic excitation on atom displacement 8−2158
- superlattice, nonlinear interaction of two waves 8−10494
- superlattice, semicond.-dielec. high freq. electromagnetic response 8−19073
- surface, electronic struct. rel. to sorption 8−14784
- surface galvanomag. props. and relax. time energy depend. 8−43459
- surface magnetostatic wave, travelling-wave amplification anal. using Maxwell equations *(Japanese)* 8−6560
- temperature superlattice, in semiconductor with hot electrons, transport props. effects *(Russian)* 8−34839
- thermal conductivity, rapid meas. method *(French)* 8−12689
- thermal ionisation of an impurity in strong electric fields *(Russian)* 8−43410
- thermally stimulated and isothermal discharges of capacitor across semicond. with grain-boundary barriers 8−2582
- thermoelectric figure of merit, direct meas. in transverse mag. field 8−10485
- thermoelectric power, meas. using analogue subtraction 8−244
- thermoluminescence and TSC interpretation of expts., extensions of conventional model 8−27335
- Thomas-Fermi dielectric screening eqn. 8−10388
- time resolved reflectivity of ps pulses 8−31217
- transient injection currents, charge transport allowing for trapping 8−26884
- transport eq.ation and photocurrent of electrons, in EM field 8−26913
- transport equations, initial approxs. for numerical soln. 8−14741
- transport equations for junction behaviour of relaxation semiconductors 8−30977
- tunnelling and negative resistance phenomena, book 8−26947
- two-dimensional excitonic phase in strong mag. field 8−43308
- two-photon absorption, free carrier storage by deep centres *(Russian)* 8−23131
- US absorption and amplification moderate freq. 8−19102
- valence conduction band transitions, appl. of modulation spectroscopy with synchrotron radiation 8−4710
- variable gap, photomagnetic EMF exam. 8−10510
- variable gap semiconductor, photoluminesc. 8−48222
- Wannier-Mott polaritons in mag. fields, review 8−2437
- weak heating of electrons, cyclotron reson. conditions, quantising mag. field 8−39141
- weak helical waves, excitation and amplification by strong waves in strong mag. field 8−19077
- weakly inhomogeneous, impurity absorpt. and impurity photocond. line profiles 8−19098
- wide-gap, extrinsic, injection currents, theory 8−19052
- XPS, core electron line shapes 8−11082
- Ge-type, light scatt. from zero-sound 8−43857

semileptonic decays
- charmed meson semileptonic decay effects of hadron multiplicity on distribs. 8−4856
- charmed particles, formalism using helicity amplitudes 8−4852
- charmed-meson decay, massive quark model 8−33067
- hadron electromag. and weak form factors, SU(6) scheme of relativistic quark model 8−41500
- neutral currents as higher order effects in Fermi-type charged current theory 8−41474
- straton model of $1/2^+$ baryon semileptonic decays and high energy neutrino-nucleon reactions *(Chinese)* 8−12873
- SU(3) rules for semileptonic weak decay of charmed and strange mesons 8−45916

semileptonic decays continued
- D(1865), charmed meson semileptonic decays 8−4854
- $D \to e+X$, anomalous electron prod. from D meson decay at $\psi(3772)$ 8−37203
- $D \to Kl\nu$, $K^*l\nu$, lepton spectrum anal. 8−4855
- D meson decay, semileptonic and leptonic modes, electron momentum spectrum 8−8657
- D semileptonic branching ratio at $\psi''(3770)$ in $e^+e^- \to$hadrons 8−45934
- F-meson semileptonic decay modes, explanation of inclusive electron spectra 8−37202
- $K_l^0 \to \pi e \nu$, Dalitz plot anal., form factors 8−37204
- $K_l^0 \to \pi \mu \nu_\mu$, anomalous short-range $\pi\mu$ interaction anal. 8−8660
- Λ^+ decay, four body semileptonic decay rates of charmed baryons 8−8665
- $\pi \to \nu_\tau \rho \pi$, A_1 resonance, $\rho\pi$ mass distrib. 8−45902

semimetallic thin films
- 1/f fluctuations *(Japanese)* 8−43448
- condensed, on supercond. film, effect on T_c and residual resist. 8−47900
- Bi, film, quantum size effect, electric field effect, Thomas-Fermi approx. energy surfaces, cond. 8−47890
- Bi film, vap. deposited, effect on deposition parameters and substrate condition on crystallinity 8−10290
- Bi, Hall effect, magnetoresist., resist. and TCR 8−2589
- Bi, polycrystalline film, elec. resistivity, thickness depend., temp. coeff. 8−14839
- Bi, thermoelec. power in transverse mag. field *(French)* 8−23183
- Bi, transverse mag. field depend. of thermoelec. power *(French)* 8−2587
- Bi-Sb film thermopiles for radiation pyrometry 8−214
- Sb, epitaxial growth of electrodeposits on oriented single crystal Au and Ag 8−43267
- Sb evaporated film crystallisation rel. to substrate temp., −50° to 170°C 8−47680
- Sb film, elec. cond., and struct., thickness depend. 8−26974
- Sb, thin plates, electron conduction, 4-293K, surface reflection ang. depend. *(Russian)* 8−19170

semimetals
- *see also antimony; arsenic; bismuth; semimetallic thin films*
- acoustic plasma wave excitation 8−10520
- beat effect of sp. ht. due to impurities, in external mag. field 8−10401
- giant quantum attenuation of sound, fluctuation effect of gas-liq. type transition 8−39168
- higher sound harmonic generation in momentum nonlinearity regime *(Russian)* 8−38783
- phase transitions in strong mag. field, HF approx. 8−23028
- phonon drag, role of surface in thermo EMF *(Russian)* 8−47819
- phonon spectrum, influence of mag. field induced quasi-local levels 8−18946
- thermal diffusivity by laser flash technique 8−6189
- XPS, core electron line shapes 8−11082
- $Bi_{1-x}Sb_x$, Shubnikov-de Haas effect, Abrikosov-Falkovskii treatment of Fermi surface anisotropy *(Russian)* 8−43285

Senftleben-Beenakker effect
- o- and n-D_2, viscomag. effect, temp. depend. 8−9745
- p- and n-H_2, viscomag. effect, temp. depend. 8−9745
- polyatomic gas-inert gas mixture, viscomag. diffusion flux 8−47087
- O_2, gas, thermal cond., mag. field effects 8−34255
- O_2-Ar, gas, thermal cond., mag. field effects 8−34255

sensing devices *see detectors*

sensing devices, electric *see electric sensing devices*

sensing devices, nonelectric *see nonelectric sensing devices*

sensitivity
- annular photoelectric goniometer sensitivity calc. 8−41327
- avalanche photodiode receiver sensitivity, specification and testing *(German)* 8−38015
- biodynamic subminiature piezoresistive accelerometer performance evaluation 8−20340
- cancer X-ray sensitivity increased by 434 MHz EM irradiation 8−24180
- Cherenkov counter photomultiplier, sensitivity to gamma quanta 8−9032
- chromatographic compound column, sensitivity regulation method 8−35752
- dichromated PVA specific wavelength sensitisation for laser beam recording 8−5531
- fluid anemometric microthermistor sensor sensitivity curves *(Russian)* 8−34219
- gravimeter, HF, calibration and sensitivity 8−7812
- high-sensitivity multipurpose remote sensor 8−40684
- hot-wire anemometer, sensitivity to stream temp. fluctuations, end cond. effects 8−34215
- ion cyclotron resonance spectroscopy, sensitivity calibration of marginal oscillators 8−21177
- LF spectral analyser with HF SQUID, threshold sensitivity 8−41328
- mammographic X-ray screen sensitivity and resolution 8−7449
- Moire projection topography accuracy and sensitivity 8−45677
- multiple-beam array antenna for supernova radio pulse searches, sensitivity 8−40975
- NMR, metal single crystal meas. 8−43659
- photomultiplier tube, RCA 4522, spectral sensitivity meas. 8−21818
- quadrupole mass filter specification and calibration *(Japanese)* 8−12784
- rare earth phosphor intensifying screen speed gain 8−7447
- sound detector using fibre optics 8−13871
- spark source mass spectrography, geochemical appl., element sensitivity, precision and accuracy 8−20544
- transducer, force measuring, EM, design and appl. *(Russian)* 8−16784
- $CaWO_4$ and rare-earth X-ray intensifying screen sensitivity to scattered radiation 8−7450
- Gd neutron radiographic amplifying screen sensitivity 8−7448
- KCl:OH mag. field-independent capacitance thermometers, sensitivity 8−4623
- NaF:OH mag. field-independent capacitance thermometers, sensitivity 8−4623

sensitivity analysis
  see also control system analysis; dynamic response; frequency response; transient response
  aquifer characteristics, sensitivity anal. rel. to linear programming management model 8−11936
  BWR power plant, direct cycle, low sensitivity optimal controller study 8−8947
  dielectric constant meter, Tangens-2M, static characts. 8−45651
  measurement data processing system error analysis 8−41288
  myocardial fibre shortening velocity dependence on inotropic and haemodynamic conditions 8−31833
  nonlinear, of multiparameter model systems 8−28931
  nonlinear algebraic eqns. with constraints 8−21086
  photoelectric inclinometer, sensitivity stabilization by negative feedback *(Russian)* 8−4012
  radiation shielding, cross section sensitivity analysis 8−21778
  receiving optical antenna, angle-distance sensitivity variation anal. 8−33841
  saccadic and vergence eye movements, reciprocal innervation model 8−31811
  thermistor ebullioscopes, uncertainty in sensitivity 8−12695
  thermographic meas., three-dimensional signal detection, expt. 8−3662
sensors, nonelectric *see nonelectric sensing devices*
sensory aids
  see also hearing aids
  artificial sight and hearing, appl. of microcircuits 8−20311
  deaf-blind communication, electromech. hand 8−48943
  devices for blind and visually impaired 8−11775
  electrocutaneous codes for prosthesis/orthosis sensory feedback 8−44715
  focused US for input of auditory information into aural labyrinth 8−40275
  gait trainer for hemiplegic patients with lower limb sensory loss 8−48940
  handicapped persons technical aids, R&D in Sweden *(Japanese)* 8−48934
  Multipoint Electrotactile Speech Aid 8−40407
  spectacle lenses, scatt. light meas. *(German)* 8−46746
  speech parameter encoding using vibrotactile freq. discrimination 8−11772
  tactile aids and equipment for physical science course for visually impaired students 8−8183
  tactile artificial sensory communications, space and freq. optimal displays 8−36049
  Tadoma vibrotactile speechreading, preliminary results 8−28127
  telescopes, light vergence and accommodation 8−24065
  vision aids, training and practice effects on performance 8−11770
  visual prosthetic device, bioengineering and biomedical aspects of focal surface model 8−48942
separation
  see also desalination; distillation; drying; isotope separation
  colloids, field separation with hydrodynamic amplification 8−27779
  fibrous microfilter for blood, disposable 8−7527
  gas mixture separation by membranes *(Japanese)* 8−48691
  gas permselective membranes, irrad. effects on permeation and separation performances 8−29591
  gaseous mixture separation, with asymmetric dense polymeric membranes 8−9696
  Hf, from Zr, new process 8−6875
  immiscible liquids, separation kinetics in low gravity environment, computer simulation study 8−34629
  inertialess charged particles, collection on circular cylinders by elec. forces and gravitation 8−44400
  ion beams, mass separation in EM field, model mass separator 8−9855
  macromolecular soln., laminar ultrafiltration, limiting flux numerical calc., variable diffusion coeff. 8−40214
  mist filtration, press. drop in filter, model calcs. 8−44399
  mixtures, physical-chemical separation and thermodynamics, review *(German)* 8−18774
  multicomponent polymer system, liq.-liq. phase separation, thermodynamic aspects of polymer compatability 8−14469
  ore, flotation extraction, thermoelectric power, extraction yield depdnd. 8−19686
  partial condensation methods, thermodynamics *(German)* 8−20054
  particle separation property of impactor stage with nonstationary flow *(German)* 8−18335
  polyleucine membrane, water and water vapour permeation and solute separation *(Japanese)* 8−31701
  polynuclear aromatic compounds, HPLC separation using aminosilane stationary phase 8−35747
  solid-liquid extraction, diffusion processes, general soln. 8−20136
  solvent-polymer system, liquid multi-phase separation 8−14468
  suspension filtration, 2-component, conc. wave bifurcation *(Russian)* 8−22420
  thermodiffusion separation column, theory according to Frazier scheme 8−5842
  trace elements, in acid solns., solvent extraction, chelation and thermodynamic activity *(French)* 8−27816
  ultrafiltration apparatus, biopolymer appl. 8−7547
  Cd-Pb(Sn)(Bi) alloy, molten, EMF meas. of liquid separation 8−39747
  Fe, purification, removal of C, N, and O by dry H_2 method *(Japanese)* 8−11234
  Na_2O-CaO-SiO_2, refining in glassmelting process 8−27467
  Pu, separation, by MnO_2 coprecipitation from fresh and saline water 8−27814
  Rb, separation from potash salts, ion exchange methods *(German)* 8−23940
  Sr, separation from potash salts, ion exchange methods *(German)* 8−23940
series (mathematics)
  asymptotic expansions in mathematical physics *(Russian)* 8−28908
  celestial mechanics, planetary motion, Taylor-Steffensen series appl. *(Russian)* 8−49352
  celestial mechanics, regularised numerical method based on Taylor-Steffensen power series *(Russian)* 8−49300
  chemical kinetics, modelling, numerical method based on Taylor series expansion 8−48629
  cubic crystals, elastic strip, moving stress sources, boundary-value problem soln. *(German)* 8−38702
  digital time series error detect. and correction 8−3963
series (mathematics) continued
  exospheric temperature, representation by sum of series in Legendre polynomials 8−45063
  FORTRAN function writer, FURI, polynomial expansion 8−16631
  Fourier-Bessel series summation *(Polish)* 8−12544
  hierarchical model ε-expansion, numerical test of Borel summability 8−12650
  hypergeometric functions asymptotic series calcs. 8−45468
  Lane-Emden problem, series soln. 8−36559
  Legendre Pade approximants, and appl. to pot. scatt. 8−28982
  Legendre Pade approximants, convergence, to Coulomb and other scatt. amplitudes 8−28983
  multicomponent systems, comput. techniques for thermodynamic data treatment and equil. calc. 8−10172
  neutron transport equation for slabs, power series solns. comparison 8−13190
  Orr-Sommerfeld eqn. eigenvalues, series representation 8−38280
  Pade approximants, nonperturbative analytic approach in plasmas 8−20951
  perturbation series in quantum mechanics and field theory, Borel summation 8−16683
  spinless particles through one dimens. pot. barrier, formal series method, refl. coeff. 8−32700
  Stokes series, computed extension, circular boundary flow 8−42583
  Taylor series methods for point reactor kinetics equations soln. 8−13201
serrated yielding
  steel, low C, pressurised, strain rate sensitivity prior to serrated yielding onset 8−48482
  Fe-Mo (3 wt.%), substitutional solid soln. with cubic faced symmetry, Portevin-Le Chatelier effect *(French)* 8−23785
  Ni-Cr-Ti-Al/Au-Ni brazed joint, high temp., AE under elev. temp. and loading *(German)* 8−31597
  Ni_3Fe alloy, step-like deformation *(Russian)* 8−27559
  V-Nb, mech. props., −196-1000°C, comp. depend. 8−39847
services, information *see information services*
servo systems *see servomechanisms*
servomechanisms
  Cocatron, servo valve for liq. He II level control, superfluidity and supercond. applic. 8−18855
  laser frequency stabiliser using electronic servocontrol system 8−1240
  monochromator drive, using high-speed digital servo 8−36992
  photogrammetric automaton 'Zenit' positioning, electromechanical system *(Russian)* 8−21101
  prosthetic arm, hydraulically powered, with seven degrees of freedom 8−40404
  servocontrolled hydraulic hot-torsion machine for hot working studies 8−27698
servomotors
  atrial and/or arterial blood pressure servo control in expt. animals 8−31986
  gyrostabilized platform, nonlinear response to transient input 8−30219
servos *see servomotors*
set theory
  Boolean-valued models and independence proofs in axiomatic set theory, book 8−32649
  entropy of density matrix, definition with respect to observable 8−45586
  fuzzy set theoretic approach to systems analysis, nuclear energy system appl. 8−17352
  GM and GL type spaces, basic props., future appls. to physical axiomatics 8−45458
  topology of molecular bonds 8−46253
sets (mathematics) *see set theory*
sferics *see atmospherics*
shadow universe *see cosmology*
shape memory effect *see ferroelasticity*
shear *see crystallographic shear*
shear flow
  see also shear turbulence
  aerodynamic effects of inviscid parallel flow 8−1680
  aortic shear stress reduction by cardiac pacing 8−40239
  arterial flow lipid transport model 8−44552
  asthenosphere, thermal stability or instability of shear flow 8−20370
  blunt body problem in nonuniform flow fields 8−5748
  Brownian motion in shear flow 8−5786
  cardiotomy circuit, factors affecting haemolysis 8−36073
  cement paste, mathematical model relating flow curve to water/cement ratio 8−34100
  charged sphere elec. double layer deform., bulk stresses 8−48669
  colloidal dispersions, stability in flow fields, trajectory anal. 8−5782
  curved shear flow, model consts., second order closure 8−38265
  direction measurement, anal. of errors 8−22436
  duct with sudden expsns., asymmetric flows and instabilities 8−22425
  dumbbell kinetic problem, rheology, Langevin approach 8−42633
  ellipsoid freely suspended, rotation about a slow viscous flow's vorticity axis 8−38386
  falling film flow, spatially growing three dimens. wave, annular-froth flow transition 8−14071
  film thickness in free coating, parameters evaluated using shear data 8−42576
  gravity waves, shape and breaking in stratified shear flow 8−34147
  heterogeneous, infinitesimal stability 8−30262
  laminar to turbulent boundary layer shear flow, three-dimens., stability eqns. 8−38284
  leading edge signal on flat plate in uniform shear 8−30259
  maltrose syrup, separation of elastic and shear thinning effects in capillary rheometer 8−42691
  near wall vel. meas. for wall shear inference in turbulent flow 8−34234
  nematic film, phase grating produced by shear flow induced instability 8−9945
  non-Newtonian effect near crit. point 8−22377
  plane shear flow, exterior Dirichlet problem for quasilinear elliptic boundary value problem 8−22317
  polymer solutions, plane polygonal, normal stress under oscill. shear flow 8−34420
  polymer solutions and melts, flow under const. and periodic deform. 8−47004

shear flow continued
power-law liquid, shear flow, general soln. for mag. rheology *(Russian)* 8−47003
pulsatile laminar flow, velocity meas. for flow in 90° branch, appl. to atherogenesis 8−38277
Rossby wave forced on uniform shear, critical layer evolution 8−42622
silicon oil, separation of elastic and shear thining effects in capillary rheometer 8−42691
spherical cap, free translation and rot. in linear shear flow, Stokes resistance 8−26095
stability of aligned, stratified, compressible magnetoatmospheric shear flow 8−26197
stability of thermal flows 8−34110
stratified flow, weakly nonlinear stability theory 8−18331
streamlines around single spheres and trajectories of pairs of spheres in two-dimens. creeping flows 8−22316
supersonic thin turbulent layer, hot-wire anemometry, error reduction 8−34235
unsteady transversely sheared mean flow characts., gusts 8−26142
vortex ring evolution in stratified and shearing environment 8−30303
wind, strong shear obs. using pulse compression radar 8−32193

shear modulus
A15 compounds, elec. struct., 3-D k.p model 8−2405
bulk material in centrifugal installations, capacitive transducer for rigidity determ. 8−19977
clay soft, increase in shear strength and rigidity due to Fe^{3+} addition *(Japanese)* 8−31463
cubic metal, temp. depend., Morse pot. calc. 8−10118
elastic-viscoplastic materials delayed behaviour of double shear perturbations 8−45483
filled polymer, elastic moduli, effect of particle shape 8−15444
glass bead-reinforced epoxy resin composite, bulk and shear elastic props. 8−6959
glass fibre reinforced composite, shear fatigue 8−15493
graphites, pyrolytic, compressed, annealed, low temp. electron irrad., elastic const. meas. *(French)* 8−43050
ionic solids, anal. of press. derivatives of shear moduli 8−18698
Kevlar 49 fibre reinforced composite, shear fatigue 8−15493
laminate, deform. charact., pliability and rigidity 8−23798
latex, monodisperse, mechanical props. 8−48701
low frequency shear modulus meas. during tension creep *(French)* 8−23913
metal, thermodynamic properties, outer electron contributions *(French)* 8−43091
metals, simple, interion interaction and interion force constants, effective pots. in nonlocal pseudopot. method *(Russian)* 8−22684
phenolic resin filled and unfilled, mech. relaxation behaviour, effects of temp. and time *(German)* 8−6963
plastic, with wide range of moisture content, mech. props. determ. with conic plastometer 8−11270
polyethylene, highly oriented, fibre composite model 8−3183
polymer, glassy, power law relationship between yield stress and shear modulus 8−15467
polymer, oriented, dynamic shear modulus determ. by acoustic method 8−23911
polyoxymethylene, effects of hydrostatic press. on shear deform. 8−15457
polypropylene, effects of hydrostatic press. on shear deform. 8−15457
polystyrene, monodisperse latex, shear US meas. 8−31711
PVC, hard, flow zone effect on degradation, rigidity, deformation, under fatigue *(German)* 8−15471
silicate glasses, industrial, elastic and shear moduli depend. on temp. 8−11254
smectic-A liquid crystal, layer rigidity, stress relax. 8−18545
static, determ. method 8−7111
steel, 300 grade maraging low temp. elastic props. 8−27555
superconductor, type II, critical current density, depend. on past history of mag. field and temp. 8−6491
Zerodur, glass-ceramic, thermoelastic props. 8−27550
Ag, wires, polycryst., internal friction and rigidity modulus, O removal from grain boundaries 8−3160
Al, rigidity modulus, neutron irrad. and quenched, point defects 8−27546
Al-Mg, single and polycrystal, variations 8−11263
C fibre reinforced composite, shear fatigue 8−15493
Fe alloys, elastic props., texture correction formulae *(German)* 8−15439
Ge, amorphous, random network model, calc. 8−6119
Ge-As-Se glasses, US vel. and reson. freq. meas. 8−23756
HFO_2, polycrystalline, monoclinic, elastic props. at room temp. 8−27548
^{4}He, HCP, pulse echo expts. 8−38910
In-Cd alloys, elastic-phase transition, US study 8−6919
LiF, inverse moduli, up to temp. of 650°C 8−14397
Mo, pure, temp. depend. of Young's modulus, and shear modulus 8−27553
Nb-H single crystal, temp. and H conc. depend. 8−39823
Ni, electroplated layers, internal friction and ΔG effect, rel. to bath comp. and annealing 8−19296
Ni, pure, temp. depend. of Young's modulus, and shear modulus 8−27553
β_2-Ni-Al (47.6 to 60.5 at.% Ni), elastic stiffnesses −196 to 400°C 8−27556
$Ni_3B_7O_{13}I$, shear modulus anomalous temp. depend. 8−43061
Pt, pure, temp. depend. of Young's modulus, and shear modulus 8−27553
Si, amorphous, random network model, calc. 8−6119
$SiTe_2$, dislocations and stacking fault energy 8−47378
V_3Ge, low temp. props., mag. suscept. and resistance 8−19213
V_3Si, appl. of new three-dimens. k.p model for A-15 cpds. 8−23015
Zr_3Al, $L1_2$ phase, work hardening 8−23718

shear strength
bone-cement interface bond enhancement technique 8−31980
clay soft, increase in shear strength and rigidity due to Fe^{3+} addition *(Japanese)* 8−31463
composite cylindrical shells, reinforced, stability loss under isotropic external pressure 8−42554
Cosserat theory of crystal plasticity, appl. to anal. of lattice rotations under constrained deform. *(Japanese)* 8−2189
cylinder, plastic flow rules and Bauschinger effect parameters 8−6984

shear strength continued
dental crown restoration fixation, dynamic shear testing 8−36068
fayalite (Fe_2SiO_4), shear strength and press. distrib. in diamond anvil press 8−12710
fibre reinforced composites, intralaminar-shear charact., 10 deg off axis test 8−35422
fibre-reinforced rigid-plastic plates transverse impact anal. 8−38211
glass fibre reinforced composite, fatigue failure, role of shear deform. 8−15494
glass fibre reinforced composite, shear fatigue 8−15493
glass fibre reinforced epoxy resin, cryogenic tensile, compressive and shear props. 8−6983
glass fibre reinforced polyester, epoxy-polyamide, single lap joint, tension-shear strength *(Japanese)* 8−11494
glass fibre reinforced polyester, single lap joint, tension-shear strength *(Japanese)* 8−11494
granular material, particle crushing under high triaxial stresses *(Japanese)* 8−15466
graphite fibre reinforced epoxy resin, cryogenic tensile, compressive and shear props. 8−6983
graphite fibre reinforced polyimide, correl. of US attenuation and shear strength 8−19968
Kevlar 49 fibre reinforced composite, shear fatigue 8−15493
laminate, simple shear charact., comparison of test methods 8−44283
metallic glass, shear deform., mechanism involving dislocation glide 8−15462
organic glass, creep under shear with superposition of hydrostatic press. 8−31482
polymers, shear strength and friction 8−39913
polypropylene, isotactic, shear induced β-form crystallisation 8−18555
powder, tensile strength data and failure loci from Jenike shear cell tests 8−31476
soil, sliding masses, residual strength and frictional resist. *(Japanese)* 8−11919
steel, Cr-Mo-V, high-temp. cumulative damage for stage I crack growth 8−19883
steel, non-alloy, work hardening due to shearing *(French)* 8−15423
steel sheets, overlapped, glued with nonuniform epoxy resin layer, strength tests *(German)* 8−15647
B fibre reinforced Al laminate, unidirectional, interlaminar shear strength exam. 8−35434
B fibre reinforced epoxy and Al, cryogenic tensile, compressive and shear props. 8−6983
C fibre composite, interlaminar shear strength, effects of fibre surface treatment, resin type and fabrication process 8−35346
C fibre reinforced Al, formed by ion plating and vacuum hot pressing 8−11165
C fibre reinforced composite, whisker coating of fibres to improve strength 8−3093
C fibre reinforced composite, shear fatigue 8−15493
C fibre reinforced composite, oxidation of C fibre effect on shear strength *(French)* 8−44238
C fibre reinforced epoxy, activated C, storage life effect on shear strength *(Russian)* 8−35483
C fibre reinforced polymers, strategic reinforcement of hybrid, impact props. 8−15502
C fibre reinforced polymer, strength props., fibre surface treatment effects 8−27636
C fibre-Kevlar 49 fibre epoxy laminate, impact props. 8−44164
C fibres with large breaking strain, prep., mech. props., struct., appl. 8−44077
CsCl crystal, BCC and BCC ordered, core struct. of ⟨100⟩ dislocations, atomistic calc. 8−30637
Cu, shear mode of ductile fracture 8−31525
Fe-Mo, damping capacity *(Japanese)* 8−11259
KH_2PO_3, mechanically treated single crystal, depth and struct. of disturbed layer *(Russian)* 8−23839
Mo single crystal dislocation interactions during parallel shear in (011) plane *(French)* 8−43029
WC-Co, size factor effect on strength in complex stressed state 8−31483

shear turbulence
annular conduit, wall suction, turbulent flow *(French)* 8−18343
bluff body, turbulent near wake, vel. correlation struct. 8−30298
bounded turbulent shear flows, pattern-recognised coherent structures 8−22334
chemically reactive flow struct. 8−1754
circular channel with centrifugal forces, laser Doppler meas. of vel. field 8−34225
corner flow, Reynolds stress model 8−46954
duct flow, wall shear stress fluctuation props. 8−38304
free shear flow, spatial interactions in the mean 8−22335
free stream turbulence and shear effects on boundary layer and wake structs. 8−26112
free-shear plane stationary computer simulated turbulence struct., discretized Navier-Stokes eqns. 8−26111
heated grid flow, temp. derivative skewness, alleviation 8−46951
heated homogeneous flow, instantaneous temp. meas. using electronic cct. 8−21137
jets discharging into quiescent ambient, finite difference anal., turbulence modelling 8−30332
layer attachment near Mach 6, peak heating 8−26153
MHD turbulence stream with 2-dimens. struct. perturbation, shear region momentum transfer *(Russian)* 8−5812
mixing, model 8−1650
modelling methods, in physical and spectral space 8−42594
phenomenological theories for computation, Navier-Stokes eqns., Reynolds stress modelling 8−46955
pipe flow, Reynolds shear stress, roughness effects 8−22426
pipe flow, wall and shear turbulence during bursting periods 8−1743
quasilinear approximation model 8−13997
Reynolds shear stress in equilib. range, turbulence spectral props. *(Japanese)* 8−18284
Reynolds stress tensor rot. in axisymmetric flow 8−26108
temperature derivative skewness, large scale struct. 8−30275
temperature fluctuations, struct. functions 8−30274
thin shear flows, ratio of scalar-to vel. fluctuation time scales 8−46950
turbulent boundary layer, wall shear stress, small amplitude perturbations 8−14000
velocity and temp. fields 8−22338

shear turbulent flow *see shear turbulence*

sheathing, cable *see cable sheathing*

sheaths, plasma *see plasma sheaths*

shell model (nuclear) *see nuclear shell model*

shielding
see also magnetic shielding; radiation protection
basalt, compressed, appl. to shielding against soft X-ray radiation 8−41865
BN-350 reactor shielding studies 8−21667
cables insulated with Al_2O_3 and MgO, resistance to high-temp. and intense gamma radiation 8−25332
clay, compressed, appl. to shielding against soft X-ray radiation 8−41865
data file for reactor shielding calculations, ENDF/B-V 8−13398
deep-penetration radiation transport, event and point value in Monte Carlo importance sampling 8−8869
deep-penetration transport calculations and neutron transport eqn. forms 8−8868
epithermal 1/V self-shielding of reactor poisons using Nordheim integral method 8−17306
fifth international conference on reactor shielding, review 8−29599
finite element methods for radiation transport calcs. 8−13196
fission reactor, multigroup libraries from radiation shielding information centre 8−13399
fission reactor, sensitivity-based cross-section data assessment 8−9048
fission reactor, techniques survey and appl. *(German)* 8−29638
floating nuclear plant, shield design features 8−21777
fusion reactor, multigroup libraries from radiation shielding information centre 8−13399
fusion reactor, sensitivity-based cross-section data assessment 8−9048
fusion reactors, quantitative cross-section data assessment 8−9047
gamma-rays due to reactor accident, shielding by vehicles and structs. 8−13251
granite, compressed, appl. to shielding against soft X-ray radiation 8−41865
ground screening factor evaluation to protect systems from interference *(French)* 8−49071
high-speed cassette film fogging and shielding 8−8460
information centre on radiation shielding, international technology resource 8−17543
irradiation sources in reactor technology *(German)* 8−46180
KS-150 reactor, radial shielding model, neutron and γ-ray spectra meas. *(Slovak)* 8−21624
LMFBR, heat and mass transfer behind heated reactor cell liner following hot Na spill 8−17388
LMFBR shielding calculations, accuracy of ENDF/B-IV cross sections 8−13401
matrix methods for radiation transport 8−13198
metal shielded optical fibre transmission characteristics 8−1369
multigroup cross section calculation, self-shielding, subgroup method *(Rumanian)* 8−46140
neutron information at National Neutron Cross-Section Center 8−13403
neutron radiotherapy, 14 MeV, skin-sparing, effect of metal sheets 8−35923
neutron shielding benchmark expts. 8−29655
neutron shutter for cyclotron facility 8−21794
neutron transport numerical methods, recent work at LASL 8−13195
neutron-induced cross sections at 14 MeV for reactor and shield design 8−13103
N.S. Mutsu, primary shield, mock-up experiments, analysis 8−21782
N.S. Mutsu, radiation streaming, repair plan 8−21781
nuclear reactor, large-scale steel melt/concrete interactions test 8−17387
nuclear reactor, thermal decomp. of concrete in hypothetical fuel meltdown accident 8−17386
nuclear reactor concrete shield, interaction with molten core material, heat flux determ. 8−17385
PBHTR, space-shielding cross sections 8−25274
power reactors, coolant circuit contamination 8−21666
PWR, shielding against neutron and gamma streaming, computational methods 8−21783
radiation protection/shield design, systematic approach 8−21779
radiation shielding, cross section sensitivity analysis 8−21778
radiation shielding, in 3-D direct-coupled-ray method 8−21785
Radiation Shielding Information Centre 8−21784
radiation streaming, shield design problems 8−21780
reactor shielding, current status and future prospects 8−25328
reactor shielding methods, development in USA 8−21776
reactor shielding methods, evolution, data 8−21775
SNR-300, coolant outlet duct design from neutron transport experiments *(German)* 8−29566
space station, radiation protection design considerations for man in geosynchronous orbits 8−28096
tandem, nuclear safety facility at Daresbury, shielding methods for insulators, ICs, other components 8−33318
thermoluminescent dosimeter monitoring post, concrete shielding to reduce background 8−817
Tokamak reactor, radiation shielding 8−25323
toroidal geometry effects in neutron transport eqn., discrete ordinate S_n method 8−13327
Varian Clinac 4 MeV linear accelerator, radiation from U collimators, and shielding 8−24135
Ag, resonance self-shielding factors, depend. of Doppler factor 8−17439
Au, resonance self-shielding factors, depend. of Doppler factor 8−17439
Fe, natural, neutron total cross section minima 8−37387
Pb shield, effects of thickness and geometry var. on neutron spectra 8−33300
Si diode detectors in radiological physics, energy compensating shield development 8−24142
Si, natural, neutron total cross section minima 8−37387

shielding, magnetic *see magnetic shielding*

shift register sequences *see binary sequences*

shift registers
see also logic circuits
reliability assessment by scanning electron microscope 8−29215

ships
see also navigation
corrosion rate of basal layers, cathodic protection meas. methods *(Dutch)* 8−3297
drill ship positioning, acoustic meas. system 8−45057
flat ship, low-aspect-ratio, planing at infinite Froude number 8−32684
infrasonic sea noise, contrib. of distant shipping 8−11902
magnetism, rel. to mag. compass, history, Airy-Scoresby controversy 8−4451
noise reduction using viscoelastic materials 8−22226
nonconservative system resonance, modal analysis 8−42557
nuclear reactor, ^{16}N activity in water from $^{16}O(n,p)^{16}N$, computer code and expt. 8−13192
nuclear vessels, probabilistic model for assessment of collision likelihood 8−5063
OCCULT laser system operating in marine boundary layer 8−5565
propulsion, fission reactor appl. *(German)* 8−29638
structure borne sound attenuation 8−33947
supertanker radiated noise spectra in deep ocean, origin 8−33959

shock, thermal *see thermal shock*

shock control
shock absorber, elastic damping props. determ. unit 8−5703

shock measurement
dielectric and magnetic pickups, signals comparison for waves up to 100 kbar intensity 8−5707
gas gun expts. for two-dim. strain meas. 8−5709
nanosecond hydrodynamic diagnostics, streaking camera, fibre optic probes 8−37096
speed of shock wave, continuous recording in porous metal 8−5708
spherical blast wave, high-speed photogrammetry of real and ideal reflections 8−42694
steel, dielectric and magnetic pickup signals comparison 8−5707

shock tubes
see also shock waves
boundary layer obs., unsteady, behind moving shock wave 8−46998
diaphragm rupture, initial flow model 8−14045
EM shock tube for obtaining short pulses of visible radiation, plasma flow anal. 8−1909
high-speed shock generation, using explosives 8−26156
ionising shocks reflection on end wall, finite difference analysis *(Japanese)* 8−42629
methane, shock-tube oxidation, equilibrium and nonequilibrium radiation emission 8−27760
tailored contact surface region, anal. 8−5832
$H_2(D_2)$-Ne-He(Ar) plasma, combustion driven shock tube, H_β central struct., ion mass effect 8−26327
NO, in exhaust gas, direct optical detect., transverse sensitivity *(German)* 8−35751
NaCl+Ar, dissoc.-ionis. process rates in shock tube 8−35674

shock wave effects
anhydrite, shock compressed, vel. of sound meas. 8−10123
astrophysical shocks, particle accel. 8−49241
beams, transient response prediction by Laplace transform techniques 8−1596
bubble breakdown, gas-in-liq. bubble, gas density 8−42653
conical shell, buckling in response to shock load 8−5679
diamond, form. by shock compression of graphite, cryst., surface struct. 8−44060
diatomic gas, dissociation past strong shock waves 8−42683
dislocation generation mechanism in shock wave deform. 8−43018
dolomite, shock compressed, vel. of sound meas. 8−10123
dust erosion by shock wave in air 8−42648
explosions in liquids, slow detonation, vapour explosions and bubble reson. explosions *(German)* 8−34150
hypersonic flow, ice crystal-shock layer interaction 8−30317
interstellar H_2 cooling, dissociation and IR emission in shocked clouds 8−41009
interstellar medium, star form. in shock-compressed layers 8−40919
kidney stone non-contact destruction appl. *(German)* 8−7517
laminate, shock wave propag., stress history recording 8−38242
liquid-vapor system, shock compression, equilib. states *(Russian)* 8−9687
metal, polycrystalline, elastic precursor wave model in shock loading 8−1601
metallic target, laser produced shocks rel. to material damage 8−31285
methyl radicals, reactions behind shock waves, UV absorpt. obs. 8−46362
molecular dynamical studies of energy transport in crystalline solid 8−30803
olivine, shock induced high-pressure transformation 8−11883
paraffin, shock compressed, vel. of sound meas. 8−10123
plastic-layer under shock, extrusion and heating 8−34064
Plexiglas, rod, breakdown charact. by longitudinal stress waves 8−38773
plexiglas, shock compressed, vel. of sound meas. 8−10123
polyatomic molecules, vibr. relax. behind shock wave 8−42177
polyethylene, shock compressed, vel. of sound meas. 8−10123
PTFE, shock compressed, vel. of sound meas. 8−10123
QSOs, shock waves in colliding gas cloud system rel. to spectrum 8−28836
quartz, impact structs., peak shock press., X-ray diffr. investig., lunar rock bombard. appls. 8−7002
quartzite, shock compressed, vel. of sound meas. 8−10123
solids, expansion after passage of shock waves 8−43068
steel, C, rod, breakdown charact. by longitudinal stress waves 8−38773
steel, heat resistant, explosive loading effects on struct. and mech. props. *(Russian)* 8−39787
stroboscopic method for pizosecond diagnostics of rapid processes 8−47159
supersonic, turbulent boundary-shock wave interaction, aerodynamic heating 8−26155
transparent material, small particle impact, high speed photomicrographic recording of shock wave 8−44342
tube flow initiated by expansion wave, viscous effects 8−26192
viscoelastically damped beams, shock response 8−38232
Al alloy, 2024, shock-loaded, recovery of Young's modulus 8−23751
Al alloy rod, wave profiles generated by short shock pulse 8−6125
Ar, ionising shock waves, stability, H impurities effect 8−22371

shock wave effects continued
  Ar+HF(HCl)(CO), shock heated steady state dissoc. rate consts. calc. 8−40039
  Br_2 recombination in supersonic expansion in nozzle *(Russian)* 8−1757
  Cu, crystal lattice behaviour under intense unidimensional compression *(Russian)* 8−6123
  Cu, explosive loading, depend. of struct. on deform. *(Russian)* 8−3177
  Cu, shock loaded, work hardening and press. depend. of dislocation arrangement and density 8−48429
  Fe, BCC, shock wave simulation using Morse pot. 8−2196
  Fe, cast rod, breakdown charact. by longitudinal stress waves 8−38773
  α-Fe, exam. of structural defects due to shock waves, and induced hardness 8−48427
  Fe-Ni-C (21, 0.6 wt.%), stress assited and strain induced martensite morphologies 8−3187
  Fe-Ni-C (31, 0.1 wt.%), kinetics of deform. induced martensite, shock loading and grain refinement effects 8−15395
  HN_3, decomposition and ionisation in shock tube *(Russian)* 8−7182
  $KAlSi_3O_8$, orthoclase, impact structs., peak shock press., X-ray diffr. investig., lunar rock bombard. appls. 8−7002
  KCl, laser produced shocks rel. to material damage 8−31285
  LiF, dynamic strength, cryst. orientation effects 8−39846
  $LiNbO_3$, shock loaded above Hugoniot elastic limit, elec. and mech. response 8−19411
  Mg, heating by shock compression, of porous material, vap. form. *(Russian)* 8−2195
  NaCl, shock compressed, vel. of sound meas. 8−10123
  Ni, shock loaded, work hardening and press. depend. of dislocation arrangement and density 8−48429
  Ni, shock loaded, work softening 8−27537
  Ni-Cr alloy KhN70VMTYu, heat resistant, explosive loading effect on struct. and mech. props. *(Russian)* 8−39787
  Pb, evaporation in shock compression release waves *(Russian)* 8−18761
  $Pb_{0.98}Nb_{0.02}(Zr_{0.95}Ti_{0.05})_{0.98}O_3$, PZT 95/5, ferroelec. ceramic, resist. meas. under shock wave compression 8−19031
  S, electrical conductivity under shock compression *(Japanese)* 8−26923
  Se, cubic modification prepared by shock compression 8−34494
  Ti alloy RMI 38644, shock loaded, residual strength 8−27574
  UO_2, clustering phenomena effect, anal. based on shock wave model 8−21652

shock waves
  see also detonation; explosions; plasma shock waves; shock tubes; shock wave effects; supersonic flow
  acoustic discontinuous waves in nonlinear media, characts. 8−5601
  adiabatic self-similar blast waves, radial instability, appl. to supernova remnants 8−8089
  air in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
  air-water bubbly mixtures, press. wave propag. *(French)* 8−22402
  Alfven shock evolution is classical MHD *(French)* 8−18352
  bar semi-infinite prismatic, elastoplastic wave propag., intense load-release wave existence *(Russian)* 8−24671
  blast waves, spherical, time-depend. energy deposition 8−9655
  blunt biconic at incidence, laminar viscous shock layer, supersonic/hypersonic flow 8−30313
  boundary layer, nonstationary, with self-induced press. 8−34164
  boundary layer, unsteady, similarity problems 8−1633
  boundary layer effects on weak shock wave and sound wave refl. at shallow incidence 8−22373
  bubbly, two-phase mixtures, numerical anal. of press. transients by explicit-implicit method 8−34185
  bubbly liquids *(French)* 8−26183
  bubbly mixtures, shock wave form. by compression wave steepening 8−38390
  cavitation, investigation by coherent optical methods 8−38431
  Chapman-Jouget detonation wave near surface curvature rupture line *(Russian)* 8−46996
  chromospheres of late type stars acoustic wave heating and temp. minima heights 8−20818
  chromospheres of late type stars temp. minima and shock form. heights 8−20818
  cold plasma, Alfven shock waves in presence of effective electron-ion collisions 8−26286
  compact double radio sources, relativistic blast-wave model for superlight motion 8−28807
  compressible flow fields, two-dimensional, computation by modified local stability scheme 8−1681
  compressible gases interface, turbulent mixing 8−1683
  cosmic rays accel. on front of shock wave, regular mechanism 8−36410
  Cygnus Loop, forbidden Fe XIV emission radial distrib. rel. to shock front model 8−32545
  Cygnus Loop, supernova remnant, filaments and high vel. gas rel. to shock waves *(Russian)* 8−41028
  cylindrically/spherically symmetric flow, numerical study of converging cylindrical shock 8−22370
  difference schemes from fluid mechanical integral theorems 8−14032
  diffraction by compression corner, single Mach refl. 8−38370
  dissipative lattice, approx. solns. for max. shock response 8−6124
  distribution theory use *(Rumanian)* 8−34046
  ducted flow, velocity and temperature development behind shock wave 8−34161
  EHD shock wave struct., anal. with complete charged component impulse eqn. *(Russian)* 8−42674
  elastoplastic half-spaces interface, oblique refr. of plastic wave, self-similarity problem *(Russian)* 8−20974
  frozen shock wave in two-dimensional steady flow past thin wedge *(Japanese)* 8−26212
  galactic centre region, shock wave model of expanding ring 8−4365
  galactic nuclei, compact X-ray sources model rel. to giant elliptical galaxy (M87) 8−28847
  gas bubble-water mixture with polymer additive, shock wave propag. 8−47021
  gas detonation wave, calculation of equilibrium flow *(Russian)* 8−1690
  gas dynamic ionising shock wave, appl. of computational method 8−38447
  gas-liquid mixture, press. perturbations propag. 8−34186
  gas-particle mixture, particle specific heat, Boltzmann eqn. 8−14072

shock waves continued
  general relativity, self-similar solutions with spherical shock waves *(Russian)* 8−8284
  gravitational shock waves from Einstein eqns. eikonal approx. 8−116
  hard-core fluid, struct. of shock wave front, mol. dynamics study 8−1970
  head-on collision, appl. to nonlinear interaction and diffraction *(Russian)* 8−22372
  heavy-ion high energy inelastic collisions, cascade evaporation model of shock waves *(Russian)* 8−41766
  Herbig-Haro objects, shock wave interpretation of individual condensations 8−45324
  Herbig-Haro objects in Gum Nebula, spectrophotometry rel. to shock wave model 8−36565
  high density nuclear Mach shock waves, central heavy ion collisions, compressed nuclear matter, meson condensation 8−46089
  hypersonic aerodynamics, limiting shock layer *(Russian)* 8−30316
  hypersonic flow around blunt bodies, surface friction, physiochemical processes in shock layer 8−46997
  hypersonic flow past blunt axisymmetric body, shock layer 8−9654
  hypersonic flow past blunted cones, shock waves 8−1684
  hypersonic two-dimens. flow behind compression shock, entropy layer 8−1691
  inertial motion of fluid, shock formation 8−13985
  internal resonances 8−1627
  interplanetary, energetic solar flare particles 8−49276
  interplanetary, interaction with low-energy protons, 1975 January, Helios 1 obs. 8−20609
  interplanetary acceleration of electrons and ions by shocks 8−49285
  interplanetary flux from flare of August 4, 1972, hydromagnetic struct. 8−28475
  interplanetary shock waves, 1973, April 29-30, anal. of complex solar particle event 8−20593
  interplanetary shocks interaction with Earth's magnetosphere, computer simulation 8−16243
  interplanetary travelling phenomena, symposium (Tel Aviv, 1977 June 7-10) 8−49275
  interstellar neutral H, weak R-type ionisation front approaching a contact discontinuity 8−49510
  interstellar shock waves, rel. to intermediate-vel. gas obs. 8−36655
  ionising shocks reflection on end wall of shock tube, finite difference analysis *(Japanese)* 8−42629
  isothermal, reflectionless passage across jump-like nonhomogeneity 8−30210
  isothermal self-similar blast waves, one-dimensional flow and its stability 8−45214
  isothermal self-similar blast waves, two-dimensional flow and its stability 8−49307
  Lagrangian hydrodynamics meshes, discrete rezoning algorithm, hot interacting bubbles calcs. 8−42628
  laser-liquid interaction, air shock wave generation at surface 8−19608
  layered hyperelastic half-space, one-dimens. propag. of weak discontinuities 8−30226
  liquid-gas bubble mixtures, shock wave disturbances 8−22411
  magnetosheath, form. due to SSC 8−45147
  magnetosphere, electrostatic shocks, double layers and anomalous resistivity 8−45152
  magnetosphere, electrostatic shocks as source of discrete auroral arcs 8−45153
  magnetosphere stand-off shock front, passage of low-freq. wave packet 8−45138
  Mars bow shock, positions, rel. to Mars mag. field, Mars 5 evidence 8−49362
  MHD shock wave refraction 8−1749
  multicomponent medium, non-homogeneous plane shock wave propagation 8−46908
  multishock problem in cylindrical symm., particle trajectory method, explosion near ground 8−1692
  natural and man-made shock waves on Earth and in space 8−3897
  nonlinear self-dual network eqn., shock wave and hole type soliton 8−27
  nuclear matter, shock wave matter, shock wave dynamics, phase transition effects 8−21509
  outer shock struct., partially ionised gases 8−9656
  piston problem, one-dimens., in gasdynamics 8−34162
  plane acoustic wave normal and oblique interaction with plane shock, wavenumber jump conditions 8−1466
  plane sound waves in air, finite-amplitude saturation and shocks 8−1465
  plates colliding, shock front determ., damping, hydrodynamic approx. 8−9595
  propagation along 90 degree bends, curvature effects on stability 8−18314
  quasi-one-dimensional flow equations, exterior differential form represent. *(Japanese)* 8−8243
  radiative transfer in shock layer, spectral lines calc. 8−5641
  radio galaxies, double source structs. form. and superluminal expansion 8−8141
  reflection from solid moving partition in non-elastic medium, loading process behind front 8−46907
  refraction at oblique shock, tensors and polars 8−30318
  relativistic gravitating gas in presence of strong shock, spherically symm. motion 8−12629
  relativistic nucleus-nucleus collisions, high density nuclear Mach shock waves 8−633
  self-similar shock and rarefaction waves in polarizable continuous media 8−47047
  soil model, viscoplastic, eqns. and expt. determ. *(Russian)* 8−7619
  solar atmosphere, propag. of MHD shockwaves 8−24503
  solar wind, evolving streams and shocks beyond 1 AU, Pioneer 10 and 11 obs. 8−49283
  solar wind magnetic fluctuations, Helios 1 search-coil magnetometer expt. 8−20607
  solar wind shocks and assoc. wave-particle interactions 8−49284
  solid, shock induced free surface velocity and postshock sp. volume 8−43074
  sonic discontinuities propagation through thermally conducting and dissociating gases 8−30311
  sonic wave propagation, thermally conducting and radiating gases 8−42679

shock waves continued
spherical blast wave, high-speed photogrammetry of real and ideal reflections 8–42694
spinning detonation mechanism 8–22362
stellar atmospheres, radiative shock dynamics and H continua 8–40918
stellar collapsing core, shock struct. and neutrino radiation, rel. to supernova explosions 8–49427
strong shock waves, motion in nonuniform density medium 8–42630
strong shock with radiation near stellar surface 8–32442
supernova remnants, cosmic rays accel. in shock fronts 8–32302
supernova remnants, Hα emission of optical filaments, shock waves interaction with interstellar medium 8–8103
supersonic cascade with strong in-passage shocks, unsteady flow 8–14041
supersonic flow, finite difference method calcs. *(French)* 8–34157
supersonic flow oround circular cone, shock and combustion waves 8–26154
supersonic flow of inverted population gas flow round blunt bodies, amplification factor 8–5828
supersonic flow past slender body, wave system 8–34155
terrestrial and cosmic, review 8–15967
thermal radiation effects on shock wave incident on wall 8–5823
transient cavitation, on marine propellers, high-speed photography 8–38432
transonic flow, discontinuous 8–38362
transonic flow, plane, weak shock wave solns. 8–38364
transonic flow, turbulent boundary layer-shock wave interaction *(French)* 8–34163
transonic turbulent boundary layer, shock pentration 8–14044
transverse shocks in detonation waves, strength var. 8–26157
turbulent boundary layer interactions, Reynolds no. effect 8–1689
two-phase detonation front compression waves, solid particle oxidation reaction *(Russian)* 8–34207
two-phase reactive particle flow through normal shock waves 8–42676
underwater explosive shock waves, weak-shock soln. 8–26003
unsteady flow in radial channel, incident shock wave 8–1744
viscoelastic medium, eqn. of state for shock-wave struct. 8–9594
viscous-inviscid flow matching, separation, shock waves *(French)* 8–34105
weak shock propagation in liquid-filled tubes 8–26004
weak shock waves in chemically reacting gas *(Russian)* 8–42681
CO_2, 10.6 μm reson. absorpt. behind shock front 8–42707
CO_2-F_2-Ar mixture, vibr. relax. in shock wave, 4.3 μm radn. 8–1062
Fe, Armco, shock front phase transition kinetics 8–10122
He-N_2-CO_2 mixture in supersonic nozzle, shock activation with overexpansion, jet form. 8–18330
KBr, shock adiabatic, nonparametric equation of state 8–10121
LiBr, shock adiabatic, nonparametric equation of state 8–10121
N_2 in supersonic nozzle, shock activation with overexpansion, jet form. 8–18330
NaBr, shock adiabatic, nonparametric equation of state 8–10121
RbF(Cl)(Br), shock adiabatic, nonparametric equation of state 8–10121

shocks, electric *see electric shocks*

short-circuit currents
turbogenerator, short circuits, stator end windings deformation *(Japanese)* 8–11465
In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8–15314
Si Schottky barrier solar cell, V-I characts. and efficiency 8–14828

short-range order
see also order-disorder transformations
alloy, binary, conc., with short and long range order, computer simulation of diffusion 8–30778
alloys, anisotropic binary, HCP struct., influence of spatial nonuniformity of short-range order on interdiffusion *(Russian)* 8–6187
alloys, substitutional disorder description within supercell model 8–26479
amorphous solids, symmetry of short-range order, polyhedra model 8–42913
anisotropic liquid, rel. to integral eqn. for ang. distrib. function, quasichem. approx. *(Russian)* 8–6147
binary alloy, electron theory, two particle interaction, perturbation theory 8–10390
binary BCC and FCC solid solns., short range order rel. to comp.-prop. relations *(Russian)* 8–47280
binary melts, short-range order, X-ray and neutron scatt. *(German)* 8–14272
binary ordering alloy, gas absorption, correl. effects *(Russian)* 8–47525
classification by electron microscopy 8–38623
cluster model for transition state, electron diffr. study 8–10168
copper formate tetrahydrate, short-range order, diffuse neutron scatt. 8–15124
disordered chains with short-range order, freq. spectra 8–10148
disordered system with short range order, elementary excitations 8–23000
electron liquids, two-dimens., short-range order onset, thermodynamic props. 8–43454
Heisenberg magnets, pure and pseudo-one-dimens. temp. depend. of EPR freqs. 8–6563
Ising paramagnet, impure, influence of spatial short range order 8–43542
liquid, Debye temp., short-range order, theory 8–2264
multicomponent system of nonspherical molecules, statistical thermodynamics in quasichemical approximation *(Russian)* 8–5995
PAA, isotropic-nematic transition, appl. of integral eqn. for ang. distrib. function *(Russian)* 8–6147
polymer, amorphous, bulk, structure models and exptl. methods, review 8–22671
polymer, amorphous, stress-optical investig. of short-range order 8–22672
polymer solution, short-range order and solvent crystallisation; spectroscopic and microcalorimetric, methods *(Russian)* 8–26416
polymer solution, short-range solvent orientational order, IR dichroism and photoelasticity obs. *(Russian)* 8–26415
rare earth oxide film, short-range order to long-range order transition 8–10288

short-range order continued
rare earth-gallium sulphide glass, R_2S_3-1.8Ga_2S_3, vibr. and electronic spectra, short-range order 8–27228
size effect in electron theory, static conc. waves approximation *(Russian)* 8–39049
spin glasses, relax. of magnetisation and order parameter 8–27043
β′-NiAl, Ni rich, electron diffr. pattern anomalies, rel. to martensitic transform. and short range ordering 8–6926
α-Ag-Zn, atomic short-range order determ., X-ray scatt. and pseudopot. calc. 8–2067
Au-Fe (22 at.%), ferromag. phase, AC susceptibility near T_c 8–43575
$CdGeAs_2$, amorphous and cryst., Mossbauer expts. 8–22648
$CoCl_2.2NC_5H_5$, quasione dimens. Ising system, thermodynamic props. 8–27042
Cr_3Ge amorphous films, short range order struct. *(Russian)* 8–30841
Cu-Al (15 at.%), vacancy migration, and short range ordering, comparison of exp. results with theory 8–47356
Cu-Au, elec. resist., pseudopot. calc. *(Russian)* 8–2460
Cu-Ni (20-80 at.%), clustering, diffuse neutron scatt. study, conc., temp. depend., miscibility gap location 8–47529
Cu-Ni alloys, magnetic diffuse neutron scatt. 8–14931
α-CuAl, kinetic study of short-range ordering 8–23726
$Cu(NO_3)_2.2^1/_2H_2O$, singlet ground-state system, mag. props., short-range ordered state 8–23289
Fe-Al (15 at.%), short range order form. kinetics *(Russian)* 8–3146
Fe-Co-Cr, Cr effect on struct. of ordering 8–35407
Fe-Ni alloy, disordered, short-range order study by time-depend. PAC method 8–6618
Fe-Ni alloy, ordered, low temp. α→γ transform. *(Russian)* 8–19740
Fe-Pd, mag. moment, comp. depend. *(Russian)* 8–47280
Fe-Sn liquid alloy, conc. depend. of enthalpy of form., conc. depend. *(Russian)* 8–44081
Fe_xNbS_2, ordering of Fe atoms 8–38650
Ge-Sb liq. alloys, SRO 8–22632
In-Sn-Sb, liquid state, structure of eutectic alloy 8–42890
$Kr.2SiO_2$, vitreous short-range atomic packing rel.to Kr entrapment 8–22664
Li-Na, liq., short-range order, neutron diffr. obs., near crit. composition 8–22639
$LiTbS_2$, long and short range order 8–38667
Mg-Bi (30 at.%), molten, short range order and partial struct. factor, neutron and X-ray diffr. 8–9941
Mg-Cd melts, atomic struct., short range order and melting *(German)* 8–14273
Ni-Al (6.3 at.%), influence of localised order on thermo-EMF and Hall-EMF *(Russian)* 8–6951
Ni-Cr (33 at.%), US deform. effect on short range order form. *(Russian)* 8–39839
$Ni_{1-x}Fe_x$, short range order exam. allowing for formation of structural domains *(Russian)* 8–6888
$Pd_{1-x}Ag_{1-x}$-Au, dil., electron density at Au, Mossbauer reson. 8–39473
PdH_x-Au, dil., electron density at Au, Mossbauer reson. 8–39473
S-Se-Te semicond. glasses, mag. suscept. meas., refractive index 8–34952
Si, short range order in surface layers, electroreflection exam. 8–6703
Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8–23474
Ti-Mo, lattice parameter and Debye temp., comp. depend. *(Russian)* 8–47280
Tl_xSe_{1-x}, amorphous and cryst., IR transmission spectra and struct. interpret. 8–23471

shot noise *see random noise*

showers, cosmic ray *see cosmic ray showers and bursts*

shrinkage
borides, metallic, sintering, review, book contrib. 8–48359
fibre reinforced composites, transverse plane, elastic, failure behaviour *(Japanese)* 8–48510
nuclear fuel compacts for HTR, irrad.-induced creep 8–44168
PMMA, biaxially oriented, shrinking kinetics in transform. range 8–27588
$BaFe_2O_4$, $BaFe_{12}O_{19}$, formation, dilatometric investigs. 8–27459
C, stripper foils under 4.8 MeV Ar^{++} ion bombardment, shrinkage, rupture, lifetime 8–33352

Shubnikov-de Haas effect *see magnetoresistance*

Si-Ge alloys *see Ge-Si alloys*

SIC *see monolithic integrated circuits*

signal acquisition *see signal detection*

signal coding *see encoding*

signal delay lines *see delay lines*

signal detection
analogue signal fast acquisition, for large particle detectors, CYCL-OP 8–17534
auditory evoked cortical potential online detector 8–31952
biological signal time averaging, digital Wiener filtering and detection statistical aspects 8–35979
digital FM detector, multichannel, EEG appl. *(Danish)* 8–35980
ECG P-wave recognition, using adaptive correlating filter *(Japanese)* 8–28119
exercise ECG analysis, noise-impervious pattern recognition approach 8–7515
foetal ECG adaptive real-time noninvasive extraction using near-orthogonal functions 8–28110
intra-auricular P wave monitor, experience, performance evaluation 8–11764
ionosphere LF signals, modulated reception method for refl. coeff. determ. 8–45114
laser signal distortion for chopped beam, due to beam pointing error 8–37937
noiselike optical signals, photoelectron counting statistics and error rate characteristics 8–1178
nonlinear detector effects on statistics of fluctuating signal 8–24735
nonlinear filtering technique for identification of biological signals 8–40438
optical pulsed signals of variable length in correlated interference, S/N ratio 8–37816
optical radar, S/N ratio statistics 8–17866
optimum detect. in non-Gaussian noise 8–38149

signal detection continued
optoelectronic system with rectilinear scanning, optimal meas. of optical signal parameters 8−17865
polarization modulated light, freq. mixing detection using periodic analyzers 8−5433
psychoacoustics, signal detect. theory 8−3514
Pull Up Shallow Water Seismometer, signal detect. and recording systems 8−45025
pulse-echo experiments, using pulse generator and coupled fast signal averager 8−21188
radiography, medical diagnostic decision making and image quality 8−28059
Space Shuttle/Orbiter S-band communication development problems 8−45197
stochastic signal locally optimum detect. in non-Gaussian noise 8−38148
time position accuracy determ. of optical pulsed signals for correlated noise types 8−12761
underwater passive detection, adaptive approach 8−5607

signal generators
see also function generators; noise generators; ramp generators; swept-frequency oscillators
FM signal modulated by smoothed random telegraph signal, generation and appl. to underwater acoustic meas. 8−18130
pacemaker interference test signal generator, operation and cct. *(Spanish)* 8−20315

signal processing
see also bandwidth compression; correlation theory; data compression; filtering and prediction theory; picture processing; signal detection; Walsh functions
abdominal foetal ECG and VCG recording/processing systems 8−31947
AC Kerr effect meas. in conducting liquids 8−23431
acoustic passive bearing estimation, removal of bias and 2π ambiguities 8−38150
acoustics, influence of time- and space-varying random filters 8−5615
acoustics, lagged signal power spectrum in cross correl. 8−9502
adaptive cross-sensor beam forming with planar arrays 8−18121
aneurysm detection using bioacoustic signal processing techniques 8−28120
array processors for noise and interference suppression and signal-to-noise resolution enhancement, error corrections 8−30132
astronomical images, PDS microdensitometer processing for astrometry 8−16306
bioelectric signal measurement and processing instrument trends *(Croatian)* 8−44665
biomedical Doppler signal processing, swept-frequency transient signal filtering 8−48848
biomedical equipment instruction using modularised signal processor 8−41131
biomedical signal and image processing, digital techniques *(Croatian)* 8−44623
biomedical ultrasonics, signal processing aspects 8−7418
broadband target classification using bionic sonar 8−18123
coherent optical defectoscopy, correlation, materials testing appl. *(German)* 8−7110
common depth point seismogram, signal and noise separation in amplitude spectra *(Russian)* 8−15970
composite strip piezoceramic US receiving array 8−42511
computerized hearing aid test system, signal processing techniques 8−30131
conditional sampling, detection and data signal phase relation, turbulent boundary layer appl. 8−24772
conference, Portovenere, Italy (Aug./Sept. 1976) 8−5614
cross correlator, wide bandwidth, construction and appls. 8−4658
cyclical data collection, linear method for second degree interpolation 8−45473
Doppler microscope for flow velocity meas. in areas $<10\ \mu$ dia., signal-analysing system *(Japanese)* 8−22441
ECG signal distortion reduction by statistical deconvolution 8−28118
ECG/vector cardiogram interpretation modular system 8−7484
EEG, detect. of intermittent transient patterns of brain elec. activity of unknown waveshape 8−31958
EEG discriminant function classification from renal patients, methods 8−28115
EEG signals with changing spectra, anal. using Kalman estimator 8−24167
EMG, surface-recorded, stabilisation of isoelec. line using high-pass filter 8−31917
evoked potential estimation, method for evaluation of Wiener filtering method 8−24190
exercise ECG computer analysis 8−7516
exercise ECG computer processing expts. 8−7510
exercise ECG processing, influence of heart rate and coronary artery disease 8−7512
exercise ECG processing principles and multivariate analysis results 8−7511
external gravity field calc., signal processing approach 8−24708
extraterrestrial civilisation radiocommunication, efficiency of signals associated with natural phenomena *(Russian)* 8−40842
fast signal averager and coupled pulse generator, for pulse-echo expts. 8−21188
flow meas. with hot-wire probe, simultaneous and instantaneous temp. and vel. meas. 8−34236
flowmeter, ultrasonic cross correl. flowmeter 8−30393
foetal heart rate variability anal. using spectral anal. 8−28111
hydroacoustic scatterers identification, system optimisation *(German)* 8−42487
Image Transform computerised transfer system, videotape signal processing, cinefilm appl. 8−45742
ion-specific electrode output volt. linearisation 8−35991
laser Doppler velocimeters, signal processing using counters, biasing elimination method 8−1773
LED analogue video signal transmission, LED linearisation by predistortion 8−37993
LF signal optical processing procedure 8−9343
linear dichroism measurement, fictitious signal elimination via polarisation scrambling 8−4683
linear feedback AGC with input-level-invariant response times for sonar signal processing 8−30130

signal processing continued
magnetophonon oscillation separation techniques, advanced methods 8−2499
marine profiling images, recording, signal amplitude preservation 8−36326
medical US imaging technology status 8−24174
meteorological satellite NOAA digital signals *(Japanese)* 8−24424
microoptic signal processing research, review 8−38073
microphone signals, cross-spectral density for acoustic intensity meas. 8−9514
multimicrophone technique for room reverberation removal from speech signals 8−9501
multivariate and conventional ECG analysis programs compared 8−7492
NMR image recovery under nonuniform magnetic fields 8−40282
optical fibre data bus systems, for electrical control TDM signals *(German)* 8−25968
optical fibre testing using digital processing oscilloscope 8−22188
optimum resolution of signals with varying freq. 8−13862
passive sonar system adaptive processor 8−5622
phase-matched filters appl. to Rayleigh waves from seismic sources 8−45010
photometer-bichromator, elec. ratio system with phase separation of signals 8−270
photomultiplier, digital signals processing via SAW spectrum analyser 8−26007
photon pulse delay estimation, nonregularity 8−29157
probe current modulation, electron distrib. determ., finite amplitude distortion, instrumental function 8−47168
radar symposium, London (Oct. 1977) 8−24395
radioastronomy, phaseless aperture synthesis technique 8−32353
radioastronomy receiver for LF planetary radio emission meas., Voyager spacecraft mission 8−4075
radiosources, two-dimensional max. entropy reconstruction of radio brightness 8−28534
remote sensors, signal correction optimisation considering internal noises *(Russian)* 8−16191
repetitive signal, signal processing via surface acoustic wave recirculation loops 8−22228
SAW space-charge coupled signal processor with storage 8−9507
seismic deconvolution and wavelet estimation 8−20542
seismic P-waves, effects of crust spectrum characts. on station calibration *(Russian)* 8−49158
seismic signals, optimal multichannel filtering evaluation taking account of amplitude and phase jitter *(Russian)* 8−40697
seismic surface wave dispersion, digital processing *(Chinese)* 8−24374
seismograms and images, automatic transform. to seismic sections *(Russian)* 8−49155
seismology, comparative evaluation of methods for multiple waves suppression *(Russian)* 8−40515
seismology, estimate of number of signals forming wave field *(Russian)* 8−49157
sensitivity of optical metrology using time modulation, electronically generated limitation 8−16828
signal parameter trend anal. 8−15920
sonar transducer arrays, image prod., signal processing methods comparison 8−18122
thermal images, data processing and optimal projection to human eye 8−38038
underwater sound, ambient sea noise directionality meas. and processing techniques 8−16025
vibration and pressure transducer design for nuclear reactor environment 8−823
vibroseis deconvolution 8−16171
vibroseis signal similarity, computerized anal. 8−20543
visual evoked potentials, transient, real-time filtering 8−31940
visual system spatial and temporal information separation model 8−40167

signal processing, computerised *see computerised signal processing*

signal sources
see also signal generators
sinusoidal signal source with variable phase shift, teaching apparatus 8−36782
GaAs homojunction LED signal source for fibre-optic communication 8−1413

signal transformers *see pulse transformers*

silica minerals *see minerals*

silicate glasses *see glass*

silicate minerals *see minerals*

silicon
see also nuclei with ......
A-centres, photoionisation cross section 8−39063
acceptor spectra, interpretation 8−43332
adsorption of Au+Ag, dispersed struct. formation 8−22952
adsorption of Cs on (111) surface, LEED, work function and thermal desorpt. 8−14590
adsorption of HBr(Cl), AES, electron energy loss spectra and electron impact desorption exam. 8−43243
adsorption of O_2, UPS, new adsorption state 8−34702
adsorption of O on (111), and stimulated oxidation by electron bombardment, AES 8−14599
AES, $L_{2,3}$ VV, local probe of atomic charge 8−48261
alignment chips for optical fibre cable connector 8−1411
alpha-particle, multiple scatt., ang. distrib. meas. 8−29720
amorphisation by bombardment with O ions 8−10098
amorphisation by ion implantation, energy depend. 8−2175
amorphous, anomalous magnetoresist., hopping model 8−23117
amorphous, diamagnetism temp. depend. 8−47940
amorphous, discharge produced, optical and photocond. props. 8−39147
amorphous, doped, electronic props. 8−19030
amorphous, doping effect and nature of localised states 8−14696
amorphous, elastic moduli, random network model, calc. 8−6119
amorphous, electronic and optic props. 8−39013
amorphous, hydrogenated photolum., heating effects 8−15204
amorphous, MIS diode I-V characts. 8−43485
amorphous, phonon interaction in luminescence 8−43927
amorphous, presence of acceptor states around Fermi level 8−2445
amorphous, reduced intensity functions, thermal vibr. coupling 8−42910

silicon continued
amorphous, structural disorder rel. to electronic props. 8−34756
amorphous electron and hole drift mobility, meas. 8−19027
amorphous film, annealing behaviour of void network 8−18551
amorphous film, IR and Raman spectra of Si-H bonds 8−19482
amorphous hydrogenated Si use as solar cell material 8−2565
amorphous layer crystn., effect of ^{16}O, ^{12}C, ^{14}N and inert gases 8−14623
amorphous layer reordering, implanted with ^{31}P, ^{75}As, ^{11}B 8−14622
atomic displacements damped by chemical bonds, computer calc. 8−47370
Auger emission from (100) surface, ang. depend., overlayer effects 8−39637
Auger recombination 8−26883
Auger transitions, L$_{2,3}$VV, struct. meas., rel to soft X-ray spectra 8−2953
band structure, appl. of nondiagonally screened model potential 8−14651
band structure under high stress, nonperturbative calc. 8−10344
biexcitons, photoluminesc. spectrum exam. 8−47705
brightening and darkening wave generation by Nd:glass laser 8−18023
bulk modulus from local Heine-Abarenkov model potential 8−42949
carrier distribution function 8−26856
CdS:N, Mn, ion implanted, anomalous enhancement of EPR signal of Mn^{2+} 8−27080
n-channel MOSFET, Si inversion layer, negative differential resistance 8−30996
channeled ion implantation, of B and P ions 8−22739
channelled α-particles, 160 MeV, stopping power, expt. 8−26613
channelled protons, theory of energy loss 8−38765
channelling of electrons and protons, correspondence between classical and quantal descriptions 8−18682
channelling surface peak rel. to thin film anal. 8−43966
characterisation techniques and trends 8−11487
charge density, struct. props. electron-electron interactions 8−47725
chemical staining due to suboxide form. 8−35540
chemisorption of Cl$_2$, photoemission polarisation effects with synchrotron radiation 8−14580
chemisorption of H, new type of chemisorptive bond, theory 8−26930
chromosphere, Si II and Si III lines spectral synthesis 8−36543
coating on glass ceramic, surface prop. 8−11367
compressed, polycrystalline, deform. and recrystallisation texture 8−27538
condensation of Au on (111), AES obs. of very first stages 8−14633
creep and dislocation structure under tension *(Russian)* 8−19839
creep and self-diffusion activation energies 8−38772
crystal film growth by condensation of mol. beams, transfer of impurity 8−10299
crystal growth, float zone, low ohmic seeds and dislocations 8−27398
crystal growth mechanism during chemical reactions in Si-H-Cl system 8−2392
crystal production and perfection for photodetectors 8−11107
crystal structure images of diamond structure, electron microscope obs. 8−14256
crystallised layers by laser annealing, ⟨100⟩ and ⟨111⟩ self-implanted samples, struct. 8−47644
crystallographic electron distribution re-evaluation 8−38657
curved crystals, neutron diffr., comparison with theory, for Laue geometry 8−14248
CVD, using CO$_2$ laser for substrate heating 8−39698
CVD film electrical props. 8−6466
CVD growth, high- and low-temp. models 8−6244
CVD layers, change of etch rate associated with amorphous to crystalline transition 8−7064
CVD on liq. Sn layers in HCl presence, enhanced crystallinity 8−6853
CVD polycrystalline layer, on oxide-covered single cryst. Si substrate, deform. 8−26778
Czochralski and web crystals, transition metal doped for solar cells 8−35297
Czochralski grown wafer, precip. during high temp. oxidation 8−11381
Czochralski growth, large crystal, convection and segregation 8−6843
Czochralski wafer intrinsic gettering by oxide precipitate induced dislocations 8−6092
Czochralski wafer oxide precipitate-dislocation complex characterisation 8−14357
dangling-bond surface states 8−43452
dechannelling by twins, ^{4}He backscatt. spectra 8−18691
deep centres, wave functions and optical cross sections 8−34801
deep diffusion of B at solid solubility limits 8−10070
deep level determ. using deep depletion MOSFET test structure 8−10571
defect production by GeV muons, thermally stimulated current technique 8−5099
deformed, faulted dipole, TEM obs. 8−38712
deposition diffusion from B$_2$H$_6$, AES analysis 8−6085
desorption kinetics of two-dimens. phases on single cryst. substrate, Au and Ag on (111) surface 8−14598
destruction mechanisms by intense IR laser radiation *(Russian)* 8−39633
determination in metals, by deuteron irrad., nucl. microprobe anal. 8−7285
deuteron, multiple scatt., ang. distrib. meas. 8−29720
device starting material, crystal defects, high voltage TEM obs. 8−10037
diamagnetic and dielectric susceptibility, temp. depend. 8−10646
diffusion in Ni, ion radiation effect on redistrib. 8−34551
diffusion of Al, open-tube high-vacuum method 8−6084
diffusion of As from doped oxide film, stress effect on film roughening 8−2389
diffusion of As from doped polycryst., conc. depend. 8−34656
diffusion of B and P, influence of dislocations 8−18840
digital Sun sensor electrical and optical props. *(Japanese)* 8−32313
diode, Auger recombination coefficient at very high injection rates 8−47863
diode, thermometric characts., 15 to 300K 8−8403
diodes, temp. and mag. field depends., appl. as thermometers 8−45623
dislocation density, effect on C-V characts. of MOS struct. *(Russian)* 8−6447
dislocation formation, under high stress, low temp. 8−47386
dislocation free, O$_2$ precipitation, stacking fault form. 8−38731
dislocation loops motion, nonconservative model anal. 8−18647

silicon continued
dislocation luminescence obs. 8−15217
dislocation multiplication *(German)* 8−38721
dislocation-free crystal O precipitation obs. 8−6095
dislocation-free Czochralski-grown, detection of microamounts of O *(German)* 8−26592
dislocation-free single crystals, growth microdefects, etching and X-ray expts. 8−47385
dislocations, dynamic behaviour *(Japanese)* 8−38722
disorder distribution extraction, semiempirical method of applying dechannelling correction 8−22781
doped polarisability of donors 8−14693
doping, complex, effects on limiting electron conc. 8−22740
doping using SiO$_2$ diffusion sources solar cell fabrication 8−2148
double-sided free polishing 8−11380
drop shape on Czochralski grown cryst. surface, dislocation struct. 8−2030
dry pressure-oxidation for low-temp. IC processing 8−7068
ductile-brittle transform. hypothesis and temp. depend. of charge bond *(Russian)* 8−35484
dynamic nuclear polarisation and mag. relax. of ^{29}Si in optically pumped samples 8−48081
edge etch process for minimum geometry windows on poly Si surface 8−31550
edge-defined film-fed growth of controlled shape crysts. 8−31327
EHT calcs. of energy bands and pressure dependences *(Japanese)* 8−34747
electrical props. affected by heat treatment *(Russian)* 8−11352
electron beam induced current technique appl. to semicond. device characts., review 8−21302
electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8−34542
electron diffraction, ang. distrib. of electrons, beyond single cryst. 8−1962
electron diffraction axial channelling Kossel patterns, Bloch wave model, obs. 8−42869
electron energy losses, anisotropy of excitation probability 8−15265
electron scattering by atomic planes in single crysts., and band struct., with intrinsic values of transverse energy *(Russian)* 8−39639
electron scattering energy distrib., channelling effect *(Russian)* 8−2183
electron states associated with core region of 60° dislocation 8−39057
electron transport and ionisation at high fields 8−30933
electron-hole drop luminescence, hysteresis effect and surface energy 8−2907
electron-hole droplets, large uniaxial stress 8−47703
electron-hole drops, Auger recomb. 8−39600
electron-hole drops, far IR absorpt. spectrum 8−47706
electron-hole drops, nucleation, time resolved luminesc. spectroscopy 8−6280
electron-hole liquid, spatial condensation of strain-confined excitons and excitonic mols. 8−39592
electron-hole liquid and exciton and biexciton gas in elastically deformed cryst. *(Russian)* 8−34782
electron-irradiated, positron annihilation 8−48256
electron-phonon interaction, internal strain and impurity elec. field effect 8−14418
electronic and optic props. 8−39013
electroreflection exam., short range order in surface layers 8−6703
energy bands and wavefunctions, localised orbital description 8−18942
energy spikes due to heavy ion bombardment, semiempirical model 8−47453
epitaxial detector fabrication, crystal growth and preferential etching 8−37505
epitaxial film concentrated inhomogeneity detection by selective etching *(Russian)* 8−10298
epitaxial growth, mechanism, impurities incorporation kinetics *(French)* 8−22749
epitaxial growth on ion-implanted Si:As 8−6243
epitaxial layer, CVD, stacking fault nucleation and growth 8−10064
epitaxial layer, large-area uniform growth through Al film by solid epitaxy 8−3033
epitaxial layer grown by saturated Sn melt undercooling, morphology 8−22969
epitaxial layer substrate junctions, carrier lifetime and abnormal conduction phenomena *(Korean)* 8−47888
epitaxial layers, doping with P cpds., process parameters effect on electrophys. characts. 8−38734
epitaxial layers, homogeneous, production, appl. of neutron transmutation 8−38737
epitaxial layers, solid phase grown, structural obs. 8−2397
epitaxy by solid phase crystn. of amorphous film 8−19663
epitaxy in high vac., stacking fault nucleation, crit. temp., for SiC growth 8−14620
epitaxy lateral autodoping kinetics 8−6087
EPR of radiation defects, temp. depend. 8−15023
EPR study of annealing characts. for irrad. Si 8−10771
exciton luminescence in mag. field or under uniaxial stress 8−27322
exciton mol. by phonon-assisted two-photon absorpt., theory 8−48197
exciton-dopant bound states, Auger lifetimes 8−18970
excitons, far IR absorption 8−31201
excitons bound to acceptors, Auger transition rates 8−34778
f-type, degenerate, Raman effect, interacting elementary excitations 8−43846
fast electron planar channelling in single cryst. 8−2178
field effect characts. rel. to surface inhomogeneity 8−26933
film, amorphous, optical absorption at high press. 8−35216
film, amorphous, oxidised, vacuum deposited, cond. change due to electron irrad. 8−10089
film, on sapphire, etching method 8−7070
film, optical characterisation from guided wave optics 8−48245
film, polycryst., meas. with ellipsometrical methods *(Polish)* 8−21095
film, sputtered amorphous, P and B doped, elec. cond. and thermopower meas. *(French)* 8−47403
film doping during deposition and with diffusion 8−6088
films on Si substrate, stress meas., X-ray topography technique 8−5710
float zone crystal growth, growth parameters for large diameter crysts. 8−31336
forbidden 200 diffr. spots 8−47214
fused, SiC cryst. growth from soln., temp. gradient method in Tb vapour 8−35301

silicon continued
growth, crucible-free, zone melting in combined heating system 8−3031
growth, dislocation-free crystal point defect condensation 8−6026
growth from melt, temp. distrib. calc. in working zone of composite heater 8−3016
growth of Ag on Si(111), cohesive energy and 2-dimens. phase diagram, AES exam. 8−43246
heavily doped, intraband Raman scatt. by free carriers 8−19483
heavily doped layer, electronic characts., electron beam induced current obs. 8−10473
heavily implanted, lattice defects and strains after high temp. annealing 8−10077
HEED, virtual inelastic scattering estimated 8−26390
heteroepitaxial early growth island morphology rel. to deposition conditions 8−6245
high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
high-resistivity, characterisation by Hall meas. 8−10480
hot electron repopulation at 77K, electron-electron scatt. effect 8−10456
hot hole diffusion and white noise, microscopic Monte Carlo model 8−30937
I-V impurity profiling under Schottky barrier 8−19148
implantation induced strains, X-ray interferometry and topography 8−43039
implantation of Pb, channelling and RHEED anals. 8−30657
implantation profile for As, calc. comparison with expt. 8−38748
implanted ^{16}O, lattice location of ^{16}O by α-particle backscatt. method 8−10080
implanted ^{222}Rn TIPAC measurements 8−43732
implanted Bi distrib., planar oscills. effects, low angle He$^+$ backscatt. obs. 8−34534
impurity concentrations, correlation with photolum. spectra 8−23513
impurity determination, by neutron activation analysis 8−11586
impurity diffusion through SiO$_2$ layer, physicochemical processes *(German)* 8−2149
indentation hardness and semiconductor-metal transition 8−35499
indirect gap semiconductor, valley-orbit interaction and effective-mass theory 8−23043
inelastic X-ray scattering cross-sections, energy-integrated separation of components 8−38587
integrational etching composition and method 8−10055
internal photoelectric effect, spectral depend. of quantum efficiency 8−39150
interstitials and lattice vacancies 8−10038
intrinsic, two-phonon assisted free exciton recomb. radiation 8−2922
inversion and accumulation layers, (100), effective mass and collision time of electrons 8−34909
inversion layer, dynamic conductivity of electrons, temp. depend. 8−19115
inversion layer, IR spectrum, 10^{5}G field effect 8−946
inversion layer, photoconductivity meas. 8−10498
inversion layer, two-dimensional magnetoplasmon 8−2440
inversion layer electrons, temp. depend. cyclotron reson. lineshape 8−10568
inversion layer in quantising mag. field, Einstein relation 8−19156
inversion layers, CDW mag. fields and stability 8−10533
inversion layers, discrepancies between absorption and photocond. meas. 8−6451
inversion layers, far IR emission from hot electrons 8−30995
inversion layers, magnetic localisation of electrons 8−43481
inversion layers, stress effects on electronic props. 8−43476
inversion layers on high-index surface of Si, valley-valley splitting 8−39219
ion damage critical gettering doses, elec. characts. 8−10085
ion damage critical gettering microstructures 8−6098
ion implantation, electrical profile of double damage layers using electron microscope 8−2169
ion implantation of B molecular ions 8−47405
ion implanted electrodes in HF electrolyte, characterization by electrolytic reverse current 8−6078
ion implanted Kr migration during anneal 8−18834
ion irradiated, B ions, long-range damage to crystallinity, X-ray diffr. meas. 8−2171
ion irradiated by 50 keV N$^+$ and P$^+$, depth distrib. of struct. defects, secondary emission obs. 8−2168
ion-implanted, thermally oxidised, Rutherford backscatt. analysis 8−19910
ion-implanted layers, total X-ray reflection investig. of clustering 8−6081
ion-implanted semiconductor, annealing, crystallisation, laser pulse energy depend. 8−34528
ions, dielectronic recomb. and ionization equilib., autoionization and excitation influence 8−1077
IR detector, free carrier absorpt. 8−37060
junction FET, annealing of neutron induced defects, transductance meas. 8−43052
large single crystal production, using directional solidification tech. 8−35298
laser pulse induced amorphous to cryst. transition, thickness depend. 8−47678
laser residual lattice absorpt., freq. and temp. depend 8−25910
laser window material, surface and bulk absorpt., photoacoustic meas. 8−25912
laser-pulse-control, self-diffr. effects 8−18022
lateral diffusion of B, influence on submicron MOST fabrication 8−26588
lattice energy, pseudopotential calc. 8−23002
lattice energy, strong orthogonality, requirement in calcs. dealing with crysts. by geminal method 8−14307
lattice thermal conductivity, 2-1400K, phonon scatt. calcs. 8−2311
layers, solid phase epitaxial growth, crystalline qualities, ^{4}He backscatt. and TEM exam. 8−10306
layers, solid phase epitaxial growth temp. depend. 8−10305
LEED patterns, intensity dynamics 8−10267
light scattering due to microdefects 8−27248
liquid inclusion migration in temp. gradient field 8−18842
longitudinal intervalley EMF due to inhomogeneities 8−19045
low resistivity, field emission, role of surface electron states 8−2993
LPE from Sn melt, kinetics 8−19675

silicon continued
LPE from Sn melt by dipping 8−6871
luminescence induced by MeV region O$^+$ implantation 8−6788
lunar basalts and regolith, anal. of var. in Al, Mg and Si abundances 8−16320
many-valley cubic semiconductor, elec. conductivity tensor, warm electron range 8−39123
mass-anisotropy exciton splitting determ. 8−6685
material processing, point defect thermodynamics 8−6054
MBE, doping impurity transport, free carriers effect 8−26793
MBE, on n$^+$ Si, with wide range doping control 8−27402
mean excitation energy based alpha particle stopping power meas. 8−30678
mechanical Q meas., low temps. 8−48118
metal-Si contacts, low temp. reactions 8−2567
microdefect distribution due to dislocation injection, selective etching 8−2122
minority carrier lifetime and surface recombination velocity meas. by photocurrent 8−10515
minority carrier lifetime degradation by POCl$_3$ emitter diffusion 8−2496
minority carrier lifetime meas. by contactless technique 8−23102
MOS, capacitors, SEM investigs. using electron beam induced current technique 8−23177
MOSFET, far IR emission on high index surfaces 8−48232
multilayer structure dopant distrib. and minority carrier diffusion length, SEM obs. *(Russian)* 8−10543
multiphonon IR absorption in highly transparent semicond. crysts. 8−10885
multiple band excitons, binding-energy calc. 8−34775
multiple bound excitons, uniaxial stress effects and excited states 8−6281
muonium, deep and shallow levels, electronic struct. 8−39051
n$^+$-p junction, surface peripheral leakage currents 8−26939
n-type, 300 keV proton irrad., temp. depend. of defect prod. 8−6113
n-type, (100) inversion layers on sapphire, surface quantum oscills. 8−19158
n-type, Hall effect appl. in coaxial power meter 8−238
n-type, high-field domain appearance in pinch channel 8−26900
n-type, many-valley semicond., current-voltage characts., with multivalued depend. of current on elec. field 8−26876
n-type, mobility and resist. as functions of dopant density and temperature 8−2487
n-type, neutron irradiated, characts. of changes in mobility 8−39135
n-type, phenomenological energy relaxation time, temp. depend. 8−43409
n-type, surface (100), oxidation-induced stacking faults, O$_2$ partial press. depend. 8−39922
n-type, surface conductivity anisotropy in accumulation layers 8−10536
n-type layer impurity distrib., γ-ray and neutron irradiated, transverse magnetoresist. and Hall effect meas. 8−19058
natural, neutron total cross section minima 8−37387
negative electron diffusivity in high fields 8−30935
neutron damage, displacement and ionis. fractions of fast neutron kerma 8−30669
neutron irradiated, characts. of defect form. 8−14382
neutron irradiated, displacement damage for monoenergetic neutrons 8−30670
neutron irradiated, heavily disordered, electronic excitation bands 8−2448
neutron irradiated, resistivity and minority carrier lifetime, radial inhomogeneity *(Russian)* 8−26881
nitridation, effect of Fe alloy additions 8−48650
nonequilibrium carrier density relax., lifetime determ. using light absorption 8−15170
nonequilibrium carriers generated by Nd laser, relax. rate temp. depend. 8−26911
nonradiative deexcitation in O$_2$ atmos., using differential meas. of excited state lifetime 8−2920
optical fibre ribbon-splicing injection-moulded connector with Si chip insert 8−1412
optical properties of Si polymorphs, orthogonalized LCAO calc. 8−10345
oxidation, clean SiO$_2$ film prep., use of poly-Si oxidation tubes 8−39924
oxidation, film defect equilibria and growth reactions 8−11377
oxidation, high-pressure pyrogenic, in the production environment 8−35547
oxidation, oxidation-induced lattice defects, review *(Japanese)* 8−39931
oxidation, oxide growth kinetics for SiO$_2$ films in low O$_2$ partial press. *(Japanese)* 8−27665
oxidation, ZZ 8−14600
oxidation comparison with O$_2$ adsorption, SIMS 8−15273
oxidation expanded defects, effect on MOS parameters 8−19152
oxidation in flow conditions at 1000 to 6000K 8−11445
oxidation in UHV, growth and thermal evaporation kinetics of oxide film 8−3246
oxidation rate constants and role of H$_2$O 8−7072
oxidation without stacking fault form. 8−7062
oxidations, Cl incorporation in O$_2$-HCl ambients 8−11378
oxidative vaporisation, thermochemical analysis 8−11447
oxide growth in HCl-O$_2$ mixture, ellipsometric meas. 8−7073
oxide layer form., crystallisation, structural props. rel. to annealing 8−34724
oxidised surface, irregular growths of B(OH)$_3$ 8−39926
p$^+$-n contaminated junction, precip.-induced and generation-recomb. currents 8−2555
p$^+$-n diode under forward bias, effects of radiation-induced deep levels on admittance 8−23157
p-i-n photodiode with internal reflection 8−37059
p-n junction, dielectric props., freq. depend. of capacitance and conductance 8−43469
p-n junction, microplasma instability, effect of space-charge field of mobile carriers 8−19140
p-n junction, passivation by slightly conductive chalcogenide film 8−2556
p-n junction, thermally associated field emission near precipitates 8−14801
p-n junction, through oxide As implantation, Ar implantation gettering 8−14802

silicon continued
p-n junction, with hot carriers, amplification 8−39203
p-n junction depth, electron probe determ. *(German)* 8−2552
p-n junction in surface region obtained by evaporation in UHV 8−39198
p-n junction sensor for high intensity solar flux mapping 8−40720
p-type, $^{49}BF_2$ ionised mols. obtained by implantation of 8−31003
p-type, achievement of negative electron affinity 8−2980
p-type, doping Ti diffusion 8−18670
p-type, inversion layer, screening effect and quantum transport in strong mag. fields 8−19155
p-type, inversion layers, intersubband spectroscopy by photocond. and absorpt. 8−10566
p-type inversion layers, hot carrier effects in high mag. field, 1.25-20K 8−34908
p-type single crystal whisker for thermoanemometers 8−3975
particle reinforced Al, internal stresses, X-ray diffr. meas. *(Russian)* 8−23765
Pendellosung fringes, meas. of real part of anomalous scatt. 8−26381
phonon assisted Auger recomb. in indirect gap semiconductors 8−39126
phonon induced intervalley transitions, violation of selection rules 8−30875
phonon viscosity tensor 8−34570
photoconductivity, extrinsic, contrib. by hopping through excited states of donors 8−6411
photoconductivity, two-step, by dislocations 8−14761
photodetector optimisation for radiation environments 8−29158
photodiode, shallow junction n^+-p, spectral response limitation mechanisms 8−37058
photodiodes, linear arrays, use for high-energy electrons detection, SEM assessment 8−32951
photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
photofield emission cathodes, single-tip and multitip, fabrication and emission characts. 8−2976
photoionisation of Group III acceptors, model 8−35174
photon drag detection 8−43440
photovoltaic detector, radiometric meas. description 8−29140
piezoresistance, energy and momentum relax. of charge carriers 8−47786
pionic atom, 2p level shifts and widths 8−46469
planar structures, Haynes-Shockley expt. for students 8−28888
planar technology, insulating thin film preparation and props. 8−10589
plasma etching using microwave discharge 8−11361
plastic deformation, dislocation density in yield point area *(German)* 8−38720
polished plate, internal friction *(Russian)* 8−15441
polycrystalline film, on Si, disloc. config. under periodic stress field 8−10312
polycrystalline p-n junction deposition 8−10549
positron mobility, drift vel. meas. 8−6808
postimplantation damage profiles, backscatt. meas. 8−47402
prismatic dislocation loops, (g.b)s product sign determ. *(Russian)* 8−38705
process stress analysis by IR photoelastic meas. 8−11488
production, low-cost low-energy processes 8−11126
production by reduction of SiO_2 with C black in plasma reactor, feasibility 8−27426
proton, energetic, range distribs., Monte Carlo computer simulation 8−22777
proton damage, depth profile anal. by channelling 8−43054
proton feeding-in and blocking, 1 MeV, simple diffusion model 8−22782
proton irradiation damage 8−34556
proton multiple scatt., ang. distrib. meas. 8−29720
pseudo-Kikuchi patterns in refl. expts. during scanning of single cryst. by intermediate energy electrons 8−1964
pseudodiffusion of Ni in single crystal Si during RF sputtering 8−2396
purification and transport, using SiF_2 8−35316
quadratic piezoresistance, ang. depend. *(Russian)* 8−47782
radiation energy loss of impurity atoms in hot plasma 8−18441
Raman spectrum, two-dimens. tensile stress effects 8−48173
resonant interaction of optical phonons with acceptor continuum states 8−35178
ribbon crystal growth, capillary action shaping tech., lifetime charact. 8−34847
ribbon growth, high-meniscus, thermal balancing via distributed inert gas streams 8−31329
ribbon to ribbon growth, using laser scanning tech., solar cell appl. 8−35299
ribbon-to-ribbon growth method and sample characterisation 8−11103
ribbons produced through capillary action shaping elec. and struct. characts. 8−47804
Schottky barrier diodes, temp. anomalies 8−14823
Schottky barrier solar cell, V-I characts. and efficiency 8−14828
screened donor impurities, binding energy calc., anisotropic mass effect 8−10399
secondary electron energy spectra due to He^+, Ar^+ ion impact 8−11049
SEM, contrast of electron channelling patterns, estimation from low index refl. 8−9921
semiconductor detector material, purification, cryst. growth, ion implantation 8−47674
shadow mask etching for ion implantation 8−6086
shallow impurities, photolum. anal. 8−23512
single crystal growth advances 8−6842
single crystal growth by heat-exchanger casting 8−11104
single crystal ribbon growth, thermal anal. 8−3029
solar cell, EFG ribbon, diffusion length enhancement under illum. 8−14756
solar cell, elec. characts. of Pd_2Si and PtSi Schottky barriers 8−14825
solar cell, minority carrier excess charge and time const. 8−30938
solar cell, minority carrier lifetime *(Korean)* 8−23103
solar cell, thin film prep., in orbiting ultrahigh vac. facility 8−7855
solar cells, low cost Si production, growth from melt 8−3028
solar energy conversion, Si film selective absorber 8−25954
solar grade, Czochralski growth, solar cell efficiency vs. metallic impurity conc. 8−31330
solid phase epitaxy in silicide forming systems 8−23613

silicon continued
solution-melt Ge-Au drops, periodic instability of motion over cryst. surface 8−47260
spin dependent effects, theory 8−23342
spin dependent recombination and photoconductive resonance 8−43439
spreading resistance calibration, effect of specimen preparations 8−10450
spreading resistivity rel. to load applied to meas. probe 8−4647
stacking fault growth, oxidation induced, role of point defects 8−10061
stacking faults, elimination in CCD processing 8−10065
stacking faults, oxid. induced, oxygen content influence in Czochralski wafers 8−10062
stacking faults, oxid. induced, wafer orientation and ion implantation effects 8−10063
strain gauge for cryostatic temp. 8−24782
subnanosecond detector, characts. 8−9027
substrate, stress field, induced by Si_3N_4 film edge, indentation-injected dislocation half-loops obs. 8−30839
substrate for Pb thin film, residual strains 8−18915
substrate surface, low loss electron and Auger images correl. 8−22944
substrates, growth and props. of GaP liquid phase epitaxial lqyers 8−6864
substrates, semicond., stress meas. in deposited thin films, X-ray topography techniques 8−5710
superconducting film, A1-type, critical mag. field 8−31023
surface, (100), accumulation layer, subband struct. and inter-subband absorption in strong mag. field 8−39177
surface, (100), effect of H adsorption on surface struct., LEED meas. 8−14602
surface, (100), temp. depend. of electron intersubband reson. 8−14783
surface, (111), electron energy loss spectroscopy of NO, O_2 and NH_3 8−2374
surface, (111), H chemisorbed, electronic struct. 8−39182
surface, (111), interaction with Ag, AES 8−14589
surface, (111), interpretation of intrinsic surface states 8−6423
surface, (111), UHV cleaved, adsorbed O, electronic transitions 8−39183
surface, (111) 7×7, interaction with H_2S, LEED and AES 8−38966
surface, Auger spectrum, high energy plasmon satellites 8−2955
surface, chem. deposition of Au film, reacts. 8−34723
surface, controlled stripping, automated system 8−31557
surface, electronic struct. rel. to sorption 8−14784
surface, influence of mech. treatment, charact. by ellipsometry 8−15141
surface, $MoSi_2$ form. in Mo films *(French)* 8−43270
surface, N_2^+ bombardment, 500 eV chem. reactions, XPS and UPS 8−48265
surface, plasma etching using CF_4 8−39921
surface, spin-depend. carrier recomb., photocond. expt. 8−19096
surface, wetting by Pb, Sn, Ge in H_2+HCl 8−43210
surface (100), chemisorption of H, pairing model calcs., compared with expt. 8−34719
surface (111), 7×7 and 1×1 chemisorption of Cl_2, UPS obs. 8−34704
surface (111), (e,2e) reactions, theory 8−39640
surface (111), covalent, pot. and charge distribs. and dangling-bond state 8−2537
surface (111), water vap. and O_2 interactions, EELS 8−14571
surface (111), with chemisorbed Al, electronic struct. self-consistent pseudopotential calc. 8−34880
surface emission of hot electrons 8−30998
surface layer defects, influence of multiple oxidation *(Russian)* 8−47650
surface layer structure changes following α-particle irrad., X-ray investig. 8−6114
surface morphology of HCl etched wafer, gas phase comp. effect 8−11360
surface photovoltage, effects of atomic steps on clean cleaved surfaces 8−19120
surface potential, influence of metal impurities, surface photo-EMF obs. 8−19122
surface potential spread rel. to chemical treatment *(Russian)* 8−11363
surface reproducibility and impurity segregation ion neutralisation spectra and UPS obs. for Si (111) 8−34688
surface resistivity, effect of hydrofluoric acid treatment 8−10537
surface structural transitions, LEED obs. of clean (110) surface 8−6203
surface structure, (111), induced by Ag evaporation, RHEED meas. 8−22942
surface structure, (111) 7×7, LEED intensity calc. 8−34683
surface structure changes by laser pulses 8−14548
surface-barrier detectors with Sn electrodes, characts. 8−5097
switch, light-controlled, appl. to high speed Kerr and Pockels cells 8−26925
thermal donor energy levels, Hall effect meas. 8−6335
thermal oxidation, role of H_2O, ellipsometry expts. 8−27656
thermal oxidation at 1200°C, effects of trichloroethylene addition 8−27660
thermal oxidation in O_2-H_2O and O_2-Cl_2 mixtures 8−44239
thermoreflectance near $L_{2,3}$ soft X-ray threshold, temp. depend. 8−35224
thermosprayed, bonding to glass ceramic 8−23848
threshold energy for displacement of atoms 8−47428
time dependent phonon irrad. of detector area from pulsed incoherent phonon radiator 8−38790
transmutation doped, deep trap level analysis 8−10471
TSC, deep centres, majority carrier thermal capture cross section 8−10468
twinned, neutron diffr. topographic obs. 8−38727
ultrafine particles prep. by gas evaporation in Ar 8−34455
valence band relaxation energies during XPS 8−39657
valence charge density calc. 8−34463
vapour species rel. to amorphous film deposition 8−14641
vapour-liquid-solid growth, using Pt and Au liq., forming agents, struct. perfection 8−42936
vapour-liquid-solid growth, using Pt and Au liq. forming agents, kinetics and morphology 8−42935
very perfect crystals, topography and goniometry 8−30516
VPE, pattern shift comparison in vertical horizontal, and cylindrical reactor geometries 8−27408

silicon continued
VPE using SiH_2Cl_2/H_2 as source for epitaxial films on insulators 8−48327
wafer, deformation *(Japanese)* 8−43064
wafer, interaction with Mo film, silicide formation kinetics determ. 8−43261
wafer, suppression of oxidation stacking fault generation by preannealing in N_2 atm. 8−30648
wafer, thermally oxidised, stress and strain meas. *(Russian)* 8−11375
wafer characterisation by photonic injection+microwave meas., appl. to Si *(French)* 8−23106
wafer thermal gradient induced slip, effect of starting cooling temp. 8−10057
wafers, preparation of preselected areas for TEM 8−24887
water impurity conc., from MOS DC transfer characts. 8−2155
weak heating of electrons, cyclotron reson. conditions, quantising mag. field 8−39141
whisker coated C fibres for composites, shear strength improvement 8−3093
whiskers, polytypism and amorphousness 8−26801
wide ribbon crystal growth apparatus 8−48307
X-ray continua emission, proton and ^{14}N bombard. 8−23559
X-ray diffraction characterisation, highly collimated beam 8−9912
X-ray K_α emission spectra, Si, SiC, SiO_2 and Si_3N_4, chemical shifts, linewidths and intensities 8−13461
X-ray linear absorption coeff. 8−26384
X-ray scattering from small defects in very perfect crysts. 8−47395
yield strength calc. 8−43062
Al-SiO_2-Si, charge measurement in MIM and MIS struct., MOS system appl. 8−2572
$Al_xGa_{1-x}As$:Si, charge state of impurity atoms, positron annihilation meas. 8−39062
AlN film, Si doping by DC glow discharge 8−19674
As implantation *(Japanese)* 8−38738
Au-Si internal photoemission struct., spatial distrib. of excited electrons *(French)* 8−23166
B high-temp. diffusion, glass layer formation obs. 8−7069
Cr-SiO_2-Si structure, solid-phase interaction between Cr and SiO_2, X-ray spectral obs. 8−10560
$Ga_{1-x}Al_xAs$:Si p-n junction, reemission effects 8−15230
$Ga_{1-x}Al_xAs$:Si p-n junction, doping in LPE, elec. and luminesc. props. *(Czech)* 8−47851
GaAs:Si, charge state of impurity atoms, positron annihilation meas. 8−39062
GaAs:Si, current-controlled growth, segregation and amphoteric behaviour 8−31346
GaAs:Si, heteroface solar cells, diffusion lengths 8−47849
GaAs:Si, quantitative anal. with ion microanalyser *(Japanese)* 8−7292
GaP:C,Si, LPE, cathodo- and electrolum., residual impurity and struct. defect effects 8−19570
GaP:Si, donor centre struct. and conduction band nonparabolicity 8−14695
Ge-Si, UHV-produced epitaxial structs., electrophys. props. 8−3060
Ge-Si n-n heterojunctions, photovoltaic response 8−14804
In_2O_3-Si highly photosensitive diodes, and their appl. 8−23152
Mo-Si junctions, metallurgical boundary props. and elec. resistivity 8−2568
Mo-SiO_2-Si, thermally stimulated ionic cond. 8−10565
Ni based superalloys 713C and Mar-M200, Si effect on oxidation, hot corrosion and mech. behaviour 8−39950
P doped Czochralski crystal donor homogenisation by thermal neutron irradiation 8−6108
Pd-Si Schottky barrier chemical sensor, for H_2 detect. 8−44646
Si, amorphous, hydrogenated bonding 8−19636
n-Si, bulk, high field characts. *(Japanese)* 8−34837
Si, cooling rates of large diameter crysts. 8−35291
Si, drift mobility and Hall coeff. factor of holes 8−43379
Si, failure in strong melt grown single crysts. 8−3205
Si, floatzone, P doping by thermal-neutron irradiation 8−22750
Si, gamma-irradiated, number of Frenkel defects 8−14377
Si, highly excited, theory of electron-hole plasma 8−10363
Si II solar lines 1808-1817 Å, observed and theoretical profiles 8−49412
Si III, IV, Stark line broadening in pulsed arc, plasma diagnostics 8−944
Si IV, 1122 and 1128 Å lines in solar spectrum 8−4170
Si, planarized solid state epitaxy for Schottky barrier diodes 8−35302
Si, surface layer, thin, density meas. by total external X-ray reflection 8−14635
Si, transmutation doped, stabilisation 8−10449
Si type semiconductor, interimpurity zero-phonon radiative transitions 8−15222
Si V, VI, beam-foil meas. of lifetimes, 500 to 1300 Å 8−9118
Si VI, $2p^43s$, $2p^43p$ and $2p^43d$ configs., UV spectrum anal. 8−21868
Si VI-XIV, line strengths, collision strengths and excitation rates, calcs. 8−5174
Si, VPE, fine struct. formation *(French)* 8−43275
Si, X-ray rot. polarisation, absorpt. crystal orientation effects 8−47206
Si^+, Stark broadening, shock tube meas. 8−17614
Si:^{57}Fe, electric quadrupole coupling at Fe nuclei 8−27137
Si:Ag, photoexcitation of electrons from ionised AG acceptors 8−2519
Si:Ag, surface layer, ellipsometry 8−19121
Si:Al film, low-temp. diffusion of Al 8−38878
Si:Al p-n lamellar structures, processing by molten Al rich wire thermomigration 8−10068
Si:As, 1.5 MeV H^+ and He^+ irradiations of As diffused layers 8−47447
Si:As, high conc. diffusion from double-layer sources 8−10075
Si:As, implanted, residual defects after one- and two-step annealing 8−6083
Si:As, ion implanted, glow discharge optical spectroscopy 8−22755
Si:As, ion implanted, laser scanning apparatus for annealing 8−34526
Si:As, ion implanted, two-step annealing 8−18664
Si:As, neutron damage mechs. in IR detectors 8−30668
Si:As,Sb, amorphous, damage depend. of epitaxial regrowth during annealing 8−47679
Si:As epitaxy, lateral autodoping kinetics 8−39699
Si:As^+, annealing by scanning Ar ion laser, dislocation loop density comparison 8−47438
Si:As(B)(Ga)(In)(P)(Sb), mean square dynamic displacement of atoms, effect of electron-phonon interactions *(Russian)* 8−10145

silicon continued
Si:As(Sb)(Bi)(P), luminescence associated with transitions from bound exciton excited states 8−23534
Si:Au, autoradiographic detection of getter effect, Ar ion implantation 8−38739
Si:Au, deep impurities, book contrib. 8−10403
Si:Au, diffusion, effect of C concentration 8−10076
Si:Au p^+-i-n^+ diode, I-V characts., recomb. centre influence 8−19134
Si:Au(Zn) deep-level impurities, insulating props. 8−39124
Si:B, detection of atomic plane displacement in near-surface layers, ang. depend. of photoemission during X-ray Bragg diffr. 8−47207
Si:B, ESR at zero and small external stress, interpreted in spin Hamiltonians 8−43641
p-Si:B, Fe, 0.45 eV majority carrier trapping level after quenching 8−18990
Si:B, heavily doped, annealing characteristics obs., Ne^+ ions implantation for damage density control *(Japanese)* 8−18666
Si:B, heavily implanted wafers, secondary defect generation suppression by HCl oxidation 8−10069
Si:B, highly-doped polycryst. thin film, growth kinetics and properties 8−44016
Si:B, implantation energy, rel. to dose, Szabo-Bogancs effect 8−38740
Si:B, implanted, oxidation induced precipitate defects, TEM 8−31556
Si:B, implanted, oxidation-induced stacking faults, EBIC and TEM expts. 8−39923
Si:B, implanted, shrinkage of rod shaped defects 8−6061
Si:B, impurity range distrib. determ. by $^{10}B(n,\alpha)^7Li$ reaction 8−11585
Si:B, interstitial Si atom formation by light ion bombardment 8−47406
Si:B, ion implanted, laser annealing 8−34525
Si:B, ion-implanted, dislocation climb, TEM obs. 8−6062
Si:B, lattice location of implanted ions after laser annealing 8−30660
Si:B, polycryst., N_2 heat treated, anomalous resist. change due to Bn form. 8−2591
Si:B, solubility and precip., and supersat. resulting by thermal predeposition 8−11232
p-Si:B, thermoelec. power, 20-300K 8−19067
p-Si:B, total piezoresist. tensor, 20 to 300K 8−19037
Si:B,P, high conc. diffusion without disloc. generation 8−10072
Si:B recombination emission polarisation of bonded multiple-exciton complexes in mag. field *(Russian)* 8−2905
p-Si:B-SiO_2 interface in MOS structures, carrier mobility and impurity distrib. 8−34902
Si:BF_2^+, anomalous migration of F and electrical activity of B 8−34654
Si:B(Al)(Ga)(In)(Tl), high resolution recomb. radiation, investigation, electron excited 8−15233
Si:B(P), dislocated crystals, DC conductivity, Hall effect, energy spectrum 8−10400
Si:B(P), dislocated crystals, microwave cond., localised electron energy spectrum 8−14694
Si:B(P)(As), ion implantation, 20-2800 keV, obs. of X-rays produced 8−14367
Si:B(Sb), deform. coeff. due to impurity diffusion 8−18671
Si:C, disorder profiles by proton backscattering, proton bombardment annealing 8−47449
Si:C, H^+ and He^+ beam impact phemomena, damage annealing rates 8−47450
n-Si:Cs, ion implanted, minority carrier lifetime and defect struct., annealing effect 8−6395
-Si:Fe, effect of γ-irradiation, photocapacitance meas., impurity centre conc. 8−18993
Si:Ga, As, sequential diffusion, radiotracer obs. 8−10073
Si:H, 50-250 keV H^+ irrad. damage distrib., $^4He^+$ channelling obs. 8−26587
Si:H, correlations between elastic energy transferred by implanted H ions and H trapping 8−14370
Si:H, defects in monovacancy Si cluster, semi-empirical calc. 8−43329
Si:H, implanted, annihilation of free excitons, inelastic scatt. by SiH_4 mols., photolum. obs. 8−19561
Si:H amorphous film, H quantitative depth profiling by nuclear reactions and SIMS 8−14373
Si:H amorphous semiconductors, prep. from SiH_4 and characts. 8−48326
Si:In, capture cross section of excitons on neutral In impurities, photoluminesc. decay 8−6760
Si:In extrinsic detectors, compensation of residual B by neutron transmutation 8−281
Si:Ir, precipitation of solid soln., photocapacitance, electrical resistivity meas. 8−47833
Si:K, ion implanted, influence of doping and annealing on carriers 8−38742
Si:Li, amorphous, interstitial doping by in-diffusion and implantation and elec. characterisation 8−26585
Si:Li, EPR in mechanically affected sampler 8−39385
Si:Li, nonrandom strain, EPR of thermally excited donors 8−43629
Si:Li, precipitation centres, elec. cond., Hall effect meas. 8−48417
p-Si:Mn, defect levels, transient capacitance spectroscopy 8−6322
Si:Mn, photosensitivity, residual cond. effects 8−19099
Si:N, interstitial Si atom formation by light ion bombardment 8−47406
Si:N, struct. defects formed by 50 keV N^+ irrad., depth distrib. 8−18688
Si:Ne, amorphous, implanted, cond. change 8−23097
Si:Ni deep impurity levels, electron capture probabilities rel. to temp. 8−2523
Si:Ni p^+n and n^+p diodes, thermally stimulated capacitance obs. of Ni acceptor levels 8−19137
Si:O, C, impurity conc. profiles and process-induced defects 8−6094
Si:O, EPR spectra of heat treatment centres 8−48039
Si:O, high temp. annealing effect on impurities 8−38745
Si:O, IR absorpt. spectra of Si:O complexes 8−19520
Si:O, implanted O location, channelling effect meas. 8−26593
Si:O, impurity solubility and diffusion props. 8−6093
Si:O, interstitial Si atom formation by light ion bombardment 8−47406
Si:P, absorpt. due to creation of bound excitons 8−23025
Si:P, acceptor bound multiexciton complex recomb., shell model, luminesc. line splitting 8−6275
Si:P, and of P diffused layers 8−38736
Si:P, B, α-particle spectrum fabrication by ion implantation 8−33373
Si:P, defects, SEM in EBIC mode vs. HVEM images 8−9923
n-Si:P, doping, by zone melting using solid dopant source 8−43035

silicon continued
Si:P, ESR-induced changes in DC resistance 8−35037
Si:P, effect of annealing on charge carrier conc. on floating zoned crystals 8−47805
Si:P, electrical conductivity oscillation, effect of dislocations 8−6388
Si:P, exciton two-electron luminesc., temp. and impurity-conc. depend. 8−39585
Si:P, expt. evidence against shell model of bound multiexciton complexes 8−10368
n-Si:P, heavily depend., spin-lattice relax. at high temp. 8−39403
n-Si:P, heavily doped, elec. cond. and Hall effect meas., impurity effects 8−19032
Si:P, heavily doped, electronic sp. ht. meas., rel. to metal-nonmetal transition 8−6162
Si:P, heavily doped, IR bound-exciton luminesc. spectra 8−15211
Si:P, heavily doped wafer, anomalous bending obs. 8−10074
Si:P, impact excitation of P at low temps. 8−23098
Si:P, ion implantation doped, positron annihilation meas. 8−14380
Si:P, ion implanted, ionisation enhanced annealing, resist. changes meas. 8−30667
Si:P, ion implanted, sheet resistance variations at elevated temps. 8−43041
Si:P, ion-implanted layers, CESR meas., impurity distrib. inhomogeneity 8−2738
Si:P, many-valley semicond., donor binding energies, variational calc. 8−23041
Si:P, N implantation through Si_3N_4 film, depth distrib. of knock-on N, SIMS meas. 8−10066
Si:P, neutron irradiated, influence of growth defects on change in cond. 8−39117
Si:P, neutron transmutation doped, electron trap annealing, deep level transient spectra 8−14368
Si:P, polycryst., neutron transmutation doped, elec. props. 8−34836
Si:P, RF sputtered polycryst. film, MOS compatibility 8−6455
p-Si:P, random and aligned implants, Rutherford backscatt. and TEM exam. 8−47454
Si:P, sputter-deposited polycryst. films, resist. meas. 8−14842
Si:P bound multiexciton complexes, expt. evidence for shell model 8−39036
Si:P implantation profiles, neutron activation anal. 8−7284
Si:P spherical defect cluster and dislocation loop analysis 8−14356
Si:P^+, ion-implanted, annealing characts., X-ray diffr. exam. 8−14372
Si:P^+, misfit dislocation formation mechanism, effect of implantation temp. 8−38708
Si:P(B), multiple-particle exciton-impurity complex form. *(Russian)* 8−43925
Si:Pb, He^+ Rutherford backscatt. and TEM exam., implant species effect on recrystn. 8−47452
Si:Pt, photoionisation cross-sections, photocurrent and photocapacitance meas. 8−10497
Si:S IR detectors, performance and elec. transport props. 8−45702
Si:Sb, dopant microsegregation rel. to crystal and crucible rotation 8−11106
Si:Sb, epitaxial regrowth of amorphous layers created by high-dose Sb implantation 8−30654
Si:Sb, high dose implanted, orientation dependent annealing effects 8−18665
Si:Sb crystal Czochralski growth, radial microsegregation analysis 8−11105
n-Si/In_2O_3:Sn heterojunction solar cell, fabrication and characts. 8−15314
Si/Si-Ge junction, elec. and photoelec. props. 8−10545
Si/SiC ceramic composite, room temp. props., effect of SiC content and orientation 8−27599
n-Si-Ag(Au) evaporated contact photoelectric props. *(Russian)* 8−43473
Si-$As_2Se_3Ge_4$ heterojunction, elec. props. 8−6434
Si-As(Sb) temp. depend. of irradiation-induced displacement of impurities, backscattering meas. 8−26605
Si-Au boundary, Schottky barrier height, interfacial layer effects 8−14824
Si-Au substrate-film system, relax. effects, internal friction meas., temp. range 20 to 900°C 8−18886
Si-C-O-Ar, high temp. plasma, prod. quenching mol. dynamics simulation 8−39711
Si-CaF_2 film, dielectric constant and selective solar absorption 8−2937
n-Si-electrolyte boundary, selective anodic oxidation 8−15563
Si-GaAs heterojunction photothyristor, spectral characts. 8−10546
Si-In(Rh)(Au) Schottky diodes, X-ray irradiated, radiation-accelerated diffusion of impurities in Si 8−26952
p-Si-metal Schottky contact surface state spectra and current transport mechanism *(Russian)* 8−43472
Si-MgO film, dielectric constant and selective solar absorption 8−2937
Si-Ni Schottky barriers, thermionic field emission at room temp. 8−6445
n-Si-Ni surface barrier junction, rectifying, struct. and elec. characts., effect of low temp. annealing 8−14821
Si-Ni surface barrier struct., surface electronic states, annealing effects *(Russian)* 8−6441
Si-O system, modern view 8−10045
n-Si-Se, ion implantation studied by deep level transient spectroscopy 8−10392
Si-Si_3N_4-Al, electrical strength, effect of struct. defects in Si_3N_4 *(Russian)* 8−26955
Si-Si_3N_4(SiO_2) boundary, electrophysical properties, effect of ionic processes in dielectric layers *(Russian)* 8−10562
Si-SiO_2, effects of processing on radiation damage 8−39223
Si-SiO_2, hot electron emission into SiO_2 8−30997
Si-SiO_2, influence of oxidation conditions on elec. props. of ultrathin SiO_2 layers 8−39226
Si-SiO_2, interface, distinction between donor and acceptor character of surface states 8−39216
Si-SiO_2, interface groups of states, C-V meas. 8−2541
Si-SiO_2, surface states, oxide charge centres, annealing effects 8−2570
Si-SiO_2 barrier height in MOS tunnel struct., SiO_2 thickness depend. 8−14831
Si-SiO_2 bonding layer, EPR exam. 8−15022
Si-SiO_2 interface, anisotropic photoinduced ESR 8−23345
Si-SiO_2 interface, Auger sputter profiling and photoelectron spectroscopy obs. 8−10287
Si-SiO_2 interface, Auger sputter profiling 8−43254

silicon continued
Si-SiO_2 interface, elec. props. and influence on service performance and stability 8−23171
Si-SiO_2 interface, electronic props. of n-Si inversion layers, stress and temp. depend 8−19113
Si-SiO_2 interface, electronic states, review 8−30992
Si-SiO_2 interface, evolution of surface states density during bias temp. treatment 8−14832
Si-SiO_2 interface, new type of interfacial charge 8−23168
Si-SiO_2 interface, props. 8−23170
Si-SiO_2 interface, surface states and elec. defects obs. using ESR 8−23169
Si-SiO_2 interface charge effects and related props. 8−10575
Si-SiO_2 interface charge inhomogeneities effect on surface state density meas. by MOS AC cond. technique 8−14833
Si-SiO_2 interface state density in MNOS structures 8−47873
Si-SiO_2 microsensor, surface conductivity effect of aliphatic alcohol molecule adsorption *(Russian)* 8−34887
Si-SiO_2 structure, oxide charge evaluation, appl. of Kelvin method 8−19157
Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
Si-SiO_2-vacuum system, principal angle and azimuth determ. 8−11009
Si-SnO_2 highly photosensitive diodes, and their appl. 8−23152
Si+Co(Fe) recoil, transient mag. field 8−29838
Si+H_2(O_2)(He)($SiCl_4$), $3p^2(^1D_2)$ state behaviour, at. absorpt. spectra 8−29846
Si^{12+}+He, K X-rays for population in $^3S_1$ metastable state, Si^{12+} from C, Au foils 8−17776
Si^{n+}+S(Ar)(Al)(Cu), K-shell vacancy sharing ratio, foil or gas target 8−42198
SiO_2, reduction by RF induction plasma torch., Si form. 8−11186
SiO_2-Si, cathodoluminesc. and AES rel. to struct. 8−43937
Si(Si^+), static quadrupole polarisability and shielding factor, Hartree-Fock calc. 8−41950
$^{28}Si^{n+}$+Sc(Ti)(Cu)(Ge), K-shell ionisation, projectile charge state depend., theory 8−17786
$^{30}Si(n,\beta)^{31}P$ transmutation doping 8−6107
$^{30}Si(n,\beta)^{31}P$ transmutation doping and electrical characterisation 8−10071
Si^*+He(H_2)(N_2)(O_2)(Cl_2)(CO)(NO)(C_2H_2)(C_2H_4), collisional quenching, reson. line absorpt. expt. 8−46297
$Si(3p^2(^1S_0))$+He($SiCl_4$)(O_2)(N_2O), attenuation of reson. radiation, time-resolved kinetic obs. 8−5329
YIG:Si, EM wave effects on mag. and optical props., lecture 8−27031
YIG:Si, photo-induced low freq. mag. permeab. *(Russian)* 8−39368
YIG:Si^{4+}, X-ray induced change in initial permeability 8−19280
ZnO-Si p-n diode monolithic storage correlator 8−18119

silicon alloys
see also Ge-Si alloys
alkaline earth-Si, M_2Si, occurrence struct. 8−38663
alumel, B versus H measurement from 25 to 180°C 8−23297
metal-silicide coating system, thermal stresses *(Russian)* 8−13891
rare earth iron silicides, $R_2Fe_4Si_9$ and $RFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8−34957
steel, austenitic stainless, bulk and grain boundary diffusion of Fe, Cr, Ni, effect of Si content 8−38875
steel, high speed S6-5-2 Si content effect on solidification *(German)* 8−11213
steel, Si, metallography of bainitic transform., carbide precipitation 8−27527
steel, stainless, deoxidation in melting with Si *(Korean)* 8−19947
steel, ultrahigh strength, Si addition and retain austenite effect on SCC, quenched and tempered 8−48567
ternary silicides, (Cr, Nb or Ta)$_{11}Si_8$, (Mn,Mo)$_{11}Si_8$, cryst. struct. *(French)* 8−38675
Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
Al-Cu-Mn-Zr-Fe-Si (6,0.3,0.18,0.3,0.1 wt.%) experimental evidence of Mn enrichment in Al_2Cu precipitates by EDS in TEM 8−15415
Al-Mg_2Si (0.95 wt.%), excess Si effect on ductility 8−27580
Al-Mg-Cu-Si-Cr (1,2.7,0.6,0.2wt.%), laser shock hardening of weld zones 8−39800
Al-Mg-Si, thermomechanically treated, age-hardening 8−11236
Al-Mg-Si alloy, descriptive method for alloy creep tests by nonstationary loadings 8−23759
Al-Mg-Si rod, extruded and cold drawn, annealing *(German)* 8−39804
Al-Mg-Si-Mn foil, planar defect spacing meas. by TEM 8−2135
Al-Si, acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
Al-Si, dil., Dingle temp. calc. 8−39005
Al-Si, magnetic susceptibility and elect. resistivity, 500 to 1000°C, struct. sensitive props. *(Russian)* 8−15550
Al-Si alloy, dilute, electron irradiation, interstitial dislocation loop obs. 8−18681
Al-Si cast alloy, flank wear of carbide tool during machining *(Japanese)* 8−19900
Al-Si film, ion-implanted, percolation and superconductivity 8−26982
Al-Si-Mg, corrosion inhibition in 0.1 N NaOH soln. 8−19924
Al-Si-Sr phase diagram *(Russian)* 8−15363
α-AlFeSi, crystal struct., anomalous dispersion methods 8−9998
AlMgSi, adhesive jointing, acoustic anal. *(German)* 8−7168
Au-Si, melt, thermodynamic study of phase diagram *(French)* 8−27482
Au_3Si, room temp. dissociation 8−35672
B-Si alloys prep., struct., phys., chem. props., appls., review, book contrib. 8−48388
Ba-Al-Si system, phase diagrams construction by simplex designing method 8−6899
Bi-Si, dil., mag. field depend. electron scatt. rates, de Haas-van Alphen meas. 8−10436
Co-Cr-Mo-Ni-Fe-Si-Mn-C, protective coatings by B diffusion, microstruct. and mech. props. 8−11427
Co-Cr-Si alloy hot corrosion and oxidation expts. for ionic conducting scale 8−11446
Co-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Co-Si, ZZ 8−26809
Co-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513

silicon alloys continued

$Co_2Mn_xFe_{1-x}Si$, hyperfine fields of Fe impurities, Mossbauer effect meas. 8−31130
$Co_{1-x}Ni_xSi$, IR refl. spectra in plasma refl. region 8−27233
CoSi, and TiCoSi, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
CoSi, IR refl. spectra in plasma refl. region 8−27233
Cr_3Si, band theory, semiself-consistent band calcs. 8−2406
Cu-Al-Si-C (95, 2.8, 1.8, 0.4 wt.%) fracture characts. of superplastic single phase, exam. 8−48500
Cu-Si, deformation and fracture under dynamic loading 8−35442
Cu-Si, dil., optical props. and electronic struct. 8−35164
Cu-Si, mech. of formation of martensitic struct. *(Russian)* 8−23702
Cu-Si correl. of periodicities in diffr. patterns and images from grain boundary 8−14362
Cu-Si-, microconductors, cast, struct. and physical props. exam 8−44232
$Cu\text{-}SiO_2$ alloy, fracture at elevated temp. 8−39896
$EuCu_2Si_2$, XPS studies, valence band, 4-f region 8−6831
(Fe, Ni, Co)-Si-B, amorphous, compositional effect on struct. changes, after heating up to 700°C, exam. *(Japanese)* 8−48433
Fe-C-Si, S effect on graphite morphology, formed during annealing *(Japanese)* 8−15434
Fe-C-Si alloy, lattice parameters of cementite after quenching 8−11198
Fe-Cr-Si film heater, lifetimes for 800 to 1000°C temp. range 8−215
Fe-Mn-C-Si alloy, G20 type, vol. effects during $\gamma \rightarrow \varepsilon$ transform., lattice parameters of γ-and ε-phases, Si and Mn effects *(Russian)* 8−6918
Fe-Ni-Si, ordered, low temp. $\alpha \rightarrow \gamma$ transform. *(Russian)* 8−19740
Fe-P-Si alloys, electrothermal-grade, thermoelec. characts. in region 273 to 573K 8−23834
Fe-Si, 180° Bloch wall motion, Barkhausen jumps *(French)* 8−23294
Fe-Si, (3 wt.%), nonuniform elastic deform. in grains *(Russian)* 8−35415
Fe-Si, atomisation of melt, charact. of metal powder 8−19688
Fe-Si, crack propag. kinetics, effect of current pulses 8−31531
Fe-Si, effect of alloying additions on magnetoelastic effects 8−43624
Fe-Si, ferritic, precipitation of AlN *(French)* 8−23711
Fe-Si, influence of stress on rotational loss, lamination appl. 8−35384
Fe-Si, internal friction anisotropy, dynamic magnetostriction *(Russian)* 8−2194
Fe-Si, liquid diffusion of H_2 *(German)* 8−14487
Fe-Si, recrystallization, in situ studies, appl. of X-ray synchrotron topography 8−35610
Fe-Si, steel sheet static mag. props., elastic tensile stress effect 8−47999
Fe-Si, strain hardening and rate-sensitivity, effect of ductile-brittle transition temp. 8−39900
Fe-Si, thin cryst., domain struct. behaviour during magnetisation *(Russian)* 8−2697
Fe-Si (3 wt.%), cold rolled, effect of primary recrystallisation texture, on behaviour of secondary recrystallisation 8−39802
Fe-Si (3 wt.%), deform., effect of superimposed US oscillatory stress *(Japanese)* 8−31461
Fe-Si (3 wt.%), EM losses, effect of bending of 180° domain boundaries *(Russian)* 8−39357
Fe-Si (3 wt.%), grain-oriented, effect of forsterite coatings in domain struct. 8−23293
Fe-Si (3 wt.%), hot rolled sheet steel, ductile-brittle transition temp. *(Chinese)* 8−31498
Fe-Si (3 wt.%), mag. anisotropy induced by rolling in (110) plane *(Russian)* 8−34978
Fe-Si (3 wt.%), recrystallisation along grain boundaries *(Russian)* 8−6942
Fe-Si (3 wt.%), tertiary products from deoxidation, electron emission microscope study *(Russian)* 8−11214
Fe-Si (3 wt.%) cores with insulative coatings, morphological and struct. SEM characteris. 8−23881
Fe-Si (3 wt.%) domain struct., tensile load effects *(Russian)* 8−47995
Fe-Si (3 wt.%) single crysts., rolling-induced mag. anisotropy *(Russian)* 8−19243
Fe-Si (3%), spikn related contrast effect, visibility of 180° ferromag. domain walls 8−43612
Fe-Si (3.12 wt.%), brittle fracture, work hardening effect at notch tip 8−44220
Fe-Si (3.25 wt.%), mag. props., influence of struct. and chemical composition of surface oxide layer 8−2700
Fe-Si (3.5 wt.%), static neutron depolarisation meas. of ferromag. domain struct. 8−14978
Fe-Si (3wt.%), quantitative determ. of grain orientation and textile by etch figure method *(Chinese)* 8−11233
Fe-Si (4 wt.%), neutron crit. scatt., experimental anisotropy 8−38590
Fe-Si (5.8 at.%), mech. behaviour in microplastic strain region *(Russian)* 8−39838
Fe-Si alloys, liq., refractive index, absorpt. coeff., elec. cond. 8−43830
Fe-Si as grown crystal, dislocation study by etching and X-ray topography 8−47377
Fe-Si transformer steel, supplementary domain struct. of misoriented grains *(German)* 8−14979
Fe-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513
Fe-Si-B amorphous alloys, metalloid content effects on Curie temp. and mag. moments 8−14956
Fe-Si-B metallic glass, magnetisation meas. 8−23252
Fe-Si-C, cast, spheroidal graphite, metallography of solidification 8−19737
Fe-Si-C, liquid alloy, activity of Si and C *(Russian)* 8−11203
Fe-Si-Mn (3, 0.004 to 0.1 wt.%), Mn effect on oxidation in $H_2O\text{-}H_2$ atmos. 8−31560
Fe-Si-MnS-Al, Al effect on hot rolling struct., recrystallization, texture magnetic props. *(Chinese)* 8−11237
Fe-Si-N alloy, BCC→FCC transform., martensitic character obs. *(Russian)* 8−48397
Fe-Si-S melt, S evaporation *(Russian)* 8−19716
$(Fe\text{-}Co\text{-}Ni)_{78}Si_8B_{14}$, amorphous, low coercivity and zero magnetostriction 8−23299
$Fe_5Co_{70}Si_{15}B_{10}$, amorphous, change of mag. props. by low temp. annealing 8−27058
$Fe_{29}Ni_{49}P_{14}B_6Si_2$ glass, crystn. kinetics, DSC expts. 8−26444
$\alpha\text{-}Fe_2Si_5\text{-}\varepsilon\text{-}FeSi$ eutectic, orientation relationships 8−31397
Fe_3Si, 3d transition metal substituted, limits of solubility, mag. props. and electron conc. 8−10670

silicon alloys continued

Fe_3Si, ordering energy, electron micrography determ. 8−14353
Fe_xSi_{1-x}, amorphous, high field magnetisation meas. 8−39367
Ge-Si-Sb solid soln., distrib. of components in universal furnace expt. in Soyuz-Apollo programme *(Russian)* 8−31381
$Hf_3Ni_2Si_3$, struct., lattice consts., space group, X-ray Weissenberg camera data 8−47284
Mg-Si, unidirectional solidification, method for determ. of diffusion and thermal diffusion coeffs. in molten Mg 8−30772
MnCoSi, mag. struct. *(French)* 8−39323
MnSi, crit. transverse US attenuation, spin fluctuations 8−48022
MnSi, helically ordered state, ^{55}Mn and ^{28}Si NMR 8−43655
MnSi, itinerant electron system, helical spin structure 8−23234
MnSi, low field mag. studies 8−23255
MnSi, NMR and susceptibility above T_c 8−43665
MnSi, weak itinerant ferromag., mag. excitations, neutron scatt. obs. 8−34969
$Mn_{85.5}Si_{14.5}$, R-phase, cryst. struct. 8−42953
$Mn_5(Si_xGe_{1-x})_3$ solid solution, mag. ordering, magnetisation and neutron scatt. meas. 8−27023
Mo film on Si surface, $MoSi_2$ form. conditions *(French)* 8−43270
$MoSi_2$, effect of Al on oxidation behaviour *(German)* 8−31587
Mo_3Si, Mo_5Si_3 and $MoSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249
Mo_3Si, $MoSi_2$, form., Mo thin film on Si, He^+ backscattering, X-ray diffr. study 8−43261
Nb-Ge-Si, Si effect on raising superconducting transition temp. in pelicular specimens *(Russian)* 8−23188
$Nb_3(AlSi)$ film, thermomodulation spectra, 1.1-2.8 eV 8−48250
Nb_3Si film, supercond., obtained by vaporisation in vacuum, props. 8−14865
Nb_3Si, superconducting, high transition temp., sputtering 8−15309
Nb_4Si, Nb_5Si_3 and $NbSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249
Ni-Al-Si, β-phase stability *(Russian)* 8−39738
Ni-Be bronze, Fe and Si alloying addition effect on phase composition *(Russian)* 8−15360
Ni-Cu-Si, Si effect on structural changes during ageing, TEM and X-ray obs. 8−15438
Ni-Cu-Si (37.6, 6.1 at.%), spinodal decomposition, morphology of microstructure, elastic strain energy anisotropy effect 8−15354
Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Ni-Si, ion beam irradiation induced Ni_3Si surface film segregation 8−38761
Ni-Si, ZZ 8−26809
Ni-Si melt, ultra acoustic study *(Russian)* 8−15613
Ni-Si solid soln., radiation, induced precipitation dose rate effects 8−6936
Ni-Si-B, embrittlement by crystallisation *(Japanese)* 8−48513
$NiSi_2$, layer, on Si, ion implantation damage, channelling obs. 8−30676
Np intermetallics, NpM_2Si_2, (M=Cr, Mn, Fe, Co, Ni, Cu), Mossbauer and magnetization expts. 8−31138
Pd-Cu-Si metallic glass, energy loss spectra and Auger spectra 8−23563
Pd-Si, glassy, phonon transport below 100K 8−14422
Pd-Si, melt, struct. and physical-chemical props., thermodynamic props. *(Russian)* 8−18536
$Pd_{77.6}Cu_6Si_{16.5}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
$Pd_{781}Cu_{55}Si_{164}$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
PdSi alloys, amorphous thermal behaviour and crystallisation kinetics 8−26446
Pd_2Si film, on Si, metallic, resist. and Hall mobility meas. 8−47886
Pd_2Si film on Si, substrate temp. effect on microstruct., TEM obs. 8−14621
Pd_2Si layer, on Si, ion implantation damage, channelling obs. 8−30676
$Pd_2Si\text{-}Si$, Schottky barrier, for solar cell appl., elec. characts. 8−14825
$Pd_{80}Si_{20}$, amorphous, structural changes by neutron irradiation, X-ray scatt. meas. 8−6104
$Pd_{80}Si_{20}$ glass, struct. simulation 8−38624
PtSi-Si, Schottky barrier, for solar cell appl., elec. characts. 8−14825
Re-Al-Si , X-ray determ.of system *(Russian)* 8−19763
Re-Al-Si system, phase equilibria, $ReAl_{1.2}Si_{0.8}$, $ReAl_{1.25}Si_{0.75}$ prod., struct. 8−35357
Rh-Si, melts, surface props. *(Russian)* 8−26750
Sc-Fe-Si system, phase obs. at 800°C *(Russian)* 8−23661
Si-Mn(Fe)(Co)(Ni), liquid alloys, thermodynamic charact. calc. *(Russian)* 8−27475
$Si_{100-x}Au_x$, amorphous, dielec. anomaly, rel. to nonmetal-metal transition 8−2791
Sr-Al-Si system, phase diagrams construction by simplex designing method 8−6899
Ti-Al-Mo-Sn-Si(4,4,2,0.5 wt.%), fracture toughness and crack propag. 8−39892
Ti-Al-Zr-Mo-Si (6,5,0.5,0.25 wt.%), fracture toughness and crack propag. 8−39892
Ti-Si, existence of β to α_m phase transformation 8−44123
$Ti\text{-}TiSi_2$, metal-silicide coating system. thermal stresses *(Russian)* 8−13891
Ti-V-Si, equlibrium silicide, X-ray and electron diffr. obs. 8−27483
TiSi, and TiCoSi, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
$U_2Co_3Si_5$, cryst. struct. 8−47285
VSi_2 thin film growth rel. to annealing environment and interposed layers 8−2395
V_3Si, A15 compound, exam. of deformation processing, review 8−39864
V_3Si, band theory, semiself-consistent band calcs. 8−2406
V_3Si, chemical composition effect on phase transition and transition temp. 8−14860
V_3Si, complex refr. index and reflectivity of thin film, microscopic characts. and superconductivity 8−31267
V_3Si, elec. resist. below 77K, phonon assisted interband scatt. 8−14703
V_3Si, electronic struct., electron-phonon interaction and high temp. superconductivity, APW calc. 8−14871
V_3Si, grain size in A-15 reaction layers 8−14911
V_3Si, H_{c2} anisotropy in high field, grain boundary flux pinning 8−43532

silicon alloys continued
V_3Si, Hall effect, 77K to superconducting transition temp. 8−43359
V_3Si, high T_c supercond., electron-phonon coupling, effect of electronic density of states sharp struct. 8−14877
V_3Si, lattice dynamics, inelastic coherent neutron scatt. 8−26645
V_3Si, low fluence neutron irradiation, behaviour of supercond. transition temp. 8−43509
V_3Si, martensitic transform. coupling with supercond. transition 8−44126
V_3Si, phase transition and transition temp., chemical comp. effects, defect struct. exam. 8−18651
V_3Si, phys. props., appl. of new three-dimens. k.p model for A-15 cpds. 8−23015
V_3Si, press. depend. of positron lifetimes 8−11015
V_3Si, soft mode sound vel. in mag. field rel. to density of states 8−14647
V_3Si, sp. ht. anomaly at struct. transform. 8−14426
ZrSi and $ZrSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249

silicon compounds
see also quartz; silicon alloys; silicones
borsic fibres, fibre, metallisation by continuous casting in Al and Al alloys *(Russian)* 8−35538
chloromethylsilane, polycryst., proton spin-lattice relax. times meas. 8−39430
diatomic molecules, linear, substituted fragment series, electronic struct. transferability, mutual at. influence 8−9066
high-silica fibre-optic waveguide, sensitivity to low-dose radiation *(German)* 8−33869
methylhydropolysiloxanes, equilibration by catalysts *(German)* 8−35722
methylsilylene, closed shell states, isomerisation, config. calcs. 8−35652
mullite, crystallisation from SiO_2-Al_2O_3 melts 8−47243
mullite, quantitative X-ray anal., standardisation, texture *(German)* 8−11176
oxide thickness measurements up to 120 Å on silicon and aluminium using the chemically shifted Auger spectra 8−23586
n-SiC, 6H and 15R polytypes, (0001) plane, influence of uniaxial mechanical stress on resist. anomaly 8−10445
silaethylene, closed shell states, isomerisation, config. calcs. 8−35652
silica, stepwise multilayer adsorpt. of water vapour, 130-150°C 8−14574
silica gel, elec. cond. on surface, effect of impurity adsorption *(German)* 8−30971
silica surface, adsorption of I_2, reson. Raman spectrum 8−42066
silicate rocks, Br determ. by epithermal neutron activation anal. 8−35741
silicate rocks, X-ray spectral fluoresc. anal. 8−3762
silicon oil, separation of elastic and shear thining effects in capillary rheometer 8−42691
silylcarbene, closed shell states, isomerisation, config. calcs. 8−35652
sulphide compounds of Si, Ge and Sn, struct. and chem. bonding *(French)* 8−30580
synthesis by ion implantation of diamond, role of struct. imperfections 8−34529
triatomic molecules, linear, substituted fragment series, electronic struct. transferability, mutual at. influence 8−9066
zeolites, coordination of Al and Si from X-ray spectra 8−11021
zeolites, matrix isolation of homonuclear diatomics, induced IR spectra 8−46333
AgBr-SiO_2, field effect potentiometric sensors 8−35691
Ag_8SiSe_6, absorpt. edge investigs. at phase transitions 8−35149
Al-SiO_2 interface, stress and microstruct. via TEM 8−26797
Al-SiO_2-Si, charge measurement in MIM and MIS struct., MOS system appl. 8−2572
Al-SiO_2-TiO_2 interference mirror coatings, high mech. strength 8−30043
AlN-Si_3N_4 mixture film, CVD, characterisation of film props. 8−43496
Al_2O_3-SiO_2, sillimanite, lattice defects, crystallo-chemical model, TEM obs. *(French)* 8−26570
B-Si system, phase diagram review, book contrib. 8−48388
Be-Si-O-N polytypes, X-ray study 8−27496
CaO-MgO-Al_2O_3-Cr_2O_3-Fe-O_2-SiO_2 system, exptl. determ. of periclase and spinel comps. 8−6906
CaO-SiO_2, molten binary, X-ray exam. of struct. 8−38610
CaO-SiO_2 melt, viscosity and polymerisation *(Russian)* 8−26712
CaO-SiO_2-Fe_2O_3(MgO), melt, CaO dissolution *(Japanese)* 8−6909
CaO-SiO_2-Fe_xO system, liq., steel making slag, Ca and Fe tracer diffusivities, O_2 press. depend. 8−38863
ZCaO.SiO_2-2CaO.Na_2O.P_2O_5 system, polymorphism and solid soln. 8−19731
$(CaO)_3$.SiO_2, adsorption of H_2O, NMR exam. 8−48354
$CdSiP_2$, PAC examination of deuteron irrad. damage, annealing effects 8−47446
$Cl_3SiOSiCl_3$, normal vibs. and force field, calcs. using electron diffr. struct. determ. *(Russian)* 8−46317
Cr-SiO_2-Si structure, solid-phase interaction between Cr and SiO_2, X-ray spectral obs. 8−10560
Fe-Fe_2O_3-SiO_2-Si melt, interacting system, oxidation products *(Russian)* 8−19728
$(Fe_yNi_{1-y})_{1-x}(SiO)_x$, dielec. effect on magnetisation and Faraday rot. *(Russian)* 8−39298
FeO-Fe_2O_3-SiO_2 -Al_2O_3-$CuO_{0.5}$/Cu slag-metal system, distrib. equilib. of Sn, Se, Te 8−44111
FeO-SiO_2 melt, viscosity and polymerisation *(Russian)* 8−26712
$FeSiF_6$.6H_2O, dielec. props., 100-270K, rel. to $NiSiF_6$.6H_2O 8−35088
GaAs-SiO_2 interface local props. *(Russian)* 8−10567
KF-PbO-SiO_2 glass shear wave velocity and its temp. depend. *(Japanese)* 8−30702
K_2O-PbO-PbF_2-SiO_2 glass shear wave velocity and its temp. depend. *(Japanese)* 8−30702
Kr.2SiO_2, props. of vitreous deposits 8−22664
Li_2O-SiO_2, cation interdiffusivity, electrochem. determ., 1100-1350°C 8−47544
Li_2O.2SiO_2, polycrystalline, oriented, fabrication by unidirectional solidification from melt *(Japanese)* 8−31371
MgO-Ga_2O_3-SiO_2 system, subsolidus phase equilib. 8−44106
MgO-Si_3N_4, hot-pressed, electrical props. 8−39136
MgO-SiO_2, molten binary, X-ray exam. of struct. 8−38610
MnO-SiO_2 melt, viscosity and polymerisation *(Russian)* 8−26712

silicon compounds continued
MnO-SiO_2-TiO_2 melt, electrical cond. meas. and electrolytic anal. *(Japanese)* 8−38861
NaF-MgF_2-MgO-SiO_2, phase formation 8−27460
$Na_2Mg_6Si_8O_{22}F_2$, fluoramphibole, fibrous, crystn. from gas phase, mechanism 8−34451
Na_2O-PbO-SiO_2, PbO activity 8−44112
$NiSiF_6$.6H_2O, dielec. loss and relax., 100-270K, reorient. mech. 8−35088
Pb-SiO_2-Au tunnel junction, obs. of conductance anomalies 8−26968
Pb-Zn-SiO melt, mathematical model of thermal C reduction *(Russian)* 8−15663
PbO-B_2O_3-SiO_2, molten mixture, microprobe state anal. by X-ray OK and BK emission band spectra *(Japanese)* 8−19606
PbO-SiO_2-(CaO)(MgO)(BaO)(NiO)(CoO), melt, PbO activity *(Japanese)* 8−6907
PbO-SiO_2-(CaO)(SrO)(BaO)(NiO), melts, density *(Japanese)* 8−6908
Si oils, free convective heat transfer from horizontal cylinder, correlation eqns., viscous dissipation 8−5632
p-Si:B-SiO_2 interface in MOS structures, carrier mobility and impurity distrib. 8−34902
Si/SiC ceramic composite, room temp. props., effect of SiC content and orientation 8−27599
Si-Al-O-N composites, dense direct prep. from naturally occurring SiO_2 and Al powder 8−11187
Si-Al-O-N polytypes, direct lattice resolution using high resolution electron microscopy 8−38682
Si-Al-O-N system, exam. of compounds and properties 8−48387
Si-N film, passivation layer, density comp., and ref. index, Lorentz-Lorenz correl. 8−39697
Si-O_2-N_2 system, Si_2N_2O, corrosion in O_2, sintered in the presence of magnesia *(French)* 8−23837
Si-Si_3N_4-Al, electrical strength, effect of struct. defects in Si_3N_4 *(Russian)* 8−26955
Si-Si_3N_4(SiO_2) boundary, electrophysical properties, effect of ionic processes in dielectric layers *(Russian)* 8−10562
Si-SiO_2, interface, distinction between donor and acceptor character of surface states 8−39216
Si-SiO_2, surface states, oxide charge centres, annealing effects 8−2570
Si-SiO_2 barrier height in MOS tunnel struct., SiO_2 thickness depend. 8−14831
Si-SiO_2 bonding layer, EPR exam. 8−15022
Si-SiO_2 interface, anisotropic photoinduced ESR 8−23345
Si-SiO_2 interface, Auger sputter profiling and photoelectron spectroscopy obs. 8−10287
Si-SiO_2 interface, Auger sputter profiling 8−43254
Si-SiO_2 interface, elec. props. and influence on service performance and stability 8−23171
Si-SiO_2 interface, electronic states, review 8−30992
Si-SiO_2 interface, props. 8−23170
Si-SiO_2 interface charge effects and related props. 8−10575
Si-SiO_2 microsensor, surface conductivity effect of aliphatic alcohol molecule adsorption *(Russian)* 8−34887
Si-SiO_2 structure, oxide charge evaluation, appl. of Kelvin method 8−19157
Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
Si-SiO_2-vacuum system, principal angle and azimuth determ. 8−11009
Si+H_2(O_2)(He)($SiCl_4$), $3p^2(^1D_2)$ state behaviour, at. absorpt. spectra 8−29846
$Si_{(6-z)}Al_zO_zN_{(8-z)}$, sialons, hot-pressed, dielec. props. 8−10822
SiAlON ceramic, pressureless sintering 8−27449
$Si_{6-z}Al_zO_zN_{8-z}$, hot pressed, DC elec. props., 18-500°C, fields up to 1.1×10^4 V cm^{-1} 8−26860
$Si_{(6-z)}Al_zO_zN_{(8-z)}$ 8−39136
SiC, 126R polytype, struct. determ., use of lattice imaging in electron microscope 8−26498
SiC, 2H→6H transform. mechanism, X-ray diffr. theory 8−30575
n-SiC, 6H, epitaxial layer, saturated electron drift velocity meas. 8−19168
α-SiC, 6H, excited states, photoluminesc. efficiency 8−39604
β-SiC, 6H polytype, pure and doped, prep. by pyrolysis of silane cpds. 8−44018
SiC (6H), piezoresist. meas. 8−2090
SiC, abrasive grains, single, wear on steel, exam. *(Japanese)* 8−44230
SiC, amorphous, localised gap states, hopping cond. and chem. bonding 8−23052
SiC and IR excess of C stars 8−16413
SiC, anodised, IR spectra *(Russian)* 8−11376
SiC, α- and β-phases, isomer shift in Mossbauer spectra of implanted ^{129}I 8−15067
SiC coating on C fibre, chemical vapour deposition, relation between surface morphology and coating conditions *(Japanese)* 8−39704
SiC containing material, deform. props. investigation by pure bending 8−19823
SiC, cryst. growth on oriented seeds by sublimation 8−35279
SiC crystal, energy band struct. and optical spectra 8−18962
β-SiC crystals, wetting by Si and growth by vap.-liq.-solid mechanism 8−3005
SiC, cubic, electron-hole liq., luminesc. obs. 8−31239
6H-SiC, dislocation etching 8−22721
SiC, eccentric growth spirals 8−26470
SiC, engng. ceramic, lattice resolution studies 8−27510
SiC, fibre, metallisation by continuous casting in Al and Al alloys *(Russian)* 8−35538
SiC filament, W, TaC and HfC CVD coatings, effect on high temp. mech. props. 8−15347
SiC film synthesis by plasma deposition process 8−11127
SiC, growth from soln. in fused Si, temp. gradient method in Tb vap. 8−35301
SiC, H_2 effects on epitaxial growth rates 8−22968
SiC, H^+, D^+ and He^+ ion implanted, Raman scatt. obs. of localised vibr. modes 8−6689
SiC, impact resistance, instrumented drop weight test 8−11265
SiC, mechanoluminesc., Mn impurities role 8−39612
SiC, N doping inhomogeneities due to growth conditions 8−22741
SiC, negative photoconductivity and photoconductivity quenching 8−6414
SiC, optical second-order nonlinear polarisability 8−25919
β-SiC, oxidation in CO-CO_2 mixture *(German)* 8−23844
SiC, p-n junction, vapour grown elec. breakdown fields 8−19135

silicon compounds continued
SiC, polycrystalline, quantitative phase analysis, statistical estimation and mathematical splines *(Bulgarian)* 8−39753
β-SiC, polytype stability, α→β phase transformation during growth 8−6028
β-SiC powder compact, microstruct. changes and β to α transform., Si vapour influence 8−19738
SiC protective coatings, on graphite for HTR, corrosion *(German)* 8−3248
SiC, pyrolytic particles for high temp. reactor fuel, X-ray and SEM study *(French)* 8−22734
SiC, reaction bonded, microstruct. characterisation 8−48353
SiC, reaction sintered transform. interface morphology 8−31364
SiC, semi-insulating in struct. with injecting contacts, cond. in strong elec. field 8−19160
α-SiC, short-wavelength photocond. and capacitance photo-EMF meas. 8−26906
SiC, SiO_2, Si_3N_4, Si K_α X-ray emission spectra chemical shifts , line-widths and intensities 8−13461
SiC, single cryst. ingots, growth using seeds, 1800-2600°C 8−43993
SiC single crystal, fracture toughness 8−7019
lett-SiC, space group refinement, P3 ml 8−47299
SiC, strength assessment by Young's modulus meas. up to 1400°C *(German)* 8−11253
SiC, struct. of $L_{2,3}$VV-Auger lines, rel. to soft X-ray spectra 8−2953
SiC, struct. of spectrum of excitons bound to neutral B atoms 8−19523
β-SiC, thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
SiC, US comminution of refractory compound powders 8−23656
β-SiC whisker, atom-probe FIM expts. 8−35275
SiC whisker coated C fibres for composites, shear strength improvement 8−3093
SiC:Al, g-values, spin temp., determ. from Raman spectra 8−43856
SiC:Al,N, blue cathodolum. spectra obs. 8−19574
β-SiC:B, diffused structures, current-voltage characts. 8−47865
SiC:N, conversion factor at high doping levels 8−22744
n-SiC:N, O, cathodolum. spectra meas. 8−19573
$SiC+CeO_2$(Pd), high temp. chem. reactions, products obs. by X-ray diffr. 8−17312
$SiCH_3H_3$, core Auger shifts, ab initio LCAO MO SCF calcs. 8−904
$Si(CH_3O)_4$, prep. from metal alkoxide, props. as precursor of oxide glass 8−48700
SiCl, ($A^2\Sigma^+$-$X^2\Pi$) transition, rot. anal., equilib. consts. 8−37648
$SiCl_4$+Na, rainbow scatt. at thermal energy, anisotropic pot. 8−29837
$SiCl_4+Si^*$, collisional quenching, reson. line absorpt. expt. 8−46297
$SiCl_4+Si(3p^2(^1S_0))$, attenuation of reson. radiation, time-resolved kinetic obs. 8−5329
SiCl(g), heat of formation, mass spectrometric determ. 8−15694
$SiCl_2$(g), heat of formation, mass spectrometric determ. 8−15694
$SiCl_3$(g), heat of formation, mass spectrometric determ. 8−15694
SiF_2 transport, for purification of silicon 8−35316
SiF_4,($SiCl_4$), mol. force consts., parametric representation method 8−25503
SiF_4, ^{19}F chem. shielding, depend. on internal coords. 8−5249
SiF_4, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8−9171
SiF_4, cryst. 8−23439
SiF_4, mol. cryst., coupled phonon modes and IR band shapes 8−26641
SiF_4, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
SiF_4+H_2, SiF_xH_{4-x} heats of form., mass spectrometric determ. 8−7221
SiF_3Cl^-, radical anion struct. and ESR spectrum 8−25571
$SiFH_3$, heat of formation, mass spectrometric determ. 8−7221
SiF_2H_2, heat of formation, mass spectrometric determ. 8−7221
SiF_3H, heat of formation, mass spectrometric determ. 8−7221
$Si_{12}Ge_{10}As_{30}Te_{48}$, amorphous, energy controlled switching obs. *(Japanese)* 8−34867
$Si_{12}Ge_{10}As_{30}Te_{48}$, chalcogenide glass film, switching delay time 8−26926
$Si_{12}Ge_{10}As_{30}Te_{48}$ chalcogenide glass threshold switch conductivity in high ohmic state *(Russian)* 8−43502
$Si_{12}Ge_{10}As_{30}Te_{48}$, dark cond. and thermoelec. power, thermal activation energies interpret. 8−23123
$Si_{12}Ge_{10}As_{30}Te_{48}$ glass, thermally stimulated depolarization current meas. *(Japanese)* 8−34875
SiH_2, electron affinity, theoretical exam. 8−29863
SiH_4, core Auger shifts, ab initio LCAO MO SCF calcs. 8−904
SiH_4, IR spectra, ν_2 and ν_4 band anal. 8−9153
SiH_4, low temp. pyrolysis, thin polycrystalline Si films 8−31342
SiH_4, ν_4 fundamental, laser sideband direct freq. reading IR spectra, electro-optical, press. broadening 8−21920
SiH_4, possible microwave interstellar maser lines 8−41020
SiH_4 purification by selective photolysis using UV laser 8−31657
SiH_4, tetrahedral mol., force field calcs. 8−29734
$^{28}SiH_4$, analysis of ν_4 band interacting with ν_2 band *(French)* 8−9152
$SiH_4+SF_6 \rightarrow S_2^*+SiF_4+HF+H_2$, laser augmented reaction, isotopic selectivity retention during detonation 8−48673
Si_2H_6, bond lengths, photoelectron spectrum, mol. orbitals calcs. 8−5132
$SiH_3{}^{81}Br$, high resolution rot. microwave spectrum, 8-40 GHz, mol. consts. 8−21916
SiH_3D, in polycryst. SiH_4, mol. motions and symmetries, IR obs. 8−48163
SiH_2F_2, core Auger shifts, ab initio LCAO MO SCF calcs. 8−904
SiH_3F, core Auger shifts, ab initio LCAO MO SCF calcs. 8−904
SiH_3F, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
SiH_3NH_2, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
$(SiH_3)_2O$, vibr. spectra, coupling of large amplitude vibrs. 8−37619
SiH_3OH, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
$(SiH_3)_2S$, rot. consts., internal rot. parameters, anal. of microwave spectra 8−46316
$(SiH_3)_2S$, UV spectra, assignments 8−46359
SiN_x, film by magnetron sputtering, composition, hardness and optical props. 8−3047
Si_3N_4, amorphous, in MIS struct., high field conductivity 8−23101
Si_3N_4, and Si_3N_4-MgO, hot pressed, DC elec. props., 18-500°C, fields up to 1.1×10^4 V cm^{-1} 8−26860

silicon compounds continued
Si_3N_4, α to β transform., TEM and electron diffr. obs. 8−27507
Si_3N_4 based abrasive material for grinding unhardened steel 8−35529
Si_3N_4 CVD film etching in acidic fluoride media 8−7071
Si_3N_4, CVD films, chemically trapped H reflection spectrometry 8−10081
Si_3N_4 degradation due to high-temp. processing 8−6454
Si_3N_4, effect of Al on oxidation behaviour *(German)* 8−31587
Si_3N_4, encapsulant for annealing of GaAs, photolum. and AES evaluation 8−27657
Si_3N_4, engng. ceramic, lattice resolution studies 8−27510
Si_3N_4, etching characts. by plasma reactive sputter etching 8−27661
Si_3N_4, film, absorption, refr. index, freq. dispersion 8−48248
Si_3N_4 film, CVD, etching in acidic fluoride media 8−39927
Si_3N_4 film, in MNS structures, dark conduction and photoconduction phenomena 8−30989
Si_3N_4 film, props., rel. to deposition conditions, appl. in semicond. devices 8−23612
Si_3N_4, film edge induced stress in Si substrate 8−30839
Si_3N_4, film on Si substrate, stress meas., X-ray topography technique 8−5710
Si_3N_4 first pressed, mixed mode fracture from controlled surface flaws 8−27603
Si_3N_4 form. by nitridation of SiO_2-C mixture 8−44068
Si_3N_4, grain-boundary-crystallized, thermal shock resistance 8−11308
Si_3N_4, hot pressed, rate controlling process in oxidation 8−27659
Si_3N_4, hot-pressed, dielec. props. 8−10822
Si_3N_4, hot-pressed, electrical props. 8−39136
Si_3N_4, hot-pressed, impact resistance, instrumented drop weight test 8−11265
Si_3N_4, intermediates in CVD, mass spectrometric detect. 8−27411
Si_3N_4, kinetic model for RF plasma-activated CVD 8−27416
Si_3N_4 MIM cathode, fluctuation noise 8−2998
Si_3N_4, MgO-fluxed, hot pressed, grain boundary phases 8−27464
Si_3N_4 off-stoichiometric plasma-deposited layer, AES evaluation of comp. 8−26781
Si_3N_4 on Si, optical waveguide, fabrication, propag. consts. 8−33826
Si_3N_4, oxidised, with Y_2O_3 densification aid, temp. and compositional stability of $Y_6Si_6O_{21}$ 8−27664
Si_3N_4 passivation films, advances in deposition processes, review 8−23620
Si_3N_4, phase content determ., using X-ray diffr. anal. 8−44281
Si_3N_4, plasma deposition, optical absorption as control test 8−35314
Si_3N_4 protective coatings on Mo, RF reactive ion plating 8−3250
Si_3N_4, reaction bonded, bending strength meas., influence of loading conditions, proof testing and anal. methods *(German)* 8−31451
Si_3N_4, sintering with Al_2O_3 and Y_2O_3 *(Japanese)* 8−19703
β-Si_3N_4 solid soln., form. from SiO_2-AlN sintering 8−23655
Si_3N_4, thermally grown films for high performance MNS devices 8−48322
Si_3N_4, thin sheets, reaction sintered, exam. of oxidation in damp air 8−48552
Si_3N_4:H, amorphous, ion induced H transfer from N to Si, band passivation, elec. props. 8−47439
Si_3N_4-GaAs structure, photoluminesc. and collective effects 8−6727
Si_3N_4-MgO, hot pressing and α-β phase transform. 8−27461
α-Si_3N_4-MgO (5 wt.%), hot-pressed, mech. strength development 8−44195
Si_3N_4-SiO_2-MgO, phase relations and interrelation with mech. strength, and oxidation 8−48386
Si_3N_4-Y_2O_3-Al_2O_3-SiO_2, X-ray diffr. exam., phase equilib. at 1400 degrees C *(Japanese)* 8−44113
Si_3N_4-ZrO_2, sintered and hot pressed, exam. of mech. props. 8−48509
SiO circumstellar maser 8−16511
SiO, evaporation geometry for film deposition 8−48320
SiO, in circumstellar shells, millimetre line emission obs. 8−49423
SiO, interstellar grains, IR absorption features 8−49509
SiO, maser emission detect. at 7 mm wavelength in M- and S-type stars 8−4215
SiO, maser emission from OH/IR sources 8−16432
SiO, maser emission from stellar sources, bright IR star monitoring at 2.7 μm 8−16433
SiO, maser emission from Mira variable stars, new sources 8−32467
SiO, maser emission obs. in long-period variable stars 8−4225
SiO, nonmaser emission lines from expanding envelopes around evolved stars 8−28650
SiO obliquely evaporated film topography, effect on liq. cryst. orientation 8−38987
SiO particles and 9.6 μ interstellar extinction feature 8−45378
SiO surface, N_2^+ bombardment, 500 eV chem. reactions, XPS and UPS 8−48265
SiO thin film, elec. breakdown voltage vs. thickness 8−2602
SiO, transition moment of $A^1\Pi$-$X^1\Sigma^+$ band, 260-290 nm 8−13552
SiO vibration rotation bands in sunspots, equiv. widths at 8 μ 8−40903
SiO^+, vac. UV photoelectron spectra, ab initio mol. orbital and Xα calcs., ($X^1\Sigma^+$) state 8−46395
SiO_2 (silicalite), new hydrophobic crystalline silica mol. sieve 8−30598
SiO_2 additive to Al_2O_3, effects on surface smoothness and densification 8−27462
SiO_2, amorphous, elec. cond. mechanism, review of developments 8−26854
SiO_2, amorphous, induced crystallisation exam. 8−6016
SiO_2, amorphous, low temp. acoustic absorpt., 9 to 20K and 15 to 65 MHz, Anderson model interpret. 8−26633
SiO_2, amorphous, optical and elec. props., comparison with chalcogenide semiconds. 8−6721
SiO_2, amorphous, phonons, cluster-Bethe lattice approach 8−10150
SiO_2, As diffusion , O_2 effects 8−43180
SiO_2 as high temp. stabiliser for Ag films 8−1319
SiO_2, avalanche injection of holes 8−26959
SiO_2 based glasses, highly absorbing anomalous IR absorption at low temps. 8−43871
SiO_2 bricks, quartz estimation using IR spectra 8−48718
SiO_2, CVD coating on W-Re microelectrode 8−11752
SiO_2, CVD film, hydration props., ellipsometry meas. 8−22986
SiO_2, clean film prep., use of poly-Si oxidation tubes 8−39924
SiO_2, coated silica fibres, tensile strengths of 1 km lengths 8−1384
SiO_2, cryst. and vitreous, struct. sensitive expansivity 8−22873
SiO_2, detect. in subway air 8−36273

silicon compounds continued
SiO_2, dielectric breakdown, impact ionisation-recombination model 8–6633
SiO_2 different modifications, chem. bonding, struct. *(German)* 8–30581
SiO_2, dissolved, natural oceanic circulation tracer, Yucatan Strait 8–44830
SiO_2, effect on carbothermic reduction of Cr_2O_3, to metallic CR *(Japanese)* 8–48651
SiO_2, effect on high temp. creep of MgO 8–48450
SiO_2, electron energy loss spectra, 0.02-2 eV 8–39642
SiO_2, encapsulant for annealing of GaAs, photolum. and AES evaluation 8–27657
SiO_2, etching characts. by plasma reactive sputter etching 8–27661
SiO_2, fabrication of surface relief struct. with linewidth below 2000 Å 8–42478
SiO_2 fibre, CW tunable near IR Raman oscillator 8–1235
SiO_2 fibre, characterisation of physical props., $CaSiO_3$ production from xonolite slurry 8–39730
SiO_2 fibres, plastic deformation and Young's modulus *(French)* 8–23746
SiO_2, film, drift mobilities of Na^+ and K^+ ions 8–10213
SiO_2 film, localised states, low-temp. photocurrent spectroscopy 8–19090
SiO_2 film, on n-GaAs, Ga content after annealing at 730-940°C neutron activation anal. 8–43255
SiO_2 film, on Si, SiOH and SiH groups, IR absorpt. results 8–26779
SiO_2 film, oxidation kinetics of Si in low O_2 partial press. *(Japanese)* 8–27665
SiO_2 film, prod. by oxid. of silane 8–3038
SiO_2 film, props., rel. to deposition conditions, appl. in semiconduct. devices 8–23612
SiO_2 film, thermally grown, pore size influence of punch-through voltage 8–6632
SiO_2, film form. by reactive HF sputtering with voltage bias 8–3045
SiO_2 film formed by ion implantation, dielectric props. 8–35090
SiO_2 film on Si, irradiation behaviour anal. 8–26957
SiO_2, film on Si substrate, stress meas., X-ray topography technique 8–5710
SiO_2, fine powder, interstitial vac. thermal muonium production 8–42250
SiO_2, furnace drawn optical fibres, contamination reduction 8–33918
SiO_2, fused, absorption coeff. at 632.8 nm 8–8454
SiO_2, fused, absorption edge meas. 8–43887
SiO_2, fused fibres, for linking very large astronomical telescope array 8–32342
SiO_2, fused silica fibres, high-strength epoxy-acrylate coated, dynamic and static fatigue 8–1385
SiO_2 glass, low press. plasma treatment, paramag. defect form. *(German)* 8–23341
SiO_2, glass, refractive index, effects of alkali oxide comp. changes *(Russian)* 8–22182
SiO_2 glasses, opt. consts. in IR and vacuum UV 8–27238
SiO_2, glassy-amorphous, light scatt. exam. 8–14281
SiO_2 glassy-amorphous system, struct. *(German)* 8–38626
SiO_2 grown on polycryst. Si, surface asperity mechanism of cond., SEM obs. 8–19153
SiO_2, growth and thermal evaporation kinetics of oxide film on Si surface 8–3246
SiO_2, high field electronic props. 8–30930
SiO_2, high-field electron trapping, I-V characts. of MOS capacitor 8–6449
SiO_2, homogeneously doped matrix, trace element standard prod. for neutron activation anal. 8–7289
SiO_2, implanted ^{222}Rn TIPAC measurements 8–43732
SiO_2, in diatoms, 20000 yr O isotope record in deep-sea sediments 8–32247
SiO_2, in MIM struct., dye sensitisation of photocond., steady state and pulse photoelectric props. 8–6408
SiO_2, in MOS struct., thermally stimulated ionic cond. 8–10565
SiO_2 in MOS struct., exciton transport rel. to surface states 8–34901
SiO_2 in MOS struct., room temp. cond., mobile Na^+ location 8–39217
SiO_2, inclusion in steel, effect of high temp. heating on size, number and distrib. 8–44145
SiO_2 layer thickness effect, in MNOS capacitors, 'write' characteristics 8–34904
SiO_2 layers, crystallisation, structural props. rel. to annealing 8–34724
SiO_2 layers, dielectric strength, dislocation effect 8–31154
SiO_2 layers, thermally grown, undoped and ion implanted, elec. props. 8–23187
SiO_2, low tridymite, cryst. struct. 8–36150
SiO_2, microprobe state anal. by X-ray OK and BK emission band spectra *(Japanese)* 8–19606
SiO_2 multimode fibre stimulated Raman scatt. obs. 8–1396
SiO_2, multiple trapping model and hole transport 8–6394
SiO_2, Ni dispersed epitaxial layer, textural effects on catalyst, ferromag. reson. 8–23963
SiO_2, non crystalline, exam. of O_2 transport phenomena correlations 8–47581
SiO_2, noncryst., in MOS struct., Na ion impurities motion 8–10223
SiO_2, noncryst., MOS structure, ionic impurities motion, trapping layers 8–30999
SiO_2 on Si, thermally grown, breakdown, review 8–23172
SiO_2, optical fibre, tensile strength distrib. and gauge length extrapolation 8–9434
SiO_2 optical fibres intrinsic attenuation 8–30067
SiO_2, oxide growth in $HCl-O_2$ mixture, ellipsometric meas. 8–7073
SiO_2 particulates dispersed in CVD reactor, size distrib., semi-in situ obs. by light scatt. 8–27406
SiO_2 passivation films, advances in deposition processes review 8–23620
SiO_2, polymer clad optical fibre, ionising radiation effect 8–42405
SiO_2, pyrolitic films, Ge substrate ellipsometry, TEM, electron diffr. studies of struct. 8–10297
SiO_2, quantity anal. of O ions, meas. of chemical shift in Si2p binding energy, using ESCA *(Japanese)* 8–48274
SiO_2, RF cosputtering with CeO_2 or TiO_2 optical film prep. and props. 8–6849
SiO_2 reactions with FeOOH crysts. prepared by hydrolysis 8–35678
SiO_2, reduction with C black in plasma reactor, feasibility of Si production 8–27426

silicon compounds continued
SiO_2, SAW resonator transverse modes, effects of anisotropy 8–5609
SiO_2, struct. of $L_{2,3}VV$-Auger line, rel. to soft X-ray spectra 8–2953
SiO_2 surface, N_2^+ bombardment, 500 eV chem. reactions, XPS and UPS 8–48265
SiO_2 thermally grown insulating film on Si, electron injection 8–23176
SiO_2 thin film, elec. breakdown voltage vs. thickness 8–2602
SiO_2 thin films RF sputtering, homogeneity improvement using mag. quadrupole field, expt. *(Croatian)* 8–48316
SiO_2, trapping level exam. by thermally stimulated discharge of capacitor *(Russian)* 8–34845
SiO_2, vacuum deposited, 7-10 μ, microhardness and structure 8–19669
SiO_2, vitreous, dielec. absorpt. saturation, 0.4-8K 8–23394
SiO_2, vitreous, fast neutron irrad. effect on struct., interstitials role 8–26599
SiO_2, vitreous, fast neutron irrad., low temp. US meas., two-level systems role 8–30703
SiO_2, vitreous, photoelectric and photoluminescent props. in fundamental absorpt. region 8–39596
SiO_2, vitreous, Raman cross sections, rel. to appl. in fibre Raman lasers 8–31176
SiO_2 vitreous, Raman spectrum, bound OH, Si-O stretch vibr. 8–19462
SiO_2, with Ni overlayer, desorption of N and O, 200 to 400K *(German)* 8–30835
SiO_2:Ag, fused, crystalline, luminescence and colour centre props. 8–10954
SiO_2:Ag, implanted atom, X-ray photoemission obs. 8–39050
SiO_2:Au, implanted atom, X-ray photoemission obs. 8–39050
SiO_2:F, silica fibres, numerical aperture and attenuation, drawing from preforms 8–1449
SiO_2:F fibre preform plasma chemical deposition *(German)* 8–33926
SiO_2:F fibre preparation by plasma-activated CVD *(German)* 8–33927
SiO_2:GeO_2 graded-index fibres, without index dip, fabrication by CVD method 8–9431
SiO_2:Ge(P) fibres, pulse delay meas. in zero-material-dispersion region 8–46769
SiO_2:TiO_2, prep., amorphous struct., effect of roasting, bonds 8–44061
SiO_2/Si interface, obs. of chem. struct. 8–27654
SiO_2-Al and SiO_2-Si in MOS, interface electrochemical obs. 8–2381
SiO_2-Al layered system, complete absorpt. of transverse mag. waves 8–39615
SiO_2-Al_2O_3, calculated thermodynamic data and metastable immiscibility 8–27495
SiO_2-Al_2O_3, refractory fibrous heat insulating material 8–6990
SiO_2-Al_2O_3, sintering theoretical treatments and exp. procedure 8–44067
SiO_2-AlN mixture sintering, form. of β-Si_3N_4 solid solns. 8–23655
SiO_2-C mixture, nitridation to form. Si_3N_4 additives effects, exam. 8–44068
SiO_2-GeO_2 glass, refr. index and density, comp. depend. 8–23424
SiO_2-Na_2O-CaO:Fe(As)(Cr) glasses, optical absorpt. changes on heat treatment 8–31224
SiO_2-Si, cathodoluminesc. and AES rel. to struct. 8–43937
SiO_2-Si, effects of processing on radiation damage 8–39223
SiO_2-Si, hot electron emission into SiO_2 8–30997
SiO_2-Si, influence of oxidation conditions on elec. props. of ultrathin SiO_2 layers 8–39226
SiO_2-Si, interface groups of states, C-V meas. 8–2541
SiO_2-Si interface, evolution of surface states density during bias temp. treatment 8–14832
SiO_2-Si interface, new type of interfacial charge 8–23168
SiO_2-Si interface, surface states and elec. defects obs. using ESR 8–23169
SiO_2-Si interface charge inhomogeneities effect on surface state density meas. by MOS AC cond. technique 8–14833
SiO_2-Si interface of hardened MOS capacitors, radiation effects 8–26958
SiO_2+H_2 reactions, rate controlling processes for H_2 transport in vitreous silica 8–26733
SiO_{2-x} system, model for paramagnetic E′-centre 8–35034
SiO_6 octahedra, var. of mean Si-O bond lengths 8–18577
SiO_x, anodic, on SiC, IR spectra *(Russian)* 8–11376
$(Si_2O_7)^{6-}$ bitetrahedra, in silicates, total energy surface, ab initio calc. 8–23056
Si_3O_3, isotopically substituted, IR freq. and intensity patterns 8–21926
Si_3O_3, matrix isolated, IR isotope freq. and intensity patterns 8–46338
SiO_xN_y, low temp. films, comp., chem. bonding and contamination 8–47676
$Si_lO_mN_p$, CVD from SiH_4-CO_2-NH_3-H_2 system, physicochem. props. 8–38978
SiS, electronic spectra, parity nonconservation effects *(Russian)* 8–13488
SiS, Franck-Condon factors and r-centroids for $(D^1\Pi-X^1\Sigma^+)$ transition using R-K-R-V 8–5293
SiTe-ATe, A=Ga, In, Tl, solid solns., mag. suscept. meas., defects 8–43552
$SiTe_2$, dislocations and stacking fault energy 8–47378
Si_2Te_3, prep. and growth, book contrib. 8–19651
$Si_{12}Te_{48}As_{30}Ge_{10}$ amorphous film, high-field transient conduction 8–43500
$Si_{12}Te_{48}As_{30}Ge_{10}$ film, amorphous, Poole-Frenkel cond. for centres with screened Coulomb pot. 8–19044
SiX_4, (X=Br,Cl), electron impact dissoc., low-energy reson. capture 8–9263
Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8–23474
TiO_2-SiO_2 fibre, prep. from metal alcoholates, prep. of spinnable soln. *(Japanese)* 8–44071
ZnO-PbF_2-SiO_2 glass, shear wave velocity and its temp. depend. *(Japanese)* 8–30702
$ZnSiF_6.6H_2O$, dielec. props., 100-270K, rel. to $NiSiF_6.6H_2O$ 8–35088
$ZnSiP_2$, first- and second-order Raman scatt. 8–35151
ZrO_2-SiO_2 glass fibre prep. form metal alcoholates 8–6886
$ZrSiO_4$, sintering, effect of grinding and additives 8–48356

silicon controlled rectifiers *see thyristors*

silicon integrated circuits *see monolithic integrated circuits*

silicon-on-sapphire integrated circuits *see field effect integrated circuits*
silicon reference diodes *see avalanche diodes; Zener diodes*
silicones
  film deposition, glow discharge polymerisation, elec. and thermal characts. 8−6467
  polydimethylsiloxane fluid permittivity and dielectric loss 8−6621
  rubber, antithrombotic materials for artificial heart and devices for assisted blood circulation 8−36052
  silicone-clad silica low-loss fibre radiation response obs. 8−1397
silver
  see also nuclei with ......
  activity determ. in molten Cu by two component method *(Japanese)* 8−11547
  adsorbed layers of $O_2(N_2)(S)$, electronic props., XPS and UPS 8−10279
  with adsorbed metal film, monolayer electronic states calc. 8−6318
  adsorption and early stages of condensation on W single cryst. surfaces 8−6212
  adsorption of Cl, AgCl epitaxial layer form., RHEED 8−14642
  aggregates, matrix isolation spectra 8−46476
  alkali halide:Ag^+, luminesc. spectra and lifetime, high-press. effects 8−35194
  angular resolved photoemission from low index faces 8−48282
  assay-activation analysis of rock, use of Au and Ag standards based on phenolformaldehyde resin 8−3419
  atom, K-shell ionis. by electron impact, cross-sections, 300-600 keV 8−29853
  atom, K-shell X-ray prod. by H^+ and He^+ bombardment, cross sections, energy depend. 8−5337
  atom clusters, local density of states, $X\alpha$ scattered wave calcs. 8−18989
  atoms, in Kr matrix, isolation and aggregation 8−45723
  Auger spectrum, $M_{4,5}VV$, interpretation 8−23562
  boundary layer on seed cryst., role in hydrothermal growth mechanism of sodalite 8−30571
  cascade energy density effect on isochronal recovery 8−47431
  cathodoluminescence, film and polycryst. samples, low energy electron irrad., visible and UV emission 8−2921
  CESR due to edge dislocations 8−19328
  channelling, reson. excitation of H- and He-like ions 8−43058
  chemisorption of Cl_2, XPS and UPS meas. 8−31293
  chemisorption of CO, N_2, NO, semiempirical calcs. 8−14611
  cluster 8−33646
  coating on steel for watch part finishing, ion plating *(French)* 8−23879
  coins, ancient Greek, neutron activation and at. absorpt. anal. 8−8489
  compact, on H_2 permeated backing, precipitation *(Russian)* 8−27520
  contact charge density, press. depend., trends for Ag-Te 8−39077
  contact resistance with Ag and Pd, effect of surface roughness and surface films 8−10540
  coulostatic deposition at underpot., pot. relax., chem. effects 8−48335
  critical temp. determ. by exploding wires method, liquid metal enthalpy 8−6149
  crystal (100) faces, polynuclear growth mechanism during electrocrystallisation *(German)* 8−18562
  crystallites, surface migration on alkali halides 8−26783
  Debye-Waller factor temp. parameter 8−30725
  desorption on Si (111), kinetics of two-dimens. phases on single cryst. substrate 8−14598
  determination of sub-ppm levels by graphite furnace atomic absorption spectrometry in heat resistant Ni and Co alloys 8−48730
  diffusion and electrodiffusion into Se, role of Ag in switching effect on amorphous Se 8−19163
  diffusion in As_2S_3-Ag_2S, GeS_2-GeS-Ag_2S and P_2S_5-Ag_2S glasses 8−18828
  diffusion of Fe 8−10225
  diffusion of Ni, resistometric technique 8−38880
  diffusion of S 8−47599
  diffusion pyrocarbon and SiC by post irradiation annealing of coated 8−13247
  dislocation dynamics during strain rate changes *(German)* 8−18655
  dislocation dynamics during stress rate changes, in single crystals 8−19813
  electrical contact material with liquid lubricant, prod. and appl. 8−10559
  electrical contacts appl., MgO-particles dispersion strengthening *(Slovak)* 8−31544
  electrocrystallisation, screw dislocation free (100) face growth kinetics 8−30557
  electrode, roughened, Raman band intensity of adsorbed pyridine 8−48160
  electrode pot. effects on surface plasmon excitation 8−15149
  electron beam irradiation, 2.3 MeV, positron annihilation exam. of radiation defects *(Russian)* 8−34542
  electron emission spectra produced by exploding wire photon sources, yield and energy meas. 8−31299
  electron irradiated, exam. of vacancy migration energies, and annealing kinetics 8−47571
  electron scattering cross sections, 300 to 1200 keV 8−9922
  electrostatic model for impurity diffusion 8−2300
  emissivity, total hemispherical, temp decay method meas. 8−26708
  epitaxial growth and reaction with SnTe substrates 8−14640
  fatigued single crystal, annealing of deform. struct. 8−3204
  FCC, Gruneisen parameters, effect of temp. variation 8−22812
  FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
  field evaporation, search for high ionic charges 8−35269
  film, He^+ ion bombardment, radiation damage, ion entrapment, gas release and bubble formation 8−30679
  film, high temp. stabilisation using SiO_2 8−1319
  film, inert gas ion refl., semiempirical analysis, compared with expt., 10-30 keV 8−6823
  film, initial stages of growth on Si (111) 7×7, LEED, AES and UPS expts. 8−38988
  film, photodissolution in amorphous As_2S_3 8−26737
  film, polycryst., singularities of recrystallisation *(Russian)* 8−2382
  film, substrate surface structure effects on absorptance 8−19585
  film, surface roughness determ. from light scatt. meas. 8−5541
  film, thermal and elec. cond., Lorenz no. 8−43487
  film, vacuum deposited, internal friction vibr. reed technique 8−43276
  film, vacuum deposited, surface struct., HEED meas. 8−6234
silver continued
  film, vacuum-deposited, removed from substrate, internal strain *(Japanese)* 8−22872
  film growth, initial stages, ion bombardment effects 8−14639
  film on Cu(111), plasma reson. absorption in interfacial photoemission 8−15289
  fine particles, adhesion and sintering, TEM exam. 8−44053
  Frenkel defect production associated with He and light ion implantation, exam. 8−47443
  grating, surface plasmons rel. to diffr. order intensity profile, higher harmonics influence 8−25981
  growth on Si(111), cohesive energy and 2-dimens. phase diagram, AES exam. 8−43246
  Gruneisen parameters, 10-100K, phonon wave vector depend. 8−38801
  host, impurity effect on electric field gradient 8−23061
  intraband optical conductivity, electron-electron scatt. 8−35166
  ion plated film on permalloy, Cu and Vicalloy substrate, AES, SEM and X-ray study *(Japanese)* 8−11128
  isoelectronic sequence, UV spectra, (60-600 Å), resonance line identifications 8−33455
  K-edge photoabsorption spectra, linear APW calc. 8−43960
  laser unidentified transitions in Ag II as Lyman, spectrometer ghosts 8−5464
  lattice dynamics, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
  liquid chromatography, electrochem. detect. and fraction collection system 8−35749
  low energy sputtering by Ar and Xe ion bombardment 8−15269
  luminescence spectra due to slow electron bombard. 8−10995
  magnetoacoustic spin-orbit antireson. 8−26808
  matrix isolated atoms, matrix influence, theory 8−46288
  matrix isolated atoms, matrix influence, theory 8−46290
  mean excitation energy based alpha particle stopping power meas. 8−30678
  metallography 8−3289
  mica interface, Van der Waals forces, direct meas. 8−43461
  microcrystals, matrix isolation spectra 8−46476
  molecule, dispersion absorption spectra, 1500 to 5300 Å, rot. anal. 8−42089
  oriented single crystal substrate for epitaxial growth of Sb electrodeposits 8−43267
  particles, Mossbauer fraction from Gaussian potential 8−47489
  particles on graphite, particle motion rel. to heating in gaseous environments 8−34695
  phonon frequency determ. in noninteracting band scheme 8−47483
  photoelectric cross section, total to K-shell ratios 8−5188
  photoelectric cross-section at K-edge measurements 8−2983
  photoemission, (111) surface, failure of plane wave, OPW and APW final states 8−11080
  photographic emulsion, developed, X-ray emission microanal. for β-ray quantitative microautoradiography 8−20545
  photolytic, mass and distribution in the solarisation region 8−29185
  photon activation analysis of coins and art objects 8−349
  positron trapping by vacancies using ^{19}Ne source 8−47341
  production and annealing of radiation defects 8−47362
  proton irradiated, radiation-annealing effects in energetic displacement cascades, film resist. meas. 8−26603
  pseudopotential nonlocal model 8−14659
  radiation damage, TDPAC of ^{109}Cd and ^{113}Sn 8−43739
  resonance self-shielding factors, depend. of Doppler factor 8−17439
  resonant model potential, energy depend. 8−18952
  scattering of light ions by Ag polycryst. 8−11048
  solidification, adsorbing species in melt effect on solidification 8−23695
  solvation in ice matrix, electron spin echo modulation 8−39396
  spin rotation amplitudes for ^{107}Cd and ^{109}Cd, comparison of temp. depend. 8−43738
  spin-orbit projected d density-of-states 8−38999
  stopping power for MeV H^+, D^+, $^4He^{2+}$, $^7Li^{3+}$ ions, deviations from Bethe formula 8−26612
  surface, (111), diffr. of He 8−39651
  surface, (111), ordered and damaged, O_2 adsorption, O_2+CO interaction 8−14583
  surface, (111), Xe incommensurate overlayer, dynamical calc. of LEED 8−30828
  surface, clean (111), absence of filled surface states in s-p gap, LCAO calc. 8−2543
  surface, Hg flow kinetics in temp. grad. *(Russian)* 8−6198
  surface (111), adsorpt., coadsorpt., and reactivity of Na and NO 8−38948
  surface (111), clean or Na-covered, adsorpt.-desorpt. props. of Br_2 8−38944
  surface (331), adsorpt.-desorpt. props., coadsorpt. and surface struct. chem. of O_3 and Cl_3 8−34711
  surface polariton absorption and emission spectra, edge effects 8−10375
  surface with thin transparent and absorbing coatings, surface plasma oscills. 8−43951
  thermal emissivities and diffusivities, expt. transient technique and theory for foils 8−43353
  ultrafine particles in glass matrix, retardation effects on optical props. 8−6677
  vaporization, thermodynamic props. determ. by mass spectroscopy 8−22841
  vapour press. above different crystallographic planes *(Russian)* 8−18762
  wires, polycryst., internal friction and rigidity modulus, O removal from grain boundaries 8−3160
  X-ray diffraction pattern recording on photographic film, student expt. 8−41130
  Ag I, absorption spectrum, 1540-1850 Å 8−13453
  Ag I, resonance level, radiative lifetime, dye laser excitation 8−46300
  Ag, ion beam plating using mass analysed ions, SIMS and AES expts. 8−19673
  Ag/AgI/Te thin film galvanic cell, shelf life determ. 8−35702
  Ag-AgCl reference electrode for high temp. and high press. electrochemistry 8−35693
  Ag-As_2S_3 sandwich structure, holographic characts., recording kinetics 8−29913
  Ag-CdTe-Ag struct., negative differential resist. 8−19161

silver continued
Ag-MgF$_2$ layered system, optical excitation of surface plasma waves 8−6803
Ag-Si (111) interface, chemisorption, AES 8−14589
Ag+^{208}Pb, 5.8 MeV/amu, Pb K-shell excitation probability 8−5338
Ag$_2$, Raman spectra, matrix isolated in Kr 8−46347
Ag$_3$, Raman spectra, matrix isolated in Kr, linear config. 8−46347
^{110m}Ag, fission product, amount in burnt-up HTR fuel *(German)* 8−25298
Al-Al$_2$O$_3$-Ag tunnel junction, surface plasmon excitation 8−10578
Al$_x$Ga$_{1-x}$As:Ag, LPE film, impurity levels, elec. and optical props. meas. 8−26862
As$_2$S$_3$-Ag photosensitive film systems, hologram recording 8−1194
As$_2$S$_3$-Ag system, activation energy for photochem. conversion, 80-340K, radiation intensity depend. *(Russian)* 8−3356
Au/Ag couple, diffusion induced stresses and plastic deform. 8−26736
Au-Ag film, diffusion of Ag along grain boundaries, scanning Auger microscopy obs. 8−22897
Au+Ag adsorbed layers on Si, dispersed struct. formation 8−22952
CdCr$_2$Se$_4$:Ag, effect of doping on exchange interaction 8−43579
CdSb-Ag, thermoelectric, thermal defect relax., elec. cond. and thermo-EMF effects *(Russian)* 8−14749
CdSe:Ag, In, cryst., photocurrent and electroreflection, 77 to 300K *(Russian)* 8−23136
CuO-Ag film solar absorbers, mechanism of high-temp. instability 8−22971
GE$_{40}$S$_{60}$-Ag glass, EPR exam. 8−23334
Ga, with 100 ppm Ag single cryst. growth by pulling, thermal parameters governing purity *(French)* 8−2046
p-InSb:Ag, ionisation energy of multiply charged impurities, compensation effects 8−18996
KBr:Ag, mag. field effect on luminesc. of paired Ag$^-$ ions 8−27313
KCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
KCl:Ag, hole capture radius, scintillation luminesc. obs. *(Russian)* 8−39582
KCl:Ag, strong IR luminesc. obs. of Ag^0 centres 8−6736
Li$_2$B$_4$O$_7$:Cu, Ag, as thermoluminescence dosimeter *(Japanese)* 8−31906
Mg-MgO-Ag junction, stable room temp. light emission 8−31257
NaCl:Ag, diffusion parameters of hot holes created by ionising radiation 8−47800
NaCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8−31108
NaCl:Ag$^+$, X-irrad., B-centres, thermal annealing, monomolecular and bimolecular sequence of kinetics 8−47373
RbBr-Ag, mag. field effect on luminesc. of paired Ag$^-$ ions 8−27313
RbBr(Cl):Ag$^+$, off to on centre defect transitions under hydrostatic press. 8−15199
RbCl:Ag, strong IR luminesc. obs. of Ag^0 centres 8−6736
Si:Ag, photoexcitation of electrons from ionised AG acceptors 8−2519
Si:Ag, surface layer, ellipsometry 8−19121
n-Si-Ag evpoarated contact photoelectric props. *(Russian)* 8−43473
SiO$_2$:Ag, implanted atom, X-ray photoemission obs. 8−39050
Zn$_x$Cd$_{1-x}$S:Cl, Cu$^+$(Ag$^+$), high pressure luminesc. 8−19533
ZnO:Er,Ag, photoluminescence and electroluminescence 8−27327
ZnS:Ag, electroluminesc., surface barriers *(Russian)* 8−2919
ZnS:Ag, struct. and mech. props. 8−22753
ZnS:Ag,Sm, recomb. centre interaction, luminesc. quenching 8−10946
ZnS:Ag phosphor prep., physicochemical investigation of processes 8−11170
ZnS:Ag$^+$, Cl$^-$(Al^{3+})(In^{3+})(Ga^{3+}), interimpurity luminesc. at high press. 8−19532
ZnTe:Ag, containing dislocation loops, optical absorption-edge fine struct. 8−43905

silver alloys
dental amalgam, exam. of fracture toughness and critical strain energy release rate 8−48933
dental amalgams, Cu-rich, SEM and energy dispersive X-ray analysis 8−24184
dilute, electric field gradients created at ^{111}Cd nuclei by near neighbour impurities 8−39450
rare earth intermetallic, RCu$_4$Ag, struct. 8−30587
Ag-^{112}In, dil., ^{112}In nucl. alignment, radiation damage, γ-ray spectra 8−19398
Ag-Al, dil., temp. depend. of elec. field gradient, impurity mass and conc. effects 8−48085
Ag-Al, plastic flow enhancement during massive transformations 8−48468
Ag-Al(Ga) electric field gradient temp. depend., nearest neighbour impurity mass effect, TDPAC meas. 8−6612
Ag-Au, sputtering by 6 keV Xe$^+$ ions, energy distribs. 8−43969
Ag-Au(Cd), deviations from Matthiessen's rule 8−10420
α-Ag-Cd, dil., electronic struct. determ. from thermoreflectance and XPS 8−39011
Ag-Cd dilute alloy, isotope effect and correlation factor for Cd diffusion 8−14501
Ag-Co, dil., binding and caging of impurities and trapped interstitials 8−39462
Ag-Cu, directionally solidified, obs. of cutting deform. zone *(Japanese)* 8−15422
Ag-Cu, liquid, surface tension 8−43217
Ag-Cu, metastable solubility lines on Ag side 8−39737
Ag-Cu (5 at.%) solid solution, pre-fatigued, strain hardening at high temp. 8−15426
Ag-Cu (50 at.%), splat-cooled, struct. of γ' extended solid solution 8−3147
Ag-Cu eutectic, mechanism of lamellar spacing adjustment 8−31395
Ag-Cu-Zn-Cd solid metal lubricant in self lubricating composite steels 8−11340
Ag-Cu(Au)(Zn)(In)(Sn)(Bi), dil., elec. quadrupole interactions on ^{111}Cd probe nuclei, time differential PAC meas. 8−15066
Ag-Dy, dil., Schottky effect, sp. ht. meas. 8−34633
Ag-Fe, dil., estimate of Kondo temp. from static mag. susceptibility meas. 8−19214
α-Ag-Ge, cold-worked, lattice imperfections, X-ray diffr. study 8−38732
Ag-Ge, liq. eutectic, struct. by neutron diffr. 8−18537
Ag-Ge, thermal expansion, X-ray determ. 8−26697

silver alloys continued
Ag-Hg amalgam, lattice const., temp. depend., explained in terms of Hg evaporation 8−26704
Ag-In, dil., interaction between recoil implanted impurities and lattice defects, TDPAC meas. 8−39467
Ag-In, dil., temp. depend. of elec. field gradient, impurity mass and conc. effects 8−48085
Ag-In(Sn), HCP ξ-phase, magnetic susceptibility 8−47946
Ag-Mn, dil., nuclear orientation expts. 8−43713
Ag-Mn, spin glass, anomalous Hall effect 8−30908
Ag-Pd, dil., elec. field gradients due to Pd near neighbour configs., TDPAC obs. 8−19391
Ag-Pd, surface comp., AES expts., correl. with O$_2$ heat of chemisorpt. data 8−34684
Ag-Pd(Pt), dil., electric field gradient temp. depend., TDPAC meas. 8−39451
Ag-Pd(Pt), dil., electric field gradient meas. by TDPAC method 8−39452
Ag-Pd(Pt), dil., TDPAC exam. of radiation damage 8−39464
Ag-Sb alloy, reflectivity, effect of electrodeposition conditions 8−13784
Ag-Sn, dil., high perfection single cryst. growth, strain-anneal technique 8−44010
Ag-Sn, dil., temp. depend. of elec. field gradient, impurity mass and conc. effects 8−48085
Ag-Sn (0 to 6%), equilibrium intergranular segregation and diffusion 8−43130
Ag-Sn alloys containing Au, splat cooled ribbons, electron microscope exam. 8−39987
Ag-Sn(In)(Cd), Zener relaxation, valency and dimensional effects *(Russian)* 8−19802
α-Ag-Zn, atomic short-range order determ., X-ray scatt. and pseudopot. calc. 8−2067
Ag-Zn (30 at.%), electron irrad. exam. of defect supersaturation by elasticity, and creep meas. 8−47366
Ag-Zn equiatomic, creep of β phase *(French)* 8−48477
Ag-Zn(Cd), production and annealing of radiation defects 8−47362
Ag$_{0.6}$Au$_{0.4}$Mn, dil., effect of mean free path on strength of RKKY interaction 8−39291
Ag$_x$Au$_{1-x}$Zn, resistivity and X-ray diffr. 8−47283
Ag$_3$Sn, containing Au, etching technique for alloys and amalgams 8−3291
AgZn-AgMg quasibinary alloy, phase relation and superlattice form. 8−3097
Al-Ag, dil., Dingle temp. calc. 8−39005
Al-Ag, thin foil, X-ray microanalysis, surface film effect 8−44428
Al-Ag (12.6 wt.%), tensile ductility, effect of ageing and impact velocity *(Japanese)* 8−15465
γ'-Al-Ag (15 wt.%), dislocation splitting mechanism, cessation above critical temp. 8−26572
Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
Al-Ag (1.03 at.%) alloy elec. resist. meas. above room temp., Ag atom configuration correlation 8−35534
Al-Ag alloy precipitation and heat of evolution, microcalometric obs. *(Japanese)* 8−15406
Al-Ag-Cu alloy precipitation and heat of evolution, microcalometric obs. *(Japanese)* 8−15406
Au-Ag, liquid alloy, surface energy meas. by const. temp. method on solid alumina 8−6208
Au-Ag, mech. damping 8−31444
Au-Ag-Cd pseudobinary alloys, thermodynamic study of order-disorder and martensitic transform. 8−48399
Au-Cu-Ag, phase precipitation on domain boundaries, effect of Ag *(Russian)* 8−39777
Au-Cu-Ag, phase transform. effect on mech. props. *(Russian)* 8−3122
CeAg$_x$In$_{1-x}$, cubic to tetragonal phase transform., conc. dependence by resist. meas. 8−2252
Cu-Ag, effective atomic number from β-ray produced bremsstrahlung meas. 8−22046
Cu-Ag metastable alloy form. by ion implantation, combined TEM and ion channelling obs. 8−34530
Fe-Ag (50 vol.%), two-phase system, plastic deformation *(French)* 8−39831
Gd-Ag (0-16 at.%), vapour-quenched, struct. and mag. props. 8−38980
LaAg, under hydrostatic press., supercond. and phase transform, elec. resist., 1-300K 8−10595
La$_{1-x}$Gd$_x$Ag, NMR ^{139}La 8−15038
La$_{1-y}$Tb$_y$Ag, crystal field effects, normal and superconducting states 8−2621
La$_{1-y}$Tb$_y$Ag, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
Mg-Ag, dil., dislocation-point defect interactions in slip systems 8−47417
Mg-Ag, dil., ion irradiated, interaction between Ag and defects, channelling meas. 8−38766
NdAg$_2$, high temp. modification, thermal effects 8−38665
Pb-Ag, Ag precipitation kinetics 8−19758
Pd-Ag alloys, epitaxial growth and surface characterisation 8−14638
Pd-Ag-D system, instability and superconductivity 8−39248
PdAg wire, H$_2$ sorption, heat of adsorpt., sticking probabilities 8−43240
Pd$_{0.9}$Ag$_{0.1}$:H(D), free energy, enthalpies of soln. 8−15692
Pd$_{1-x}$Ag$_{1-x}$-Au, dil., electron density at Au, Mossbauer reson. 8−39473
PrAg$_2$, high temp. modification, thermal effects 8−38665
ScAg, UPS exam. 8−48276
Sn-Pb-Ag, microduplex eutectic, cavitation during superplastic flow 8−48457
TbAg, hyperfine field exam. by NMR spin echo 8−23365
TbAg$_{1-x}$In$_x$, mag. and transport props. 8−43572
Ti-Ag, existence of β to α_m phase transformation 8−44123
Zn-Ag, dil., dislocation-point defect interactions in slip systems 8−47417
Zn-Ag, dil., elec. field gradient, temp. depend. 8−39481

silver compounds
chalcogenides, single-phase, preparation 8−35293
halide, Dember effect, photographic emulsion grain parameter depend. 8−16870

silver compounds continued
halide, grains, breakdown of $Na_2S_2O_3$, electron microscopy 8−21237
halide emulsions, spectral sensitisation, review 8−4719
halide high resolution materials, 3-D hologram recording, exposure characts. 8−17880
halide microcryst., space charge characts. 8−15097
halide photochromic glass:Cu^{2+}, characterisation of Cu ions 8−5530
halide photochromic glass, darkening mechanisms under pulsed laser excitation 8−25938
halide photographic materials for holography, book contrib. 8−25832
halide photography and xerography compared *(Japanese)* 8−24876
halides, defect and impurity states, LCAO-MO treatment 8−16876
halides, EPR of triplet state of self-trapped excitons 8−43684
iodobromides, spectral absorpt. curves, density, wavelength and temp. depend. 8−16871
liquid chromatography, electrochem. detect. and fraction collection system 8−35749
photographic emulsions, preparation, explosion hazard of ammoniated silver salt solns. 8−4727
pyridinium pentasilver hexaiodide, solid, far IR refl. spectra, incoherent neutron scatt., low freq. optical modes 8−2291
trifluoroacetate, aq. soln., positronium form., quenching and inhibition 8−15690
zeolites, type 13X, acetylene adsorption, inelastic neutron scatt. 8−14584
Ag halide, absorpt. and vac. photolysis 8−8458
Ag^+ superionic conductors, US attenuation due to hopping of Ag^+ ions 8−22890
Ag/AgI/Te thin film galvanic cell, shelf life determ. 8−35702
Ag-AgCl reference electrode for high temp. and high press. electrochemistry 8−35693
Ag-B system, interactions, product chem., phase, struct. anal., book contrib. 8−47305
Ag-Se mixture, activity of Se *(German)* 8−27492
Ag_3AsS_3, proustite, cryst., vibr. spectra 8−48172
Ag_3AsS_3, proustite, freq. conversion of CW chem. HF laser radiation 8−30023
Ag_3AsS_3, proustite, heat of melting 8−43106
Ag_3AsS_3, proustite, multistage conversion of pump energy into low-freq. radiation 8−30022
$AgBiS(Se)_2$, polymorphism and defects, electron microscopy 8−2254
AgBr, crystal growth behaviour, influence of Gibbs-Thomson effect 8−24883
AgBr crystals, positron lifetime *(German)* 8−19593
AgBr, decay of proposed Bose-Einstein condensed excitons 8−15221
AgBr, diffusion of Fe^{3+}, vacancy migration evidence 8−47603
AgBr, dispersive phonon modes, reson. Raman scatt. obs. 8−10896
AgBr, electron-hole liq. and biexciton pocket, luminesc. obs. 8−15216
AgBr emulsion, low-intensity reciprocity failure *(French)* 8−37085
AgBr emulsion, sub-image and latent image specks form. and props. 8−21245
AgBr, epitaxial layer, ionic field effect 8−10588
AgBr, free holes in spectral sensitisation 8−4720
AgBr, hydrosol, latent-image stability, chem. sensitisation 8−21236
AgBr melt, Raman spectra, rel. to sublattice melting in α-AgI 8−10882
AgBr microcrystal dispersed in gelatin, effect of I^- on interstitial Ag ions 8−26726
AgBr microcrystals, photohole motion 8−26903
AgBr microcrystals, photocond. and luminesc. 8−26904
AgBr, molten, Monte Carlo computer simulation 8−26426
AgBr, photoexcited, dye sensitized bleaching of surface silver specks 8−308
AgBr, photographic emulsions, dye spectral sensitization, latent image form., subcond. band events 8−32905
AgBr, photographic emulsions, sensitivity, fog rel. to treatment in redox-buffered solns. 8−32906
AgBr photographic emulsions, adsorpt. of thiolic antifoggants, chem. struct., ESCA investig. 8−32907
AgBr, photographic gelatin dispersion, cryst. habit. rel. to Br^-, cyanine absorpt. 8−32908
AgBr, photographic monodisperse emulsions, Ag sub-specks 8−16875
AgBr, radiative recomb. of indirect excitons at high concs. 8−6732
AgBr undeveloped photographic layer, light scattering and absorption *(Russian)* 8−37090
AgBr, X-ray diffraction pattern recording on photographic film, student expt. 8−41130
AgBr:I, refilling of recombination centres during thermal stimulation 8−10464
AgBr:Pd, EPR of Pd^+ ions 8−27087
AgBr-NaCl(Br) solutions, UV spectra 8−39560
AgBr-SiO_2, field effect potentiometric sensors 8−35691
$AgBr_{1-x}Cl_x$, ESR of self-trapped holes, Jahn-Teller and reorientation effects 8−27092
$AgBr_{1-x}Cl_x$, mixed cryst., formation of self-trapped holes 8−39399
Ag_2BrNo_3, cryst. struct. 8−18594
AgCl bicrystal, grain boundary slip simulation 8−3176
AgCl, colloid bands induced by reactor irradiation at low temps. 8−26567
AgCl, cryst. growth by Stepanov's method 8−23600
AgCl, defects induced by energetic ion implantation 8−17518
AgCl, epitaxy on Ag spherical cryst. by Cl adsorption 8−14642
AgCl, luminesc. excited by UV radiation at 80K *(Russian)* 8−31256
AgCl nuclear track detectors, track forming, stabilisation and development processes 8−17516
AgCl oriented single crystal, Kyropoulos growth using NaCl seed crysts. 8−11102
AgCl particles suspended in photochromic glasses, shape rel. to photosensitivity 8−31223
AgCl single cryst. foil, photographic elementary process 8−17519
AgCl, Stepanov growth, oriented plates, rods and tubes 8−3023
AgCl, surface layer stress distrib. after mech. treatment, polarisation-optical obs. 8−18887
AgCl, thermal fields generated during plastic deform. 8−35457
AgCl track detector prep. and props. 8−17517
AgCl:$Cd^{2+}(Pb^{2+})(Mn^{2+})$, recombination processor, radioluminescence 8−2915
AgCl:$Li^+(Na^+)(K^+)(Rb^+)$, impurities effect on plasticity, brittleness 8−14398
AgCl:X^{2+}, X=Mg, Ca, Sr, Cd, Ba, plasticity, impurity hardening effect 8−47466

silver compounds continued
AgCl(:AgBr), intrinsic ODMR spectrum mechanism, doping effect 8−43682
$AgClO_3$, γ-irradiated, resonant Raman effect of O_3^- centres 8−48178
$AgClO_4$, aq. soln., positronium form., quenching and inhibition 8−15690
$AgGaCr_4S_8$, IR spectra obs. of ordering *(German)* 8−6669
$AgGaS_2$, up-conversion of 10.6 μm radiation into visible 8−33783
$AgGaS_2$, Raman spectrum, degenerate mods, temp. depend. 8−35150
$AgGaSe_2$, pressure-induced phase transformations 8−30748
$AgGaSe_2$, Schottky diodes with tunnel device characts. 8−39215
$AgGaSe_2$, seeded Bridgman growth of crack-free crysts., thermal expansion coeff. 8−11101
$AgGaSe_2$, ternary semiconductor crystals for nonlinear optical applics. 8−33782
$AgGaSe_2$ wavelength-modulated reflectance, optical electronic transitions, 1.5-5.5 eV 8−35170
$AgGa(Se_{1-x}S_x)_2$, crystal growth, phase studies, optical props. 8−48305
$AgGaTe_2$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
$Ag_8GeS_6(Se_6)(Te_6)$, absorpt. edge investigs. at phase transitions 8−35149
Ag_8GeSe_6, polymorphic transition, absorpt. coeff. meas. 8−2257
$AgHg_2AsO_4$, cryst. struct. by X-ray diffr. *(French)* 8−34490
Ag_2HgI_4, order-disorder transform. at 51°C, sound vels. and dielec. losses 8−10129
Ag_2HgI_4, ordered and disordered phases Raman spectra temp. depend., ion hopping 8−23438
$AgHg_2PO_4$, cryst. struct. by X-ray diffr. *(French)* 8−34490
AgI, atmospheric ice forming props., impurities and surface state effects *(French)* 8−20459
AgI, density of states, IR cond., and Raman scatt., lattice dynamics calc. 8−30709
α-AgI, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
β-AgI, ion dynamics and transition to superionic state, nucl. spin-lattice relax. meas. 8−43179
β-AgI, low temp. electronic hopping 8−39111
AgI microcrystal dispersed in gelatin, effect of I^- on interstitial Ag ions 8−26726
AgI microcrystals, photohole motion 8−26903
AgI microcrystals, photocond. and luminesc. 8−26904
AgI particles in seeded storms, detection 8−3884
AgI, single cryst. neutron diffr. meas., Ag distrib. determ. 8−10025
α-AgI, superionic cond., sublattice melting, Raman spectra, rel. to AgBr(Cl) melts 8−10882
α-AgI, superionic cond. Raman spectra, compared with liquid like model 8−2855
α-AgI, superionic conductor, Raman spectra, freq. depend. cond. exam. 8−10883
AgI type solid electrolytes, sp. ht. anomaly, theory *(Russian)* 8−10198
AgI-Ag oxysalt ionic solids, thermoelec. power determ. 8−30947
AgI-Ag_2O-MoO_3, comparison of ionic conductivity between glassy and crystalline solid electrolytes 8−30786
AgI-Ag_2O-P_2O_5 system, glass form. and superionic cond. characts. 8−26722
AgI-AgBr emulsion, low-intensity reciprocity failure *(French)* 8−37085
AgI-HgI_2, solid electrolyte, ionic and electronic cond., phase composition determ. 8−2296
AgI-piperazinium, (or N,N′-disubstituted piperazinium diiodides), binary salts, ionic cond. study *(French)* 8−2293
AgI+$HgCl_2$ → $AgHgClI_2(AgHgCl_2I)$, solid state diffusion controlled reaction at 100°C 8−34659
$Ag_{44}I_{53}(C_{11}H_{30}N_3)_3$, cryst. struct. determ. 8−26553
$AgInCr_4S_8(Se_8)$, 1:1 ordering on tetrahedral sites, IR spectra obs. *(German)* 8−6669
$AgIn_5S_8$, cryst. growth and props. 8−39677
$AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
$AgInSe_2$, far IR refl. spectra, polarised light 8−43870
n-$AgInSe_2$, press.-induced compensation, resist. expts. 8−30919
$AgInSe_2$, reflectvvity and XPS meas. 8−35165
$AgInSe_2(Te_2)$, pressure-induced phase transformations 8−30748
$AgInTe_2$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
$AgInTe_2$, far IR refl. spectra, polarised light 8−43870
$Ag_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$Ag_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
$AgNO_2$, high-pressure phase behaviour, crystal chemistry of univalent nitrites 8−30749
$AgNO_3$, melt, NO_3^- ion struct., pulsed neutron diffr. obs. 8−22631
$AgNO_3$, molten, X-ray diffr. structural anal. 8−42887
$AgNa(NO_2)_2$, Landau behaviour of sp. ht. close to nearly tricritical ferroelec. phase transition 8−10861
AgO and Ag_2O, ESCA spectra, Auger effect, initial and final states effect 8−15280
AgO, electronic spectra in rare gas matrix 8−996
Ag_2O, film, photocond., annealing and time effects *(French)* 8−23135
Ag_2O film, prep. and effect of O_2, Ar and H_2 gases *(French)* 8−14637
Ag_2O, forbidden energy gap oxide semicond. crystals, review of spectroscopic props. 8−2876
Ag_2O, photoconductivity of crystals grown under hydrothermal conditions 8−14765
Ag_2O, thermal expansion, lattice parameter determ., 150-250K 8−2267
Ag_3PO_4, cryst. struct. 8−42973
$Ag_4P_2Se_6$, orthorhombic system, crystal parameters determ. *(French)* 8−34481
Ag_2S, α⇌β transitions 8−22846
β-Ag_2S, electrogalvanic and elec. props., and range of existence *(French)* 8−43175
Ag_2S, film, optical characterisation, inversion method 8−11008
Ag_2S film reduction, effect of Ag interdiffusion on the catalytic activity of Pt and Pd films 8−14519
Ag_2S, metal-nonmetal transition, crystallographic, optical, mag. and transport props. 8−6418
Ag_2S, nonlinear V-I characts. obs. at low temp. *(Japanese)* 8−34866
α-Ag_2S, struct., X-ray scatt. intensity anal. 8−38672
Ag_2S, transport props., 700-1500K 8−47796
Ag_2S-(As)(Sb)(Bi), temp.-comp. diagram 8−44105

silver compounds continued
  Ag_2S-In_2S_3-SnS_2 system quaternary and ternary sulphide spinels, solid solubility and struct. 8−35376
  $Ag_2S(Se)$, ionic-electronic mixed conductor, solid state controlled growth using cryst. rotation 8−31338
  $AgSbS_2$, synthetic crystals, monoclinic to cubic phase transition *(German)* 8−42943
  Ag_2SbS_3, order-disorder phase transition, NQR and spin-lattice relax. expts. 8−47523
  Ag_3SbS_3, ionic component of conductivity *(Russian)* 8−38870
  Ag_2Se, metal-nonmetal transition, crystallographic, optical, mag. and transport props. 8−6418
  Ag_2Se, polymorphic transition, DTA meas. 8−34620
  Ag_2Se-(As)(Sb)(Bi), temp.-comp. diagram 8−44105
  $Ag_6Si_2O_7$, crystal atomic struct. determ. *(German)* 8−10007
  Ag_8SiSe_6, absorpt. edge investigs. at phase transitions 8−35149
  Ag_3Sn, dental alloy, prod. by melt extraction technique, exam. of mech. props. 8−48349
  $Ag_8SnS_6(Se_6)$, absorpt. edge investigs. at phase transitions 8−35149
  Ag_8SnSe_6, phase transition, thermal expansion meas. 8−14466
  Ag_2Te, low temp. thermal cond., thermoEMF 8−43423
  Ag_2Te, polymorphic transition, DTA meas. 8−34620
  Ag_2Te-(As)(Sb)(Bi), temp.-comp. diagram 8−44105
  $Ag_2Th(MoO_4)_3$, crystallographic data determ. *(French)* 8−10013
  $AgTlSe_2$ and AgTlSe, elec. cond. and thermoelectric power, doping effects, rel. to pseudogap model 8−2506
  β-$Ag_xW_yV_{2-y}O_5$ bronzes, β-phase existence range, elec. cond. and Ag diffusion 8−35373
  β-Al_2-O_3-Ag_2O, sp. ht. 0.1-1 K, evidence for localised low-energy excitations 8−34632
  As_2S_3-Ag_2S glass, Ag diffusion, 50-120°C 8−18828
  (Cu,Ag)X, (X=Cl, Br, I), molten, thermoelec. power determ. 8−26711
  Cu_2Se-$AgInSe_2$ heterojunction, photodetection props. 8−39195
  Ge-S-Ag glasses, bulk and film, EPR study 8−43644
  GeS_2-GeS-Ag_2S glass, Ag diffusion, 50-120°C 8−18828
  KCl-AgCl (0.5%), surface positron and positronium states, positron annihilation expts. *(Russian)* 8−39623
  P_2S_5-Ag_2S glass, Ag diffusion, 50-120°C 8−18828
  $RbAg_4I_5$, solid electrolyte, electronic cond. meas. 8−2483
  $RbAg_4I_5$, superionic cond., US absorpt., ionic cond., relaxing sp. ht. 8−14505
  $RbAg_4I_5$-metal interface, photocurrents, photoelectrochem. effects 8−34897
  $SO_2(NHAg)_2$, disilver sulphamide, crystal atomic struct. *(German)* 8−10008

SIMS *see secondary ion mass spectra; secondary ion mass spectroscopy*

simulation
  see also aerospace simulation; analogue simulation; brain models; digital simulation; hybrid simulation; modelling; physiological models; plasma simulation; semiconductor device models
  acoustic ducts, finite element simulation 8−38115
  acoustic logging in cased wells, simulation rel. to excited wave freq. optimisation *(Russian)* 8−40707
  apodiser, optimum, simulation by binary filters 8−5539
  Asian summer monsoon, hemispheric simulation 8−40629
  Asian summer monsoon, simulation by general circulation models 8−40637
  atmospheric adiabatic boundary layer height vars., simulation in wind tunnel 8−7691
  atmospheric circulation flow patterns, laboratory simulation of abrupt changes, catastrophe theory appl. 8−40721
  atmospheric wind simulation in wind tunnels, roughness element geometry anal. 8−47079
  BCC structures, simulation of vacancy-thermotransport 8−47570
  brittle fibre reinforced composite, failure, mathematical simulation 8−3221
  bubble populations in a gas fluidised bed 8−22415
  cellular convection in liquids, numerical simulation *(Russian)* 8−34120
  complex chemical systems, kinetic mechanisms simulation method 8−48622
  convection, natural, in closed container, numerical simulation 8−46969
  daytime F_2-layer simulation, selection of aeronomic parameters system 8−45087
  diatomic gas, molecular dissociation, recombination reactions simulation 8−23934
  dipolar lattice, 2-D, Monte-Carlo calc., lattice energy 8−14308
  drag reduction by compliant wall, numerical simulation of turbulent boundary layer 8−26114
  earthquake simulator studies of cylindrical tanks 8−45027
  educational simulation involvement indices based on physiological responses 8−31760
  FFTF, operator training simulator 8−5013
  finite amplitude sound wave, simulation of nonlinear propag. through circular pipe 8−13834
  fission reactor safety, two-phase flow, analytical simulations for safeguards design 8−46143
  flowmeter, flux distortion, tests using analogue rig to simulate flow with boundary layer 8−38420
  free-shear plane stationary computer simulated turbulence struct., discretized Navier-Stokes eqns. 8−26111
  galactic models with variable spiral structure, computer simulations 8−32574
  high-current relativistic beam, bunching, 2-dimens. finite size particle model 8−9310
  HTGR Core Auxiliary Cooling System mathematical simulation 8−29570
  human factor studies, conf., San Francisco, USA (Oct. 1977) 8−48742
  ice, hexagonal, lattice struct., computer simulation 8−14324
  interplanetary shocks interaction with Earth's magnetosphere, computer simulation 8−16243
  ion autoresonant acceleration, numerical simulation 8−21789
  ionic motion, 3-D quadrupole electric field, charge exchange collisions 8−9315
  laser-supported detonation wave momentum transfer optimisation 8−30307
  linear molecule liquids, computer simulation and theory, review 8−38604
  liquid/solid interface, mol. dynamics simulation of struct. 8−26764

simulation continued
  macromolecular dynamics, constraint dynamics, computer simulation 8−9932
  macromolecules, computer simulation techniques for mol. theory verification 8−13633
  metal, grain boundary slip simulation using AgCl 8−3176
  molecular dynamics computer simulation, multiple time-step methods 8−47220
  molecular dynamics simulation of dense gases, test particle motion 8−9930
  nuclear reactors, modular data based codes appl. *(German)* 8−17445
  ocean storm surge simulation expts. 8−16052
  percolation clusters, as teaching aid for Monte Carlo simulation and crit. exponents 8−12477
  photochemical smog, rate parameters and computer simulation 8−48677
  Pickering reactor, simulation of wire activation expts. with SORGHUM code 8−25310
  piezoelectric resonator with vibrating wall, impacting oscills. simulation *(Japanese)* 8−9483
  polymers, by self-avoiding nonintersecting random chains, conc. effect 8−12639
  press. by Monte Carlo computer simulation 8−4564
  PWR power plant, primary cct. leakage, safety aspects *(German)* 8−33239
  reaction rate data evaluation and compilation, simulation and models 8−48621
  reactor fuel pin heat transfer, digital transfer matrix 8−29548
  relativistic electron beam deposition, field-enhanced, bremsstrahlung prod. 8−29677
  remote sensing simulator for soil moisture meas. 8−49143
  rimming flow, numerical simulation of free-surface flow with surface tension 8−22353
  rocks fabric development simulation, appl. to quartzite 8−49015
  sea ice dynamics in Arctic (May 1975), simulation 8−36192
  sensitometer, Xe flash, for daylight, W illum. simulation 8−29192
  speech analysis, simulation rel. to error evaluation for linear predictive using small anal. segment *(Japanese)* 8−31824
  Stepanov method, liq. mixing in shaper hole, simulation device 8−3022
  thermal neutron monochromators, Monte-Carlo simulation of mechanical velocity selectors 8−24886
  tornado vortex simulation at Purdue University 8−40677
  transport coeff. numerical simulation of meas. by correlation method 8−8364
  tropical climate of ice age, simulation 8−16144
  troposphere, urban photochemistry, computer simulation 8−49085
  turbulent flow, numerical simulation of large eddies 8−9628
  turbulent flow in pipes, numerical anal. by finite element method 8−18341
  turbulent shear flow computation, Navier-Stokes eqns., Reynolds stress modelling 8−46955
  two-phase flow through porous media, starting algorithm for numerical simulation 8−38388
  Viking biology experiments simulation, possible surface reactions on Mars 8−7904
  viscous incompressible fluid, two-dimensional turbulence in bounded region 8−30270
  visual path neuron, analogue and digital electronic circuit appl. *(Spanish)* 8−27942
  vortex sheet evolution, buoyancy and surface tension effects 8−9643
  water, structure, theory based on quasi-component distrib. functions 8−38606
  wave supporting system, lossless, distributed parameters from boundary meas. 8−16658
  I_2, $(B^3\pi_{0+u})$, dissoc. reaction, computer simulation 8−48639
  KCN, liq., mol. dynamics computer simulation 8−38609
  KCl, (100) face, mol. dynamics computer simulation of surface props. 8−18880
  NaCl, evaporating surface, step motion obs. and simulation 8−26766
  Si-C-O-Ar, high temp. plasma, prod. quenching mol. dynamics simulation 8−39711

simulation, digital *see digital simulation*

simulators *see simulation*

Sinanoglu's theory *see atomic structure*

sinks, heat *see heat sinks*

sintering
  see also densification
  agglomeration techniques in powder technology, review 8−39713
  bearing material, current state of prod. and development trends review 8−19902
  borides, metallic, sintering, review, book contrib. 8−48359
  ceramic, compaction during pressing, green strength, effect of adsorbed layers *(German)* 8−6880
  chrome-forsterite-periclase refractory constitution and props., phase reactions during firing *(German)* 8−11175
  clay, sintering tendency, effect of basalt and chemical-mineralogical composition 8−11177
  crystalline particles at sphere-plane contact, nondiffusional deform. under capillary forces 8−15329
  diamond, sintering under quasi-hydrostatic high press. *(Chinese)* 8−11141
  diamond powder, sintering with Co binder 8−27450
  electric discharge sintering, metal powder+punch electrode reactions 8−11148
  electrical contact material, sintered, corrosion under tropical marine climate 8−11366
  feldspars theoretical treatments and exp. procedure 8−44067
  frictional electromagnetic clutch material, sintered, friction, hardness, wear props. 8−11339
  frictional material, environment effects on props. 8−11338
  grinding powder *(Polish)* 8−6873
  initial phase kinetics, model with diffusion *(French)* 8−35328
  metal, plastic, work hardening, sintered, porous, irreversible deform. 8−19849
  metal fibre materials, thermal and elec. conductivities 8−10419
  metal powder, milling conditions effect on densification during pressing and sintering 8−11149
  metal-glass material, relation between struct. and props., prod. by hot densification 8−11145

sintering continued
Ni-Cr alloy Kh20N80, sintered sheet material, stopping power and pore size relationship 8−19693
Nichrome wire, porous, strength charact. 8−6997
parts for frictional units 8−11342
paste, direct tensile tests and tied crack model 8−11178
piezoelectric ceramic, TsTBS-3, mech. strength, effect of glass powder addition 8−31370
porcelain, sintering, theoretical treatments and exp. procedure 8−44067
porcelain body dynamic equation, during sintering process *(German)* 8−27455
porosity effect in sintered material on temp. generated during grinding 8−35530
porous material, role of gas in healing of isolated pore by volume vacancy diffusion 8−15330
powders, submicron, surface area reduction kinetics, model 8−44039
sintered metal, cold forming with self aligning dies 8−11158
spherical powder sintering by surface diffusion, computer simulation 8−48344
steel, alloy hot forging for differential pinion gear 8−15337
steel, austenitic Kh18N9T, porous fibres, oriented struct., strength props. 8−3199
steel, austenitic stainless, powder, sintering behaviour 8−44051
steel, Ni-Mo, sintered, martensitic transformation due to cold working, metallographic study 8−44127
steel, sintered, high speed, with Ti(C,N) additions 8−11160
steel, sintered bearing material, standardisation, wear and friction props. 8−19901
steel, sintered type M2 high speed, heat treatment response and cutting props. 8−15336
steel, stainless, sintered sheet material, stopping power and pore size relationship 8−19693
transition metal borides, cryst. struct., prep. methods, chem., elec., mag. props., appls., book contrib. 8−47307
Volume changes experienced by porous solids during nonisothermal liquid-phase sintering and self-propagating high-temperature synthesis 8−15328
Ag, fine particles, adhesion and sintering, TEM exam. 8−44053
Al, powder, liquid phase sintering, solid-state solubility effect on vol. change 8−35332
Al_2O_3, high purity, sintering, impurity effects, analysis *(German)* 8−6881
α-Al_2O_3 sinterability, dependence on crystallinity of $NH_4AlO(OH)HCO_3$ parent salt *(Japanese)* 8−6883
Al_2O_3, sintered, TEM ons. of K containing β‴ precipitates 8−27522
α-Al_2O_3, sintered or hot-pressed, porosity effect on positron mean lifetime 8−27463
Al_2O_3, sintering under press., survey *(Polish)* 8−31368
Al_2O_3, sintering with $SrTiO_3$ admixture *(Polish)* 8−19699
Al_2O_3, surface smoothness and densification, effects of SiO_2 additive 8−27462
Al_2O_3, translucent, fabrication by high press. sintering 8−11167
β-Al_2O_3-Na_2O, MgO stabilised sintering *(German)* 8−19696
β-Al_2O_3-Na_2O:Mg, with and without Co co-doping, sintering behaviour rel. to ionic cond. 8−26723
Al_2O_3-W cermet, sintered pressed compact, compressive and transverse rupture strength 8−19850
$Al_2O_3+TiO_2$, reaction on sintering in reducing media 8−27457
Au, fine particles, adhesion and sintering, TEM exam. 8−44053
Be, plasma spray/sinter technique, Ar, satellite support structures, appls. 8−7079
$Cd_xHg_{1-x}Te$ compressed sintered slabs, Hall coeff. and microstructure obs. *(Russian)* 8−10475
CdS, effect of halide (NaCl, $CdCl_2$, $CdBr_2$, CdI_2) and polysulphide (Na_2S_x, K_2S_x) on recrystn. 8−11171
CdS:$CuCl_2$, sintered film, dopant conc. effects on carrier mobility 8−2484
CdSe, effect of halide (NaCl, $CdCl_2$, $CdBr_2$, CdI_2) and polysulphide (Na_2S_x, K_2S_x) on recrystn. 8−11171
$Co_{3-x}Mn_xO_4$, solid soln., synthesis, effect of Bi_2O_3 admixture upon props., thermistor appl. 8−15325
CoO, pressure sintering densification model, computer program 8−44040
Cu, dislocation form. during sintering *(German)* 8−31361
Cu-TiC precipitation hardened composite, struct. effect on friction 8−11337
Fe, sintered, metallographic meas. of pore size, effect on mech. props. 8−19685
Fe, sintered, plastic deform., porosity effects 8−23801
Fe, sintered parts, densification in burnishing process by rocking die method 8−35331
Fe-B_4C powder mixtures, phase changes and struct. of sintered materials *(Russian)* 8−6872
Fe-base fibres, extruded, heat treatment 8−35414
Fe-base wear resistant dispersion hardened electrolytic coating, annealed and sintered 8−35593
Fe-C-O, sintered, ferritic struct. obtained by Ar_3 transform. *(Japanese)* 8−6874
Fe-Cu (2 wt.%), furnace cooled, ageing and steam oxidation 8−23744
Fe-Cu-C, mixed powder compact, sintering mechanism 8−15343
Fe-Mo-(C)-(Ni), sintering 8−35333
Fe_2O_3-FeO, sinter, heating and reduction effect of phase transform. and fracture *(Russian)* 8−15375
Fe_2O_3-FeO, sintered and pellets, reduction in H_2 *(Russian)* 8−15705
Fe_2O_y, powder, sintering, surface area reduction, exam. 8−44039
$Fe_{1+x}V_{2-x}O_4$ spinels, prep. and negative resist. characts. *(Korean)* 8−39119
HFO_2, powder, preparation technique for highly sinterable powder 8−39714
LaB_6, US comminution of refractory compound powders 8−23656
La_2O_3-Mn_2O_3-Cr_2O_3, synthesis and properties of solid solutions 8−44038
$Li_{0.5}Fe_{2.5}O_4$-$Bi_2O_3(V_2O_5)$ systems, phase diagrams, sintering conditions 8−35366
Mg-noble metal alloy, sintered, supercorroding for heat and H_2 gas generation, seawater reaction 8−15607
$MgFe_2O_4$, sintered, cation ordering, grain size effects 8−39763
MgO, fused periclase, sintering and struct. characts. 8−23652
MgO-Cr_2O_3, reaction sintering *(German)* 8−11174

sintering continued
$MnCo_2O_4$ spinel, synthesis, effect of Bi_2O_3 admixture upon props., thermistor appl. 8−15325
Mo, powder sintering, transition metal activators, 1000-1350°C, heterodiffusion model 8−44044
(Na,Li)NbO_3 ceramic, optimum prep. conditions and characterisation 8−3079
Ni, electrolytic and carbonyl grades, sintered sheet material, stopping power and pore size relationship 8−19693
Ni-base wear resistant dispersion hardened electrolytic coating, annealed and sintered 8−35593
Ni-Zn ferrites, comp., lattice imperfections, sintering 8−3080
$PbMg_{1/3}Nb_{2/3}O_3$-$BiMg_{2/3}Nb_{1/3}O_3$, dielectric polarisation of solid solutions 8−43776
Pt on C, crystallite behaviour on sintering 8−7235
Si-Al-O-N system, exam. of compounds and properties 8−48387
Si-O_2-N_2 system, Si_2N_2O, corrosion in O_2, sintered in the presence of magnesia *(French)* 8−23837
SiAlON ceramic, pressureless sintering 8−27449
SiC, reaction sintered transform. interface morphology 8−31364
SiC, US comminution of refractory compound powders 8−23656
Si_3N_4, grain-boundary-crystallized, thermal shock resistance 8−11308
Si_3N_4, sintering with Al_2O_3 and Y_2O_3 *(Japanese)* 8−19703
Si_3N_4, thin sheets, reaction sintered, exam. of oxidation in damp air 8−48552
Si_3N_4-ZrO_2, sintered and hot pressed, exam. of mech. props. 8−48509
SiO_2-AlN mixture sintering, form. of β-Si_3N_4 solid solns. 8−23655
SrO.HfO_2(ZrO_2), US comminution of refractory compound powders 8−23656
$SrTiO_3$, sintering kinetics rel. to added SrF_2, ZrO_2 8−44037
$SrZrO_3$, $NiTO_3$, sintering additive 8−23638
Ta, sintering with transition metal additions 8−15335
Ta(C,N)-Ni-HfC(HfN)(Mo_2C)(VC), sintering, prod. of hard metals 8−11155
Ti, sintered sheet material, stopping power and pore size relationship 8−19693
TiC-base alloys, anomalous phase flaky precipitation *(Japanese)* 8−48401
TiC-Ni-Co-Cr, sintered, mech. props. effect of processing factors 8−11159
TiC-steel composite, effect of method of Cr additions on props. 8−15341
TiN, highly dispersed, metallic thermo-EMF 8−43363
TiN_zO_y, cubic, concentration dependence of the degree of filling of unit cell 8−44063
TiO_2, sintered ceramic, props. rel. to additives, impurities 8−35329
UO_2 powder, sintering charact. 8−35341
W fibre reinforced Ni-Cu composite, liquid phase sintering under press. 8−19695
W, porous, variation of open and closed porosity during sintering 8−15342
W-Cu sintered alloy, produced from coreduced powders, densification 8−11154
W-Ni, liquid phase sintering, microstruct. meas. 8−44054
W_2B_5, sintering rel. to prod. by boron carbide process 8−11184
WC-Co, cemented carbide sintered, appl. of dihedral angle meas. to microstruct. 8−39716
WC-Co sintered carbide tips, microscopic stress anal. 8−5663
WC-Ni hard alloys, sintered, with uneven binder metal distrib., molten Ni migration 8−35336
Y_2O_3, hot cast ceramic, prod., used as dielectric 8−11181
Y_2O_3 sintered body, blackness study thermoluminescence anal. *(Japanese)* 8−23541
Y_2O_3 sintered body, luminous pipe of high press. Na discharge lamp, corrosion resistivity *(Japanese)* 8−19915
Y_2O_3, US comminution of refractory compound powders 8−23656
ZnO ceramics, nonohmic, cryst. phases 8−26530
ZnO, powder, sintering, surface area reduction, exam. 8−44039
Zr and Hf, appl. *(Italian)* 8−4978
ZrB_2, pure, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649
ZrB_2-Ta composite, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649
ZrC, sintering 8−19700
ZrC, US comminution of refractory compound powders 8−23656
ZrO_2, powder, preparation technique for highly sinterable powder 8−39714
ZrO_2, sintering of granular masses, stabilized with CaO and Y_2O_3 8−44064
ZrO_2, Y_2O_3 stabilised, hydrothermal growth 8−15302
ZrO_2-CaO (12-19 mole%), AC elec. behaviour, 300-900°C, grain size, electrode material, and sintering effects 8−34649
$ZrSiO_4$, sintering, effect of grinding and additives 8−48356

size effect
metal, RF size effect, line shape, exactly solvable models 8−43429
metal, RF size effect, small-angle scatt., exactly solvable models 8−47821
metal film, effect on temp. coeff. of resist. 8−43489
metal thin wires, size effect correlation to longitudinal magnetoresistance 8−34824
metal-dielectric boundary, role of cond. electrons in form. of thermal resist. *(Russian)* 8−19149
metallic fine particles, tunnelling effects on props. 8−14704
metallic thin films, effect of pressure, case for in-situ meas. 8−39228
phase comparisons for Sondheimer size effect oscills. 8−34823
semiconductor, size quantised, superlattice state 8−39142
semiconductor film, quantised, indirect interband absorption rel. to surface irregularity 8−39618
semiconductor film with impurity centres, light absorpt., quantum size effect 8−27274
short range atomic order, size effect in electron theory, static conc. waves approximation *(Russian)* 8−39049
surface magnetisation, size effect 8−15008
thin crystal, interference spectra, size quantisation of excitons 8−47708
thin wire, negative longit. magnetoresist., kinetic theory 8−34821
Al, magnetoresistance size effect, effect of cyclotron orbit nature 8−47767
(Ba, Sr)TiO_3 ferroelectric film, phys. props. in weak elec. fields 8−35098
Bi filament, size-quantized, magnetoresist. oscills. 8−19062

size effect continued
Bi film, Hall effect, magnetoresist., resist. and TCR 8−2589
Bi, film, quantum size effect, electric field effect, Thomas-Fermi approx. energy surfaces, cond. 8−47890
Cd_3As_2 film 8−2600
Cs film, work function theory, size effect 8−43460
Cu-Au, elec. resist., pseudopot. calc. *(Russian)* 8−2460
Fe whiskers, galvanomag. size effects 8−14709
In, electron scattering rates, RF size effect meas. under multiple-turn conditions 8−14654
$In_{1-x}Ga_xP_{1-z}As_z$-InP, single and multiple layer heterostruct., LEDs and lasers 8−46626
Pd, ultrafine particles, size effect on vibr. sp. ht. 8−10153
Sn film, thermoelec. power, 3.7-8K 8−39231
W, low temp. transport props., phonon and impurity scatt. 8−10418

skin effect
see also anomalous skin effect
anisotropic metals in perpendicular mag. field, surface impedance behaviour *(Russian)* 8−39145
conductor surface, calc. by Leontovitch boundary condition *(Russian)* 8−2508
discharge, HF, stability under strong skin effect *(Russian)* 8−14242
metal, EM props., general lecture 8−26901
plasma, skin effect for microwaves and transverse pseudowaves 8−26297

sky
see also night sky; sky brightness
daytime sky meas. of haze and aerosol characts. *(Russian)* 8−36276

sky brightness
see also airglow; twilight
$\mu_h(\varphi)$ indicatrix rel. to single scatt. optical depth, new formula *(Russian)* 8−11999
daytime sky, UV light polarisation as indicator of atmospheric turbidity 8−20517
extragalactic background light intensity at 5100 Å wavelength 8−4414
light pollution, effect on astronomical obs. 8−3954
light pollution and possible measures 8−49139
night sky zenithal brightness monitoring, light pollution rel. to astronomical observations 8−49141
radiance during total solar eclipse, model 8−40652
reflected light from Earth's surface in Rayleigh atmosphere, estimation *(Japanese)* 8−40663
zenith photoelectric measurements during annular solar eclipse (1976, April 29) 8−3900

sky surveys *see astronomical catalogues*

Slater-type orbital calculations *see STO calculations*

sliderules *see calculating apparatus*

sliding contacts, electrical *see electrical contacts*

slip
see also kink bands; plastic flow
alkali feldspar, deformation, plastic defects, TEM investig. 8−32066
alkali halide, doped single crystals, plastic anisotropy 8−26575
alkali halide crystals, dislocation internal friction, orientation depend. 8−48439
alloy, formation of laminated martensitic structures *(Russian)* 8−39771
alloys, Ll_2, superstructure, dislocation link strength and strain hardening at high degrees of deform. *(Russian)* 8−39792
anisotropic body, slip planes 8−39874
anthracene, polymorphic forms, generation by repeated slip 8−34457
α-brass, fractographic obs. of cracks in early stages of fatigue *(Japanese)* 8−7023
brass, shear band development during rolling, twinning, metallographic obs. *(Japanese)* 8−39849
brittle fracture in ductile material, model and applic. to H embrittlement 8−23814
computer simulation of thermally activated dislocation motion through random array of point obstacles 8−30636
crack behaviour, discrete dislocation analysis 8−22788
crack tips, blunting during conc. plastic flow *(Russian)* 8−7013
cubic crystals, active slip systems in plastic deform. process *(French)* 8−35431
cyclic creep, enhnaced, high temp. theory for polycrystalline materials 8−7018
dislocation motion through random array of short range barriers, digital simulation 8−30634
dislocation multiplication, double cross-slip mechanism 8−22720
dislocation pile-up dynamics, planar 8−6058
dislocation pile-ups, plane-parallel inertial mechanism of avalanche-like breakthrough 8−2121
driving force and climbing force on dislocations 8−43017
dynamic stability of dislocation sub-boundaries during straining, computer simulation 8−30635
easy glide, computers modelling, range of permissible parameters *(Russian)* 8−47375
elastic body, inhomogeneous yielding, slip plane intersection with stress free boundary 8−5667
elasto-diffusive solids, singularity movement, appl. to fracture propag. 8−30235
enstatite, wet polycrystalline, high temp. flow 8−32082
fatigue crack, dynamic treatment of growth *(Japanese)* 8−34084
FCC crystal, transient effects during tensile tests in model of correlated dislocation motion 8−38715
finite distortional latent hardening in single crysts., perpetuation of slip 8−3144
fracture, plasticity model, dislocation based, geometrically consistent 8−30242
HCP crystals, dislocation-point defect interactions in slip systems 8−47417
hexagonal polycrystals, creep and plasticity, rel. to single crystal slip 8−13920
low temperature deform., heating of dislocation sources 8−18660
machine process, nonuniqueness 8−39932
metal, BCC, relation between elastic energies of dislocations and choice of slip system *(Japanese)* 8−18656
metal, shearing, scissors type, slip-line analysis 8−23761
metallic glass, shear deform., mechanism involving dislocation glide 8−15462

slip continued
Nimanic 80A, inhomogeneity effect of cyclin strain on crack initiation 8−48532
octadecanol, normal, single cryst., lattice defects, X-ray topographic obs. 8−18650
olivine, plastic flow of oriented single crystals, dislocation struct. interpretation 8−36156
ordering alloy, $L1_2$ superstruct., superdislocation dissoc. *(Russian)* 8−48451
plastic slip concept, statistical approach *(Russian)* 8−18196
plasticity, polycrystalline, based on dislocation processes, probabilistic approach 8−26621
polyethylene, high-density, oriented, deform. mechanisms 8−44171
polyethylene, high-density, semicryst., fold-surface morphology effect on deform. processes 8−34447
PVC, hard, flow zone effect on degradation, rigidity, deformation, under fatigue *(German)* 8−15471
rock, cracked, slip surface development 8−15480
sapphire, shaped single crystals, porosity, microstruct. 8−2125
sheet metals, strain-induced changes in mech. props. and press formabilities 8−19781
simulation of dislocation glide through fields of point obstacles 8−34521
slow viscous flow, slip-plane and slip-cylinder theorems 8−14046
statistical theory, dislocation configs., in point obstacle random array 8−18645
steel, austenitic 03KhAG19, fatigue crack development at normal and low temps., struct. effects *(Russian)* 8−35480
steel, austenitic stainless, flow cavitation erosion, initial part of incubation period 8−44224
steel, austenitic stainless, partial dislocation separation and dislocation substructure, effect of applied stress 8−22727
steel, low C, slip line development 8−15480
steel, pearlitic, deform. microstruct. and cementite fracture, −196 to 700°C 8−27576
steel, stainless, 18-8 type polycrystal, strain induced γ to α′ transform. *(Japanese)* 8−11221
steel, stainless, martensite nucleation and growth, expt. study 8−3125
steel, tensile prestrained strength of anisotropic rolled steel, rot.-bending fatigue tests, slip bands 8−27590
steel rolled, low-cycle torsional and push-pull fatigue anisotropy 8−27589
steels, C and stainless, fatigue crack propag. and crystallographic orientation *(Japanese)* 8−7027
stick-slip sliding dynamic props. appl. to earthquakes 8−48983
stress-deformation diagram for materials without significant elastic section *(Russian)* 8−13923
thermal and thermoelastic fields around moving dislocations *(Russian)* 8−22731
transient sliding motion under idealized dry friction, earthquake faulting appl. 8−34093
transition metal refractory materials, slip and microhardness 8−3211
Zircaloy, micrograin superplasticity at 850°C 8−23758
Ag, dislocation dynamics during strain rate changes *(German)* 8−18655
Ag, FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Ag single crystal, dislocation dynamics during stress rate changes 8−19813
AgCl bicrystal, grain boundary slip simulation 8−3176
Al, bicrystal, ⟨100⟩ oriented, plastic deform. 8−19812
Al, exoelectron photoemission enhanced by slip steps, plasmon reson. theory 8−15300
Al, internal friction, dislocation glide and jog climbing *(French)* 8−11261
Al, internal friction at medium temps. *(French)* 8−39826
Al, load relaxation, plastic deform. theory and plastic eqn. of state 8−27554
Al, plastic deform. and prominent cross slip ⟨100⟩ oriented single crystal 8−19851
Al single crystal, high purity, unusual slip systems 8−47387
Al-Cu (4 wt.%), precipitation hardened and fatigued alloys, solute loss at fracture surface, EPMA exam. 8−39893
Al-Mg-Si-Mn foil, planar defect spacing meas. by TEM 8−2135
Al-SiO_2 interface, stress and microstruct. via TEM 8−26797
Al-Zn (6.5 at.%), fatigue props., effect of ageing and thermomech. treatment 8−27620
Al-Zn solid soln., controlling creep mechanisms, role of diffusion 8−31469
Al-Zn solid soln., controlling creep mechanisms role of diffusion 8−31470
Al-Zn-Mg (3,1.5 wt.%), precipitation hardened and fatigued alloys, solute loss at fracture surface, EPMA exam. 8−39893
Al_2O_3, polycrystalline, slip band form. under fatigue stress, Schmid factor effect *(Korean)* 8−44199
Bi, deformed cryst., phonon scatt. by lattice defects, thermal cond. calc. 8−22802
$CaCO_3$, plastic deformation in compression parallel to (111) 8−38709
$CaMg(CO_3)_2$, dolomite, partial dislocations and stacking faults obs. 8−3761
$Cd_xHg_{1-x}Te$, thermally activated slip, microhardness temp. depend. *(Russian)* 8−34567
CdS, characts. of interaction of light with dislocations 8−2137
CdS, dislocation charges determ. 8−2136
CdSe, plastically deformed, luminescence line 0.96 eV 8−10950
CdTe, aB glide dislocations, dissociated into two Shockley partials, stacking fault energy 8−43024
CoO, polycrystalline, high temp. deform. 8−3174
CsI, crysts., microplasticity mechanism 8−30696
Cu, ⟨100⟩ oriented single crystal plastic deform. and prominent cross slip 8−19852
Cu and Cu-Al (8 wt.%) single crystal, surface dissolution effect on fatigue damage and crack nucleation 8−39936
Cu FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Cu single crystal, stored energy meas. by new deform. calorimetry method 8−39834
β-Cu Zn, cross slip 8−26576
α-Cu-Al (0.5 to 10 at.%), latent hardening and dislocation density 8−19853

slip continued
Cu-Al (15 at.%), single crystal, steady state deform. with $\langle 001\rangle$ axis at high temp. *(Japanese)* 8−6980
Cu-Al (15 wt.%) single crystal, steady state deform. at high temps. *(Japanese)* 8−19833
Cu-Al (8 at.%), coplanar slip, related with specimen size and axis *(Japanese)* 8−34518
Cu-Al alloy, low temp. deform., heating of dislocation sources 8−18660
Cu-Fe, single crystal with coherent γ-Fe particles, precipitation hardening 8−31416
Cu-Ge (1 at.%), FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Cu-Ge(Zn), conc. single crystal, yield region investigation, flow stress and obstacle charact. 8−3173
β-(CuNi)Zn, cross slip 8−26576
β-Cu(ZnMn), slip geometry, anomalous strengthening 8−10056
α-Fe, deformation induced intergranular creep cavitation 8−31473
Fe, influence of H on slip process *(French)* 8−6965
Fe, pure, mech. props. at low temps. 8−44219
Fe-Cr-Ni (18, 14 wt.%), single strain induced γ to α′ cryst. transform. *(Japanese)* 8−11221
Fe-Cr-Ni (25, 20 wt.%), single crystal, stress corrosion cracking 8−35553
FeAl single crystal, compressed, dislocation arrangement 8−14354
$Ga_{1-x}Al_xAs$ epitaxial layers, spectroscopic technique for imaging spatial distrib. of nonradiative defects 8−23498
GaAs-GaAlAs DH lasers, optical studies of defects and degradation 8−18654
Ge, screw dislocation loops, shrinkage vel. and cross slip freq., activation energies *(German)* 8−43028
InP, plastic deform. and scratch microhardness meas. 8−27583
LiF bicrystals, intergranular fracture due to single slip 8−34520
LiF:Mg, slip band struct. changes with temp. 8−47390
Mg alloy MA12, thermally strengthened, fatigue cracking in air and vacuum *(Russian)* 8−35481
Mg crystal basal slip, anal. of pairwise dislocation interactions and contrib. to flow stress 8−35440
Mg, pyramidal dislocation pair interactions contrib. to flow stress during slip 8−35441
Mg single crystal, anelastic internal stress field in easy glide region 8−48442
Mg-Mn-Ce, structural changes and deformation during superplastic flow 8−15472
Mo single crystal dislocation interactions during parallel shear in (011) plane *(French)* 8−43029
NH_4Cl, order-disorder transition, slip bands 8−22848
NaCl, single crystal, temp. anisotropy of plasticity and brittleness 8−3198
NaCl, strained in one glide system at 450°C, dislocation struct. 8−22728
NaCl type crystal, dislocations due to high temp. stress relax. 8−2126
Nb, catastrophic slip bands, fine struct. *(Russian)* 8−38718
$(Ni,Co)_3Ge$, Co effect on temp. depend. of yield stress 8−31487
Ni, deformed, coercivity and remanence anisotropy 8−31093
Ni, deformed, magnetic susceptibility anisotropic changes 8−27025
Ni, dislocation struct formed by C diffusion in single crystals, electron microscope obs. *(Japanese)* 8−10053
Ni plated Fe single crystal, deformed at 77K, surface obs. 8−19916
Ni/Ni_3Al-Ni_3Nb eutectic, directionally solidified, plastic deformation *(Russian)* 8−39843
$Ni-Al_2O_3$ alloy, electron beam evaporated, struct. and mech. props. 8−11114
$Ni_3(Al,W)$, yield stress, orientation depend. 8−39830
Ni_3Al, overshooting while testing in tension 8−44189
$\gamma'-Ni_3Al-Fe$ (10 at.%) alloy, steady-state creep 8−15460
Ni_3Fe, ordered and disordered states, strain hardening characts., temp. depend., multiple slip case *(Russian)* 8−15421
NiO, polycrystalline, high temp. deform. 8−3174
Ni_3V, dissociation of $^1/_2\langle 112\rangle$ perfect dislocations and nature of slip dislocations 8−43022
Pb film, thermal strain, depend. on cryst. orientation 8−10311
Si, plastic deformation, dislocation density in yield point area *(German)* 8−38720
Si wafer thermal gradient induced slip, effect of starting cooling temp. 8−10057
SmS, single crystals, crystallographic slip 8−18659
Sn, white, configurations, formation and Burgers vector of coupled dislocations stradlling polygon wall 8−26569
Ta, between 0.7 and 40K 8−19808
Ti-Al-V (6, 4 wt.%), texture effect on fatigue crack path 8−27633
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8−39791
Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8−6975
Ti-V (40 at.%), BCC, single crystal, fatigue and slip 8−19854
V, slip geometry and dislocation struct., rel. to degree and temp. of deform. *(Russian)* 8−38717
Zn, compatible bicrystal, plastic deform. *(Japanese)* 8−31460
Zn, deforming stress under basal slip, contrib. of forest and primary dislocations 8−3186
Zn, glide dislocations, second order pyramidal band, etch pit obs. of pure single cryst. *(Japanese)* 8−38716
Zn monocrystal, cavitation induced multiple slip, twinning and fracture 8−39872
Zr-base alloy as reactor core material, microstruct., deform. and fracture 8−4988
Zr_3Al, $L1_2$ phase, work hardening 8−23718
Zr_3Al, $L1_2$ phase yield strength 8−19811

slip (asynchronous machines)
deep slip motor starting characteristics, industrial cinefilm winder motor appl. *(Russian)* 8−29199

small polaron conduction
biphenyl, electron mobility and photogeneration temp. depend., polaron hopping 8−19033
Peierls-Frohlich state on many-phonon-coupling model, dynamical props. 8−47773
As_2Se_3, amorphous, DC Hall effect, elec. cond. mechanism 8−23121
CeO_{2-x}, small polaron mobility, elec. cond. and nonstoichiometry meas. 8−47785

small polaron conduction continued
$CuO-CaO-P_2O_5$ system glasses, DC cond., hopping transport, 300 to 620K 8−23096
Ge, sputtered hydrogenated amorphous, steady-state and transient photocond. meas. 8−10506
La_2CuO_4, high pressure phase transformation, small polaron cond. to semicond. transition 8−6156
$La_{1-x}Sr_xCrO_3$, x=0-0.2, AC and DC cond., 77-1300K, hopping of polarons 8−2477
$MoO_3-P_2O_5$, glass, polaron hopping DC conduction mechanism 8−6376
$Na_2O-TiO_2-SiO_2$ glass, elec. props. and energy gap 8−26921
$Pb(Ti_{0.47}ZrO_{.53})O_3$, small polaron cond. mechanism, elec. cond. and thermopower meas. point defects 8−43380
Pr_6O_{11}, mag. and transport props., multiphonon hopping conduction 8−19211
$TiO_2-P_2O_5$ reduced glasses, prep., elec. transport, chem. anal., DC, AC cond., seebeck coeff. 8−30924
$V_2O_5-GeO_2-PbO$ glasses, memory and threshold switching 8−23142
$WO_3-P_2O_5$ glass, DC elec. cond., 100-400K 8−39106

smectic liquid crystals
A→C second order phase transition, symm. changes and dipole orderings 8−2238
A-phase, layer rigidity, stress relax. 8−18545
aromatic esters derived from naphthalene, liqs. cryst. props. 8−47235
BBOA, B phase, containing 4 ferrocene derivatives, ^{57}Fe Mossbauer study 8−27136
biaxial order parameters, NQR meas. 8−34432
CBOOA, smectogenic, cryst. and mol. struct. determ. 8−2103
chiral polarised, electric field induced tricritical point 8−10176
cholesteryl myristate, density of smectic, cholesteric, blue, isotropic phases 8−42897
4-cyano-4'-octyloxybiphenyl, nematic-smetic-A transition, optical birefr. temp. coeff. 8−47505
cyanobenzylidene octyloxyaniline, director bend mode behaviour near nematic to smectic-A phase transition 8−1985
de Gennes model, for nematic to smectic-A transition, anisotropic crit. props. 8−43110
L-p-decyloxybenzylidene-p′-amino-2-methylbutyl-cinnamate, ferroelec. smectic liq. cryst., electro-optical effect 8−39527
deuterated compounds, molecular order and conformation changes in phase transitions 8−47237
EEBAC-TBBA, mixed liq. cryst., layer thickness of smectic-B phases 8−38822
electro-optical reversible memory effect *(Russian)* 8−31174
ferroelectric smectic-C liquid crystal film, freely suspended, two-dimensional mol. orientation fluctuations, light scatt. meas. 8−47236
focal conics energetics 8−22641
HBT, mag. susceptibility and anisotropy, smectic, nematic, isotropic phases 8−18748
HBT, phase transitions, quenching effects, DSC, DTA, X-ray diffr. and microscopic obs. 8−22833
p,n-hepthyloxybenzoic acid, smectic C liq. cryst., coherent light diffr. 8−1999
4-n-hexyloxybenzilidene-4′-n-propylaniline, liq. cryst. phases, thermal and structural studies 8−1989
p,n-hexyloxybenzylideneamino-p′-chlorobenzene, liq. cryst., sp. ht. meas. 8−22831
HOBA two dimensional diffr. grating due to AC electric field, pulsating diffr. 8−15148
homeotropic to confocal texture transformation *(Russian)* 8−18548
HxBPA smectic phases, X-ray diffr. and Raman spectra 8−6012
induced smectic mesomorphism by incompatible nematogens 8−1983
internal field, dipole correlation factor 8−34428
light propagation in chiral and cholesteric phases *(French)* 8−43836
lipid-water smectic phase, forced Rayleigh scatt. 8−14278
liquid crystal, smectic A and C phases, classification of defects 8−26433
liquid crystals, nematic and smectic, EPR and NMR relax., first-rank tensor component effects 8−14275
molecular structure and occurrence of smectic A and smectic C phases 8−6008
4-n-octyl-4′-cyanobiphenyl, smectic A and nematic liq. cryst., refr. indices and order parameters 8−22644
4′-n-octyl-4-cyanobiphenyl, smectic bilayers, press. effects, phase diagrams *(French)* 8−10177
4′-n-octyloxy-4-cyanobiphenyl, smectic bilayers, press. effects, phase diagrams *(French)* 8−10177
octyloxycyanobenzylidene, smectic A, anomalous ordering, Landau-Peierls system 8−30538
phase transition smectic A to C, crit. behaviour, in mag. field 8−6148
phase transitions, B-E and H-VI, symmetry changes and crit. behaviour 8−2243
piezoelectric effect 8−6635
Schiff base compounds, cholesteryl esters, mesomorphic behaviour 8−1994
Schiff base compounds, p-n-alkoxybenzaldehydes condensed with p-bromoaniline, transition temp. 8−42898
Schiff base esters, mesomorphic behaviour 8−1993
shear wave attenuation 8−9944
striped patterns in thin droplet 8−26430
TBBA, low temp. phase, inelastic coherent neutron scatt. exam. 8−26429
TBBA, smectic, spin-lattice relax., self-diffusion, mol. rot. 8−35055
terephthal-bis-n-alkylaniline, homologous series, prep. and mesomorphic props. 8−26436
terephthalates, vibr. spectra, vol. struct. 8−18547
terephthalylidene-bis-4-n-alkylanilines, smectic F planes 8−42902
thermal parameters, transition temps. and latent heats 8−22832

smoke
see also air pollution; dust
atmospheric smoke and dust clouds, lidar observation at 0.7 μm, 10.6 μm 8−49181
cigarette, density changes during burning as obs. by β-source attenuation 8−11792
computerised rapid-scan spectroscopy, at NAVWPNSUPPCEN Crane 8−41362
gas-particle plumes from finite-size combustion sources, dynamics 8−30341
laser velocimetry of distance smoke plume 8−28345

smoke continued
light extinction, absorption effects 8−33667
open field burning emissions and plume concs., depend. on meteorology, field conditions and ignition technique 8−36266
photochemical smog, transferred contaminant air pollution model *(Japanese)* 8−32217
pollution, Greater London area, vehicular and domestic emissions relative importance 8−36269
sedimentation, natural, visual, photographic and laser sonde obs. *(Russian)* 8−32216
shock wave structures, particle specific heat, Boltzmann eqn. 8−14072
timber fires in Alaska, NOAA-5 images, of smoke 8−49079
MoO_3, smoke particles, coalescence growth by gas-evaporation 8−47256
WO_3, smoke particles, coalescence growth by gas-evaporation 8−47256
smoothing circuits
see also filters
bioelectric potentials, controlled filter 8−40357
snap off varactors *see varactors*
Snoek effect
Fe-C-Cu (0.21, 0.2 wt.%), neutron-irradiated, resolution of C atoms, internal friction meas. 8−31442
Nb:H, lattice distortion and migration energy of H impurities 8−30796
Ta:H, lattice distortion and migration energy of H impurities 8−30796
V:H, lattice distortion and migration energy of H impurities 8−30796
V=O, lattice distortion and migration energy of O impurities 8−30796
snow
Antarctic, surface dust contamination, climatonomical modelling of temp. response 8−24354
clouds, water droplets size, density distrib. meas., laser remote sensing technique *(Japanese)* 8−49175
depths in Birmingham, England 1917/18-1976/7 winters 8−44890
dielectric breakdown characteristics *(Japanese)* 8−40669
dielectric relaxation and LF anomalous dispersion obs. *(Japanese)* 8−49056
microwave spectroscopic imagery of Earth from Nimbus 6 satellite 8−12026
organic micropollutants in precipitation in Norway 8−36262
persistence, runs and recurrence characts. of precip. 8−3865
E.-central Scotland, snow and sleet freq. var. in 1708-1975 period 8−44951
water storage determ. using aircraft-borne gamma-ray surveys 8−16218
N compounds exchange between ocean-atmosphere-continent system 8−3794
O isotopic composition of fallen snow in Antarctica, controlling factors 8−36237
^{210}Pb conc. or climatic changes at South Pole 8−7748
social and behavioural sciences
see also economic and sociological effects; ergonomics; psychology; teaching
catastrophe theory application, claims and accomplishments 8−29
catastrophy theory appls., book 8−32665
educational course, scientific method illustrated by paraphysical and neuroscience topics 8−24591
global problems and energy, nuclear power 8−45454
man's effect on environment, natural resources 8−45455
marine animal biphasic constant current stimulator 8−48899
societies
Royal Astronomical Society, manuscript archives 8−32636
sociological effects *see economic and sociological effects*
sociology *see social and behavioural sciences*
sockets (electrical) *see electric connectors*
sodar *see sonar*
sodium
see also nuclei with ......
adsorbed on Pt(III) surface, electronic struct. 8−19117
adsorption, on W(110) plane, ordering, theoretical anal. 8−18892
arc lamp, high-press., tube temp., Al_2O_3 sublimation 8−5532
atmosphere Na layer in 80-105 km height range, lidar obs. of horizontal var. 8−36347
atom, ($4^2P_{1/2}$, $5^2{}_{1/2}$ states), mag. dipole interaction consts., RF spectroscopy 8−37577
atom, core polarisation effects, influence on photoionisation cross sections, ground and excited states 8−46308
atom, D_1 and D_2 reson. lines, intensity dependent polarisation change 8−5163
atom, D_1 line, optical coherent transients by laser freq. switching 8−42391
atom, Doppler-free two-photon linewidths, 3S-4D press. broadening coeffs. 8−25481
atom, electron impact excitation, 2nd order pots. method calcs. 8−13608
atom, electron impact excitation, L-Auger and autoionis. spectra 8−5354
atom, electron impact excitation cross sections, Vainshtein approx. 8−25721
atom, electron impact ionisation, reson. and nonreson. electron distrib. 8−33615
atom, electron impact reson. transition excitation, unitarised distorted-wave polarised-orbit model 8−25710
atom, excited state photon echo relax. 8−37606
atom, field ionisation of highly excited states 8−17814
atom, ground state g_j factor, meas. from weak-field Zeeman spectra 8−33469
atom, high resolution inelastic electron scatt. at zero angle, oscillator strengths 8−9255
atom, high-resolution laser spectroscopy with minute samples 8−17822
atom, hyperfine interaction in $4D_{3/2}$ and $4D_{5/2}$ levels 8−37616
atom, in Xe matrix, 3s excitation, UV and vis. spectra 8−46291
atom, inner core neutral binding energies, relaxed orbital relativistic Hartree-Fock-Slater calc. 8−13433
atom, laser induced zero-field effect, non-optical obs. 8−37604
atom, Lorentzian power broadening by optical pumping 8−17613
atom, narrowed optical lines, laser and accel. beam method 8−37770
atom, optical pumping, Hanle effect 8−33475
atom, partial photoionis., cross sections $\sigma_{3p,s}$ and $\sigma_{3p,d}$, expt. separation and study 8−42020
sodium continued
atom, population change induced by laser radiation, hook method 8−33476
atom, reson. fluoresc., photon burst detection 8−42244
atom, reson. light scatt., theory of correl. meas. 8−42014
atom, seeded in acetylene-air flame, optoacoustic pulses, energy transfer from laser excited atoms 8−25490
atom, spectral line breadth, total absorpt. of 3S→nP transitions 8−46306
atom, spin polarisation in flames by optical pumping, mag. reson. transitions 8−29762
atom, two-photon absorption reson. in spatially separated fields 8−21890
atom detection by laser photoionisation *(Russian)* 8−33487
atomic beam, fast, collinear laser spectroscopy 8−37078
atomic beam source, low-consumption, with recycling oven 8−5376
atomic D_2 line, fluoresc. freq. distrib. induced by monochromatic laser beam 8−942
atomic resonant lines, wing intensities after inert gas perturbation 8−37596
atomic Rydberg states, nd→(n+1)p intervals meas. 8−33629
attenuated total reflection minima, correlation with surface polariton modes, computational study 8−31265
biomembrane transport mediation by ionophore A23187 in absence of divalent cations 8−11623
carotid artery Na kinetics 3-compartment model, incorporation of diffusion effects 8−27996
cloud around Jupiter's satellite Io, distrib. and intensity 8−36494
coadsorption and reactivity with NO on Ag (111) 8−38948
coadsorption with Br_2 on Ag (111) 8−38944
Debye-Waller factors, temp. depend. calc. 8−22807
detection limit, using CW dye laser spectroscopy *(Japanese)* 8−44435
determination, in water, by neutron activation and X-ray fluoresc. analyses 8−3428
elastic free energy meas., rel. to localised soft mode theory for martensitic transforms. 8−10159
electron potentials and wave functions *(Russian)* 8−47688
film, XPS lineshapes, many body processes 8−39663
glass-Na vap. interface, dye laser frequency locking by selective refl. 8−29992
Gruneisen parameter temp. var. for BCC struct. 8−6137
Heine-Abarenkov potential 8−6248
high-press. discharge lamp, theory and plasma diagnostics appl. 8−9829
ileum epithelial cells and intercellular spaces, microprobe meas. of Na, K and Cl conc. profiles, rabbit 8−35819
interstellar Na I, quadratic depend. of column density on N_h 8−20872
isoelectronic sequence, electron impact excitation, transition probabilities, oscill. and collision strengths 8−25718
isoelectronic sequence, theoretical f-values 8−37593
isoelectronic series, Hartree-Fock line strengths 8−9122
kidney, isolated, perfused in vitro, sugar reabsorpt. rel. to Na transport, rabbit 8−20155
lattice sp. ht. and thermal vibrs. 8−30768
liquid, atomic self-motions *(Rumanian)* 8−47226
liquid, incipient superheat meas., expt. and physical parameter effects 8−18289
liquid, inelastic thermal neutron scatt., interatomic pots. calc. 8−42891
liquid, MHD induction machine, duct local flow charact. at large EM interaction parameter *(Russian)* 8−5818
liquid, radial distribution functions calc. at 100°C 8−22638
liquid, resistivity, thermoelectric power, Harrison nonlocal pseudopot. calcs. 8−23069
liquid, small-leak Na+water reaction in LMFBR steam generator, dissolution rate of hydrogen 8−29545
liquid, square-well pot. mols., struct. factor, transport props. 8−22620
liquid, T_c, P_c, V_c, from eqn. of state 8−2228
liquid metal slug flow, transfer function of temp. fluctuations 8−46133
LMFBR, accidental Na release as peroxide aerosol, effect on tomato and lettuce *(French)* 8−8997
magnetically perturbed gas, distortionless optical pulse propag. 8−22179
mesenteric artery Na distrib. in early salt-induced hypertension 8−27999
mesosphere Na and K abundances, simultaneous nighttime lidar meas. 8−36239
model pseudopotential, form factors, binding energy and compressibility calcs. 8−26486
molecule, Franck-Condon factors direct meas. 8−25618
monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
MOS structures, Na^+ neutralisation characteristics of HCl oxides 8−10572
Na-coloured intracavity flame, in dye laser, mode competition 8−46594
nuclear fuel-sodium interactions, effects of finite mixing time and noncondensable gas 8−17331
nuclear reactor coolant, impurity conc. meas. by automatic plugging indicator 8−17283
optical parametric oscillator, resonantly enhanced four-wave, pump intensity 8−9412
optically excited vapour, evanescent light emission near interface, transient polarisation 8−25468
phase comparisons for Sondheimer size effect oscills. 8−34823
phonon dispersion, modified de Launay model 8−34573
phonon dispersion curve crossing in (ξ00) direction 8−38795
physiological pNa monitoring, by integrated FET micro ion sensor 8−44641
plastic deformation 8−30693
selective and counter transport through polyvinylbutyrolactonecoacrylonitrile membrane *(Japanese)* 8−31700
single atom detection by saturated optical nonresonant emission spectroscopy 8−31741
slow atoms, inverse scatt., semiclassical approx. calcs. 8−17747
solubility in wustite and diagram Fe-Na-Ca-O at 1000°C *(French)* 8−31392
sputtering from NaI target, velocity spectrum meas. by Doppler shift laser spectrometer 8−19621
superheated flow in pipe, single bubble slug expulsion 8−672
thermodynamic props. at high press. *(Russian)* 8−47536
vacancy double jumps and atomic diffusion 8−6175

sodium continued
vacancy formation volume, temp. depend. 8−47350
vapour, conversion of He-Ne laser emission *(Russian)* 8−33776
vapour, direct ninth harmonic conversion of ps laser pulses 8−5526
vapour, electron drift vel., expt. 8−30403
vapour, electron drift vel., momentum cross-section, theory 8−30404
vapour, quantum counter, IR detection 8−30016
vapour, seventh harmonic generation of light 8−18009
vapour, sum frequency generation, via reson. quadrupole transition, theory 8−42385
vapour, two-photon reson. four-wave mixing 8−46716
vapour delay line, temporal compression of dye laser 5890 Å CW output 8−46688
X-ray scattering, thermal diffuse, meas. in longitudinal and transverse branches 8−19598
X-ray threshold anal. 8−31281
XPS investigation of density of states 8−6829
AgCl:Na$^+$, impurity effect on plasticity 8−14398
Al_2O_3-P_2O_5-Mg(Ca)(Sr)O glasses, Na$^+$, Sr^{2+} diffusion coeffs. rel. to temp. 8−30787
CaF_2:Na, pulsed DNMR exam. 8−35066
CsI(:Na), ionic cond. temp. depend. meas., effect of Na doping 8−18829
K$^+$+Na, differential scatt. cross section, electronic excitation via. rot. coupling in NaK$^+$ 8−13579
KCl:Na, photodichroic holographic recording, polarisation sensitivity 8−29911
KCl:Na$^+$, R-centre exam., uniaxial stress effects on zero-phonon lines 8−47371
Na, (3s-4d), Doppler free spectra, 4d fine struct. splitting=1028±0.4 MHz 8−41356
Na, energy and displacement field around edge dislocation, Ritz method 8−14344
Na I, in W 51 region, possible detect. of 17 cm hyperfine emission 8−8139
Na I 5890-5896 Å, airglow in upper atmosphere, semi-annual vars. 8−28360
Na I isoelectronic series, transition probabilities, oscill. strengths, lifetimes, branching ratios 8−33470
Na I twilight and nightglow, interferometric studies of D-line profiles 8−36353
Na$^-$, photodetachment cross-sections and multipole polarisabilities, extended asymptotic model 8−42028
Na$^+$/K$^+$ intracellular ratio, rel. to protein synthesis control and cataract form. 8−11646
Na-Ar, nonlinear optical 5th order susceptibility meas., VUV harmonic generation 8−42381
Na-H_2-N_2 jet, ignition and extinguishment in simulated LMFBR accident conditions 8−8932
Na-ice condensate, EPR lineshape second moment, electron solvation struct. 8−3440
Na-NH_3, nonmetal-metal transition, thermodynamics 8−18964
Na-Ne, gas phase, absorption, D-line profiles, dye laser meas. *(French)* 8−42007
Na-Ne-Ar discharge low-press., instability 8−9868
Na$^+$-solvated electron, reversible capture by 1,1-diphenylethylene, equilib., kinetics 8−7177
Na+Ar, collisional relax. by tri-level echo 8−17774
Na+Ar, fine structure transition cross-sections, emission spectra, NaAr form. 8−9085
$Na+Cl \rightleftharpoons Na^+ + Cl^-$, chemi-ionis. and recomb. cross sections 8−33583
Na+ethanol, reaction rate determ., rel. to cleaning from LMFBR components 8−21689
Na+H$^+$, charge transfer processes with plasma gun, Lyman-α radiation exam. 8−46573
Na+He$^+$, single-electron capture cross-sections 8−37737
Na+He(Ar)(Ne), press. broadening coeffs. of Na 3S-4D transition 8−25481
Na+He(2^3S_1), Penning ionis. in stationary afterglow 8−42184
Na+inert gas atom collisions, optical emission cross section, reson. lines 8−13584
Na+Li$^+$, direct and charge exchange scatt., differential scatt. cross-sections meas. 8−42158
Na+Mg$^+$, charge exchange and excitation processes 8−17772
Na+N_2, collisional deactivation of Na excited states, time resolved fluoresc. 8−42197
Na+N_2, rot. excitation and fine struct.-changing collisions 8−42176
Na+$N_2(H_2)(O_2)$, excited atom quenching, semi-empirical model 8−1065
Na+Ne, autoionising Ne levels excited in 5-10 keV collisions 8−22017
Na+Ne, electron excitation, multi-state impact parameter approx. 8−42200
Na+$SiCl_4(C(CH_3)_4)(Si(CH_3)_4)(Sn(CH_3)_4)$, rainbow scatt. at thermal energy, anisotropic pot. 8−29837
Na$^+$+He, electron gas model, polarisation inclusion 8−37699
Na$^+$+He, relative level excitation, orbital ang. momentum quantum number depend. 8−25688
Na$^+$+K, differential scatt. cross section, electronic excitation via. rot. coupling in NaK$^+$ 8−13579
Na$^+$+Li, direct and charge exchange scatt., differential scatt. cross-sections meas. 8−42158
Na$^+$+Ne, autoionising Ne levels excited in 5-10 keV collisions 8−22017
Na$^+$+Ne collisions, Na KK vacancy prod. 8−17781
Na_2, beam, multiphoton ionisation mass selective laser spectroscopy, vibronic, gyrovibronic states, clusters 8−21985
Na_2, electron impact, vibr.-rot. excitation by slow electrons, multiple scatt. calcs. 8−13617
Na_2, supersonic mol. beam, characterisation by multiphoton ionisation 8−23946
Na_2^+, core-core interaction potential calc. 8−25645
Na_2^+, FSGO calcs. with model pots. 8−33413
Na_2^+ Simons-type pseudopots. calcs. 8−5120
Na_2+Li→NaLi+Na, equilib. const., enthalpy change 8−25750
^{20}Na, D-line absorption, isotope shift determ. *(French)* 8−42008
Rb+Na, spin exchange cross section 8−33637
ZnSe:Na, characterisation of edge emission 8−27312
ZnTe:Na, fluorescence spectra meas. 8−10949

sodium alloys
dilute, sp. ht. meas. close to melting point 8−47501

sodium alloys continued
K-Na, dil., anisotropic scatt. of conduction electrons by impurities 8−18944
K-Na, dil., anisotropy of electron-impurity scatt., de Haas-van Alphen effect meas. 8−18943
Li-Na, liq., concentration fluctuation and structure factor 8−30534
Li-Na, liq., short-range order, neutron diffr. obs., near crit. composition 8−22639
Na-Cs, liq., thermopower 8−23074
Na-Cs melt, density and molar volume *(Russian)* 8−15357
Na-Cs solution, saturated vapour pressure of Cs over solution 8−26688
Na-K, liq., dynamical struct. factor calc. 8−22634
Na-K alloys, liq., thermal conductivity, NaK_2 formation 8−10416
Na-K liquid alloy, self and mutual diffusion coeff. 8−22877
Na-K-Cs alloys, liquid contact material, phase diagram calcs. 8−6145
NaK, appearance pot., dissoc. energy, ionis. pot., mass spectra obs. 8−25750
Na_xK_{1-x}, solid-liquid transition 8−6144
NaLi, appearance pot., dissoc. energy, ionis. pot., mass spectra obs. 8−25750
NaLi→Na+Li, equilib. const., enthalpy change 8−25750
$Na_{1-x}Sb_x$, liq., mag. susceptibility 8−14926
Pb-Na, with Pb_3Na precips., flux pinning, crit. currents obs. *(German)* 8−14907
PbNa, type-II superconductor, regularly ordered precipitates, peak effect, crit. current meas. *(German)* 8−19196

sodium compounds
see also Rochelle salt; sodium alloys
acetate trihydrate, whisker growth on membrane in aq. soln. 8−30854
alkanoates, phase relationships and thermal behaviour branching effects 8−43111
B_2O_3-Na_2O, thermal cond. of melt in region 900 to 1100°C, effect of convection 8−2309
cryolite, hydrothermal synthesis of large synthetic single crystal, props. 8−19654
cryolite melts saturated with alumina, interfacial tension between Al and melt 8−38913
diemthyl sulphoxide-H_2O-NaCl system, DTA exam. of primary ice phase field 8−48382
fluor-richterite crystal, habit, growth in oxide-fluoride mixtures, statistical study *(German)* 8−38639
NaCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8−14434
pyrochlore, high temperature chlorination 8−11180
soda lime glass, microparticle impact, high speed photography obs. 8−44223
sodalite, hydrothermal growth on seed crysts. covered with boundary layers, growth mechanism 8−30571
sodium ammonium tartrate, improper ferroelec. transition anomalies 8−19430
sodium hydrogen oxalate monohydrate, crystal struct. neutron diffr., deform. electron density analysis 8−10032
styrene-sodium methacrylate (9 mol.%) copolymer cond. relax. 8−38874
zeolites, type 13X, acetylene adsorption, inelastic neutron scatt. 8−14584
$16Na_2O.12CaO.72SiO_2$, self-diffusion of Ca^{2+} ions *(Japanese)* 8−6173
AgBr-NaCl(Br) solutions, UV spectra 8−39560
$AgNa(NO_2)_2$, Landau behaviour of sp. ht. close to nearly tricritical ferroelec. phase transition 8−10861
β-Al_2O_3-Na_2O, calculation of simultaneous ionic cond. and tracer diffusion 8−43178
β-Al_2O_3-Na_2O, colour centers, AES, electron energy loss, and optical spectroscopy obs. 8−35176
β-Al_2O_3-Na_2O, low freq. Raman scatt. from NH_4^+ ions 8−43878
β-Al_2O_3-Na_2O, MgO stabilised sintering *(German)* 8−19696
β-Al_2O_3-Na_2O, nucl. double reson. interferometry, satellite spectrum 8−31123
β-Al_2O_3-Na_2O, sp. ht., 0.1-1 K, evidence for localised low-energy excitations 8−34632
β-Al_2O_3-Na_2O:Mg, with and without Co co-doping, ionic cond. and cryst. struct. 8−26723
β-Al_2O_3-Na_2O:Mn^{2+}, EPR of Mn^{2+} 8−6569
β-Al_2O_3-Na_2O:Mn^{2+}, ESR exam. 8−19313
β-″-Al_2O_3-Na_2O:Na$^+$,Ca^{2+}, charge compensation mechanism, Na$^+$ and Ca^{2+} ion movement 8−22891
β″-Al_2O_3-NaO-LiO_2, stabilised, effect of phase composition, grain size, on Na ion cond. 8−47582
β-$Al_2O_3Na_2O$, H-exchanged, effect of moisture, on H_2 activity changes and thermal stability 8−47580
β-$Al_2O_3.Na_2O$:Cu, EPR, localisation of Cu^{2+} and linewidth effect 8−39395
B_2O_3-NaF-$NaBF_4$, crystalline compounds and glasses 8−11210
$Ba_2NaNb_5O_{15}$, birefr. material, thermal cond. determ. by optical method 8−18851
$Ba_2NaNb_5O_{15}$ crystal, high optical quality, and optical absorption coeff. meas. 8−30036
$Ba_2NaNb_5O_{15}$, effect of substituting Gd, Cr on lattice parameters 8−47291
$Ba_2NaNb_5O_{15}$, Gd substitution, effect on linear thermal expansion, possible BSN replacement 8−43153
CaF_2-NaF crysts., F_a centres, 385 and 435 nm absorpt. bands of electron irrad. crysts. 8−2889
$CaNH_4NaP_2O_7.3H_2O$, crystallographic data *(French)* 8−14316
ZCaO.SiO_2-2CaO.$Na_2O.P_2O_5$ system, polymorphism and solid soln. 8−19731
CdF_2-NaF, liquid mixture, enthalpy of mixing 8−48684
$CdNH_4NaP_2O_7.3H_2O$, crystallographic data, crystal structure *(French)* 8−14316
$CoCl_2$-KCl-NaCl system, melting diagram investigation by thermographic anal. *(Russian)* 8−3111
$Cs_2NaYbCl_6$, Mossbauer relax. spectra, breakdown of white noise approx. 8−27141
H_2O-NaCl-sucrose, phase diagram determ., appls. in cryobiology 8−15777
$K_3NaP_2O_7.4H_2O$, cryst. struct. *(French)* 8−42961
$K_xNa_{1-x}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8−2852

sodium compounds continued
$KNa[Pt(CN)_4].3H_2O$, neutron diffr. cryst. struct. exam., refinement by least squares 8-2079
$(La_{0.5}Na_{0.5})RuO_3$, mag. props. 8-27027
(Li,Na,Cu,Zn) ferrites, nonceramic synthesis, electrochem. investig. 8-35339
$LiCl+NaNO_3$, apparent and partial molar volumes in aq. soln. 8-44396
LiF-NaF-KF molten mixture, diffusivity and solubility of H_2 8-34640
$Li_{1-x}Na_xBr(I)$, intrinsic optical absorpt. spectra 8-23500
$Li_{0.5-x}Na_xFe_{2.5}O_4$, Na_2CO_3 effects on ferrite formation 8-27458
$Li_{1-x}Na_xNbO_3$, LPE, growth and temp. coeff. of SAW velocity 8-43227
$MgCl_2$-NaCl, binary melts, surface tensions *(Japanese)* 8-10260
$Mg_{0.7}Na_{0.9}K_{2.0}Ca_{2.4}Al_{9.1}Si_{26.9}O_{72}.xH_2O$, erionite, cryst. struct. exam., stacking faults 8-2083
$(Na,K)NbO_3$ solid solns., struct. transitions, neutron powder diffr. 8-38649
$(Na,Li)NbO_3$, ceramics, electrophys. and struct. props. near morphotropic transition 8-2816
$(Na,Li)NbO_3$ ceramic, optimum prep. conditions and characterisation 8-3079
Na_2-SiO_2-MgO glass, melt viscosity and IR meas. to study MgO behaviour *(Japanese)* 8-14495
$NaAl_2Br_7$, ^{81}Br NQR and ^{27}Al NMR 8-6597
Na_3AlF_6 flux for corundum cryst. growth 8-30563
Na_3AlF_6-PbF_2, interference filter prod. for near UV *(French)* 8-25974
$NaAlSI_2O_6$, elec. cond. meas. 8-47787
$Na_{0.91}Al_2(Si_{3.09}Al_{0.91})O_{10}(OH)_2$, paragonite 1M, cryst. struct. determ., electron diffr. 8-26547
$Na_2Al_2Ti_6O_{16}$ bronze, synthesis in $NaBO_2$, growth conditions *(French)* 8-43998
NaAr, $X^2\Sigma$, $A^2\Pi$ and $B^2\Sigma$ state, ab initio CI calcs. 8-9085
NaAu(Ag), mol. dissoc. energy, third law enthalpy and heat of formation, mass spectra 8-40033
NaB_6, prep., cryst. struct., thermal stability, phys. and chem. props., book contrib. 8-47304
Na_xB_{15}, x=0 to 1 prep., cryst. struct., thermal stability, phys. and chem. props., book contrib. 8-47304c
$NaBF_4$, use in Al alloy manufacture, transfer efficiency of B 8-27453
$NaB_5O_6(OH)_4$, cryst. struct. determ. 8-26511
$Na_3B_5O_8(OH)_2.H_2O$, synthetic, cryst. struct. 8-18591
NaBr, dispersion of phonons calc. 8-26646
NaBr, optical breakdown, 1.06 to 0.172 μm 8-35089
NaBr, orbital g-factor and spin-orbit splitting of F-centre excited state, magnetoabsorpt. and MCD 8-2886
NaBr powder coloured in electrodeless discharge, reflectance spectra, thermoluminescence props. 8-6796
NaBr, shock adiabatic, nonparametric equation of state 8-10121
NaBr, water preadsorbed, adsorption of organic vapours *(Japanese)* 8-18897
$NaBr:Cu^+$, off to on centre defect transitions under hydrostatic press. 8-15199
NaBr:Tl, emission spectra, press. effects 8-23509
NaBr:Tl, impurity segregation with Kyropoulos growth 8-9977
$NaBr:Tl^+$, absorption spectra meas. 8-15197
$NaBr:Tl^+$, emission spectra, excitation in A-band 8-15218
$NaBrO_3$, cryst. chirality and optical rotation sense 8-10026
$NaBrO_3$, IR and Raman spectra, vibrs., dipolar coupling effect 8-43852
$NaBrO_3$, optically active, crystal atomic struct. remeas. 8-10009
$NaBrO_3$, Raman spectrum, temp. depend. *(Russian)* 8-23466
NaCN, lattice dynamics in disordered cubic phase 8-38794
NaCN, Raman spectrum, hydrostatic press. effects 8-6663
Na_2CO_3, elec. cond., 270-830°C, and transition points 8-10216
Na_2CO_3 electrolyte, silent discharges elec. characts., expt. *(Korean)* 8-40057
Na_2CO_3, molten, IR emission spectra *(Japanese)* 8-19469
$Na_2CO_3.1^1/_2H_2O_2$, cryst. struct. 8-18588
$Na_{7.5}Ca_{0.5}(AlSiO_4)CO_3.2H_2O$, cancrinite, proton-containing groups, PMR meas. 8-2094
$Na_6Ca_4(BeF_4)_6F_2$, cryst. struct. by X-ray diffr., cation distrib. *(German)* 8-43001
$NaCaPO_4$-Ca_2SiO_4 partial system, phase diagram 8-35364
$NaCaPO_4$-$Ca_3MgSi_2O_8(CaO)$ systems, phase diagrams of partial system 8-35369
$NaCaPO_4$-Ca_3SiO_5 partial system, phase diagram 8-35365
$NaCaPO_4$-$CaMgSiO_4$ system, phase diagram 8-35370
$Na_4Ca(SO_4)_3$, cryst. data and IR spectra 8-42986
$NaCaVO_4$, luminesc. spectra in visible region, vanadate group 8-43921
NaCl, adsorption heat of Ar variation 8-26772
NaCl aerosols, density rel. to formation by condensation 8-7244
NaCl, aq. soln., isothermal compressibility, hydration parameters, up to 350°C and 10^3 kg cm^{-2} 8-10112
NaCl, aq. solns. hypersonic sound vel. and absorpt. meas. 8-30699
NaCl, aqueous soln., Lennard-Jones parameters, mol. dynamics and X-ray obs. 8-9939
NaCl as natural sea salt nuclei and laboratory controlled recrystallization 8-24337
NaCl, bent single crystal, equilib. face, surface relief form. during annealing 8-47651
NaCl, bulk and (001)-surface equal-time vibr. correlation function 8-47655
NaCl, cation motion energy parameters, dielectric relax. meas. 8-30784
NaCl, channelling of MeV H^+ and He^+, zero dose meas. 8-18689
NaCl, cryst., plasma prod. by laser impact, effect on surface 8-1866
NaCl crystal with aggregate colour centres, photocond. kinetics 8-19100
NaCl, cubic cryst., temp. depend. of third-order elastic consts. 8-18699
NaCl, Czochralski growth, temp. distrib. near crystn. front 8-2036
NaCl, deformed by conc. loading, X-ray beam scattering *(Russian)* 8-35430
NaCl, dislocation internal friction, orientation depend. 8-48439
NaCl, dislocation microplasticity, internal friction expts. 8-47388
NaCl, doped by Ca^{++} and OH^-, thermal conductivity in 5-190K range 8-14520
NaCl, dynamic dislocation retardation, impurities effect 8-26577
NaCl, effect of surface cond. on crystal bulk elec. cond. 8-6177

sodium compounds continued
NaCl, effect on high temp. hot corrosion 8-48563
NaCl, effective Debye temp., press. and temp. depend. 8-18728
NaCl, elastic moduli, quadratic fit against temp. 8-14397
NaCl, elastic X-ray scatt., effect of dynamic deform. calc. 8-26378
NaCl, electron beam excited, luminesc. and cond. of nonideal degenerate electron-hole plasma 8-10488
NaCl, electron trapping by alkali ion impurities 8-47809
NaCl, energy struct. determ. by electron absorpt. spectra 8-11040
NaCl, evaluation of ionic thermocurrent technique in monitoring relaxation behaviour of impurity-vacancy dipoles 8-43778
NaCl, evaporating surface, step motion obs. and simulation 8-26766
NaCl, evaporation coeff. meas. by TEM 8-18909
NaCl, exposed to US waves, dislocation multiplication in original stage 8-47383
NaCl, F_3-centre quartet state, IR emission spectra 8-43930
NaCl, F-centre interactions and local distortions *(French)* 8-43016
NaCl, F-centres near monoenergetic proton stopping region, space charge effect 8-18640
NaCl, far IR dispersive-reflection meas. at room temp., comparison with calc. 8-35139
NaCl, γ-irrad., C-centres, position ang. correl. obs. 8-22712
NaCl, high density of dislocations meas., new etchant 8-43019
NaCl, high hydrostatic press. effects on dislocation mobility 8-14358
NaCl, internal stresses and dislocation mobility 8-48440
NaCl, kinetics and morphology of lamellar-spiral growth hillocks 8-18566
NaCl, low temp. space charge polarisation 8-43789
NaCl, luminescence excited by vacuum UV lasers 8-10941
NaCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8-15238
NaCl, molten, diffusion of Li^+ ion *(Japanese)* 8-14489
NaCl, molten, dynamical struct. factors 8-47228
NaCl, molten salt, thermodynamic function, Brillouin spectroscopy, hypersonic vel. *(French)* 8-35161
NaCl, nuclei in atm., optical props. 8-11995
NaCl, occlusion formation during dendritic crystal growth, expt. 8-38993
NaCl, optical breakdown, 1.06 to 0.172 μm 8-35089
NaCl, orbital g-factor and spin-orbit splitting of F-centre excited state, magnetoabsorpt. and MCD 8-2886
NaCl, photoemission exam. of Na^+-2p core excitons 8-43982
NaCl plasma, acoustic wave-coherent CO_2 light scatt. 8-34325
NaCl, plastic deform. and dielec. losses 8-19410
NaCl, plate, distortions due to 10.6 μm laser irrad., interferometric obs. 8-46697
NaCl plates, γ-irrad., hologram recording, He-Cd laser radiation 8-17878
NaCl, prep. of fine crysts. demonstrated by electron microscopy 8-48302
NaCl, pulsed dielectric breakdown, mech. stress photoelasticity obs. *(Russian)* 8-2800
NaCl, pulsed Rf radiation produced by scratching *(Russian)* 8-19607
NaCl, Schottky defect, formation enthalpy, entropy, temp. effects, correction 8-10039
NaCl, shock compressed, vel. of sound meas. 8-10123
NaCl single crystal, plasticity, effect of alternating electric field 8-15481
NaCl, single crystal, temp. anisotropy of plasticity and brittleness 8-3198
NaCl single crystal-electrode interface, anomalous transient currents 8-22886
NaCl, single cubic particles, suspended in laser beam, optical size determ. 8-33673
NaCl soln., nebulized aerosol, droplet size distrib., evaporation effect, medical appl. 8-24084
NaCl, strained in one glide system at 450°C, dislocation struct. 8-22728
NaCl, thermal cond. under press. meas. 8-30802
NaCl, thermal fields generated during plastic deform. 8-35457
NaCl, transverse optical mode anharmonic self energy, far IR spectrum 8-6131
NaCl type crystal, dislocations due to high temp. stress relax. 8-2126
NaCl vapour, and Na_2SO_4, hot corrosion of Co-Cr-Al-Y turbine blade coatings 8-19941
NaCl, vapour, effect on oxidation of Ni-Cr-Al alloy 8-44274
$NaCl^-$, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8-25436
$^{22}NaCl$, tracer diffusion meas. in aq. NaCl soln., closed capillary method 8-14491
$NaCl:^{63}Cu^+$, resonant bandmode, stress spectroscopy with far IR laser 8-2847
NaCl:Ag, diffusion parameters of hot holes created by ionising radiation 8-47800
NaCl:Ag, electroluminescence spectra 8-2918
NaCl:Ag, formation of Ag atoms and self-localised holes by illumination, EPR meas. 8-31108
$NaCl:Ag^+$, X-irrad., B-centres, thermal annealing, monomolecular and bimolecular sequence of kinetics 8-47373
NaCl:Au, EPR and optical absorpt. 8-39397
NaCl:Ca, precipitate form., transform. after annealing, critical flow stress 8-38848
NaCl:Ca, single cryst., vaporisation kinetics meas. 8-18763
$NaCl:Ca^{2+}$, X-ray induced luminescence 8-23516
$NaCl:Cd^{2+}$, superstructure obs. by ionic thermal current meas. 8-39499
$NaCl:Co^{2+}$, dynamic braking of dislocations *(Russian)* 8-6068
$NaCl:MgCl_2$ (0.1 mol.%), thermoluminesc. glow curves, temp. distrib. and trapping centres 8-48241
$NaCl:NaOH(NaNO_3)$, absorpt. spectra and dielectric losses 8-19524
NaCl:Pb, colouring, room temp., influence of conc. and aggregation state of Pb 8-14339
NaCl:Pb, precipitation of Pb impurity 8-48415
$NaCl:Pb^{2+}$, decay of luminescence emission 8-39593
$NaCl:PbCl_2$ crysts., melt grown, Pb distrib. determ., UV spectrochem. anal. 8-40101
$NaCl:Sn^{2+}$, thermally stimulated space charge decay 8-48111
$NaCl:Sr^+$, ionic thermocurrent exam. 8-10833
NaCl:Tl, emission spectra, press. effects 8-23509
$NaCl:V^{2+}$, phonon induced zero field splitting 8-39073

sodium compounds continued
NaCl:X (X=Ca, Sr, Ba, Mg, K, Li, Tl, Ag), impurity conc. effect on mech. and elec. props. 8–47469
NaCl:Zn^+, X-irrad., EPR and optical absorpt. 8–43642
NaCl-Ca, single crysts., load-microhardness curves, heat treatment, impurity effects obs. 8–30694
NaCl-$CaCl_2$, dislocation struct., etch pit obs. 8–43020
NaCl-CsCl-$CrCl_3$ system, phase struct. anal. by X-ray method *(Russian)* 8–3112
NaCl-KCl electrolyte mixtures, in aq. soln., viscosity, individual electrolyte effects *(German)* 8–22881
NaCl-KCl mixed crystal, growth, X-ray exam. and microstruct. 8–44001
NaCl-KCl mixture, electrical, electromag., and acoustic props. *(Russian)* 8–30759
NaCl-K(Al) adhesion 8–18914
NaCl-metal system, sliding and rolling electrification 8–14796
NaCl-NaBr-$CaCl_2$, dislocation struct., etch pit obs. 8–43020
NaCl+Ar, dissoc.-ionis. process rates in shock tube 8–35674
NaCl+K, prior statistical distribs., collinear reactions 8–35670
$(NaCl)_n$ (n=1-7) equilib. configs., total energy calcs., far IR spectra 8–29872
$NaClO_3$, cryst. chirality and optical rotation sense 8–10026
$NaClO_3$, IR and Raman spectra, vibrs., dipolar coupling effect 8–43852
$NaClO_3$, optically active, crystal atomic struct. remeas. 8–10009
$NaClO_3$, Raman spectroscopy exam. of high-pressure phase transform. 8–10186
$NaClO_3$, shift of Na NQR freq. by nonreson. RF photon dressing 8–43674
$NaClO_3$, trapped O species in irradiated samples, low-temp. X-ray photoelectron spectroscopy 8–27799
$NaClO_3$-$CsClO_3$, NQR, mag. susceptibility meas. 8–35059
$Na_xCr(Mn)(Co)O_2$, layer struct., elec. cond. behaviour *(French)* 8–26542
$NaCrO_2$, two-dimensional antiferromag., mag. props. *(French)* 8–23251
NaD+K, prior statistical distribs., collinear reactions 8–35670
$NaD_3(SeO_3)_2$, ^{23}Na NQR, second-order quadrupole shift, temp. depend. 8–15055
$NaEr(SO_4)_2$, cryst. struct. by X-ray diffr. *(French)* 8–42990
NaF, CW lasing of $F_2{}^+$-centres, 0.9-2 μm 8–29957
NaF, channelling of MeV H^+ and He^+, zero dose meas. 8–18689
NaF, DNMR cross relaxation modes 8–10803
NaF, dislocation microplasticity, internal friction expts. 8–47388
NaF, elastic moduli, quadratic fit against temp. 8–14397
NaF, elastic X-ray scatt., effect of dynamic deform. calc. 8–26378
NaF, M-centre vibronic absorpt. spectra, elec. field, method of moments 8–27186
NaF, relaxation rate calculation 8–15060
NaF, single crystal, TSEE by electron bombardment 8–6836
NaF, with colour centres, laser stimulated luminesc. 8–6749
NaF:Fe, dispersed ions, absorber Mossbauer spectra 8–15077
NaF:Li, pulsed double nucl.-nucl. reson. *(Russian)* 8–10804
NaF:OH, mag. field-independent capacitance thermometers 8–4623
NaF-^4He liquid interface, phonon propagation 8–14526
NaF-Al adhesion 8–18914
NaF-Al_2O_3, β-Al_2O_3 form. *(Japanese)* 8–6912
NaF-AlF_3 binary melt, density and elec. cond. *(Japanese)* 8–18814
NaF-MgF_2-MgO-SiO_2, phase formation 8–27460
NaF-ScF_3 system, ionic equilib., mass spectra 8–7222
NaF+Eu^{2+}, cryst., hyperfine splitting, EPR 8–2733
NaF(Cl) substrate, epitaxial crystn. of isotactic polypropylene 8–26787
NaF(NaF^-), electron affinity and dipole moment, ab initio calc. 8–41938
$NaFeO_2$, solubility in CaO, meas. *(French)* 8–31392
β-$NaFe_2O_3$, struct. of single cryst. *(French)* 8–6033
$Na_2Fe_2Ti_6O_{16}$ bronze, synthesis in $NaBO_2$, growth conditions *(French)* 8–43998
$Na_2Fe_2Ti_6O_6$, freudenbergite, cryst. struct. determ. 8–26519
$NaGdO_2$:Tb^{3+}, obs. of efficient luminesc., UV excitation 8–43922
$Na_5GdSi_4O_{12}$, ionic conductivity and struct. 8–18826
NaH, interstellar, search in diffuse clouds 8–4325
NaH^-, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8–25436
NaH^+, FSGO calcs. with model pots. 8–33413
$NaHCO_3$, thermal conductivity thermal decomposition 8–2310
$NaHCd_4(Ge_5O_{15})$, cryst. struct., comparison with natural rhodonite 8–30600
NaH^-(NaH), ab initio ground-state pot. energy curves, electron affinities 8–41946
NaH_2PO_2-$NaHPO_3$, quantitative anal. of $H_2PO_2{}^-$ and $HPO_3{}^{2-}$, by relative Raman intensities obs. *(Japanese)* 8–23991
β-$Na_2HPO_4.12H_2O$, dosorder of $HPO_4{}^{2-}$ and H bonds 8–34471
$Na_2HPO_4.2H_2O$, crystal struct., coordination and H bond competition 8–14315
$NaHSO_4$, struct. of new modification 8–34477
$NaH_3(SeO_3)_2$, central mode, spin lattice relaxation dispersion 8–15108
$NaH_3(SeO_3)_2$, dielec. props. 8–43764
$NaH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8–43853
$NaH_3(SeO_3)_2$, proton behaviour in H-bonding, neutron spectroscopy obs. *(German)* 8–22816
NaI, exciton-phonon polarisation interaction *(Russian)* 8–35195
NaI, luminesc. polarisation for free and bound excitons 8–10942
NaI, refr. index, 300-700 nm., temp. coeff., 100-580K *(Russian)* 8–15142
NaI scintillation detectors, efficiency values, point and extended volume source geometries 8–13387
NaI-polyethylene oxide complexes, order-disorder transformations 8–47251
$NaIn(SeO_4)_2.6H_2O$, cryst. struct. by X-ray diffr., symm. 8–43004
NaK, laser-induced fluoresc. in supersonic nozzle beams 8–25593
Na_2KSb, evaluation as photocathode material 8–11072
$Na_{0.5}K_{3.5}(Te_2O_6(OH)_4).6H_2O$, cryst. struct. determ. 8–26520
$NaLO_3$, disorder of $NO_3{}^-$ ions, rel. to Raman spectrum temp. depend. *(Russian)* 8–2099
$(Na_{0.5}La_{0.5})_xBa_{1-x}TiO_3$, dielec. and IR spectra exam., ferroelec. transition 8–23418
$NaLaO_2$:Pr^{3+}, obs. of efficient luminesc., UV excitation 8–43922
$NaMgF_3$, extreme UV spectra, 9-30 eV 8–23486

sodium compounds continued
$Na_2Mg_6Si_8O_{22}F_2$, fluoramphibole, fibrous, crystn. from gas phase, mechanism 8–34451
$Na_4Mo_{12}GeO_{40}(H_2O)_8$, X-ray diffr. cryst. struct. exam. 8–2075
Na_2MoO_4-Na_2SO_4, phase diag. and isomorphism 8–27486
$Na_6Mo_5P_2O_{23}(H_2O)_{14}$, X-ray diffr. cryst. struct. determ., refinement 8–2074
$NaNH_4SeO_4.2H_2O$, model of ferroelec. phase transition 8–19433
$NaNH_4SeO_4.2H_2O$, ferroelectric phase transition mechanism 8–31162
$NaNO_2$, ^{14}N NQR, multiple spin echoes 8–19365
$NaNO_2$, cryst., delayed fluoresc., triplet excitons, dopant effects 8–10963
$NaNO_2$, cryst., Stark shift of visible absorpt. of $NO_2{}^-$ 8–19499
$NaNO_2$, cryst., triplet excitons, localised states, zero-field ODMR, dopant effects 8–15062
$NaNO_2$, high-pressure phase behaviour 8–30749
$NaNO_2$, hot luminesc. 8–6722
$NaNO_2$, hot luminescence 8–10976
$NaNO_2$, incommensurate phase transitions 8–26653
$NaNO_2$, nonlinear dielec. anomaly in paraelec. phase 8–39495
$NaNO_3$, ^{23}Na spin-lattice relax., orientation depend. 8–23372
$NaNO_3$, aq. soln., heat capacity at 298.15K 8–3364
$NaNO_3$, disordered, temp. depend. of Raman spectra, Rayleigh wing scatt. 8–31209
$NaNO_3$ floating zone melting, surface tension driven flow 8–48313
$NaNO_3$, melt, $NO_3{}^-$ ion struct., pulsed neutron diffr. obs. 8–22631
$NaNO_3$, melt, Tl^+ high dilution diffusion, interferometry 8–47546
$NaNO_3$, molten, X-ray diffr. structural anal. 8–42887
$NaNO_3$-$Cd(NO_3)_2$ molten mixtures, electrical conductance, non-Arrhenian behaviour 8–43158
$NaNbO_3$, photoconductivity and TSC 8–2520
$NaNbO_3$, photoferroelectric effect 8–35108
$NaNbO_3$, thermoelec. effect and phase transitions 8–48123
$NaNbO_3$-$BaTiO_3$ solid soln. form. and props. *(Russian)* 8–48378
$Na_2Nd_2Pb_6(PO_4)_6Cl_2$, laser material, flux growth *(French)* 8–35288
$NaNd(SO_4)_2$, cryst. struct. by X-ray diffr. *(French)* 8–42990
NaNe, van der Waals mol., form., laser spectroscopy 8–29797
Na_2NiFeF_7, weberite struct. refinement *(German)* 8–47294
$Na_2NiTi_7O_{16}$ bronze, synthesis in $NaBO_2$, growth conditions *(French)* 8–43998
Na_2O, in phosphate or silicate glass, effect on thermooptics props. 8–18029
Na_2O, in porcelain raw material, determ. by ion exchange chromatography 8–7272
Na_2O-$2SiO_2$ high expansion glass, chemical durability improvement by ion exchnage 8–48361
Na_2O-(CaO)-SiO_2, corroded, quantitative anal. by IR frequency shifts 8–19909
Na_2O-B_2O_3 glass, $Eu^{3+}\rightarrow Nd^{3+}$ diffusion-limited energy transfer, quantum efficiency 8–31238
Na_2O-B_2O_3:Se, EPR, γ-ray effects *(Russian)* 8–31109
Na_2O-B_2O_3-SiO_2 glass, ^{11}B NMR obs. of struct. 8–38625
Na_2O-B_2O_3-SiO_2 low-loss optical fibre prep. by double crucible technique *(German)* 8–33929
Na_2O-B_2O_3-SiO_2:GeO_2 medium-loss graded-index preform fabrication by phase separation and leaching *(German)* 8–33930
Na_2O-Bi_2O_3-TiO_2, subsolidus phase equilibrium at 1000 degrees C 8–48384
Na_2O-CaO-SiO_2, double torsion specimens, compliance and fracture load as crack length function 8–48508
Na_2O-CaO-SiO_2, glass, transition from slow to fast crack propag., effect of different liquids 8–23828
Na_2O-CaO-SiO_2, glass, surface indentation effect on mech. strength, and thermal stress resistance 8–48463
Na_2O-CaO-SiO_2, refining in glassmelting process 8–27467
Na_2O-CaO-SiO_2 glass, Hertzian fracture characts., comp. influence 8–31522
Na_2O-CaO-SiO_2 glass microbubbles, permeation eccentricities of He, Ne and D-T 8–47598
Na_2O-CaO-SiO_2 glasses, ion-exchanged, mixed alkali effect rel. to elec. cond. 8–34653
Na_2O-CaO-SiO_2 sheet glass, pristine and scratched, fracture behaviour during bending 8–23829
Na_2O-Fe_2O_3-SiO_2 glass, partially crystallised, mag. props. 8–23302
Na_2O-Ga_2O_3 system, new superionic conductor *(French)* 8–14504
Na_2O-GeO_2, electric cond. and dielec. relaxation *(Japanese)* 8–19905
Na_2O-GeO_2 glasses, low temp. viscosity, as function of composition 8–38865
Na_2O-K_2O-Al_2O_3-SiO_2 glass, mixed alkali effect, nonbridging O content effects 8–18827
Na_2O-K_2O-SiO_2, Na diffusion 8–26724
Na_2O-$Li_2O(K_2O)$-SiO_2 glass, heat of mixing *(Japanese)* 8–10195
Na_2O-PbO-SiO_2, PbO activity 8–44112
Na_2O-SiO_2, and Na_2O-K_2O-SiO_2 based glasses, high field cond. and ionic jump processes 8–38873
Na_2O-SiO_2, disilicate glass, reaction with Fe, Mossbauer effect 8–11190
Na_2O-SiO_2, disilicate glass, Fe ion introduction, Mossbauer effect 8–11191
Na_2O-SiO_2 glass, IR reflection spectra change due to moisture corrosion *(Japanese)* 8–19914
Na_2O-SiO_2 glass, suitability of small angle neutron scatt. for struct. determ. 8–22663
Na_2O-SiO_2 glasses, Na_2O effect on Si-O bonds *(Japanese)* 8–42918
Na_2O-SiO_2:CeO_2, photochromic glass, form. and decay kinetics of absorpt. centres 8–13774
Na_2O-SiO_2-H_2O-FeO system, 'heavy phase', recrystallisation and struct. 8–2089
Na_2O-TiO_2-SiO_2 glass, IR refl., Raman and EPR spectra, struct. *(Russian)* 8–2860
Na_2O-TiO_2-SiO_2 glass, elec. props. and energy gap 8–26921
Na_2O-WO_3 glass containing transition metal ions optical absorption 8–27254
Na_2O+GeO_2, molten mixture, EMF measurements 8–43144
Na_2O_3-Al_2O_3-SiO_2 effect of composition on mechanical props. 8–48435
Na_2O_3-B_2O_3-SiO_2, glass, effect of composition on mech. props. 8–48435
NaOH glass: tryptophan (tyrosine), γ-irrad., electron traps, stimulated luminesc. 8–11536
NaOH, melt, preferential dissolution of Mg_2SO_4, etching obs. 8–34513

sodium compounds continued
$Na_2O.11Al_2O_3$, conversion to β-$H_2O.11Al_2O_3$ 8–3069
$Na_2O.2Al_2O_3.5SiO_2:Fe^{3+}$, Mossbauer effect and magnetometric exam. 8–6613
$Na_5P_3O_{10}$, γ-irrad., PO_3^{2-} EPR obs. 8–27091
$Na_6Pb_4(BeF_4)_6F_2$, cryst. struct. by X-ray diffr., cation distrib. *(German)* 8–43001
$NaReO_4$, quadrupole coupling, cation electric field gradients 8–35060
Na_2S, phonon dispersion curves, inelastic neutron scatt. obs. *(German)* 8–14414
$Na_2S:Mn^{2+}$, polycrystalline, EPR and luminesc. of Mn^{2+} 8–27082
Na_2SO_4, and vaporous NaCl, hot corrosion of Co-Cr-Al-Y turbine blade coatings 8–19941
Na_2SO_4, IR and Raman spectra of vap. over heated matrices 8–25525
Na_2SO_4, molten, corrosion of Ni, at 1173K, E-pO^{2-} diagram 8–44247
$Na_2SO_4:XO_4^{2-}$, X=Cr, Se, Mo, W, lattice-impurity interactions, IR spectra 8–19522
$Na_2S_2O_3$, breakdown on Ag halide grains, electron microscopy 8–21237
$Na_2S_2O_6.2H_2O$, cryst. struct. 8–42969
Na_3Sb, and Na_2KSb, photocathode materials, band struct., empirical pseudopotential calc. 8–10346
$NaSbBrF_3.H_2O$, cryst. struct. *(French)* 8–18589
Na_2SbF_5, linear and nonlinear optical props., hyperpolarisability 8–30010
Na_2SiO_3 aqueous soln., ^{29}Si NMR expts. 8–15051
$Na_20.2Si0_2$ Crystal nucleation kinetics 8–26467
Na^+TCNQ^-, optical absorpt. spectra of small particles 8–19505
$NaTaO_3$, electric field gradients and isomer shift ^{181}Ta 8–39453
Na_2TeO_3, D_2O soln., $^{123,125}Te$ Fourier transform NMR 8–15046
Na_2TeO_4, 3-dimens. X-ray struct. anal., Te(VI) and cation coord. *(French)* 8–18610
Na_2TiF_6, use in Al alloy manufacture, transfer efficiency of Ti 8–27453
Na_2TiSiO_5, cryst. struct. 8–42976
$NaVO_2$, polycryst., quadrupole coupling const., asymmetry parameter, chem. shift, NMR computer calcs. 8–6584
$NaVO_3$, cryst. struct. 8–6043
$NaVO_3$-BaV_2O_6-SrV_2O_6, phase diagrams, simple eutectic system 8–48379
$Na_{1.9}V_{12}O_{29.7}$, phase transitions, elec. cond., susceptibility and sp. ht. meas. 8–14776
$Na_xV_2O_5$, catalytic behaviour in decomp. of isopropanol, 186-300°C 8–11553
β-$Na_xV_2O_5$, EPR evidence of Na clustering 8–43630
Na_xVSe_2, synthesis and struct. determ. 8–26537
Na_xWO_3, $(0.22 \leqslant x \leqslant 0.84)$, ^{183}W NMR, electronic struct. near metal-semicond. transition, Knight shift 8–48063
Na_xWO_3, cubic single cryst., LEED/Auger obs. 8–19614
Na_xWO_3, local struct. states in supercond. TI phase, lattice props. 8–26981
Na_xWO_3, struct. phase transition sequence 8–22852
Na_xWO_3, supercond. crit. temp., semiempirical model lor lattice instabilities in nonstoichiometric materials 8–14442
Na_xWO_3, X>0.5, temp. depend. of Raman active soft modes, tetragonal-tetragonal transition 8–48180
Na_xWO_4, cluster model 8–10351
$Na[Fe(CN)_5NO].2H_2O$, X-ray spectroscopy of single crysts., use of polarised radiation 8–8481
$Na_2[Fe(CN)_5NO].2H_2O$, powder, Mossbauer spectra, acoustic-excitation-induced asymmetry of quadrupole splitting 8–27145
$Na_2[MoO_{1-x}(OH)_{2x}(H_2O)_{1-x}O(MoO_4)_2].2H_2O$, proton NMR for chem. comp. at −195°C 8–38651
$Na[Mo_2O_5(O_3(OH)C_6H_8(OH)_2)].2H_2O$, struct. determ. and refinement 8–2073
$NiNa_2H_8(PO_4)_4.4H_2O$, cryst. struct. determ. *(French)* 8–26504
SiO_2-Al_2O_3-Fe_2O_3-CaO-MgO-Na_2O-SO_3 glass, thermophysical props. 8–18849
SiO_2-Na_2O glass, fracture initiating flaws, depth meas., crack propag., SEM exam. 8–48494
SiO_2-Na_2O-CaO:Fe(As)(Cr) glasses, optical absorpt. changes on heat treatment 8–31224
$TlNO_3$-$NaNO_3$, melt, cationic self-diffusion coeffs., temp. and conc. depends. 8–22879

sodium potassium tartrate tetrahydrate *see Rochelle salt*

sofar *see sonar*

soft modes
see also displacive transformations; lattice phonons
A15 compounds, coherence length and phonon softening 8–34587
A15 compounds, mode softening and high supercond. crit. temp. 8–14851
alkylammonium compounds with perovskite-type layer struct., symmetry of lattice vibrs. 8–22797
anharmonic crystal, lattice dynamics and stability 8–6129
arsenates, ferroelec. phase, E-mode splitting 8–15163
catastrophe indices rel. to thermodynamic pot. function isotropy 8–14431
chloranil, neutron superlattice reflection, soft phonon and central peak scatt., phase transition 8–18732
classification of struct. transforms., using coupled double-well model 8–14443
collective modes of CDW near lock in transition 8–30879
diamantane, low temp. soft librational mode, Raman spectra exam. 8–30730
dimethylammonium cadmium chloride, soft modes, order-disorder transition model 8–22817
displacive transformation, dynamic critical exponents, microscopic calc. 8–10163
elastic constants, single crystals, rel. to vibr. behavior, supercond. 8–10114
ferroelectric, H-bonded, soft and central modes, mag. reson., review 8–15108
ferroelectric, photoinduced changes in refractive index and spontaneous polarisation 8–43804
ferroelectric semiconductor, impurity carrier effects, vibronic theory 8–43803
ferroelectric semiconductor, phase transition temp., rel. to free carrier conc. 8–10860
ferroic phase, commensurate, form. from prototypic phase, possibility of transition being second order 8–2223

soft modes continued
graphite, intercalation compound, C_8Rb, elastic and inelastic neutron scatt. 8–30597
graphite intercalation compounds with K and Cs, sp. ht., XPS 8–26693
inducing soft mode transitions by IR or lower freq. EM radiation 8–7421
Invar, influence of magnetoelastic effects on lattice vibrs., neutron scatt. meas. 8–2722
Ising model, transverse field dynamic behaviour 8–22814
laser light scatt. spectroscopy, phase transitions 8–10156
lattice instabilities in coupled pseudospin-phonon systems 8–10157
low lying lattice vibrational modes, conf., San Juan, Puerto Rico, (Dec 75) 8–10131
martensitic transformations, localised soft mode theory 8–10159
metallic fine particles, anharmonic lattice vibr. theory, Einstein model appl. 8–18714
nonstoichiometric materials, lattice instabilities, models 8–14442
one-dimensional Hubbard model, antiferromag. and Peierls instability 8–23233
Peierls transition, interchain bandwidth effect at low temp. 8–10352
polaronic crystals, central peak 8–47712
spin-Peierls transition, dynamic struct. factor 8–14964
structural phase transitions and anharmonic phonons 8–14433
structural transitions of antiferroelectric and displacive modulated type caused by electron-phonon interactions 8–43092
superconductor, high T_c, dynamic instabilities 8–10607
transition metals, and their carbides high temp. superconductivity and phonon softening 8–14848
TTF-TCNQ, electronic props. and comparison with $(SN)_x$, review 8–6306
TTF-TCNQ, Kohn anomaly and Peierls-type transition, X-ray obs. 8–14435
TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8–10381
TTF-TCNQ, Peierls instability and consequences 8–6303
TTF-TCNQ, X-ray exam. of 2k and 4k anomalies 8–10162
$BaMnF_4$, dielec. anomaly, mechanism, spin canting 8–10744
$Ba_2NaNb_5O_{15}$, Raman spectra, soft oscillations, temp. depend. 8–31203
$BaTiO_3$, soft mode dielec., anomalous low temp. sp. ht. 8–14423
$BaTiO_3$, tetragonal, over-damped soft E-polariton and dielec. dispersion 8–15111
$Bi_xSb_{1-x}SI$, low freq. Raman spectroscopy 8–15162
$Bi_2Ti_4O_{11}$, anomalous temp. depend. of phonon modes, Raman spectra 8–10893
$Bi_2Ti_4O_{11}:PbO$, anomalous temp. depend. of phonon modes, Raman spectra 8–10893
$BiVO_4$, ferroelastic, observation of soft optical phonon 8–2856
Ce, high press. superconductivity, phonon softening 8–14852
β_1Cu-Zn, structural Umklapp processes at low and high temp. lattice kinetics of phase transformation isotherms *(German)* 8–30707
Ge, mode Gruneisen coeff. at point X, effect of lattice softening 8–38804
$Hg_2Br(Cl_2)$, paraphase, Raman scatt. spectra, soft mode from Brillouin zone boundary *(Russian)* 8–2851
Hg_2Cl_2, low temp. phase transition, X-ray diffr., Raman spectra 8–22849
In-Cd alloys, elastic-phase transition, US study 8–6919
KCN, elastic anomaly at 168K 8–27242
KCN, lattice dynamics and order-disorder transitions, neutron scatt. expts. 8–14434
KD_2PO_4, soft ferroelec. mode anisotropy 8–14430
$KD_3(SeO_3)_2$, acoustic phonon softening and spontaneous strains 8–26652
KH_2AsO_4, soft shear mode, Brillouin scatt. obs. 8–15176
KH_2PO_4, central peak susceptibility and US propag. near T_c 8–15125
KH_2PO_4, damping of transverse acoustic and ferroelec. modes 8–14413
KH_2PO_4, depolarised light scatt., dynamic central peak 8–10858
KH_2PO_4, Raman scatt. near T_c, search for soft modes 8–15114
$KH_3(SeO_3)_2$, acoustic phonon softening, US vel. meas. 8–14429
$K_{0.75}Li_{0.25}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8–2852
KNO_3, antiferroelec., press. induced II to IV phase transition, Raman scatt. 8–15161
$K_xNa_{1-x}TaO_3$, press. depend. of impurity soft modes, low energy Raman scatt. meas. 8–2852
K_2OsCl_6, displacive phase transition, thermal expansion meas. 8–10188
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, lattice softening, temp. depend. of elastic consts., US meas. 8–14432
$K_2Pt(CN)_4Br_{0.3}.xH_2O$, dynamical props. near Peierls instability, neutron scatt. 8–14436
K_2ReCl_6, displacive phase transition, thermal expansion meas. 8–10188
$KTa_xNb_{1-x}O_3$, ferroelectric transition, US attenuation, elastic consts., soft modes 8–23411
La, supercond. transition temp., press. depend., mode softening 8–14847
Mo and Nb-Mo alloys, superconductivity and phonon softening, between electron bands and phonons 8–14859
$(ND_4)_2BeF_4$, ferroelec. transition, Raman spectra obs. *(Russian)* 8–23408
$NH_4H_2PO_4$, phase transition, phonon echo method *(French)* 8–6640
$NaNO_2$, incommensurate phase transitions 8–26653
Na_xWO_3, X>0.5, temp. depend. of Raman active soft modes, tetragonal-tetragonal transition 8–48180
Nb and Nb-Mo alloys, superconductivity and phonon softening, between electron bands and phonons 8–14859
NbC_xN_{1-x}, s.p. ht., 4.2-100K, phonon anomaly rel. to supercond. transition 8–14880
Nb_3Sn, phonon softening and T_c, strong electron-phonon coupling 8–31009
$(Pb,La)TiO_3$, soft E(TO) phonons, and phase transitions, Raman spectra, −200 to 400°C 8–15109
PbF_2, cubic, dielec. const., ionic cond., soft modes 8–14427
$Pb_5Ge_3O_{11}$ acoustic relaxation near ferroelectric transition 8–2814
$PbMo_{5.1}S_6$, high supercond. T_c, soft mode behaviour 8–14855
$Pb_{1-x}Sn_xSe$, gapless state and phonon spectrum *(Russian)* 8–30715
PbTe, TO phonon mode softening, sub mm spectra 8–6665

soft modes continued
- Pb(Ti,Zr)O_3, soft E(TO) phonons, and phase transitions, Raman spectra, −200 to 400°C 8−15109
- $PbZr_{0.95}Ti_{0.05}O_3$, soft mode dielec., anomalous low temp. sp. ht. 8−14423
- $PrCl_3$, cooperative Jahn-Teller ordering of elec. dipoles in non-Kramers doublets 8−15115
- $RbCaF_3$, 193K phase transition, lattice dynamics 8−10160
- $RbCaF_3$, 193K phase transition, crit. neutron scatt. obs. 8−10161
- $RbCaF_3$, sp. ht. anomaly at struct. transform. 8−14426
- $RbD_3(SeO_3)_2$, phase transform., inelastic neutron scatt. study 8−39514
- RbH_2AsO_4, Raman scatt. near T_c, search for soft modes 8−15114
- RbH_2PO_4, ferroelectric, soft mode frequency from US vel. data 8−23417
- RbH_2PO_4, Raman scatt. near T_c, search for soft modes 8−15114
- $RbH_3(SeO_3)_2$, low temp. struct., neutron diffr. 8−38669
- $(SN)_x$, electronic props. and comparison with TTF-TCNQ, review 8−6306
- SbSI, Raman scatt., near tricritical point 8−15159
- $Sm_{1-x}Y_xS$, effect of valence fluctuations on lattice dynamics 8−47493
- $SnMo_5S_6$, high supercond. T_c, soft mode behaviour 8−14855
- $SnMo_6S_8$, lattice softening, vibr. anisotropy 8−14428
- SnTe, carrier density depend. of soft TO-phonon, Raman scatt. meas. 8−6684
- SnTe, mag-props., effect of structure transition 8−6158
- SnTe, softening of TO phonon mode *(Japanese)* 8−2225
- $SrZrO_3$, high temp. phases, struct. determ., soft mode transitions 8−42942
- TiN, phonon dispersion curves, soft-mode behaviour, inelastic neutron diffr. 8−43083
- TlBr, soft mode dielec., anomalous low temp. sp. ht. 8−14423
- TlN_3, press. induced phase transition, Raman scatt. meas. 8−19468
- U, supercond., phonon-softening 8−10592
- V, supercond., soft modes, d-electron localisation 8−14872
- V_3Si, elec. resist. below 77K, phonon assisted interband scatt. 8−14703
- V_3Si, soft mode sound vel. in mag. field rel. to density of states 8−14647
- V_3Si, sp. ht. anomaly at struct. transform. 8−14426
- YS, soft-mode behaviour in phonon dispersion, inelastic neutron scatt. meas. 8−38807
- ZnF_2, elastic moduli, press. depend., 0-10 kbar 8−10117
- ZnF_2, elastic props., 4.2-300K, incipient ferroelec. transition 8−30691

software (computers) *see computer software*

sogicons *see semiconductor devices*

soil
- acceleration excited by 1976 May 6 Friuli earthquake 8−24260
- active layer, parameterisation and influence on atmosphere surface layer *(Russian)* 8−44924
- basal hills in Darling Downs, SE.Queensland, slope profiles of cycloidal form 8−44820
- bulk resistivity, meas. method 8−24381
- cement mixture for earthfill dam embankment *(Japanese)* 8−39729
- chemical grout for stabilization, simultaneous tests for engng. props. *(Japanese)* 8−31596
- clay, highly plastic, compaction and lime stabilization effect on pore size distrib. *(Japanese)* 8−31365
- cohesionless with curved yield surfaces, elastoplastic stress-strain theory 8−18186
- dew meter, β-absorpt. type, appl. to meas. on soil and plant surfaces 8−24803
- external environmental radiation levels of naturally of occurring radioactive sources 8−9001
- fissionable element impurities, nature and distrib., fission track method 8−44436
- groundwater natural recharge, math. modelling 8−11934
- heat recovery from nuclear plants for agriculture and pisciculture 8−37464
- heavy metal adsorption and interfacial reactions 8−3832
- interaction with surface mounted struct. under excitation by plane SH wave 8−22292
- land-use data processing for resource planning 8−7804
- landscape periodicity, slope deposits, soil pattern and erosion in small catchment area 8−11924
- landslides due to rainwater permeation, residual strength and frictional resist. of sliding soil masses *(Japanese)* 8−11919
- mechanics, triaxial test, limit analysis theory *(French)* 8−32073
- moisture, estimation of effective capillary press. in Green and Ampt infiltration eqn. 8−3844
- moisture content, determ. by meas. of reflectance in ultrashort radio wave band 8−16075
- moisture influence on evaporation, Priestley-Taylor model 8−24314
- moisture meas. using airborne imaging passive microwave radiometer 8−36310
- multi-layer soils, state vector approach to one dimens. consolidation 8−3757
- multiband photography for geomorphology, soils and land use study, feasibility 8−12025
- nondestructive neutron activation analysis of environmental samples using low-energy photon spectrometry 8−3995
- Otway Ranges and coastal plain, S.E.Australia 8−20418
- permafrost terrain, EM probing, theory 8−28323
- pollution indication, Ca and NO_3-N loss from microcosms 8−16019
- pore water characteristics, modelling, similarity hypothesis 8−11941
- quartz grains of podzols, surface texture, SEM study 8−36151
- Quaternary loess deposits of Banks Peninsula, New Zealand, radiocarbon dating 8−24271
- radioisotope sorption on USA subsoils from differing weathering intensity areas, ^{241}Am, ^{237}Np and ^{99}Tc 8−16014
- rainfall infiltration into bare soils, theoretical model and expts. 8−49058
- resistivity meas., LF electromagnetic wave method *(French)* 8−24394
- rigidity testing using capacitive transducer 8−19977
- sandy moist, compressibility and plasticity during repeated shock loading 8−11885
- Santorini, soil conditions during Minoan times around 1500 BC 8 40552
- shear wave velocity, meas. during standard penetration test 8 48978
- soil moisture measurement, remote sensing simulator 8−49 13

soil continued
- stabilisation with granulated slag, increased compressive strength *(Japanese)* 8−31464
- subsoil liquifaction during earthquakes in Japan 8−36118
- surface moisture content parametrization, use in atm. prediction models 8−49052
- thermograph for soil temp. meas. 8−4005
- Tolaga Bay Flats basin, recent alluvial infilling estimation using tephra marker beds 8−11925
- viscoplastic model, eqns. and expt. determ. *(Russian)* 8−7619
- warming of soil by using waste heat from nuclear power station 8−37463
- water accumulation in low-level radioactive waste burial trenches at West Valley 8−13266
- water accumulation in low-level radioactive waste burial trenches at West Valley, remedial work 8−13267
- water flow, two-dimens. infiltration and redistrib., numerical anal. 8−11942
- water flow through soil with initial gradient 8−32127
- water infiltration into frozen soil 8−16077
- watershed geochemistry, aqueous solns. control by soil materials 8−20445
- weathering, geochemical study and elemental redistrib. 8−7634
- wind erosion and suspended dust deposition, wind speeds and particle concs. 8−40623
- ^{14}C analysis and soil dating 8−36299
- ^3H, environmental transport from atm. release of mol. ^3H 8−11987
- Pb total in soil, comparative study of analysis methods 8−16221
- Pu distribution in Ohio soils, local and stratospheric sources 8−16015

solar absorber-convertors
- chemical treatment of cover to reduce reflection *(French)* 8−25982
- conference, optical phenomena in IR materials, Annapolis, MD, USA (Dec. 1976) 8−25933
- cylindrical dioptrics, nonfocalising solar collector 8−21195
- IR spectral emittance profiles of spectrally selective solar absorbing layers 8−25955
- laser, solar pumped, for space communications 8−46645
- luminescent greenhouse solar collector materials 8−13789
- materials research and collector thermal performance tests *(Japanese)* 8−46732
- materials science aspects, lecture 8−25989
- oxide layers on high-temp. alloys, for central-receiver, solar-thermal power systems 8−18071
- selective film absorber, design improvements by surface roughening and refr. index grading 8−25976
- selective transparent filters, Drude mirror type, efficiency 8−33836
- solar collector thermal performance testing procedures *(Japanese)* 8−16795
- water decomposition into H and O using solar energy, one-step effusional process 8−15672
- Au black, struct. comp. and optical props. 8−27339
- Cr, ultrafine particles, coatings for selective absorpt. of solar energy, efficiency 8−18060
- Cr ultrafine particles, selective solar energy absorption 8−18027
- CuO-Ag film solar absorbers, mechanism of high-temp. instability 8−22971
- $(In_{1-x}Sn_x)_2O_{3-y}$, pyrolytic selective coating, Sn additions effect 8−43499
- Ni-Al_2O_3 composite film, selectively absorbing, optical props. 8−6798
- PbS-Al coatings, absorptivity, emissivity, as function of PbS thickness 8−46731
- Si film selective absorber, optical consts. 8−25954
- W, dendritic, solar absorbing surfaces anodised interference coatings 8−13815

solar absorbers *see solar absorber-convertors*

solar activity
- *see also solar flares; solar prominences; solar-terrestrial relationships; sunspots*
- 11-year cycle, chromospheric rot. meas. during years of declining activity 8−4186
- 11-year cycle, rel. to large-amplitude standing planetary waves in troposphere 8−36236
- 22-year cycle, rel. to quiescent prominences mag. field orientations 8−45305
- active region and flare plasmas, electron density from Fe IX lines intensity ratio 8−20771
- chromosphere network struct. from medium resolution EUV obs. 8−20801
- chromospheric network, comparison of He II 304 Å and He II 10830 Å spectroheliograms 8−20799
- climate var. rel. to activity and solar constant change 8−28301
- corona, activity complex development, Skylab soft X-ray obs. 8−12191
- corona, soft X-ray obs. of large-scale active region brightening 8−20806
- coronal active regions, imaging with Fresnel zone plates 8−49342
- coronal and interplanetary responses, dynamic modelling 8−49418
- coronal general mag. field evolution with solar cycle, rel. to solar wind streams and galactic cosmic ray vars. 8−7974
- coronal holes and assoc. solar wind, sunspot cycle 20 survey 8−40911
- coronal holes rel. to magnetic fields and model of formation in solar cycle 8−40909
- coronal line profiles above active regions, statistical anal. 8−7968
- coronal streamers, electron densities from K-coronameter polarisation meas. 8−4182
- currents sheets as heating source for active regions 8−28634
- cycle, absence of effect on zodiacal light brightness 8−45276
- cycle, as nonlinear oscill. of general mag. field driven by nonlinear dynamo 8−40889
- cycle, rel. to polar mag. fields and cosmic ray vars. phase reversals 8−40780
- cycle 20, study of Forbush decreases and corresponding flares 8−49249
- cycle 21, forecast of max. activity 8−49416
- cycle dependence of range and freq. spread F 8−32292
- cycle effects on equatorial ionospheric F-region elec. fields 8−28405
- cycle minimum, evolution of photospheric mag. field patterns during Skylab 8−20798
- cycle minimum, study of background corona 8−28616
- cycle var. of interplanetary magnetic field 8−49274
- energy balance of active regions 8−28633

solar activity continued
faculae, line profile families rel. to total mag. flux 8-49408
inactivity, ^{14}C evidence in tree rings 8-7962
influence on photoelectron fluxes in Earth's ionosphere and plasmasphere 8-16374
interplanetary phenomena, solar-induced, rel. to differences between new and old comets 8-36513
ionospheric E-region, NO var. with solar activity 8-49207
long-term variations, solar activity and neutrino flux 8-45307
noise storms, spectrum and position at decametre wavelengths 8-28622
open magnetic fields in active regions 8-28631
open magnetic structures evolution, Skylab obs. 8-16362
photosphere cooling with increased sunspot activity 8-40896
planetary tides, mechanical interpretation of solar activity *(French)* 8-20787
pores, line profile families rel. to total mag. flux 8-49408
radio bursts, evidence for dense non-potential magnetic flux tubes in corona 8-28615
radio bursts of drifting pairs type, results of obs. near 25 and 12.5 MHz 8-24502
radio emission, preliminary results from Mark II Nancay radioheliograph 8-28517
radio noise storms, correl. with photospheric source position and mag. structs. 8-4185
radioastronomical obs. by amateurs *(Italian)* 8-7887
radiocommunication implications, historical account and predictions *(Italian)* 8-24496
scattering process above active regions, propagation in fibrous medium 8-20780
Solar Maximum Mission GSTDN/TDRSS compatible RF system 8-45198
solar wind, evidence for solar cycle vars. 8-49266
statistical study, X-ray radiation rel. to SEA and active areas *(French)* 8-20788
STIP Intervals I and II, significant solar-initiated events 8-49420
submillimetre observations, of solar active regions 8-12177
sunspot minimum, quiet radio Sun rel. to coronal X-ray holes radio emission 8-20805
surges and coronal heating, Skylab X-ray images examination 8-12190
Torun Observatory 127 MHz data since 1958, survey *(Polish)* 8-36549
type II radio burst, 1973, May 3, fine struct. 8-24501
type III radio bursts, interplanetary baseline obs. 8-20808
type III radio bursts, rel. to nonrelativistic electron beam propag. 8-28623
type III radio bursts, second harmonic radiation and related nonlinear phenomena 8-7958
UV brightenings in active regions, OSO-8 obs. 8-28630
weather-solar activity correlation, anal. 8-40628
X-ray bright arcs and mag. flux emergence regions 8-12174
X-ray emitting active region, early evolution 8-28621
^{14}C content in tree rings correl. with solar cycle, 1744-1892 period *(Russian)* 8-16390

solar atmosphere
see also chromosphere; photosphere
acoustic mode overstability in polytropic atmosphere 8-49413
acoustic waves, energy transmission across mag. flux sheath 8-20802
acoustical-gravity waves in plane waveguide, interaction and self-action *(Russian)* 8-36221
active regions, currents sheets as heating source 8-28634
active regions, submillimetre obs. rel. to general atmospheric heating 8-12177
bound-free and free-free electron transitions, review 8-33563
coronal model, rel. to Fe abundances and temps. determ. from XUV emission lines 8-4180
electric fields generated by motion of mag. features 8-12194
evolving force-free magnetic fields, stability of configurations and motion of medium 8-12176
filaments, multifreq. obs. at centimetre wavelengths 8-28602
flare plasma, physical parameters and dynamics from X-ray and XUV emission 8-12175
flares, electrostatically unstable heat flow and its consequences 8-20804
force-free magnetic flux tubes, dilation 8-4172
gamma-rays generation, rel. to energy spectrum of 1972 Aug. 4 flare event *(Russian)* 8-12185
heterogeneities, classification, physical mechanisms 8-16394
inhomogeneous solar phenomena with different porosities, line profiles *(Russian)* 8-40891
limb darkening coefficients for quiet Sun, integrated spectrum 8-24498
magnetic field energy dissipation, in neutral current sheets 8-26250
magnetic fields and motions, granulation and sunspots *(Russian)* 8-16376
magnetospheric explosions, role of gravitational instabilities 8-28655
mechanical heating of outer layers *(Italian)* 8-32431
momentum and energy transport, by acoustic, Alfven and fast mode waves 8-4162
noise storm sources, spectrum and position at decametre wavelengths 8-28622
nonradial p mode eigenfrequencies depend. on solar envelope struct. 8-16364
nonradial p-mode oscillations 8-32428
nonrelativistic electron stream, propag. in solar atmosphere rel. to type III radio bursts 8-28623
quiescent prominences, downward motions model 8-20779
rare earth rich submicron grains in Earth's atm., solar vs. terrestrial origin 8-12180
review of present knowledge 8-40895
rising magnetic field, rope struct. *(Russian)* 8-40898
sound generation by Alfven waves with random phases 8-7979
sunspot magnetic field and vel. quasiperiodic oscills. *(Russian)* 8-12186
transients, MHD, two-dimens. plane anal. 8-20773
UV spectroscopy, review of high resolution obs. 8-45313
vector magnetic fields, determ. from Stokes profiles 8-28611
CO IR spectrum rel. to atm. struct. and C abundance 8-28608
Ca II K-line, search for global oscillations 8-7959

solar atmosphere continued
Hα photography 8-40833
Mg II h and k lines, Skylab high-resolution obs. 8-36544

solar batteries *see solar cells*

solar cell arrays
see also solar power
albedo contribution to satellite array perf. 8-40798
ESRO IV satellite, orbital performance assessment 8-40797
rocket solar sensor data processing cct. *(Japanese)* 8-24423
weld testing, nondestructive tech. system selection 8-35629

solar cells
fabrication, using ionised-cluster beam deposition and epitaxy 8-11133
heterojunction, interface state and energy barriers effect on efficiency 8-43464
heterojunction cell production by neutralised ion beam sputtering 8-3046
II-VI heterojunctions, recent results 8-39206
lecture on optoelectronic devices 8-25990
materials and fabrication techniques to reduce the cost of Si solar cells, book 8-15306
materials science aspects, lecture 8-25989
MIS, influence of interface states, efficiency improvements 8-39227
MIS Schottky barriers, photocurrent suppression and interface state recomb. 8-39222
MIS-Schottky barrier solar cells, photovoltaic props. anal. 8-6448
NDT of welds, mechanical strength eval. 8-35630
photoelectrolytic, water decomp. with semicond. materials 8-2562
polyacrylonitrile, polaris., pyroelec., electret film, solar energy conversion *(Russian)* 8-39507
polycrystalline Si growth, ribbon to ribbon laser scanning tech. 8-35299
ribbon-to-ribbon growth method and sample characterisation Si 8-11103
Schottky barrier cell, optimum thickness indicator for barrier metal 8-21120
semiconductor, n-type, thermodynamic pot. for anodic dissolution, rel. to photoelectrochem. cell efficiency 8-26948
semiconductor electrodes, light energy conversion and storage 8-14813
semiconductor liquid junction, efficiency, electrochemical stability and surface preparation 8-14817
semiconductor-electrolyte solar cell, minority carrier transfer, energy levels role 8-39209
sputtered Cu_2S fabrication, on CdS substrate 8-39692
surface-channel insulator-semicond. photocell, photoelec. characts. 8-26909
ternary semiconductor device applications, review 8-39207
ternary semiconductors, use in thin film heterojunction and homojunction photovoltaic devices 8-39208
textured surface, reflectance and transmission props. 8-1165
AlAs-GaAs film heterojunction, VPE growth and characts. 8-6439
BP-Si junctions epitaxial growth and device appls. 8-48333
n-CdS-CdSe mixed polycryst. electrode for photoelectrochem. cell 8-47867
CdS-Cu_2S, effect of CdS surface stoichiometry on performance 8-2956
CdS-Cu_2S heterojunction, pilot line production 8-2525
CdS-Cu_2S solar cells, preparation and stoichiometric control 8-2560
CdS-GaAs n-n voltage-enhanced photoanode, solar cell efficiency 8-14810
CdSe based photoelectrochemical cell, for solar energy conversion 8-19147
CdTe:As^{2+}, photovol. props. of p-n junction prod. by ion implantation 8-43038
Cu_2S-CdS heterojunction model 8-39205
Cu_xS chalcocite film fabrication, characts. 8-39240
Cu_xS-CdS, post fabrication treatments, surface props. 8-39822
Cu_xS-CdS thin film solar cell using chem. sprayed CdS film 8-43465
GaAlAs-GaAs, high efficiency heterostruct. solar cell grown by metalorganic CVD 8-11118
GaAs fabrication, using AMOS tech., single and polycrystalline cells 8-39935
GaAs film on recrystallised Ge film, solar cell appl. 8-19671
GaAs film solar cell fabrication, substrate requirements 8-11125
GaAs, polycrystalline, for solar cells 8-11124
GaAs:Si, heteroface solar cells, diffusion lengths 8-47849
p-GaP, cathode of photoelectrochemical cell 8-10552
In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8-15314
n-InP photoelectrode, stabilisation to photoanodic dissolution, in aqueous solutions of Te^{2-}/Te_2^{2-} 8-14814
InP/CdS fabrication by reactive sputtering, anal. of technique 8-39693
Si, amorphous hydrogenated, use as solar cell material 8-2565
Si, CVD on liq. Sn layers in HCl presence, enhanced crystallinity 8-6853
Si, low cost production for solar cells, growth from melt 8-3028
Si, minority carrier lifetime *(Korean)* 8-23103
Si polycrystalline p-n junction deposition 8-10549
Si, proton irradiation damage 8-34556
Si ribbon, EFG, diffusion length enhancement under illum. 8-14756
Si, ribbons produced through capillary action shaping, elec. and struct. characts. 8-47804
Si Schottky barrier solar cell, V-I characts. and efficiency 8-14828
Si Schottky-barrier, electron and hole drift mobility in amorphous Si 8-19027
Si, SiO_2 diffusion sources under oxidising ambient conditions, solar cell fabrication 8-2148
Si solar cell, transition metal doped Czochralski and web crystals, measurement of impurity effects 8-35297
Si, solar grade, Czochralski growth, solar cell efficiency vs. metallic impurity conc. 8-31330
Si, thin diffused layer, minority carrier excess charge and time const. 8-30938
Si, thin film prep., in orbiting ultrahigh vac. facility 8-7855
Si:Al lamellar devices, surge protector, solar cell, HV diode and negative resistor appls. 8-10068
Si:H amorphous semiconductors, prep. from SiH_4 and characts. 8-48326
Si-Pd_2Si, Schottky barrier, resistivity, elec. characts. 8-14825
Si-PtSi, Schottky barrier, resistivity, elec. characts. 8-14825

solar cells continued
- SiO$_2$, reduction by RF induction plasma torch., Si form. 8−11186
- SrTiO$_3$, photoanode water photoelectrolysis at high current density 8−15679
- TiO$_2$ photoanode, water photoelectrolysis at high current density 8−15679
- n-TiO$_2$, rutile anode, water photolysis 8−2563
- ZnO-electrolyte interface, electron transfer sensitisation by salt additions 8−34894

solar chromosphere *see chromosphere*

solar composition
- element abundance, atomic and mol. f-values 8−20792
- element relative abundance, review 8−20793
- photosphere, abundances of elements Na to Ca 8−49411
- photosphere, C, N, O, abundances 8−24497
- quiet corona, O/N abundance ratio from highly ionised O and N X-ray spectrum 8−45297
- spectroscopic differences between solar-type cluster stars and Sun 8−36560
- CO IR spectrum rel. to atm. struct. and C abundance 8−28608
- He abundance in solar quiescent prominences, theoretical models 8−49405
- La, photospheric abundance, new lifetime meas. of La$^+$ 8−17618
- Mn abundance, Mn$^+$ oscillator strengths 8−17619
- Ti, abundance from recent Ti I oscillator strengths 8−45306

solar constant *see solar radiation*

solar corona
- 1973 June 30 eclipse, white light polarisation 8−20786
- active region surges and coronal heating, Skylab X-ray images examination 8−12190
- active regions, currents sheets as heating source 8−28634
- active regions, imaging with Fresnel zone plates 8−49342
- active regions, open mag. fields 8−28631
- activity complex development, Skylab soft X-ray obs. 8−12191
- Alfven and magnetoacoustic wave mode coupling in solar corona, cold plasma approx. 8−12178
- Alfven waves, finite amplitude circularly polarised, instability 8−28502
- autoionisation rate coefficients for coronal ions 8−17623
- background corona near solar minimum, Skylab obs. 8−28616
- chromosphere-corona transition region, interpretation of C III and O V emission line ratios 8−28598
- coronal hole, birth, Skylab, soft X-ray obs. 8−7967
- coronal hole, physical parameters defining changing struct. 8−20770
- coronal holes, radio and EUV meas. of temp. distrib. and electron density *(Russian)* 8−16378
- coronal holes and high-speed wind streams 8−12187
- cosmic ray particles with energy below 10 MeV, propag. and acceleration 8−49246
- dense non-potential magnetic flux tubes, radio and soft X-ray evidence 8−28615
- electron densities in coronal streamers, K-coronameter meas. 8−4182
- electron density distrib. models rel. to shock wave propag. 8−16375
- equatorial K-corona radiance, temporal evolution 8−28618
- external occulting disc, coronograph, scattered light reduction 8−36455
- Faraday rotation, helios 1 occultation expt. results 8−20790
- filament transition sheath, study from radio obs. 8−28619
- filament-corona transition region, OSO-VI EUV obs. 8−28620
- fine chromospheric structs. in corona, Hα obs. *(French)* 8−28607
- flare, 1973 June 15, Hα, magnetic and X-ray morphology 8−4173
- flare, 1973 June 15, Skylab XUV spectra, intersystem and forbidden transitions 8−4159
- flare plasma, evaporative cooling 8−40890
- flare plasma nonequilibrium ionization and emergent X-ray spectrum 8−7953
- force-free fields, exterior source surface 8−28600
- He I, He II, XUV emission lines, intensities and gross centre-to-limb behaviour 8−40888
- heating, by ion acoustic waves 8−4181
- Helios 1 and 2 occultations, S-band time delay meas. 8−20791
- hole evolution by sudden large scale changes 8−40910
- hole in northern polar region, simulation, MHD eqns. 8−4168
- holes, hydrostatic and dynamic models 8−4167
- holes, nature of underlying photospheric mag. fields 8−28613
- holes and assoc. solar wind, sunspot cycle 20 survey 8−40911
- holes and large-scale structures, plasma parameters from soft X-ray obs. 8−4161
- holes rel. to magnetic fields and model of formation in solar cycle 8−40909
- large scale magnetic field determ. from radiosource rotation meas. *(Russian)* 8−32433
- linear force-free fields in lower corona 8−40902
- long distance arches, electron density from centimetric quiet Sun reinterpretation 8−28597
- loop prominences formation, kinematic model 8−7965
- loop transients expansion and broadening, theoretical explanation 8−40887
- loops brightened by flares and transients, decay 8−40907
- magnetic arch, type III and type I-like decametric emission 8−12179
- magnetic bottles, rel. to solar cosmic rays fast azimuthal transport 8−32305
- magnetic field evolution with solar cycle, rel. to solar wind streams and galactic cosmic ray vars. 8−7974
- magnetic field heterogeneities, rel. to fine struct. of type II radio burst 8−24501
- magnetic field topology in coronal-interplanetary space 8−49273
- magnetic loops, struct., MHD stability theory 8−28632
- magnetic loops, structure, equilib. theory 8−12192
- mass ejection event, 1973 December 19, kinematics 8−28640
- mass ejection events, rel. to noncompressive density enhancements in solar wind 8−28479
- mass ejection into interplanetary space 8−49417
- MHD shock waves, propag. in solar atmosphere 8−24503
- MHD waves, mode coupling, oblique incidence on stratified media 8−20775
- MHD waves, mode coupling reduction of coupled eqns. 8−20776
- momentum and energy transport, by acoustic, Alfven and fast mode waves 8−4162
- open magnetic structures 8−4158
- open magnetic structures evolution, Skylab obs. 8−16362

solar corona continued
- plasma diagnostics using high-resolution spectroscopy, Skylab obs. of forbidden lines 8−14203
- plasma diagnostics with broad-band X-ray imaging systems, physical parameter method 8−49414
- plasma turbulence triggering during fast flux emergence 8−45304
- polar plumes, EUV anal. 8−4178
- quiescent solar corona, dynamics 8−40885
- quiet corona, X-ray spectrum of highly ionised O and N 8−45297
- quiet Sun, scatt. effects on radio emission at freqs. <200 MHz 8−4183
- radio bursts, type II and III theory *(Russian)* 8−16381
- radio bursts of drifting pairs type, 25 and 12.5 MHz obs. rel. to coronal cyclotron instability 8−24502
- radio emission, fluctuations 8−45311
- radio emission, probability of occurrence of stable pulses 8−42737
- radio wave propag. in inhomogeneous magnetic field *(Russian)* 8−16385
- red line, more precise wavelength *(Russian)* 8−40899
- response to solar events, dynamic modelling 8−49418
- restructurings, correl. with evolution of photospheric mag. field patterns 8−20798
- reverse current in flares 8−16363
- scattering process above active regions, propagation in fibrous medium 8−20780
- sheet-current approach to coronal-interplanetary space modelling 8−20807
- Skylab photographic X-ray images, analysis 8−49341
- soft X-ray limb flares from Skylab 8−4164
- soft X-ray obs., of large-scale coronal active region brightening 8−20806
- solar wind, expansion in high-speed streams 8−45298
- spectral line profiles above active regions, statistical anal. 8−7968
- stereo radioastronomical obs. 8−49419
- streamers, rotational motions effects on spectral lines 8−49410
- subsonic flows, in coronal-interplanetary closed field lines regions 8−28624
- temperature distribution 8−40908
- thermally conductive flows in coronal holes, theory 8−28614
- transient phenomena, mass ejection mechanism 8−7980
- transients, MHD, two-dimens. numerical solns. for model corona 8−20774
- transients, MHD, two-dimens. plane anal. 8−20773
- transition zone, search for turbulent free region 8−4174
- transition zone, Si IV line profile vars., rel. to MHD disturbances 8−28626
- Viking radio occultation obs. at 1976 Mars solar conjunction 8−20789
- Voyager radio science experiment 8−24430
- X-ray and XUV emitting structures, changes rel. to mag. reconnection 8−28635
- X-ray emitting active region, early evolution 8−28621
- X-ray holes, radio obs. rel. to quiet radio Sun at 2800 MHz 8−20805
- X-ray photographs, anal. and interpretation 8−4179
- XUV emission lines, appl. tq coronal Fe abundances and temps. determ. 8−4180
- Fe XIV 5303 Å emission line polarisation, coronal mag. field determ. *(Russian)* 8−16389
- Fe XIV coronal depletion, 1976, April 20, photoelectric obs. 8−28617
- Fe XVIII X-ray emission lines, obs. and anal. 8−36542
- Fe^{11+}, proton collisional excitation in ground configuration 8−33582
- He-like ions, X-ray spectra from laser plasma, comparison with solar corona 8−17596
- Si, dielectronic recomb. and ionization equilib., autoionization and excitation influence 8−1077

solar corpuscular radiation *see solar wind*

solar corpuscular streams *see solar wind*

solar cosmic ray particles
- acceleration and coronal propag. of particles below 10 MeV 8−49246
- bidirectional anisotropies in proton and electron events rel. to magnetic bottles 8−40778
- Brookhaven experiment sensitivity to solar neutrinos, collapsing stars and cosmic neutrinos, ^{37}Cl neutrino absorpt. cross-sections 8−4929
- complex solar particle event, 1973, April 29-30, anal. 8−20593
- coronal and interplanetary propagation of solar particles following E45° solar flare on 29/7/73 8−49248
- electron stream, nonrelativistic, propag. in solar atmosphere rel. to type III radio bursts 8−28623
- energetic particles from flares, interplanetary shock waves 8−49276
- energetic protons assoc. with forward-reverse shock pair at 1 AU 8−4052
- energetic protons assoc. with interplanetary active regions at 1-5 AU 8−45176
- event signatures rel. to propag. and acceleration processes 8−49244
- fast azimuthal transport, by coronal mag. bottle 8−32305
- flare particle events, exponential decay 8−4047
- flare protons near-Earth parameters determ. from radio bursts 8−45165
- heavy nuclei enhancement at high energies, 1974 July 4 event 8−28641
- Helios 1 measurements, 1974 Dec.-1975 Sept., quiet time spectra, radial gradients 8−20592
- intensity and anisotropy, influence of injection processes and interplanetary propag. 8−12195
- intensity variations assoc. with interplanetary mag. field disturbances 8−40779
- interplanetary ice particles erosion by low energy cosmic rays 8−45177
- interplanetary propag., solar cosmic ray events, solar and interplanetary diffusion 8−28458
- interplanetary propagation from 1 to 5 AU 8−20594
- muon solar harmonics, variation of upper limit rigidity, 1958-63 8−49265
- neutrino flux and ^{6}Be reson., ^{4}He(^{3}He,n)^{6}Be 38.61 MeV cross-section 8−619
- neutrino flux rel. to solar evolution and mass changing cosmology 8−45441
- neutrino puzzle, lepton mixing explanation 8−16373
- neutrons, prod. in solar flares and expected fluxes 8−32306
- preflare enhancement in cosmic ray intensity, rel. to solar X-ray emission 8−45166
- propagation correlations detected on Mars-7 and Prognoz-3 8−49247

solar cosmic ray particles continued
- proton event, 1972 August 4, influence on stratospheric O_3 8−7732
- proton flare spectrum determ. from latitudinal effect, using minimal Stormer pulse 8−45308
- proton flares, excessive particle emission mechanism 8−45310
- proton flares, particle characts. near Earth from radio burst obs., longit. attenuation function 8−45309
- proton flares 1942-76 and their prediction 8−20811
- proton spectra determ., comparison of methods 8−28459
- protons, low-energy, cross-sections for (p,xn) reactions 8−28504
- protons, low-energy, energy spectrum shape at 1 AU *(Russian)* 8−16255
- protons, penetration into magnetosphere, influence of magnetosheath 8−20583
- protons, relationships to ionospheric plar cap riometer absorpt. 8−28413
- protons and electrons, medium-energy, Helios 1 and 2 particle spectrometer meas. 8−20608
- protons in Earth's magnetosphere, vars. and spectra (August 1970) 8−16256
- protons reflected by Earth's bow shock, upstream wave boundary determ. method *(Italian)* 8−24409
- spherically symmetric production and modulation, analytical solns. 8−16368
- ν capture rate, disagreement between theory and expt. 8−4171
- ν flux survey, inhomogeneous solar models 8−4166

solar cosmic ray photons
- gamma rays, theory of prod. and observational results 8−32306
- gamma-rays energy spectrum during 1972 Aug. 4 flare *(Russian)* 8−12185

solar disturbances *see solar activity*

solar eclipses
- 1973, June 30, equatorial electrojet irregularities drift vels. meas. 8−36365
- 1973, June 30, stray light meas. for sunspot intensity correction 8−28596
- 1973 June 30, atmospheric point discharge currents during eclipse 8−16094
- 1973 June 30, white light corona polarisation 8−20786
- 1975, May 11, 8 mm obs. of quiescent prominence 8−7977
- 1976, April 29, annular eclipse, zenith intensity photoelectric meas. 8−3900
- 1976, April 29, ionospheric electron content quasiperiodic fluctuations during partial eclipse 8−24407
- 1976, April 29, ionospheric HF signals freq. shift 8−45111
- 1976, April 29, partial eclipse obs. in Poltava 8−45201
- 1976, October 23, ionospheric total electron content meas. over Australia, rel. to induced gravity waves 8−49210
- 1976 April 29, atmospheric point discharge currents during eclipse 8−16094
- 1976 October 23, contact timing expt. during total eclipse 8−36547
- 1976 October 23, in-flight obs. near Victoria, Australia 8−36548
- 1977, October 12, photographic obs., cloudy weather 8−45315
- 1977, October 12, photographic obs. from North America 8−45314
- 1977 October 12, partial phases for N.America, predictions 8−7865
- 1977 October 12, ship-borne expeditions in NW.Pacific 8−32434
- ionosphere effective height change *(Russian)* 8−49201
- light bending by eclipsed Sun, star field obs. *(French)* 8−20634
- sky radiance during total solar eclipse, model 8−40652
- teaching, camera obscura demonstration *(Hungarian)* 8−36773

solar energy concentrators
- catenary curve reflecting surfaces for concentration 8−46744
- chemical treatment of cover to improve collection *(French)* 8−25982
- collector coatings, for solar heating and cooling systems 8−30045
- compound wedge cylindrical stationary concentrator, charact. 8−33815
- cone collectors for finite sources 8−46742
- dielectric compound parabolic concentrator 8−5533
- diffuse light collection onto extended absorber, mirror designs 8−22186
- fixed focal axis large linear solar concentrators shaped by gravity field 8−9427
- flat plate collector energy yield increase by planar reflector, modelling appl. 8−33813
- generalised light concentrators, collection props. 8−33807
- hyperbolic cone-channel condenser system 8−33811
- lens-mirror combinations with max. conc. 8−9422
- line focus solar collector, construction *(Japanese)* 8−30072
- luminescent greenhouse solar collector materials 8−13789
- materials, reflected beam profile characterisation 8−33814
- orbiting mirrors, solar illumination after dark appl. 8−33816
- semiconductor film absorbing surface coated onto base, SiO antireflection coating over bath 8−5580
- solar tower concept, ray trace approach 8−5571
- spherical mirror solar collector, geometrical concentration determ. *(French)* 8−33808
- Al and alloys corrosion characteristics in ethylene glycol-water mixtures 8−7095
- Cr_2O_3/Cr cermet film, RF sputtered, for selective black absorbers 8−30046

solar energy conversion
- *see also solar absorber-convertors; solar cells*
- No entries

solar flares
- 1972, August, obs. of assoc. coronal radio emission fluctuations 8−45311
- 1972, August 4, gamma-rays energy spectrum *(Russian)* 8−12185
- 1972, August 4, interplanetary flux hydromagnetic struct. 8−28475
- 1972, August 4 and 7, gamma-ray obs. 8−32306
- 1972 August 2-4, ionospheric VLF sudden phase anomalies 8−40739
- 1972 August 4, energy characts., plasma and mag. field struct. behind interplanetary shock wave 8−49268
- 1973, April 29-30, anal. of complex solar particle event 8−20593
- 1973, June 15, Hα, magnetic and X-ray morphology 8−4173
- 1973, June 15, high temp. plasma evolution, Fe XXIII, Fe XXIV obs. 8−28636
- 1973, June 15, multiple loop activations and continuous energy release 8−28637
- 1973, June 15, Skylab XUV spectra, intersystem and forbidden transitions 8−4159

solar flares continued
- 1973, September 5, struct. and dynamics from X-ray and XUV obs. 8−12175
- 1973 September 7, Mars probe meas. 8−16252
- accelerated particles, power-law energy spectrum problem 8−40914
- anomalous Balmer decrement, stimulated transitions between highly excited atomic levels 8−5176
- chromosphere flares, correl. with vars. in Earth surface atmospheric press. field 8−36245
- chromosphere flares, effective time of observations *(Russian)* 8−40893
- chromospheric, effects on geomag. pulsations 8−28424
- chromospheric, parameters and fine struct. determ. 8−24499
- cooling rate, nonlinear cond. effects 8−28638
- corona, plasma turbulence triggering during fast flux emergence 8−45304
- coronal and interplanetary responses, dynamic modelling 8−49418
- coronal flare plasma, evaporative cooling 8−40890
- coronal loops brightened by flares and transients, decay 8−40907
- coronal plasma nonequilibrium ionization and emergent X-ray spectrum 8−7953
- cosmic ray particles production and modulation, analytical solns. 8−16368
- cosmic rays, fast azimuthal transport by coronal mag. bottle 8−32305
- Cretaceous-Tertiary extinctions, effects of solar flares and stratospheric aeronomy 8−32215
- electric currents in cosmic plasmas 8−12094
- electrostatically unstable heat flow and its consequences 8−20804
- emerging flux model 8−4165
- emission line profiles, from inhomogeneous solar phenomena with different porosities *(Russian)* 8−40891
- energetic particles from flares, interplanetary shock waves 8−49276
- energy, period, radiation, future research *(Dutch)* 8−32432
- EUV emission line spectra, analysis of Skylab obs. 8−40913
- EUV structure of small flare, Skylab obs. 8−40912
- Forbush decreases and corresponding flares during solar cycle 20, 1965-72 period 8−49249
- force-free magnetic fields evolution, field configurations stability and motion of medium 8−12176
- geomagnetic crochet type disturbances current systems and elec. fields in polar cap ionosphere 8−40733
- hard X-ray emission, backscatter rel. to anisotropy and polarisation 8−28594
- interplanetary magnetic field structure within flare streams 8−7969
- Io, correlation of posteclipse brightening with major solar flares 8−28573
- magnetic field energy dissipation, in neutral current sheets 8−26250
- magnetic reconnection, plasma accel., heating and shock form. 8−40773
- mass ejection mechanism for transient phenomena 8−7980
- MHD shock waves, propag. in solar atmosphere 8−24503
- microwave burst spectra and flare mag. fields 8−7970
- nonrelativistic electrons accel. by strong plasma turbulence 8−7954
- particle events, exponential decay 8−4047
- particle events, interplanetary propagation from 1 to 5 AU 8−20594
- phenomenological model, appl. to 1972, August 4 flare 8−49407
- photosphere, force-free magnetic field bifurcation rel. to flare process 8−40901
- plasma electron density from Fe IX lines intensity ratio 8−20771
- plasma wave electric fields meas. using Stark effect 8−12193
- proton event, 1972 August 4, influence on stratospheric O_3 8−7732
- proton events, excessive particle emission mechanism 8−45310
- proton flares, effects on ionospheric circumpolar currents 8−49198
- proton flares, near-Earth solar protons parameters determ. from radio bursts 8−45165
- proton flares, particle characts. near Earth from radio burst obs., longit. attenuation function 8−45309
- proton flares 1942-76 and their prediction 8−20811
- proton spectrum determ. from latitudinal effect, using minimal Stormer pulse 8−45308
- radio noise storms, spectrum and position at decametre wavelengths 8−28622
- reverse currents 8−16363
- simulation of solar flare energy spectrum from monoenergetic incident proton beam 8−12786
- soft X-ray limb flares from Skylab 8−4164
- spectral lines between 171 and 630 Å, obs. 8−49406
- steady force-free dynamos, appl. to mag. fields flaring process 8−20777
- stellar and solar flares, review 8−7973
- sudden cosmic noise absorpt., solar Zenith angle depend. 8−12047
- super flares, as cause of Cretaceous-Tertiary extinctions 8−32435
- temperature structures derivation from X-ray spectra, use of a priori information 8−20778
- theory, stochastic particle accel. *(Russian)* 8−16377
- troposphere, lower, solar flare effects on temp. and press. 8−40615
- UV brightenings in active regions, OSO-8 obs. 8−28630
- X-ray and Hα flares comparison 8−7971
- X-ray bright flares and EUV macrospicules identification with Hα macrospicules 8−16361
- X-ray bursts, during early evolution of X-ray emitting active region 8−28621
- X-ray emission, rel. to cosmic ray intensity preflare enhancements 8−45166
- Fe line X-ray emission, ionization equilib. and line excitation 8−32426
- Hα flares, rel. to large-scale coronal active region X-ray brightenings 8−20806
- Hα-flares and microwave bursts rel. to isolated sunspot magnetic configurations 8−16387

solar furnaces *see furnaces*

solar interior
- convection in rotating deep compressible spherical shell, theory 8−20795
- convection zone, heat flow near obstacles 8−28609
- convection zone struct. and charact. scales on solar surface 8−7981
- long-term variations, solar activity and neutrino flux 8−45307
- mass changing cosmology, solar evolution and neutrino flux 8−45441
- MHD dynamo, convectively-driven models, solar dynamo appl. 8−42668
- nonlinear magnetic dynamos, bifurcation of steady dynamos from oscillating dynamos 8−49306

solar interior continued
  review of present knowledge 8−40895
  variability rel. to radiation and ice ages on Earth 8−12183

solar magnetic fields *see solar magnetism*

solar magnetism
  active region, X-ray emission rel. to mag. field configuration 8−28621
  active regions, currents sheets as heating source 8−28634
  active regions, open mag. fields 8−28631
  active regions, photosphere mag. field strength rel. to submillimetre emission 8−12177
  atmosphere, acoustic wave energy transmission across mag. flux sheath 8−20802
  atmosphere, elec. fields generated by motion of mag. features 8−12194
  atmosphere, heterogeneities, classification and physical mechanisms 8−16394
  chromosphere, effects of MHD shock wave on mag. field and density profiles 8−24503
  chromosphere-corona transition region, mag. force tube struct. from EUV obs. 8−20801
  corona, large scale magnetic field determ. from radiosource rotation meas. *(Russian)* 8−32433
  corona, large-scale active region X-ray brightenings rel. to field line reconnection 8−20806
  corona, linear force-free fields in lower regions 8−40902
  corona, mag. field heterogeneities rel. to fine struct. of type II radio burst 8−24501
  corona, plasma turbulence triggering during fast flux emergence 8−45304
  corona, radio and soft X-ray evidence for dense non-potential magnetic flux tubes 8−28615
  coronal general mag. field evolution with solar cycle, rel. to solar wind streams and galactic cosmic ray vars. 8−7974
  coronal hole, physical parameters defining changing struct. 8−20770
  coronal holes and high-speed wind streams 8−12187
  coronal holes and large-scale structures, plasma parameters from soft X-ray obs. 8−4161
  coronal holes rel. to magnetic fields and model of formation in solar cycle 8−40909
  coronal loop transients, mag. field struct. rel. to expansion and broadening 8−40887
  coronal loops, struct., MHD stability theory 8−28632
  coronal loops, structure, equilib. theory 8−12192
  coronal mag. field determ. from Fe XIV 5303 Å line polarisation *(Russian)* 8−16389
  coronal magnetic arch, type III and type I-like decametric emission 8−12179
  coronal magnetic bottles, rel. to solar cosmic rays fast azimuthal transport 8−32305
  coronal transients, MHD, two-dimens. numerical solns. for model corona 8−20774
  coronal transients, MHD, two-dimens. plane anal. 8−20773
  coronal X-ray and XUV emitting structures, changes rel. to mag. reconnection 8−28635
  coronal-interplanetary field, topological structure 8−49273
  coronal-interplanetary mag. fields modelling, sheet current approach 8−20807
  coronal-interplanetary space, subsonic flows in closed field lines regions 8−28624
  differential rotation of magnetic fields, solar cycle variations 8−20781
  differential rotation rates for short-lived regions of emerging magnetic flux 8−20782
  equatorial K-corona, mag. field struct. rel. to radiance temporal evolution 8−28618
  eruptive prominences, rot. motions rel. to twist transport in force-free mag. flux tubes 8−40813
  evolving force-free magnetic fields, stability of configurations and motion of medium 8−12176
  faculae, line profile families rel. to total mag. flux 8−49408
  faculae, models, Ca II K line wings and magnetic fields 8−16392
  flare, 1973, September 5, mag. field struct. and dynamics from X-ray and XUV obs. 8−12175
  flare magnetic fields and microwave burst spectra 8−7970
  flares, electrostatically unstable heat flow and its consequences 8−20804
  flares, emerging flux model 8−4165
  flares, mag. field energy dissipation in neutral current sheets 8−26250
  flares, phenomenological model 8−49407
  flux tubes, role of flows in prod. and maintenance of flux conc. 8−16393
  force-free fields, exterior source surface 8−28600
  force-free magnetic flux tubes, dilation 8−4172
  force-free photospheric field bifurcation 8−40901
  intense magnetic flux tube, vertical motions inside 8−40900
  isolated sunspot magnetic configurations rel. to Hα-flares and microwave bursts 8−16387
  large-scale solar magnetic field, Stanford obs. compared with Hα synoptic charts 8−28612
  loop prominences formation, kinematic model 8−7965
  magnetic flux element in horizontally stratified compressible plasma, stability 8−28610
  mean magnetic field, obs. at Stanford 8−20800
  MHD dynamo, convectively-driven models, solar dynamo appl. 8−42668
  nonlinear dynamo, general mag. field nonlinear oscill. rel. to solar cycle 8−40889
  nonlinear magnetic dynamos, bifurcation of steady dynamos from oscillating dynamos 8−49306
  open magnetic structures evolution, Skylab obs. 8−16362
  photosphere, mag. fields and convection dynamic interaction 8−24458
  photosphere, mag. fields and motions, granulation, sunspots *(Russian)* 8−16376
  photosphere, mag. structs. correl. with radio noise storms 8−4185
  photosphere fields hydraulic concentration, adiabatic cooling and conc. in downdraughts 8−45300
  photosphere magnetic field patterns, evolution during Skylab 8−20798
  photosphere magnetic fields beneath large coronal holes, nature 8−28613
  polar magnetic fields, reversals rel. to cosmic ray vars. phase reversals 8−40780
  pores, line profile families rel. to total mag. flux 8−49408
  quiescent corona, mag. field rel. to heating and dynamics 8−40885
  quiescent prominences, mag. fields orientation 8−45305
  radio bursts, type I and III comparison *(Russian)* 8−16379
  radio bursts, type II and III theory *(Russian)* 8−16381
  radio wave propag. in inhomogeneous magnetic field *(Russian)* 8−16385
  rope structure, of rising solar mag. field *(Russian)* 8−40898
  small-scale magnetic fields theory 8−12197
  small-scale photospheric magnetic fields 8−12196
  sunspot magnetic field and vel. quasiperiodic oscills. *(Russian)* 8−12186
  sunspots, darkness difference, mag. and vel. field effects 8−28629
  sunspots, origin of broad-band circular polarisation 8−45301
  sunspots, steady-force-free dynamos theory 8−20777
  supergranulation, dynamics of gas and mag. field below photosphere 8−16366
  surface magnetic activity, vars. rel. to solar luminosity and biological extinctions 8−32435
  transition zone, Si IV line profile vars., rel. to MHD disturbances 8−28626
  vector magnetic fields, determ. from Stokes profiles 8−28611
  X-ray bright arcs and mag. flux emergence regions 8−12174

solar noise *see noise; solar radiofrequency radiation*

solar power
  see also solar energy concentrators
  collector, appl. of forced convection heat transfer at inclined plates 8−30285
  illumination after dark, orbiting mirror appl. 8−33816
  industrial process heat charact., potential for solar and nuclear power systems 8−822
  meteorological aspects of solar and wind power 8−36250
  mirror surfaces for solar power stations, specular reflectance obs. 8−13786
  radiation intensity oscillations, daily and seasonal, problems of power when demanded *(Croatian)* 8−3859
  receiver surface optical properties obs., black coatings on high-temperature alloys 8−18071
  selective surfaces for high temp. photothermal conversion 8−1364
  solar tower concept, ray trace approach 8−5571
  textured surface, reflectance and transmission props. 8−1165
  thermo-telemetry transistorised thermometer appl. *(Spanish)* 8−16793
  thin composite films, photothermal conversion efficiency film 8−2937

solar prominences
  anomalous Balmer decrement, stimulated transitions between highly excited atomic levels 8−5176
  coronal mass ejection event, 1973 December 19, kinematics 8−28640
  electron density of quiescent prominences in He and Na emission regions *(Russian)* 8−20784
  emission line profiles, from inhomogeneous solar phenomena with different porosities *(Russian)* 8−40891
  eruptive prominences, rot. motions rel. to twist transport in force-free mag. flux tubes 8−40813
  filament observations with multi-channel subtractive double pass spectrograph 8−12189
  filament-corona transition region, OSO-VI EUV obs. 8−28620
  filaments, multifreq. obs. at centimetre wavelengths 8−28602
  filaments, short-lived, differential rotation 8−28642
  fine chromospheric structs. in corona, Hα obs. *(French)* 8−28607
  formation, by rising mag. flux ropes twisting *(Russian)* 8−40898
  hedgerow prominences, fine structure from spectral obs. 8−40906
  loop prominence systems, rel. to large-scale coronal active region X-ray brightenings 8−20806
  loop prominences formation, kinematic model 8−7965
  mass ejection mechanism for transient phenomena 8−7980
  nonthermal turbulent motions, spectral obs. 8−4174
  quiescent, Hβ, He D_3 and Ca II 8542 Å line emission meas. 8−32427
  quiescent, obs. at 8 mm during 1975 May 11 eclipse 8−7977
  quiescent prominences, downward motions model 8−20779
  quiescent prominences, He abundance determs., theoretical models 8−49405
  quiescent prominences, mag. fields orientation 8−45305
  quiescent prominences, spectra meas. 8−40886
  streamers, rotational motions effects on spectral lines 8−49410
  UV spectra, preliminary results from OSO-8 LPSP instrument 8−49317
  C III and O V emission line ratios, interpretation 8−28598
  Hα dark filament, study of transition sheath from radio obs. 8−28619

solar radiation
  see also solar cosmic ray photons; solar radiofrequency radiation; solar spectra; solar wind; sunlight
  absorption in stratosphere by O_2-O_2 and O_2-N_2 dimers 8−9167
  active regions, submillimetre obs. 8−12177
  Arctic summertime stratus clouds, solar radiation pyranometric meas. 8−32165
  atmospheric dust rel. to planetary radiation balance, climatological consequences 8−36242
  atmospheric general circulation model, climatic characts. response to solar radiation vars. 8−36260
  atmospheric spectral absorption of solar radiation by Denver Brown Cloud 8−16158
  background corona, brightness near solar minimum 8−28616
  chromosphere, Ca II K_3-line obs. rel. to rot. during 1972-73, declining activity years 8−4186
  chromosphere network pattern, identification with 1.35 cm radiogranulation *(Russian)* 8−40897
  chromosphere radiative losses, empirical estimate 8−40915
  clouds influence on solar radiation input in tropical ocean regions 8−3956
  cloudy atmosphere, solar radiation distrib. 8−3955
  continental ice sheet model, stability to insolation periodic vars. 8−28251
  corona, Hα emission from narrow chromospheric structs. *(French)* 8−28607
  corona, radio and soft X-ray evidence for dense non-potential magnetic flux tubes 8−28615
  corona, soft X-ray obs. of large-scale active region brightening 8−20806
  corona polar plumes, EUV radiation anal. 8−4178

solar radiation continued
coronal Fe XIV 5303 Å depletion, 1976, April 20, photoelectric obs. 8−28617
coronal holes, X-ray and radio emission rel. to quiet radio Sun at 2800 MHz 8−20805
Earth's surface, direct radiation, turbid ideal Rayleigh atm. 8−36274
energy flux, 770-80 Å region 8−28605
energy meas., photometric and bolometric methods 8−12470
equatorial K-corona radiance, temporal evolution 8−28618
EUV, ionization of ionospheres of Saturn, Uranus and Neptune 8−4142
EUV lines, medium resolution obs. rel. to chromospheric network struct. 8−20801
far UV flux, origin, variations, rel. to climatology *(French)* 8−40884
flare, 1973, September 5, X-ray and XUV emission rel. to struct. and dynamics 8−12175
flare plasma, evaporative cooling rel. to X-ray and EUV radiation 8−40890
flares X-ray emission, rel. to cosmic ray intensity preflare enhancements 8−45166
flux mapping sensor, Si p-n junction for high intensity appl. 8−40720
gamma rays, theory of prod. and observational results 8−32306
global radiation calc. as function of insolation *(Spanish)* 8−49117
RMS granular contrast, new meas. of centre to limb var. 8−4176
granulation, brightness fluctuations and lifetime from balloon-borne imagery 8−28601
granulation, photometric props. from balloon-borne imagery and digital image enhancement 8−7956
granule/intergranule brightness contrast, new determ. 8−20797
hard X-rays, backscatter, anisotropy and polarisation 8−28594
impulsive X-ray bursts, polarisation, directivity and spectrum of bremsstrahlung radiation 8−4160
India, solar radiation meas. and atm. transmission at high altitude stations 8−32152
intensity oscillations, daily and seasonal, problems of power when demanded *(Croatian)* 8−3859
interplanetary dust, effect of spin and solar radiation on motion *(Japanese)* 8−20732
irradiance meas. in upper ocean layer 8−44864
limb darkening, effects on zenith light intensities during annular solar eclipse (1976, April 29) 8−3900
long-term variations, solar activity and neutrino flux 8−45307
luminosity variations, as cause of Cretaceous-Tertiary extinctions 8−32435
microwave solar radiation, forward scattering from water surface 8−44872
north-south brightness asymmetry, obs. 8−45303
radiation pressure effects on interplanetary dust grains 8−20730
short wave radiation flux, rel. to daytime F_2-layer simulation 8−45087
solar constant, effects of sunspots and faculae 8−4163
solar constant, Nimbus 6 meas., rocket calibration 8−11948
summer global and diffuse solar radiation rel. to monsoon rainfall 8−32154
sunspots, origin of broad-band circular polarisation 8−45301
total and net radiation intensities, power spectral anal. 8−40617
UV diffuse-direct ratios meas. with compact double monochromator 8−49144
UV light, polarisation at solar limb 8−45302
UV limit at Earth surface, photon counting monochromator meas. 8−49134
UV radiation level measurement problems 8−37057
variability rel. to ice ages on Earth 8−12183
X-ray and Hα flares comparison 8−7971
X-ray and Lyman α, effect on ionospheric radiowave absorpt. 8−40737
X-ray bright arcs and mag. flux emergence regions 8−12174
X-ray emitting active region, early evolution 8−28621
X-ray photographs, anal. and interpretation 8−4179
X-ray spectra, rel. to Auger electron and photoelectron spectra in ionosphere and plasmasphere 8−45094
X-rays, intensity in E-region meas. by rocket-borne proportional counters 8−45072
X-rays rel. to SEA and active areas, statistical study *(French)* 8−20788
Fe line X-ray emission, ionization equilib. and line excitation 8−32426
Hα synoptic charts, comparison with large-scale synoptic charts obs. at Stanford 8−28612
He II 304 Å and He I 10830 Å spectroheliograms, comparison 8−20799

solar radio emission *see solar radiofrequency radiation*

solar radiobursts *see solar radiofrequency radiation*

solar radiofrequency radiation
1.35 cm radiogranulation, optical identification with chromospheric network pattern *(Russian)* 8−40897
activity levels, influence on photoelectron fluxes in Earth's ionosphere and plasmasphere 8−16374
bursts, stereo radioastronomical obs. 8−49419
centimetric quiet Sun, reinterpretation rel. to density in coronal long distance arches 8−28597
corona, burst sources positions rel. to dense non-potential magnetic flux tubes 8−28615
corona, radio emission fluctuations 8−45311
coronal radio emission, probability of occurrence of stable pulses 8−42737
coronal X-ray holes, radio obs. rel. to quiet radio Sun at 2800 MHZ 8−20805
decameter wavelength spectrum of quiet Sun 8−7966
decimetric type IV narrow-band burst with fine structure 8−36546
drifting pairs type radio bursts, results of obs. near 25 and 12.5 MHz 8−24502
filament, radio spectrum rel. to transition sheath study 8−28619
fine structure radio bursts at meter wavelengths, review *(Russian)* 8−16386
fine structure radio emission in 20-30 MHz range, theoretical freq. splitting mechanism *(Russian)* 8−16383
fundamental and harmonic type IV bursts in 24 to 220 MHz, range circular polarisation *(Russian)* 8−16384
Langmuir wave emission and absorpt. coeffs. due to anisotropic unmagnetized particles 8−16370
Mauna Kea, atmospheric absorpt. between 4 and 30 cm^{-1} 8−3888

solar radiofrequency radiation continued
microwave burst, 1976 March 28, superimposed 4.7 s periodic oscills. 8−7972
microwave burst and Hα-flares rel. to isolated sunspot magnetic configurations 8−16387
microwave burst spectra and flare mag. fields 8−7970
microwave bursts, appl. to near-Earth solar flare protons parameters determ. 8−45165
microwave bursts, flare protons characts. determ. near Earth, longit. attenuation function 8−45309
noise storms, book 8−20810
noise storms, correl. with particular photospheric mag. structs. 8−4185
noise storms, spectrum and position at decametre wavelengths 8−28622
noise storms and bursts, preliminary results from Mark II Nancay radioheliograph 8−28517
plasma emission appl. to radio bursts *(Russian)* 8−14139
polarisation characts., radio wave propag. in inhomogeneous magnetic field *(Russian)* 8−16385
quiet Sun, obs. at metre and decametre wavelengths 8−4184
quiet Sun emission at freqs. <200 MHz, scatt. effects 8−4183
radioastronomical obs. by amateurs *(Italian)* 8−7887
S-component, local sources emission directivity, spectral study 8−24500
S-component spectrum in 4 to 7 GHz range, radiospectrograph for fine structure *(Russian)* 8−49320
scattering process above active regions, propagation in fibrous medium 8−20780
sudden cosmic noise absorpt., solar Zenith angle depend. 8−12047
Torun Observatory 127 MHz solar data since 1958, survey *(Polish)* 8−36549
total intensity and circular polarization struct. at 21 cm 8−7957
type I and III bursts comparison *(Russian)* 8−16379
type II and III bursts theory *(Russian)* 8−16381
type II bursts data *(Russian)* 8−16380
type II bursts with reverse frequency drift 8−7978
type II radio burst, 1973, May 3, fine struct. 8−24501
type III and type I-like decametric emission in coronal mag. arch 8−12179
type III burst, stereoscopic direction finding meas., second harmonic emission 8−45312
type III bursts, drift rate rel. to polarization at 237 MHz 8−36545
type III bursts, Langmuir wave-electron interactions 8−30418
type III bursts, second harmonic radiation and related nonlinear phenomena 8−7958
type III bursts with fine structure at decameter wavelengths *(Russian)* 8−16382
type III radio bursts, interplanetary baseline obs. 8−20808
type III radio bursts, rel. to nonrelativistic electron beam propag. 8−28623
type V bursts, VHF obs. 8−28639
type-II bursts, LF and MF obs. by Prognoz satellites 8−16375
Voyager planetary radioastronomy experiment 8−24433

solar radiowaves *see solar radiofrequency radiation*

solar rotation
12.2 day rot. period 8−16367
17th century, 1625 to 1626 and 1642 to 1644, anomalous solar rot. from sunspot drawings 8−36550
27.5 day rotation, rel. to large-amplitude standing planetary waves in troposphere 8−36236
convection in rotating deep compressible spherical shell, theory 8−20795
coronal holes, rigid rot. rel. to nature of underlying photospheric mag. fields 8−28613
differential rotation of magnetic fields, solar cycle variations 8−20781
differential rotation rates for short-lived regions of emerging magnetic flux 8−20782
differential rotation rel. to turbulent transport of angular momentum 8−16372
differential rotation/global convection system, modulation by nonlinear dynamo rel. to solar cycle 8−40889
elements i and Ω determ. from Doppler vel. meas. of solar plasma 8−28599
filaments, short-lived, differential rotation 8−28642
MHD dynamo, convectively-driven models, solar dynamo appl. 8−42668
polar and equatorial rotation rates, supposed anticorrel. 8−49415
time variations of solar angular momentum 8−7950
variations in rot. pattern, correl. with evolution of photospheric mag. field patterns 8−20798

solar spectra
see also solar activity; solar corona; solar radiation
active region and flare plasmas, electron density from Fe IX lines intensity ratio 8−20771
asymmetry of selected Fraunhofer lines, obs. *(Russian)* 8−40892
chromosphere, Fraunhofer line cores formation, empirical statistical model 8−7963
chromosphere, Hα obs. close to limb 8−28628
chromosphere, Heξ/H8 relative intensities in spicule spectrum 8−40904
chromospheric oscillations obs. in C II 1336 Å line by OSO-8 8−28625
corona, plasma diagnostics using high-resolution spectroscopy, Skylab obs. of forbidden lines 8−14203
corona polar plumes, anal. of M X and O VI EUV spectra 8−4178
coronal Fe XIV 5303 Å depletion, 1976, April 20, photoelectric obs. 8−28617
coronal Fe XVIII X-ray emission lines, obs. and anal. 8−36542
coronal line profiles above active regions, statistical anal. 8−7968
coronal red line, more precise wavelength *(Russian)* 8−40899
coronal XUV emission lines, Fe abundances and temps. determ. 8−4180
element abundance, atomic and mol. f-values 8−20792
EUV emission line spectra of flare, analysis of Skylab obs. 8−40913
EUV lines, medium resolution obs. rel. to chromospheric network struct. 8−20801
faculae, line profile families rel. to total mag. flux 8−49408
faculae, models, Ca II K line wings and magnetic fields 8−16392
faculae and pores, line profiles 8−16391
filament, radio spectrum rel. to transition sheath study 8−28619

solar spectra continued
filament-corona transition region, OSO-VI EUV line intensities obs. 8−28620
flare, 1973 June 15, Skylab XUV spectra, intersystem and forbidden transitions 8−4159
flare coronal plasma nonequilibrium ionization and emergent X-ray spectrum 8−7953
flares, obs. of lines between 171 and 630 Å 8−49406
flares X-ray spectra, use of a priori information in derivation of temp. structs. 8−20778
Fraunhofer line profiles interpretation 8−7976
Fraunhofer lines, profiles in 4226-7700 Å range *(Russian)* 8−28606
Fraunhofer lines asymmetry 8−4175
hard X-ray spectra, effects of backscatter on anisotropy and polarisation 8−28594
He I, He II, XUV emission lines, intensities and gross centre-to-limb behaviour 8−40888
hedgerow prominences, fine structure from spectral obs. 8−40906
inhomogeneous solar phenomena with different porosities, line profiles *(Russian)* 8−40891
micro-turbulence model test on flux spectrum 8−16365
microturbulent and macroturbulent filter functions, improved values 8−20796
noise storms, spectrum and position at decametre wavelengths 8−28622
photosphere, C, N, O, abundances 8−24497
photosphere weak absorpt. lines, appl. to photosphere total vel. field determ. *(Russian)* 8−40894
pores, line profile families rel. to total mag. flux 8−49408
prominence streamers, rotational motions effects on spectral lines 8−49410
quiescent prominences, Hβ, He D_3 and Ca II 8542 Å line emission meas. 8−32427
quiescent prominences, spectra meas. 8−40886
quiet corona, X-ray spectrum of highly ionised O and N 8−45297
recorded by slit interference spectrograph 8−24866
resonance multiplet lines, radiative transfer theory 8−24460
spectral analogues, photoelectric scanner obs. of solar-type stars 8−40938
spectroscopic differences between solar-type cluster stars and Sun 8−36560
Stokes profiles of lines, appl. to vector mag. fields determ. 8−28611
sunspots, AlF lines intensities prediction 8−20803
sunspots, FeH bands identification 8−7952
sunspots, FeH column densities rel. to Wing-Ford band identification 8−24507
transition zone, search for turbulent free region 8−4174
transition zone, Si IV line profile vars., rel. to MHD disturbances 8−28626
type II radio burst, 1973, May 3, dynamic spectra obs. rel. to fine struct. 8−24501
UV lines polarisation, effects on UV light polarisation at limb 8−45302
UV spectra, preliminary results from OSO-8 LPSP instrument 8−49317
UV spectral line identifications 8−16371
UV spectroscopy, review of high resolution obs. 8−45313
vacuum UV centre-to-limb variation obs. *(Japanese)* 8−28604
wavelength shift determ. method, appl. to C_2 molecule 8−49340
C III and O V emission line ratios, interpretation 8−28598
CO IR spectrum rel. to atm. struct. and C abundance 8−28608
Ca II K-line, search for global oscillations 8−7959
Fe I weak Fraunhofer line profiles rel. to absorption coeff. *(Russian)* 8−20783
Fe XIV 5303 Å emission line polarisation, coronal mag. field determ. *(Russian)* 8−16389
Fe-group elements, oscillator strengths for V I and Co I in photosphere 8−40905
H_2 lines, detect. in EUV solar spectra 8−12184
He I, D_3-line profile meas. with birefringent filter 8−4177
He II 304 Å and He I 10830 Å, spectroheliograms comparison rel. to line form. models 8−20799
La II, lifetimes, element relative abundance 8−17618
Mg I 2852 Å line sensitivity to partial redistrib. effects 8−7951
Mg II, reson. line fluxes rel. to chromospheric radiative losses 8−40915
Mg II h and k lines, Skylab high-resolution obs. 8−36544
Mg II resonance-line wings, faint emission features obs. 8−32429
Mn II, oscillator strengths, element relative abundance 8−17619
Nd II, branching ratios and transition probabilities, photospheric abundance 8−9104
O I emission resonance triplet lines form. 8−24504
Se I lines in UV spectrum, predicted wavelengths 8−938
Si II, Si III, chromospheric lines spectrum synthesis 8−36543
Si II, Si III, EUV emission line profiles, centre-to-limb vars. 8−28627
Si II solar lines 1808-1817 Å, observed and theoretical profiles 8−49412
Si IV, 1122 and 1128 Å, obs. of nearby solar spectrum 8−4170
SiO vibration rotation bands in sunspots, equiv. widths at 8 μ 8−40903
Sn abundance from Sn I line intensity profiles 8−20772
Ti I lines, oscillator strengths and solar Ti abundance 8−45306

solar system
see also celestial mechanics; planets; Sun
Allende meteorite coarse-grained inclusions, trace elements and condensate phases 8−49401
Chamberlin-Moulton cosmogony, rise and fall 8−32641
constants numerical values, from Joint Report of IAU Commission 4 Working Groups 8−40845
early solar system magnetic fields, rel. to fields of terrestrial planets 8−12125
energy loss and modulation of galactic cosmic rays 8−32308
grain formation by nucleation, astrophysical environment 8−16501
isotopic abundances, cosmoradiogenic ghosts and origin of Ca-Al rich inclusions 8−12162
isotopic anomalies rel. to supernova neighbour or presolar carriers model 8−12110
Jupiter-Saturn-Sun systems, long-term numerical solns. 8−24450
'mysterite' as late condensate in solar nebula, H6 chondrite evidence 8−7946

solar system continued
nebula, charged dust accretion rel. to Fe, stone and planetesimal formation 8−28548
nebula, form. of Fe-Ni-Si planetary cores 8−12112
nebula, rel. to abundance pattern of primordial noble gases in chondrites 8−32424
nebular primordial mag. field, meas. from Allende meteorite chondrules 8−49399
nucleocosmochronology, model, r-process elements discrete addition to presolar cloud 8−4121
orbit-orbit resonances, varieties and similarities 8−4093
organic matter origin, anal. of organic polymer in carbonaceous chondrites 8−20767
origin, genetic implications of trace element distrib. in Allende inclusions mineral separates 8−49400
origin *(Chinese)* 8−20659
outer asteroid belt, rel. to mini planet between Saturn and Uranus 8−20721
periodic orbits families, existence in N-body problem 8−24449
physical parameters, determ. from Viking lander radio tracking data 8−20685
planetary evolution, solar influence 8−49348
planetary exploration methods, appl. to planetary atmospheres and solar nebula theory *(Czech)* 8−32374
planetary orbits stability, soln. to Poincare problem in celestial mechanics 8−28492
planetary sciences, AAS meeting (Honolulu, 19-22 January 1977) 8−4127
presolar grains from supernova ejecta, rel. to meteorites isotopic anomalies 8−20845
primordial magnetic field, during meteorite parent body era 8−45293
proton-associated alpha-irradiation in early solar system, search for possible ^{41}K anomaly 8−49398
protoplanetary cloud blow-off by T Tauri like solar wind 8−45243
ring systems around giant planets, origin 8−32373
satellites accumulation, circumplanetary swarm model 8−28549
solar companion star, evidence from pulsar period derivatives 8−12198
solar nebula and planetary system, mass distrib. 8−12109
structure of the universe, book 8−32628
Titius-Bode law, existence of space for more than ten planets 8−40851
zodiacal cloud, symmetry plane from photopolarimetry and brightness annual vars. 8−45276
Li, 'cosmic' abundance from sample activation anal. 8−12111
Ne-E, anomalous meteoritic Ne component, thermonuclear origin, supernova models 8−45292
U, isotopic composition in chondritic meteorites, origin of anomalies 8−4157

solar-terrestrial relationships
atmospheric pressure field, vars. in periods of high and low geomag. activity 8−36245
atmospherics noise variation with sunspot number during 1600-2000 hours at Delhi 8−49083
climate var. rel. to solar activity and solar constant change 8−28301
climatic changes, rel. to equatorial solar rot. 8−7960
climatic fluctuations in 1870-1969 period, statistical study of likely causes 8−7751
Cretaceous-Tertiary extinctions, effects of solar flares and stratospheric aeronomy 8−32215
Cretaceous-Tertiary extinctions, effects of solar luminosity vars. and super solar flares 8−32435
daytime F_2-layer simulation, selection of short-wave solar radiation flux 8−45087
E-region critical penetration freq. var. with solar activity 8−7828
E-region horizontal drifts, search for solar cycle var. at Ibadan 8−36390
Earth core torsional oscillations, induced by Sun 8−44793
equatorial counter-electrojet, geomag. aspects and solar cycle depend. 8−36367
evolution implications for Earth's early atmosphere 8−36285
F-region, range and freq. spread F rel. to solar cycle 8−32292
flare effects on geomag. pulsations 8−28424
flare effects on ionospheric circumpolar currents 8−49198
flares of 1972 August 2-4, ionospheric VLF sudden phase anomalies 8−40739
geomagnetic activity, correl. with solar wind speed long-term averages 8−32301
geomagnetic crochet type disturbances current systems and elec. fields in polar cap ionosphere 8−40733
ionosphere, electron content quasiperiodic fluctuations during 1976 April 29 partial solar eclipse 8−24407
ionosphere, equatorial electron densities, seasonal and solar cycle changes 8−36378
ionosphere, equatorial F-region elec. fields, solar cycle effects 8−28405
ionosphere, sudden freq. deviations during solar flares, depend. on operating freq. 8−28373
ionosphere, total electron content meas. during 1976 Oct. 23 solar eclipse over Australia, rel. to induced gravity waves 8−49210
ionosphere, unusual mid-latitude disturbance of corpuscular origin 8−28374
ionosphere HF signals, freq. shift during solar eclipse (1976, April 29) 8−45111
ionospheric E-region, NO var. with solar activity 8−49207
midlatitude spread-F, depend. on geomag. vars. and solar cycle 8−36389
Pc 5 pulsations, features during solar cycle 8−36406
photoelectron fluxes in ionosphere and plasmasphere, solar activity effects 8−16374
photosphere cooling with increased sunspot activity 8−40896
polar cap riometer absorpt. and solar protons, night and day relationships 8−28413
quasi-biennial geomagnetic variation, correl. with solar activity 8−32006
radiation balance as function of atm. dust, climatological consequences 8−36242
solar constant, effects of sunspots and faculae 8−4163
solar radiation var. rel. to ice ages 8−12183
solar X-ray fluxes, rel. to upper atmosphere Auger electrons fluxes and spectra 8−28376

solar-terrestrial relationships continued
STIP Intervals I and II, significant solar-terrestrial events 8−49420
stratosphere, O_3 reduction assoc. with 1972 August 4 solar proton event 8−7732
sunspot numbers, geomag. vars. and Earth diurnal rot. vel. 20 year vars. 8−32005
thermosphere nighttime winds and temps., monthly vars. during solar min. 8−32263
thermosphere zonal mean circulation, seasonal and solar cycle vars. 8−32262
thunderstorms, nontropical, initiation by solar activity 8−49096
troposphere, lower, solar flare effects on temp. and press. 8−40615
troposphere, Sun-induced large-amplitude standing planetary waves 8−36236
weather-solar activity correlation, anal. 8−40628
X-ray and Lyman α solar radiation, effects on ionospheric radiowave absorpt. 8−40737
X-ray spectra, rel. to Auger electron and photoelectron spectra in ionosphere and plasmasphere 8−45094
^{14}C content in tree rings correl. with solar cycle, 1744-1892 period *(Russian)* 8−16390

solar visible radiation *see sunlight*

solar wind
see also solar cosmic ray particles
Alfven waves, finite amplitude circularly polarised, instability 8−28502
comet-solar wind interactions 8−49392
complex solar particle event, 1973, April 29-30, anal. 8−20593
corona polar plumes as solar wind sources, EUV anal. 8−4178
coronal holes, thermally conductive flows 8−28614
coronal holes and assoc. solar wind, sunspot cycle 20 survey 8−40911
coronal-interplanetary expansion, sheet-current approach 8−20807
corotating stream, compression region interaction with Comet Kohoutek (1973 XII) ion 8−49267
corotating streams and shock waves, scintillation obs. 8−49279
cosmic ray 27 day modulation by solar wind *(Russian)* 8−16257
electrons, penetration into magnetosphere and adiabatic motion 8−28421
EM field in Earth magnetosphere, theory 8−28419
evolving streams and shocks beyond 1 AU, Pioneer 10 and 11 obs. 8−49283
expansion in high-speed streams, theory 8−45298
HELIOS 1 and 2 and STIP Intervals I and II participation 8−49295
Helios 1 and 2 mission, general aspects 8−20615
high-speed streams and coronal holes 8−12187
high-speed streams var. with solar cycle and coronal mag. field 8−7974
interaction with non-magnetic bodies 8−49270
interaction with type-1 comet tails 8−49393
interplanetary flux from flare of August 4, 1972, hydromagnetic struct. 8−28475
interplanetary ice particles erosion by solar wind particles 8−45177
interplanetary plasma wave-solar electrons interaction, numerical anal. 8−7853
interplanetary scintillation, appl. for solar wind probing 8−45178
interplanetary shock wave from 1972 August 4 solar flare, energy characts., plasma and mag. field struct. 8−49268
interplanetary shocks interaction with Earth's magnetopshere, influence of solar wind rel. 8−16243
interplanetary streams, Helios 1 plasma expt. results 8−20606
ion acoustic waves, Imp 6 wavelength meas. 8−40787
ionospheric recurrent storms, effects on HF radio communication 8−4028
long-term average speed, correl. with geomag. activity 8−32301
low energy charged particle measurements, Compton-Getting effect complications 8−49269
low-frequency wave packet, passage across stand-off shock front 8−45138
lunar EM induction, modelling, solar wind parameters limitations 8−36415
lunar magnetic anomalies interaction with cold solar wind 8−4125
lunar surface mass fractionation by solar wind sputtering 8−49350
magnetic fluctuations, EM response of Moon 8−12113
magnetic fluctuations, Helios 1 search-coil magnetometer expt. 8−20607
magnetosphere interaction, electron(ion)-beam instabilities 8−5888
magnetosphere interaction, flow peculiarities rel. to magnetopause position 8−49236
magnetosphere interaction, satellite obs., comparison with laboratory plasma and simulation 8−5945
magnetosphere interaction, solar wind plasma injection at dayside cusp 8−40775
Mars interaction, evidence for Martian mag. field reexamined 8−49359
Mercury, interaction of surface with exospheric atmosphere 8−49351
Mercury magnetic field-solar wind interaction, Mariner 10 obs. 8−12131
Mercury surface interaction, simple mols. prod. by solar wind irradiation 8−16324
MHD Bernoulli flow, singular point 8−4099
MHD dynamic modelling of disturbances during 1972 August solar flares 8−45174
micropulsations Pc 3 and 4, evidence for control by solar wind vel. 8−7837
momentum and energy transport, by acoustic, Alfven and fast mode waves 8−4162
Moon, interaction of surface with exospheric atmosphere 8−49351
multispecies flows, transport eqns. mathematical struct. 8−47084
noncompressive density enhancements, props. and origin 8−28479
origin, space charged particle repulsion by light *(Chinese)* 8−16388
particle telescopes with multiple view directions for pitch angle meas. from satellites 8−24425
plasma anisotropies, alignment with mag. field direction 8−32311
plasma disturbances caused by charged Helios spacecraft 8−24416
plasma motion through comet coma 8−49391
polar enhancement of interplanetary Lα through solar wind asymmetries 8−20605
protons and electrons, medium-energy, Helios 1 and 2 particle spectrometer meas. 8−20608
protons cooling, evidence from Mariner 2 data 8−40789
protons preshock perturbations, two-spacecraft study 8−12067

solar wind continued
protons reflected by Earth's bow shock, upstream wave boundary determ. method *(Italian)* 8−24409
protoplanetary cloud blow-off by T Tauri like solar wind 8−45243
radial dependence of properties, results from Helios 1/2 and Pioneer 10/11 scatt. expts. 8−28595
radio bursts, type II and III theory *(Russian)* 8−16381
radio measurements of second moment field 8−16369
radio scattering, meas. of spacecraft signals 8−49277
review of theoretical research (since 1958) 8−49281
shocks and assoc. wave-particle interactions 8−49284
slow MHD shock waves in interplanetary medium 8−12068
small-scale solar-wind inhomogeneities, whistlers model 8−45173
solar cycle variations, additional evidence 8−49266
solar flare energy spectrum simulation from monoenergetic incident proton beam 8−12786
speed distrib. and high speed streams, evolution 8−49282
T Tauri type solar wind, rel. to planetary ring systems origin 8−32373
terrestrial planets bow shock locations 8−28560
transverse waves propag. along axisymm. mag. field in nonhomogeneous plasma, WKB kinetic theory 8−42740
type II emission mechanism 8−28476
type III radio bursts, second harmonic radiation and related nonlinear phenomena 8−7958
velocity, dispersion anal. 8−7852
velocity meas., interplanetary scintillation obs. 8−49278
velocity rel. to galactic cosmic ray flux, Mars 2-7 meas. 8−16252
Venus interaction region, struct. from meas. of ion-flux characts. by (Venera 9 and 10) 8−4051
Voyager plasma experiment 8−20617
Voyager plasma wave system 8−24432
He^{2+} acceleration, effects of interactions with transverse waves 8−40788

soldering
Eccobond solder 56 C, sp. ht., 1.3-300K 8−16804
fusion instant recording by US method 8−44319
lead coatings, solderability after storage at 25-400°C 8−184
plasma coating, fused, strength of adhesion to base by gas flame soldering 8−23894
pressure transducer, operating temperature range extension using semicond. tensoresistors 8−4608
solderability of external coatings after storage at 25-400°C 8−184
steel, plate, Pb-Sn soldered joint strength study *(Japanese)* 8−7166
wrap-soldered tubing, inspection using UDT-6Sm us apparatus 8−3276

solenoids
see also coils; electromagnets
electron beam heated solenoid reactors for fusion power and fissile fuel breeding 8−8992
ferrite-core solenoid, appl. to geomag. pulsations detect. 8−24384
homogeneous magnetic field generation, ampere turn deposition determ. 8−42253
NMR magnetometer for solenoid calibration 8−21187
ohmic heating coil, nonuniform current density distrib., appl. to Tokamak reactor 8−17427
pulsed magnetic field production, for ultrahigh acceleration of Al ring 8−5386
superconducting, current regulated sweep unit 8−4659
superconducting, for H^+ collective accelerator, Q-values and field profiles 8−46188
superconducting, for H^+ collective accelerator 8−46187
superconducting, homogeneous, for superconductor props. meas. by NMR *(Czech)* 8−29130
superconducting, mag. field stability in persistent mode *(Czech)* 8−29131

solid effect
No entries

solid helium
FCC, lattice dynamics at high press. 8−10255
HCP, ground state props., cell model 8−14539
ion mobility 8−2324
paramagnet system, low-temp. diffusive transport for polarons and defectons 8−43174
specific heat high temp. anomaly, quasi-average and averages, translational symmetry breakdown 8−30811
superfluidity search in ^{4}He 8−10254
^{3}He, BCC, first-neighbour mag. interaction sign 8−14538
^{3}He, BCC, mag. ordered phase, complicated spin-glass-like phase 8−22928
^{3}He, BCC, Zeeman exchange cross relax. time 8−22930
^{3}He, deform.-assisted pairing, magnetic transition interpreted 8−2334
^{3}He, mag. susceptibility near ordering temp., pulsed NMR meas. 8−18869
^{3}He, magnet, review of theory 8−38906
^{3}He, magnetisation through nucl. ordering temp. meas. 8−18870
^{3}He, quantum crystal, growth from melt at low temps. 8−31319
^{3}He, solid BCC, four spin exchange, susceptibility behaviour below 10 mK 8−10253
^{3}He, submonolayer on Grafoil, vacancy induced ferromag. 8−14536
^{3}He-^{4}He mixture, ^{3}He-^{3}He and ^{3}He-^{4}He tunnelling motions, NMR meas. 8−38908
^{4}He, BCC, vacancy tunnelling at finite temp. 8−38907
^{4}He, crystalline, shape anal. of pulsed second sound 8−14537
^{4}He, HCP, Debye-Waller factor by inelastic neutron diffraction 8−43206
^{4}He, HCP, elastic consts. 8−38910
^{4}He, HCP, free standing cryst., shear deform. 8−2333
^{4}He, HCP, US attenuation 8−47634
^{4}He, Kapitza resist. below 1K 8−34673
^{4}He, quantum crystal, growth from melt at low temps. 8−31319
^{4}He, second layer film on graphite, liquefaction 8−47632
^{4}He, solid BCC, plastic deform., stress-strain relations and US attenuation 8−38909
^{4}He:^{3}He, quantum diffusion of ^{3}He, impurity interaction anisotropy *(Russian)* 8−30810
^{4}He:^{3}He, spin diffusion coeff. and T_2, impuritons, temp. depend. 8−34675
^{4}He-^{3}He, ^{4}He impurity at. and ion interaction and mobility, in solid or liq. *(Russian)* 8−18868
^{4}He-^{3}He, quantum mobility of impurity ^{3}He atoms 8−47636

solid hydrogen
energy in vol. range 10 to 60 a.u./atom, allowance for three-particle interactions *(Russian)* 8−38654
p-Hz:o-H_z, clustering rate and NMR obs., 25 mK-2K 8−47635
laser fusion research, prep. of solid H_2, D_2 targets using cryostat 8−17417
metallic, defect form. energy, Einstein-Kanzaki model 8−34676
metallic, electron-phonon interaction and superconductivity, APW calcs. 8−14854
metallic, expanded, Hartree-Fock and correlation energies 8−34674
metallic, struct. and stability 8−14305
metallic and molecular, transition press. and eqns. of state calc. 8−26685
microwave absorption of isolated pair of o-H_2 molecules in solid p-H_2, theories 8−2948
molecular charge density contours for cryst. struct. 8−38645
neutron scattering, inelastic, theoretical analysis 8−34569
NMR, pulsed, linewidth transition, T_1, low ortho conc. 8−43667
nuclear magnetism at reduced ortho conc. 8−10787
pellet-rotating plasma interaction, spectroscopic anal. 8−18455
static energy determ. taking into account three particle interactions *(Russian)* 8−9996
thermodynamics, polarised spin system of H atoms, metastable in mag. field 8−30812
p-H_2, anisotropic NMR spectra and crystalline state 8−10786
o-H_2 quantum molecular crystal, quantum quadrupolar phase theory *(Russian)* 8−22929
p- H_2, solid, induced near IR absorption spectrum, freq. shift, intensity, up to 10 kbar 8−6658
o-H_2, solid FCC, orientational ordering, SCF approx. 8−2029

solid lasers
see also gamma-ray lasers; Raman lasers; semiconductor junction lasers
active mirror and disc amplifiers, laser glasses, physical props. 8−42337
alkali halide, CW lasing of $F_2{}^+$-centres, 0.9-2 μm 8−29957
anisotropic, oscill. props., rate eqns. 8−22135
Argus two beam system, 5 TW performance 8−46656
array spatially-coherent beam formation and mode locking 8−37898
clocks, for psec. meas., review 8−12676
conference, inertial confinement fusion, San Diego, USA, (Feb. 1978) 8−46171
dibenzyl: naphthacene, cryst., ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
electron beam pumped semiconductor laser as TV tube screen 8−29969
Gekko IV, four beam phosphate glass laser system for fusion expts. 8−46650
glass, beam quality and efficiency increase by using circ. polaris., phosphate glass and double-pass amplifiers 8−46654
glass laser high power system for thermonuclear fusion *(Japanese)* 8−8970
glass rod amplifier, for OMEGA system 8−46653
high-efficiency, high-power lasers for fusion appl. *(Japanese)* 8−5486
impure molecular crystals, ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
laminated active laser element, thermal stresses produced by longit. nonuniform pumping *(Russian)* 8−5474
$LiNdP_4O_{12}$, fluoresc. and oscill. characts. at 1.317 μm 8−5473
mode self-locking 8−1283
Nd: glass, 1060 nm picosecond laser impulse, characterisation by sweeping slit cameras *(French)* 8−42366
ns pulse length continuous control, appl. to Nd laser 8−1280
OMEGA laser system, design parameters, performance 8−46655
OMEGA laser system for fusion expts. 8−46649
rare earth lasers and excited states, book 8−29958
rare earth pentaphosphates:Ce^{3+},Tb^{3+}, energy transfer between dopants, excitation spectra, laser appls. 8−10961
ring, interactions between opposite waves, self-modulation and beats 8−17983
ruby, cryst., lasing action, spectrum, luminesc. spectrum effects *(Russian)* 8−13716
ruby, CW operation, pumping by Ar ion laser 8−1253
ruby, negative feedback, ultrashort pulse generation 8−13714
ruby, pulsed, with active spectrum phasing, dynamics and energy characts. *(Russian)* 8−9387
ruby, treatment of chromatic maculae of the skin *(German)* 8−24177
ruby laser, Q-switched, parameter depend. on ruby quality 8−46608
ruby laser, radiation effects on Xe plasma *(Russian)* 8−22514
ruby laser rod, absorption coeff., loss coeff. and population inversion *(Japanese)* 8−37888
ruby Q-switched laser, photographic film calibration for energy meas. 8−5517
Shiva fusion laser, development of components and subsystems 8−5491
SHIVA laser for fusion reactors, fluorphosphate glass development 8−37440
spectrally inhomogeneous active medium, giant external pulse 8−17897
ultrashort-pulse generation by lasers with saturable absorbers 8−46687
wavelength identification using reference absorber 8−5513
CdS, electron-beam pumped, excitation of short cavity rhodamine 6G laser 8−25887
CdS, single cryst., laser emission following single-photon excitation *(Russian)* 8−37889
CdS single crystal laser screen, photolum., determ. of layer depth disturbed by polishing 8−17977
CdS, superluminescence due to pulsed X-rays, 170 and 295K 8−42338
Ce^{3+}:LaF_3, UV fluoresc. potential tunable laser 2760 to 3220 Å 8−15206
Ce^{3+}:LuF_3, UV fluoresc. potential tunable laser 2760 to 3220 Å 8−15206
Cr^{3+}:YAG, radiation colour centres, absorpt. and thermolum. spectra 8−48206
Er^{3+}:La_2S_3.$3Ga_2S_3$ glass, fluoresc., and possibility of lasing 8−23514
$Eu^{3+}\rightarrow Nd^{3+}$ diffusion-limited energy transfer in Na borate glass 8−31238
GaAs, optically pumped DFB laser, with two-dimens. Bragg reflectors 8−1252
p-GaAs, wavelength depend. of gain saturation 8−1229
HgI_2, stimulated emission and optical gain, 80K 8−33738

solid lasers continued
Ho:$LiYF_4$, 750 nm laser oscill., flashlamp and dye laser pumping 8−9386
Ho^{3+}:YAG, 2.09 μm stimulated emission, resonant pumping by Nd laser 8−17944
$K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8−2901
$LiNdP_4O_{12}$, glass clad, slab waveguide laser 8−46625
ND:fluorozirconate glass, prep. and optical props. 8−27304
ND:glass, sub ns periodically Q-switched 8−17995
$Na_2Nd_2Pb_6(PO_4)_6Cl_2$, laser material, flux growth *(French)* 8−35288
Nd, 3rd and 5th harmonic generation in Cs vapour *(Russian)* 8−25926
Nd compounds, diode pumped miniature laser 8−9392
Nd, for optical communication, characts. *(German)* 8−37902
Nd laser freq. conversion, resonant pumping of Tm^{3+}, Ho^{3+} activated YAG 8−17944
Nd stoichiometric laser crysts., oscill. props., rate eqns. 8−22135
Nd^{3+} in glass and cryst. hosts, fluoresc. branching ratios 8−29956
Nd:BeF_2 glass lasers for fusion expts. 8−46661
Nd:$CaY_3Mg_2Ge_3O_{12}$, CAMGAR low threshold CW room temp. laser operation at 0.941 μm 8−1234
Nd:garnet, freq. axial mode shift, two-mirror resonator synchronisation, stabilisation *(Russian)* 8−22154
Nd:glass, 0.92 μ laser action at room temp. 8−1236
Nd:glass, continuous dynamic freq. tuning of pulse radiation 8−29986
Nd:glass, fluorophosphate glass for fusion lasers 8−46660
Nd:glass, luminesc. quantum yield meas., relative method *(Russian)* 8−35203
Nd:glass, passive mode-locking by optical Kerr effect modulator 8−9403
Nd:glass, spectral distrib. kinetics rel. to intracavity spectroscopy 8−1293
Nd:glass, with nonlinear absorber, pulsed Q switching 8−9400
Nd:glass amplifier, large aperture, active mirror design 8−46659
Nd:glass disc amplifier design 8−46633
Nd:glass disc laser amplifier with immersion medium 8−1262
Nd:glass fibre optical quantum image amplifier 8−1261
Nd:glass laser, mode locking characts. using polymethine dye No. 3955 in solid host 8−17989
Nd:glass laser array, spatially coherent beam form., mode locking 8−29989
Nd:glass laser system, oscillators operating at 1.054 μm 8−46657
Nd:glass laser system, pulse shaping 8−46658
Nd:glass laser system for optical wave mixing expts. 8−5521
Nd:glass laser with freq. doubling compatibility, for glaucoma surgery 8−40403
Nd:glass lasers, optimisation for 1-10 ns pulses operation 8−46651
Nd:glass lasers, performance, Nova system design 8−46652
Nd:glass:CeO_2, TiO_2, lasing action, stabilisation *(Russian)* 8−13715
Nd:glass-YAG composite medium master oscillator, 1.06 μm stable conversion into fourth harmonic 8−46724
Nd:P_2O_5 glass, stimulated emission cross section, Verdet const. 8−25885
Nd:YAG, appl. of pulse gas-discharge lamp to optical pumping *(Bulgarian)* 8−33795
Nd:YAG, high brightness 1 J freq. doubled laser 8−46615
Nd:YAG, intense fourth harmonic generation, pulse periodic conditions 8−17972
Nd:YAG, materials processing appls. *(German)* 8−1294
Nd:YAG, mode self locking with combined Q-switching 8−1284
Nd:YAG, pump for IR dye laser 8−22139
Nd:YAG, single freq. laser with waveguide resonator 8−1277
Nd:YAG, single mode pulsed oscillator, control of temporal and spectral jitter 8−46629
Nd:YAG, space communications appl. 8−28483
Nd:YAG, spherical resonator diffraction losses, expt. meas. 8−29980
Nd:YAG actively mode-locked laser, short pulse generation for laser fusion 8−9404
Nd:YAG fibre laser, self-contained LED-pumped single-crystal 8−1264
Nd:YAG laser, conductively cooled pulsed design 8−46647
Nd:YAG laser, reduction of passive Q-switch output jitter 8−46648
Nd:YAG laser oscillator-amplifier coupled to Nd:glass amplifier, programmable electro-optical pulse form. *(German)* 8−33753
Nd:YAG laser radiation, Q-switched, temporal power variation of second and fourth harmonic generation 8−25922
Nd:YAG laser stabilisation by T-shaped four-mirror resonator *(Russian)* 8−13730
Nd:YAG solar pumped laser for space communications 8−46645
Nd:YAG space laser communication system, K-Rb arc lamp pump 8−46646
Nd^{3+}:Al_2O_3-P_2O_5 glass, high Nd conc., spectroscopy and lasing obs. 8−46609
Nd^{3+}:glass, oscillator, narrow bandwidth ps. laser operation using Nd^{3+}:YAG as amplifier 8−37894
Nd^{3+}:glass, Q-switching by exploding PbS film 8−42361
Nd^{3+}:YAG, CW, 1.05 to 1.44 μm tunability, performance 8−22142
Nd^{3+}:YAG, with intracavity SHG, amplitude- and phase-freq. characts. 8−25884
$Nd_xLa_{1-x}P_5O_{14}$, Nd^{3+} stoichiometric materials, luminesc., conc. quenching 8−27315
Tb^{3+},Ho^{3+}:calibo glass, diffusion limited energy transfer 8−31235
Tm^{3+}:YAG, 2.014 μm, stimulated emission, resonant pumping by Nd laser 8−17944
YAG, high yield triggered laser *(French)* 8−37916
$Y_{1-x-y}R_xEr_yAlO_3$, $Y_{1-x-y}R_xEr_yScO_3$, stimulated emission of Er^{3+} ions 8−6705

solid-liquid transformations
see also crystallisation; freezing; melting; solidification
AB-type compounds, high-press. and high-temp. behaviour, review 8−22850
alkali isoalkanoates, thermal behaviour, differential scanning calorimetry 8−34600
alkanoate, Li, Na, K and Rb salt mixtures, DSC anal. 8−10192
alloy, solidus temperature determ. by method of moving specimen boundary projected on screen 8−35353
binary alloys, pseudopotential theory 8−6144
diemthyl sulphoxide-H_2O-NaCl system, DTA exam. of primary ice phase field 8−48382

solid-liquid transformations continued
lattice gas model, three phase eqns. of state 8−22818
lipid monolayers and bilayers, phase transitions, model 8−44460
macromolecular systems, phase transitions, temp. and press. depend. theory, Ising model appls. 8−43105
mixtures, binary and ternary, solid-liq. phase equilib., excess Gibbs free energy 8−30736
molecular dynamics calc. of liq. struct. up to solid surface 8−26764
neopentane, Brillouin scatt. near liq.-plastic cryst. transition 8−19495
phenanthrene-d_{10}, oriented in biphenyl, triplet zero-field splittings, conc. depend. 8−2773
quantum crystal translational symmetry spontaneous breakdown, quasi-averages and averages, phase transitions 8−30811
transition metal solid solutions, max. or min. liquidus temps. 8−39741
cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
^{3}He, submonolayer on Grafoil, vacancy induced ferromag. 8−14536

solid mechanics *see mechanics*

solid solubility
coalescence of gas-filled pores *(Russian)* 8−18679
KCl-$BaCl_2$ system, solid solns., phase diagram, enthalpy of soln., vibr. entropy. 8−39751
semiconducting binary compound, third component solubility 8−43124
steel, tempered, kinetics of solution of Mn in precipitated cementite *(Russian)* 8−6891
transition metalloid atom solubility and electronegativity difference correl. with phase stability and d-electron/atom ratio 8−6914
$AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
Ag_2S-In_2S_3-SnS_2 system quaternary and ternary sulphide spinels, solid solubility and struct. 8−35376
Al, powder, liquid phase sintering, solid-state solubility effect on vol. change 8−35332
BiI_3-$Sb(As)I_3$, phase diags. 8−6905
BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
CaF_2-CaO, elec. cond. meas., CaO solubility, O^{2-} diffusion const. 8−30760
$Ca_{0.5}Gd_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8−2260
$Ca_{0.5}Nd_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8−2260
$Ca_{0.5}Pr_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8−2260
$Ca_{0.5}Y_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8−2260
$CdGa_2S_{4(1-X)}Se_{4x}$, solid soln., crystallographic studies 8−15301
CdSe, of Cu and Ga 8−22856
$CeNi_2$, of Cu, Ag, Au, absence of obs. 8−6032
Cu-Ag(Ta) metastable alloy form. by ion implantation, combined TEM and ion channelling obs. 8−34530
Cu-Ni (20-80 at.%), clustering, diffuse neutron scatt. study, conc., temp. depend., miscibility gap location 8−47529
Cu-Sb alloy, splat-quenched, energy dispersive X-ray diffr. 8−23728
$CuInS_2(Se_2)$-$GeS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
Fe-Mo-C system, isothermal sections, 973 to 1273K, thermodynamic analysis 8−6895
$Ga_xIn_{1-x}P_yAs_{1-y}$, $(0.5<y<0.9)$, LPE on InP, Ga, As distrib. coeffs., lattice matching 8−47673
Ge-In-Te system, homogeneity region, struct., electrophysical props. 8−44091
GeTe-In, solubility, thermo-EMF coeff. meas. 8−43124
In_2Te_3, of PbTe 8−35361
Li_2O-B_2O_3-SiO_2 glass systems, phase separation effect on the diffusion processes 8−26734
Mo-N system, phase diagram of solid and liq., high and low press. 8−44083
$NaCaPO_4$-$Ca_3MgSi_2O_8(CaO)$ systems, phase diagrams of partial system 8−35369
$NaCaPO_4$-$CaMgSiO_4$ system, phase diagram 8−35370
Nb, of O_2 steady state *(German)* 8−38851
$Pb_{1-x}Sn_xTe$:Cd, Cd diffusion obs. using Hall mobility and Cd solubility expts. 8−26584
PbTe:Cd, Cd diffusion obs. using Hall mobility and Cd solubility expts. 8−26584
SbI_3-AsI_3, phase diags. 8−6905
Si:B, solubility and precip., and supersat. resulting by thermal predeposition 8−11232
Si:O, impurity solubility and diffusion props. 8−6093
Si:Sb, high dose implanted, orientation dependent annealing effects 8−18665
Sn-Bi alloy, splat-quenched, energy dispersive X-ray diffr. 8−23728
SnTe-In, solubility, thermo-EMF coeff. meas. 8−43124
Ti-H, H diffusion and phase consistution, V influence, proton spin-lattice relax. meas. 8−27484
Ti_2O_3-$MgTiO_3$, phase analysis 8−3103
V-H system, DTA, phase diagrams, low temp. phase 8−6903
Y, solubility of H_2 and D_2 *(Japanese)* 8−18784

solid solution hardening
brass, theory 8−19771
computer simulation 8−31420
Hastelloy-X, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
Haynes alloy 188, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
Multi-component intrinsic solid solution softening and hardening 8−19774
Multimet, fatigue crack propag. at elevated temps. in solid solution strengthened superalloys 8−39895
steel, CC Cr-Mo (2.25, 1 wt.%) effect of heat treatment on tensile props. 8−23745
steel, Cr-Mo (2.25, 1 wt.%), annealed, heat treatment effect on tensile props. 8−11243
steel, Mn-C (1, 0.1 wt.%) strip, hot rolled, P effect on mech. props. 8−27532
theory 8−19771
AgCl:Ba^{2+}, plasticity, impurity hardening effect 8−47466
AgCl:$Li^+(Na^+)(K^+)(Rb^+)$, impurities effect on plasticity, brittleness 8−14398

solid solution hardening continued
Al, non-elastic deformation, phenomenological model with solute strengthening effect incorporation 8−39832
Cu-Al, cold worked solid soln., anneal hardening, grain boundary effects 8−48420
KCl-KBr, solution hardening and softening at low temp. 8−31414
Mo and Mo superalloys high temperature properties 8−44173
Ni based alloys, hot hardness and oxidation resistance meas. 8−31588
Ni-Al, solid soln. and solid soln. hardened, stead state creep 8−27578
Ni-base superalloy, IN-738, microstruct. changes during isochronal heat treatment, 773-1467K 8−27531
Ti-Al, hardening of Ti by addition of Al *(French)* 8−23715

solid solutions
solid solutions such as Au-Cu are indexed under alloys of the named elements i.e. 'gold alloys' and 'copper alloys' in this example
see also alloys; solid solubility
alkali feldspars, TEM study of exsolutions, review *(French)* 8−28224
alloy, binary, theory for initial stage of grain growth and unmixing kinetics 8−19714
alloy, large grained, creep ductility 8−48479
almandine-pyrope-grossular garnet, exsolution obs. 8−32074
Approximation of the phase diagrams of complex binary systems with unlimited solid solutions and peritectic transitions 8−23680
bimetal system, diffusion kinetics taking into account nondiagonal coeff. of Onsager matrix *(Russian)* 8−38871
binary, growth-disorder model, three-dimensional, phase transition 8−26462
binary, tolerance classes in system of elements with α-Fe type struct. 8−2053
binary, tolerance classes in system of elements with Cu structural type 8−9988
binary, tolerance classes in system of elements with Mg and α-La structural type 8−9989
binary BCC and FCC solid solns., short range order rel. to comp.-prop. relations *(Russian)* 8−47280
binary systems of eutectic type, phase diagrams, approximations, appls. 8−43094
diffusion in force field 8−10211
p-dihalobenzene, mixed cryst., Raman spectra, phonons and vibr. excitons, criteria for solid solns. 8−43840
FCC, modelling, computer program 8−26475
geikielite, solid soln., phase transform. during reduction *(Russian)* 8−44042
ilmenite, solid soln., phase transform. during reduction *(Russian)* 8−44042
instability zone rel. to new phase preformation and nucleation 8−10169
interstitial, deform. interaction of atoms, pseudopot. calc. *(Russian)* 8−18636
metallic, diffusion by press. *(Russian)* 8−18833
molecular crystal with disorder, mean field approx. 8−22688
multicomponent, diffusion processes *(Russian)* 8−47552
rhombic distortion of cryst. lattice at low temp. 8−2253
solute interaction energy, const. press. and const. vol. condition effects 8−38856
spinel systems, prop.-comp. relationship, electron exchange effect *(Russian)* 8−47524
substitutional alloy, disorder description within supercell model 8−26479
supersatuated diffusive decomposition, universal distrib. function in dimension space for new-phase particles 8−48372
surface segregation, miscibility gaps, reg. soln. theory 8−18882
TCNQ anion radical salts, phase transition $\alpha\gamma\rightarrow\beta\gamma$, volume change 8−26684
TCNQ anion radical salts, solid solns. phase transition, heats of mixing 8−47519
transition metal solvent, max. or min. liquidus temps. 8−39741
TTF_x $TseF_{1-x}TCNQ$ solid soln., DC conductivity, struct. 8−10423
tungsten-bronze ferroelectrics, $A_5B_{10}O_{30}$- and $A_6B_{10}O_{30}$-type, phase relations 8−35100
Ag-Cu (50 at.%), splat-cooled, struct. of γ′ extended solid solution 8−3147
$AgGa(Se_{1-x}S_x)_2$, crystal growth, phase studies, optical props. 8−48305
Al-Fe (0.02 at.%), rapidly quenched, ^{57}Fe Mossbauer spectrum associated with vacancy 8−23378
Al-Mg (1 to 11 wt.%), alloy A99, dissociation in solid soln., effect of treatment of liquid Al *(Russian)* 8−15353
Al-Zn, resistivity anomalies in Guinier Preston zones *(French)* 8−6937
Al-Zn solid soln., controlling creep mechanisms, role of diffusion 8−31469
Al-Zn solid soln., controlling creep mechanisms role of diffusion 8−31470
Al-Zr solid soln., discontinuous precipitation of metastable Al_3Zr 8−3130
$Al_2O_3+TiO_2$, reaction on sintering in reducing media 8−27457
$As_xSb_{1-x}SI$, solid solns., ferroelec. props. 8−23409
Au-Ni solid soln., creep 8−15475
BN-AlB, cubic phase solid soln., crystallographic and metallographic study, thermal resist. *(Russian)* 8−30599
$ZCaO.SiO_2$-$2CaO.Na_2O.P_2O_5$ system, polymorphism and solid soln. 8−19731
$CdGe(As_{1-x}P_x)_2$, crystal growth, phase studies, optical props. 8−48305
$CdSe_xTe_{1-x}$, solid solns., epitaxial layer prod. 8−23619
$CdSnP_2$-$CdSnAs_2$, and $CdSnP_2$-$CdGeP_2$, solid solution form. and elec. characterisation 8−43125
Ce_2Se_3-$SnSe_2$, solid-solution region, physical properties 8−43391
$Cr_{1-x}V_xN$ solid solution, X-ray diffr. structure exam. at low temp., deformation study *(French)* 8−2069
Cu solid soln., wear 8−3233
Cu solid solutions, single phase FCC metal, stacking fault energy and delamination wear 8−3239
Cu-Fe-O system, ternary phases, activities in spinel solid soln., phase equilibria and thermodynamic props. 8−6910
Cu-Ge solid soln., isotope effect for Ge diffusion 8−2285
Cu-Sn solid soln. steady state deform. *(Japanese)* 8−19832
Cu-Ti, lattice parameter change during ageing *(Japanese)* 8−35411
$(Cu_xAn_{1-x})_2AsO_4(OH)$, olivenite-adamite solid soln., ordering 8−42962
Er_2O_3-ZrO_2, subsolidus phase relations, X-ray diffr. and thermal expansion exam. 8−31382

solid solutions continued
- Eu-Ce(Pr)-Fe-O system, solid solns. of ferrogarnet and ferroperovskite type 8−27488
- $Eu_2Nb_2O_7$-$Sr_2Nb_2O_7$, new system preparation 8−42994
- $Eu_2Ta_2O_7$-$Sr_2Ta_2O_7$, new system preparation 8−42994
- Fe base ternary soln., containing interstitials and substitutional solutes, thermodynamic and kinetic props. 8−2297
- Fe-Ga, solid soln., order-disorder transform. *(French)* 8−3121
- Fe-Mn-S, thermodynamics, activity of FeS-MnS solid soln., 1100 to 1400°C 8−6902
- Fe-Mo (3 wt.%), substitutional solid soln. with cubic faced symmetry, Portevin-Le Chatelier effect *(French)* 8−23785
- Fe-Ni, influence of hydrogen press. on temp. of martensitic transform. *(Russian)* 8−27514
- Fe-Ni solid soln., thermodynamic study 8−6904
- Fe-Ni-Pt system, ordered phase fields of equilibrium diagram 8−48373
- $FeBO_3$-MBO_3 solid soln., (M=Mn, Cr, Al, Ga, In), synthesis, crystal chem. and mag. props. 8−31058
- γ-Fe_2O_3:Fe_3O_4, magnetite impurity determ. by C_p calorimetry 8−2152
- Fe_3O_4-$ZnFe_2O_4$, spinel type solid soln., thermodynamic study by EMF meas. 8−15379
- GaP-based III-V solid solns., bonding and energy gap, mag. meas. 8−18580
- GaP-ZnS, solid solns., microstruct. investig. 8−2128
- Ge-Al (1.15 wt.%), US wave vel. meas. for anal. of solid soln. breakup 8−23887
- Ge-Ga (1.13 wt.%), US wave vel. meas. for anal. of solid soln. breakup 8−23887
- Ge-Si-Sb solid soln., distrib. of components in universal furnace expt. in Soyuz-Apollo programme *(Russian)* 8−31381
- Ge-Si-Sb solid soln., prod. by 'Universal Furnace' expt. Sb and Si distrib. *(Russian)* 8−23692
- Ge-Si-Sb solid soln., struct. peculiarities and mech. props. under weightlessness *(Russian)* 8−23693
- GeS-GeSe, limits of solid soln. region, microstructural, X-ray and DTA meas. 8−47530
- Ge_2S_3-Ge_2Se_3, glass, photoluminesc. spectra, solid soln. form. *(Russian)* 8−23525
- $Hg_{1-x}Cd_xTe$, CESR *(Russian)* 8−23344
- KCl:NH_4Cl, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
- KCl-KBr solid solution, yielding model on plateau stress 8−27568
- La_2O_3-Mn_2O_3-Cr_2O_3, synthesis and properties of solid solutions 8−44038
- La_2Se_3-Ga_2Se_3-$GeSe_2$ ternary system, phase diags., glass formation *(French)* 8−3109
- $Mg_yU_{1-y}O_{2+x}$, thermodynamics from EMF meas., high Mg conc. 8−43143
- MnO-CoO-O_2, semicond. solid solns., ageing effects on elec. cond. 8−23085
- $Mn_5(Si_xGe_{1-x})_3$ solid solution, mag. ordering, magnetisation and neutron scatt. meas. 8−27023
- Mo, chromizing, formation of ordered solid soln. *(Russian)* 8−11402
- Mo-Re, solid soln., dislocation internal friction *(Russian)* 8−23748
- $(Na,K)NbO_3$, struct. transitions, neutron powder diffr. 8−38649
- Na_2MoO_4-Na_2SO_4, phase diag. and isomorphism 8−27486
- Nb-O, cyclic creep, effect of O_2 conc. and temp. 8−48466
- Ni-Al, solid soln. and solid soln. hardened, stead state creep 8−27578
- Ni-Cr(Mo), solid soln., US effect on mech. props. *(Russian)* 8−23819
- $Ni_{1-x}Li_xO$, $0.01 \leqslant x \leqslant 0.08$, mag. susceptibility in region 80 to 800K *(Russian)* 8−2664
- $PbFe_{(2/3}W_{1/3})O_3$-$Pb(Co_{1/2}W_{1/2})O_3$ solid soln., crystallographic, dielectric, magnetic props., Mossbauer spectra 8−43807
- PbI_2-$PbBr_2$, optical spectra, solid soln. struct. 8−48247
- $PbMg_{1/3}Nb_{2/3}O_3$-$BiMg_{2/3}Nb_{1/3}O_3$, dielectric polarisation of solid solutions 8−43776
- $PbTiO_3$-$CaFe_{2/3}W_{1/3}O_3$, solid solutions 8−43816
- $PbTiO_3$-$Pb(Ni_{1/2}W_{1/2})O_3$ system, solid soln. form., struct., dielec. props. and thermal expansion *(Japanese)* 8−27501
- $PbZrO_3$-$PbCd_{0.5}W_{0.5}O_3$, phase transitions 8−43817
- $RbCl$:NH_4Cl, PMR, NH_4^+ ion proton spin-lattice relax. time temp. depend. 8−27104
- Sb-Bi, melting kinetics of solid soln. during high heating rates, superheating *(Russian)* 8−15358
- $Sb_{1.5}Bi_{0.5}Te_3$, electrical, thermoelectric and thermal properties, temp. influence obs. *(Slovak)* 8−30946
- β-Si_3N_4 solid soln., form. from SiO_2-AlN sintering 8−23655
- $(Sr/Ba)(Fe/Al/Ga)_{12}O_{19}$ solid soln. crystal for hexaferrite layer substrate *(German)* 8−23672
- Ta-D, dil. soln., high temp. thermodynamics 8−43128
- Ta-H, dil. soln., high temp. thermodynamics 8−43128
- Ta-O, dil. soln., high temp. thermodynamics 8−43128
- α-Ti based alloys, deform. twinning effect on mech. props. at low temps. *(Japanese)* 8−6979
- α-Ti, solid soln., strain ageing *(Japanese)* 8−6953
- Ti-O, dil. HCP solid soln., O interstitial distrib. effect on lattice parameters 8−30588
- Ti-O alloys+Li melt, ternary solid soln. formation *(Russian)* 8−11396
- α-Ti-O solid soln., hexagonal, thermodynamics 8−3098
- Ti-V-C-N, solid solns., quasibinary cross sections 8−23676
- TiC_xO_y, structural mechanism of O inclusion into lattice 8−22707
- Ti_2O_3-$MgTiO_3$, phase analysis 8−3103
- $Ti_{1-x}Ta_xO_2$, solid soln. formed in TiO_2-Ta_2O_5-Ta at 1100°C *(French)* 8−35375
- $TlCl_xBr_{1-x}$, $TlBr_xI_{1-x}$, polymorphous mixed cryst. layers, opt. props. 8−23490
- V_2O_3-M_2O_3, M=Ti, Cr, struct. and mag. props. 8−27041
- $V_{1-x}Ti_xO_{1.75}$, synthesis and mag. susceptibility obs. 8−23243
- W-Ti(Zr)(Hf)-C, cubic solid soln., form. and props. 8−48348
- $YO_{1.5}$-PrO_x, phase relns. and electrophys. props. of solid solutions 8−23686
- ZnO-Zn_2TiO_4, solid soln. formation 8−27490
- ZnTe-CdSe, solid soln. formation and effects 8−27489
- α-Zr, H location in HCP phase 8−18637
- Zr-Nb solid solutions, BCC, direct imaging of linear defect using diffuse scatt. 8−22726
- ZrO_2-Y_2O_3-Nd_2O_3, spectral determ. of crystal stabilisation 8−27203

solid-state microwave circuits
- *see also Gunn oscillators; microwave integrated circuits*
- frequency multiplier, for superhigh frequencies, high multiplication factor 8−4636
- submillimetre wave mixers 8−45712

solid-state microwave devices
- *see also BARITT diodes; IMPATT diodes*
- information storage in piezoelectric semiconducting single crystals 8−15101
- International Microwave Symposium, San Diego, Calif., USA (June 1977) 8−5478
- Josephson junction, radiation power spectrum 8−43522
- microbridge, thin film, nonreson. detection of Josephson radiation 8−43523
- p-i-n diode, design technique for specific reverse bias characts. 8−34890
- tunnelling and negative resistance phenomena in p-n junction devices, book 8−26947
- GaAs and related cpds., conf., Edinburgh, Scotland (Sep 1976) 8−3039
- GaAs MESFET fabrication using dual-bubbler CVD system 8−6856

solid-state phase transformations
- *see also ageing; distortive transformations; ferroelasticity; ferroelectric transitions; glass transition; high-pressure solid-state phase transformations; martensitic transformations; order-disorder transformations; polymorphic transformations; precipitation; spinodal decomposition*
- A15 structure, O_h^3-Pm3n, group theory of phase transition 8−9992
- A^4-phonon theory, free energy and phase transition 8−41257
- alkali alkanoates, phase relationships and thermal behaviour branching effects 8−43111
- alkali metal hexachlorotellurates, $A_2(TeCl_6)$, (A=Cs, Rb, K), IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- alkali tungsten bronzes, dynamic fluctuations between local struct. states in supercond. TI phase 8−26981
- alkanoate, Li, Na, K and Rb salt mixtures, DSC anal. 8−10192
- alkylammonium tetrachloromanganate (II) IR and Raman spectroscopic exam. 8−31189
- alkylene-di-ammonium cadmium chloride, influence of C atoms and metal ions on structural phase transitions 8−2256
- alloy, struct. transform. during ageing, book contrib. 8−11199
- anharmonic phonons and structural phase transitions 8−14433
- 2-azanoradamantane N-oxyl, crystal-plastic transition, plastic crystal struct. exam. 8−2100
- benzil, heat capacity near phase transition 8−2250
- bifurcation approach to phase transitions, external field inclusion 8−14446
- dl-2,3-camphanedione, elec. cond., brittle-to-plastic region, cond. jump 8−39169
- dl-camphor oxime, elec. cond., brittle-to-plastic region, cond. jump 8−39169
- carbon tetrabromide, phase I cryst. struct. 8−18626
- carbon tetrabromide, phase II cryst. struct. 8−18623
- chloranil, neutron superlattice reflection, soft phonon and central peak scatt., phase transition 8−18732
- cholesteryl oleate (linoleate), solid-solid transition, glass transition, cryst. nucleation temps., DSC obs. 8−34604
- classification, according to mechanism and kinetics 8−26683
- classification , using coupled double-well model 8−14443
- collective modes of CDW near lock in transition 8−30879
- composite growth by eutectoid or solid-state decomposition 8−44056
- continuous phase transitions in structurally complex crysts., Landau theory, subgroup approach 8−14441
- crystal irreducible problems, use of Clebsch-Gordan reduction 8−2052
- crystal symmetry changes due to structural phase transforms. 8−2056
- cubic crystals, commensurate nonLifshitz phases 8−18772
- dialkyl ammonium cadmium chloride, influence of C ions and metal ions on structural phase transition 8−2256
- dialkyl ammonium manganese chloride, influence of C ions and metal ions on structural phase transition 8−2256
- dialkylammonium compounds, $(C_nH_{2n+1}NH_3)_2MX_4$, cryst. growth solubility, and props. 8−43999
- diamantane, low temp. soft librational mode, Raman spectra exam. 8−30730
- dimethylacetylene, solid-solid phase transition, NMR meas. 8−6583
- dipolar lattice, 2-D, Monte-Carlo calc., lattice energy 8−14308
- disordering systems, multiple phase transitions 8−34595
- n-eicosane-n-docosane mixtures, positron lifetime spectra, temp. depend., phase depend. 8−18768
- electron microscopy, conf., Nice, France (May 1977) 8−24889
- EPR spectra, above crit. temp., cluster theory for dynamic crit. phenomena 8−6566
- equilibrium conditions of solid phases 8−10171
- ferrite-austenite transition, C diffusion const. determ., rate const. of carburization and decarburization 8−48396
- ferroic phase, commensurate, form. from prototypic phase, possibility of transition being second order 8−2223
- film, phase transition dynamics, investigating device 8−22967
- FIM atom probe technique, suitability for continuous phase transforms. obs. 8−35621
- geikielite, solid soln., phase transform. during reduction *(Russian)* 8−44042
- graphite, intercalation compound, C_8Rb, elastic and inelastic neutron scatt. 8−30597
- graphite-nitrate residue compounds, phys. props. 8−10199
- gypsum, struct., vibr. spectroscopic obs. *(Russian)* 8−15175
- heat-resisting alloys, VM-1 and VX-4, thermal fatigue rel. to struct. changes *(Russian)* 8−11302
- ilmenite, solid soln., phase transform. during reduction *(Russian)* 8−44042
- incommensurate phase transitions under existence of Lifshitz invariant 8−22822
- incommensurate structural phase transition, and phason *(Japanese)* 8−30758
- incommensurate structural phase transitions and phason interpret., review *(Japanese)* 8−22827
- laser light scatt. spectroscopy 8−10156
- lattice internal rearrangement modes, correlation betwen lattice structural and magnetic structural transitions 8−47987
- linear diatomic rigid mol. chain, mol. dynamics, rot. phase transformation, struct. factors 8−26635

solid-state phase transformations continued
- low temperature depend. of elec. resist., mag. suscept., heat capacity, Hall const. *(Russian)* 8−30900
- low-lying vibrational modes and theory of local and transport props. at transitions 8−14425
- lunar pyroxenes, cation distrib. and exsolution as chronological indicator of thermal history 8−45246
- metal-insulator transition study, electron microscopy *(French)* 8−26815
- noble metal complexes, hexafluoro, review of struct. obs., pseudorot., press. effects 8−6045
- nonstoichiometric materials, lattice instabilities, models 8−14442
- nylon II, high-press. X-ray structural study 8−14296
- one-dimensional metallic systems, theory of structural phase transitions 8−38830
- opaque minerals alteration states correl. with temp. in active geothermal system 8−40551
- physics of transitions, introduction 8−26660
- plastic crystal-crystal transition, mol. and lattice symm., Landau theory 8−42929
- polaronic crystals, central peak 8−47712
- polybutylene terephthalate, hysteresis of stress-induced cryst. phase transition 8−31404
- polydiacetylene, reflection spectra, thermochromism, temp. hysteresis and phase transformation 8−19452
- polydiacetylene cryst., electronic struct. change at phase transition, Raman spectra 8−2833
- polyethylene terephthalate, amorphous state change by heat treatment below glass transition temp. 8−30550
- polymer film, conformational transitions, activation energy determ. *(Russian)* 8−48186
- α,ω-polymethylene diammonium metal (II) tetrahalides, cryst. growth, solubility and props. 8−43999
- polyvinylidene fluoride-PMMA blends, dynamic mech. props. and sonic velocity, cryst. phase transitions 8−26454
- prototype and prototypic phase explained 8−38833
- pseudospin-phonon system exam. 8−10157
- pyrazine, phase transitions, sp. ht., X-ray diffr., LF vibr. spectra 8−43122
- pyrene, low temp. phase transform., TEM obs. 8−22851
- pyrene crystal, mechanism of structural phase transition 8−30757
- quantum effects in second order phase transition described by $\mu\varphi^3+\lambda\varphi^4$ model 8−24752
- quartz, optical SHG and γ-ray diffr. results 8−14459
- quartz-cristobalite transform. kinetics 8−11223
- quasi-one-dimensional system, first and second order phase transitions, qualitative theory 8−31086
- quasione dimensional crystals, effect of band filling on features of struct. transition 8−2424
- rare earth oxide film, short-range order to long-range order transition 8−10288
- RBCaF$_3$, cubic to tetragonal X-ray diffr. examination of temp. depend. lattice consts. *(French)* 8−10184
- semi-infinite systems, critical behaviour 8−4563
- single-particle properties of systems undergoing struct. phase transitions 8−26654
- spectroscopic properties of crystals of C_{4h}, D_{2d} and D_4 symmetry at second-order structural transform. 8−22845
- squaric acid, two-dimens., phase transition, elastic neutron scatt. 8−6155
- steel, α to γ phase transform., during rapid resistance heating, apparatus for investigation *(Slovak)* 8−19742
- steel, austenitic, phase transform to pearlite and martensite, kinetics, stresses due to quenching, anal. *(Japanese)* 8−27508
- steel, C-Mn-(Cr), structural changes during stress cycling after heat treatment and cold rolling *(Russian)* 8−19787
- steel, C-Mn-Cr-Mo (0.4, 0.8, 1.1, 0.25 wt.%) C, Ni, Mo, Cr addition effects on toughness of bainite 8−11327
- steel, Cr, phase transform., effect of high temp. plastic deform. *(Slovak)* 8−19837
- steel, Cr (1 to 5 wt.%), effect on transform. of Cr content and all round press. of 25 kbar *(German)* 8−11219
- steel, Cr-C (13, 0.15 wt.%), bainitic transform. *(German)* 8−11218
- steel, Cr-Mo-V, creep, effect of microstruct., heat treatment, transform. temp. 8−11248
- steel, eutectoid and hypoeutectoid stress relaxation during rapid heating transform. *(Japanese)* 8−11258
- steel, low alloy, bainite transform. behaviour, struct., toughness 8−27513
- steel, low C, transition behaviour, bending speed effect *(Japanese)* 8−11222
- steel, martensitic, Cr-Ni, grain refining and phase transforms. effect on plasticity *(Russian)* 8−39837
- steel, Ni-Mn (16, 2 wt.%), 40N16G2, single crystal, stabilisation and destabilisation mechanisms *(Russian)* 8−23732
- steel, rimming, cold rolled, low alloy, radiation capacity *(Russian)* 8−14486
- steel, Si, metallography of bainitic transform., carbide precipitation 8−27527
- steel, stainless, 0Kh13N7, 0Kh13AN7, thermocyclic treatment effects, on struct. phase composition and mech. props. 8−44204
- steel, stainless, 18-8 type polycrystal, strain induced γ to α' transform. *(Japanese)* 8−11221
- steel, stainless, wire, effect of stress on phase transformations 8−44119
- steel VNS-2, damping capacity, magnetomechanical, phase transform. effects 8−31445
- steel XC80 isothermal and pearlitic transform. mech. prop. meas. using dilatometer *(French)* 8−31598
- styrene acronitrile copolymer, glass transition temp. determ. by elec. meas. 8−47506
- 1T-TaS$_2$, nearly commensurate phase, harmonics effect on phase transitions 8−14462
- TCNQ anion radical salts, phase transition $\alpha\gamma\rightarrow\beta\gamma$, volume change 8−26684
- TCNQ anion radical salts, solid solns. phase transition, heats of mixing 8−47519
- TCNQ salt, alkali transition metal, elec. cond. and phase transition 8−43370
- TCNQ salt, DECA (TCNQ)$_2$, struct., phys. props. and irreversible phase transition 8−6273
- p-terphenyl, carrier generation and transport, temp. depend. around phase transition at 180K 8−47783

solid-state phase transformations continued
- tetramethylammonium hexachlorotellurate, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
- thermodynamic theory for cryst. props. behaviour near structural transitions *(German)* 8−38809
- thiourea-cyclohexane inclusion compound, phase changes, molecular motion exam. 8−31116
- Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
- transition metal film, chemical compound formation by ion bombardment 8−30846
- n-triacosane, chain axis cryst., quasi-elastic neutron scatt., plastic phase transform 8−6023
- s-triazene, second order phase transition, mol. reorientation, ^{14}N NQR 8−48074
- (TSeF)$_x$(TTF)$_{1-x}$TCNQ, struct., cond., phase transitions 8−47770
- TTF-DETCNQ, metal-insulator transition, struct., elect. cond. and sp. ht. expts. 8−14662
- TTF-TCNQ, CDW and phase transition exam. 8−6283
- TTF-TCNQ, Landau theory of phase transitions 8−30914
- TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
- TTF-TCNQ, single cryst., mag. susceptibility in phase transition region, two-gap model 8−6511
- TTF-TCNQ, theory of structural phase transitions 8−38831
- TTF-TCNQ, X-ray exam. of 2k and 4k anomalies 8−10162
- TTF-TCNQ phase transition, press. depend., longitudinal lockin, stacking axis resistivity meas. 8−47520
- Vicalloy 1, dilatometric anomalies and α to γ transform., effect of heating rates *(Russian)* 8−39762
- Ag-Al, plastic flow enhancement during massive transformations 8−48468
- Ag$_8$SnSe$_6$, phase transition, thermal expansion meas. 8−14466
- Al-Ga, face centred cubic struct. stability, melt equilib., α-Ga effects 8−18766
- Al$_2$O$_3$-CaF$_2$, phase relns. 8−23700
- β''-Al$_2$O$_3$-NaO-LiO$_2$, stabilised, effect of phase composition, grain size, on Na ion cond. 8−47582
- Al$_2$O$_3$-ZrO$_2$ dispersed system, thermal diffusivity/conductivity, effect on microcracking resulting from phase transform. 8−10231
- As$_2$Te$_3$, phase transitions and elec. cond. 8−10440
- Au-Cu-Ag, phase transform. effect on mech. props. *(Russian)* 8−3122
- Au-Cu-Ga, solid soln., phase systems, valence electron density effects *(French)* 8−19724
- Au(110), spin polarised LEED 8−18508
- BN, rel. to artificial production of growth twins 8−30641
- BaCl$_2$.2H$_2$O rel. to artificial production of growth twins 8−30641
- BaO film, depend. of struct. on thickness 8−2391
- BaTiO$_3$, 3d element doped, phase stability, phase transition temp., mag. susceptibility meas. 8−38835
- BeO+SiO$_2$+V$_2$O$_5$, reaction kinetics and mechanism, phenakite formation 8−23608
- Ce and Ce-Nd, reversible mech. memory effect, α to γ transition *(Russian)* 8−15396
- Ce$_{0.74}$Th$_{0.26}$, mixed valence alloy, spin dynamics 8−10708
- Co-Fe alloy, plastic deform. effects on phase comp. *(Russian)* 8−19743
- CoSiF$_6$.6H$_2$O, anomalous thermal expansion near transition temp. 8−47516
- CsSrCl$_3$:Mn^{2+}(Gd^{3+}), structural transitions, EPR meas. 8−34619
- Cu-Ga, plastic flow enhancement during massive transformations 8−48468
- Cu-Mn, positrons as probe of phase transforms. 8−31401
- Cu-Ni-Mn (20,20wt.%), structural transform., X-ray and hardness study *(French)* 8−39760
- β_1Cu-Zn, structural Umklapp processes at low and high temp. lattice kinetics of phase transformation isotherms *(German)* 8−30707
- β_1-Cu-Zn mixed crystal, metastable structural Umklapp process, isothermal phase transform. *(German)* 8−22798
- Cu(OH)$_2$-α-Mn(OH)$_2$, phase transition during ht. treatment 8−23659
- CuTeBr, ionic cond., phase transition obs. by millimetre wave spectroscopy 8−22855
- cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
- Fe, pure, nitrided layers obtained by ion bombardment, microstruct. exam. *(French)* 8−15581
- Fe-B$_4$C powder mixtures, phase changes and struct. of sintered materials *(Russian)* 8−6872
- Fe-C-O, sintered, ferritic struct. obtained by Ar$_3$ transform. *(Japanese)* 8−6874
- Fe-Cr (2 at.%), plastic flow enhancement during massive transformations 8−48468
- Fe-Cr-C alloy, bainitic struct. morphological changes, due to external stress, plastic deform. 8−44120
- Fe-Cr-Mo, grey cast, pearlitic, isothermal transform. of austenitic in bainitic range *(Rumanian)* 8−23698
- Fe-Cr-Ni (18, 14 wt.%), single strain induced γ to α' cryst. transform. *(Japanese)* 8−11221
- Fe-Mn-C-Si alloy, G20 type, vol. effects during $\gamma\rightarrow\varepsilon$ transform., lattice parameters of γ-and ε-phases, Si and Mn effects *(Russian)* 8−6918
- Fe-Ni alloy, ordered, low temp. $\alpha\rightarrow\gamma$ transform. *(Russian)* 8−19740
- Fe-Ni-Cr vapour deposited film metastable phase formation *(German)* 8−38984
- Fe-Ni-Ti martensitic alloy, γ' particle effect on crystallisation struct. *(Russian)* 8−44129
- Fe-Ni-V-(CO) alloy, lattice parameter variation during ageing *(Russian)* 8−39812
- Fe-Ta alloy, mech. drawn and aged, exam. of electrical resistivity, hardness, microstruct., and mag. props. *(Japanese)* 8−48545
- γ-Fe$_2$O$_3$, struct. vacancy distrib., effect on $\gamma\rightarrow\alpha$ transform. heat 8−6051
- Fe$_2$O$_3$-FeO, sinter, heating and reduction effect of phase transform. and fracture *(Russian)* 8−15375
- Ga, FCC hypothetical struct., stability calcs. 8−18766
- GaSe$_{1-x}$Te$_x$, zone-centre optical phonons, Raman scatt. meas., structural phase transition obs. 8−10141
- Gd$_2$(MoO$_4$)$_3$, electron microscope exam. 8−15134
- HCN, hydrogen bond distance, stretching freq. calc. 8−10183
- Hg$_2$Br$_2$, sp. ht. near phase transition region meas. 8−38855
- Hg$_2$Br(Cl$_2$), paraphase, Raman scatt. spectra, soft mode from Brillouin zone boundary *(Russian)* 8−2851

solid-state phase transformations continued
$HgCl_2$, second order phase transition, elastic consts. meas., Brillouin scatt. 8−10908
In-Cd alloys, elastic-phase transition, US study 8−6919
KAg_4I_5, ionic conductivity and heat capacity near T_c 8−47584
KCN, F-centres, optical props., rel. to structural phase transition 8−2892
KCN, phase transition at 168K, neutron inelastic scatt. line shapes for phonons obs. 8−38840
KCN_xKCl_{1-x}, phase transition and OCN^- vibr. spectrum 8−43093
$K_2Cd_2(SO_4)_3$, piezoelec. langbeinite-type, cryst. struct. and ferroelastic transform. 8−6036
$K_2Co_2(SO_4)_3$, phase transition behaviour with respect to lattice constants and ionic radii of constituent ions 8−6643
KH_2PO_4 optical SHG and γ [quartz, struct. transitions, optical SHG and γ-ray diffr. results]-ray diffr. results 8−14459
$KH_3(SeO_3)_2$, proton NMR study about paraelastic-ferroelastic transition 8−23363
$K_2Mn_2(SO_4)_3$, phase transition, X-ray diffr. study of high and low temp. phases 8−38832
$K_2Pb(MoO_4)_2$, and isomorphs, domain struct. and phase transition *(Russian)* 8−6159
K_2SO_4, hexagonal orthorhombic phase transition 8−2251
K_2SeO_4, hexagonal orthorhombic phase transition 8−2251
K_2SeO_4, incommensurate modulation along axis perpendicular to x-axis 8−6154
$K_2[SnCl_6]$, defects determ., dipole relax. in phase transform. *(German)* 8−22711
$(La,Ce)Ru_2$, supercond. transition temp., its press. depend., and structural phase transform. 8−6473
La_2O_3-Mn_2O_3-Cr_2O_3, synthesis and properties of solid solutions 8−44038
$LiNH_4SO_4$, phase transitions, temp. depend. of NMR, spontaneous polarisation, birefringence and SHG 8−10191
$Li_{1-x}Ti_{2-x}O_4$, struct. phase transition and thermal expansion 8−14465
MgO-Nb_2O_5-Al_2O_3, equilibria at 1400°C phase diagram *(Italian)* 8−23671
$Mg(OH)_2$-α-$Mn(OH)_2$, phase transition during ht. treatment 8−23659
Mn-Cu, mag. and cryst. struct., neutron and X-ray diffr. meas. *(Russian)* 8−22694
Mo and Mo superalloys high temperature properties 8−44173
Mo(001) surface, atomic displacements and electronic struct. 8−30963
N_2, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
$NH_4Ag_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
$(NH_4)_2Ca_2(SO_4)_3$, phase transition behaviour with respect to lattice constants and ionic radii of constituent ions 8−6643
$NH_4Cl_{1-x}Br_x$, US exam. of order-disorder phase transform. 8−38841
$(NH_4)_2Mg_2(SO_4)_3$, phase transition behaviour with respect to lattice constants and ionic radii of constituent ions 8−6643
$(NH_4)_2Ni_2(SO_4)_3$, phase transition behaviour with respect to lattice constants and ionic radii of constituent ions 8−6643
NH_4ReO_4, nuclear quadrupole coupling, NQR temp., press. depend., continuous phase transition 8−27109
$(NH_4)_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
NO, first monolayer on MgBr cleavage face, triple point 8−6227
Na_2CO_3, elec. cond., 270-830°C, and transition points 8−10216
$NaCaPO_4$-$Ca_3MgSi_2O_8$(CaO) systems, phase diagrams of partial system 8−35369
$NaCaPO_4$-$CaMgSiO_4$ system, phase diagram 8−35370
Na_xWO_3, dynamic fluctuations between local struct. states in supercond. TI phase 8−26981
Na_xWO_3, X>0.5, temp. depend. of Raman active soft modes, tetragonal-tetragonal transition 8−48180
Nb-Ti (60 at.%), aged, TEM exam. of precipitation process *(Japanese)* 8−48409
Nb-Zr-N, deformed and annealed, internal friction, rel. to structural state *(Russian)* 8−6957
Nb_3Al superconductors, sputter deposited, BCC to A15 transition, microstruct. investig. 8−27512
NbO_2, structural phase transform., neutron scatt. obs. 8−14458
$Nb_{1-x}W_xSe_2$ x=0 to 0.15, elec. resist., mag. suscept., heat capacity, structural, supercond. transition *(Russian)* 8−31006
Ni complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Ni-Ti (12 wt.%), dil. alloys, transform. early stages 8−3096
$NiCr_2O_4$, cooperative Jahn-Teller phase transition, channelling obs. 8−38839
$Ni(NH_3)_6(NO_3)_2$, Raman spectra exam. of orientational phase transitions 8−31184
$Ni_xZn_{1-x}Mn_2O_4$, mag. props. 8−43573
$(Pb,Ba)Nb_2O_6$, polycryst., orientational polarisation and phase comp. in strong field 8−27157
Pb_3O_4, cryst. struct., 5-240K, symm. change at 170K *(French)* 8−34618
$Pb_3(PO_4)_2$-$Pb_3(VO_4)_2$ mixed crystal, crit. stress and phase diagram temp. depend. 8−26623
$Pb(Ti,Zr)O_3$, polycryst., orientational polarisation and phase comp. in strong field 8−27157
$PbZrO_3$-$PbCd_{0.5}W_{0.5}O_3$, phase transitions 8−43817
Pd complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Pt complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Pt complex, $Mg_{0.82}Pt(C_2O_4)_2.xH_2O$, X-ray diffuse scatt., 1-D Peierls-Kohn anomaly and struct. transforms. 8−14680
$RbAg_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
$RbAg_4I_5$, struct. transition at 209K, Ising like behaviour 8−14460
$RbCaF_3$, 193K phase transition, lattice dynamics 8−10160
$RbCaF_3$, 193K phase transition, crit. neutron scatt. obs. 8−10161
$RbCaF_3$, elastic consts. near phase traOsition by Brillouin scatt. 8−38844
$Rb_2Ca_2(SO_4)_3$, phase transition behaviour with respect to lattice constants and ionic radii of constituent ions 8−6643
$RbNO_3$, single cryst., DC cond., dielec. and thermophys. props., temp. depend., transitions interpret. 8−26682
Sb_2S_3 crystals, X-ray and DTA methods phase transitions *(German)* 8−43119
Se, monoclinic to trigonal transform., DTA, X-ray diffr. and optical microscopy meas. 8−14461

solid-state phase transformations continued
Si_3N_4, α to β transform., TEM and electron diffr. obs. 8−27507
Si(110), clean surface structural transitions, LEED obs. 8−6203
$SrTiO_3$, H_2 reduced, neutron scatt. study of structural phase transition, central-peak enhancement 8−30755
Ta-chalcogenides, domain-like incommensurate CDW states and first order incommensurate-commensurate transition 8−26824
TaS_2 (1T), domain-like incommensurate CDW states and first order incommensurate-commensurate transition 8−26824
TaS_2 (2H), sp. ht. and resist. near CDW phase transitions 8−34786
$TaSe_2$ (2H), sp. ht. and resist. near CDW phase transitions 8−34786
$Tb_pY_{1-p}AsO_4$, crystallographic, mag. phase transition as function of temp. and Tb conc. 8−43334
Ti, surface struct., HCP to BCC type struct. transition, FEM obs. *(Japanese)* 8−22938
Ti-Al-Mo (31, 13 wt.%), transform. microstruct. 8−48394
Ti-Mo-Zr-Sn, alloy, βIII, struct. transform. in thermally affected zones after electron beam welding 8−23919
Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8−3153
TiC, ageing and ordering phenomena *(Russian)* 8−39807
TiN, precipitation of ordered δ'-phase *(Russian)* 8−6929
$TiSe_2$, electronic instability, ^{77}Se NMR 8−10790
$TiSe_2$, mechanism for 200K transition, sp. ht. meas. 8−22853
$TlCdF_3$, elastic consts. near phase transition by Brillouin scatt. 8−38844
$Tl_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8−6659
VH_x, NMR, phase transition obs., activation energy for H diffusion meas. *(Russian)* 8−27506
VO_2, metallic, electronic struct., lattice instability 8−14664
V_2O_3, lattice parameter anomalies at high temp. 8−47522
V_2O_3, phase transitions, Raman scatt. expts., 20-300K 8−39538
V_3O_5, insulator-metal phase trnasition at 450K, properties 8−39023
VSi_2 thin film growth rel. to annealing environment and interposed layers 8−2395
V_3Si, phase transition and transition temp., chemical comp. effects, defect struct. exam. 8−18651
W-Nb (0-30 at.%), average thermal expansion coeff., 500-1200K 8−14483
$Y_2[Pt(CN)_4]_3.21H_2O$, first order phase transform., spectroscopic and thermodynamic anal. 8−38829
Zr-Nb (1 and 2.5 wt.%), annealed, thermal expansion, α/β transition *(Russian)* 8−26702
ZrO_2, polycrystalline, tetragonal phase, stabilisation 8−15392
ZrO_2-Zr cermet composite, hot pressed, fracture toughness 8−27604
ZrV_2, supercond. rel. to struct. instability *(Russian)* 8−23196

solid-state plasma
see also helicons; plasmons
alkali metal, plasmon line width variation due to interband transitions 8−47822
dielectric-plasma like medium interface, image potential 8−14794
graphite, IR optical properties, refl. data and complex dielec. function 8−10889
instabilities, magnetohydrodynamic, in nonequilibrium plasmas, theory and expt. *(Japanese)* 8−10493
instability, sausage, in linearly pinched plasma, theory and expt. *(Japanese)* 8−10492
ionic crystal, electron beam excited, luminesc. and cond. of nonideal degenerate electron-hole plasma 8−10488
low-dimensional systems, infrared problems and phase transitions of continuous order 8−6286
magnetic semiconductor, sound-like plasma oscillations in electron gas *(Russian)* 8−23125
metal, pair potential between two ions in electron gas 8−47723
metal film, ion sound velocity in mag. field *(Russian)* 8−18982
metallic film, steady-state Langmuir turbulence spectrum and turbulent energy absorption 8−26899
p-n junctions, microplasma noise, stochastic model, breakdown voltage of microplasma 8−47854
semiconductor, electron-hole plasma drift due to carrier mobility gradients 8−26896
semiconductor, layered, electron-hole liq. and metal-dielec. transition *(Russian)* 8−2425
semiconductor, parametric amplification of plasma waves 8−43428
semiconductor, photoexcitation phenomena, low density 8−27319
semiconductor, quantum electron-phonon system, theory of parametric excitation 8−10489
semiconductor plasma, isotropic heated, temp. plasmon oscills. 8−26898
semiconductor with superlattice, nonlinear plasma oscills. 8−26897
Ag film, with thin transparent and absorbing coatings, surface plasma oscills. 8−43951
Ag-MgF_2 layered system, optical excitation of surface plasma waves 8−6803
Al, plasma oscillations in oxide free Al clusters 8−2510
Bi, instability induced by microwave field, carrier overheating 8−19076
CdS, nonequilibrium electron-hole plasma, optical orientation of carriers *(Russian)* 8−2904
CdS, parametric action of strong radiation field 8−14752
GE, microwave cyclotron resonance lineshape, magnetoplasma interference effect, reinterpretation of excitonic polaron 8−43287
GaAs, epitaxial layers, high density electron-hole plasma luminesc. 8−19537
n-GaAs, two stream instability 8−2509
Ge, electron-hole drops, appearance of plasma at high excitation rates 8−26821
Ge, highly excited, theory of electron-hole plasma 8−10363
Ge, oscillistor effect in strong mag. fields, ambipolar drift and breakdown 8−2511
Ge, p-n junction, I-V curve for microplasma breakdown, at. size difference effect 8−2550
Ge, plasma excitation, ultrafast optical props. 8−31248
GeTe, heterophase state with nonuniform distribution of free carriers *(Russian)* 8−2849
InSb, absorpt. saturation by nonequilib. electron-hole plasma, luminesc. 8−9418
n-InSb, electron-hole plasma, LF instabilities in crossed fields 8−39146

solid-state plasma continued
- InSb, microwave magnetoplasma matching effect 8−14750
- InSb, parametric amplification of plasma waves 8−43428
- InSb-insulator boundary, surface wave resonance in transversely magnetised semicond. plasma 8−30948
- PbTe, lattice permittivity determ. by magnetoplasma waves method 8−19075
- Sb, magnetosonic waves propagating in Voigt configuration obs. 8−23126
- n-Si, appearance of high-field domain in pinch channel 8−26900
- Si, highly excited, theory of electron-hole plasma 8−10363
- Si p-n junction, microplasma instability, effect of space-charge field of mobile carriers 8−19140

solid-state rectifiers
- *see also copper-oxide rectifiers; thyristors*
- No entries

solid structure
- *see also crystal structure; long-range order; noncrystalline state structure; short-range order*
- hard-sphere solid, radial distrib. function, Monte Carlo calc. 8−6022

solid theory
- hard-sphere solid, radial distrib. function, Monte Carlo calc. 8−6022

solid-vapour transformations
- *see also sublimation*
- high-current, graphite cathode vaporisation, composition and temp. spectral determ. 8−14228
- lattice gas model, three phase eqns. of state 8−22818
- N_2, solid low-press. diffusion of vapour 8−22842

solidification
- *see also segregation*
- alloy, solidified, thermophysical charact. in region of special points of phase diagram *(Russian)* 8−44082
- alloy solidification, kinetic model, appl. to liquisol quenching 8−44116
- binary eutectic alloys, solidification anal. considering temp. and solute distrib., numerical soln. *(Japanese)* 8−39757
- casting, impurity distrib., effect of thermal-gravitational convection, numerical study *(Russian)* 8−19734
- ceramic, directionally solidified eutectic 8−27503
- continuously cast billet with cubic cross-section, solidification *(Russian)* 8−19735
- crystal growth, capillary phenomena during solidification 8−30564
- dendritic growth, fluid flow effect 8−11215
- epoxy resin ED-5, specific heat during solidification *(Russian)* 8−38816
- eutectic 8−23694
- eutectic morphology modification, state-of-the-art 8−31394
- eutectic structure coarsening during and after unidirectional growth 8−35379
- fixed boundary condition modal, phase interface velocity *(Russian)* 8−15390
- foreign particle trapping during solidification anomalous influence of body force 8−2045
- grain refinement during unidirectional solidification, effects of addition of powdered cpds. *(Japanese)* 8−35395
- helical impurity distrib. produced by hydrodynamic instability, vertical solidification 8−30567
- horizontal macrosegregation during solidification with a heterogeneous zone *(German)* 8−15381
- interfacial stability theory, moving symmetric model 8−2230
- interfacial stability theory, stationary symmetric model 8−2229
- lamellar eutectic diffusion problem, numerical solns. determ. using elec. analogue 8−3116
- laminar forced flow in convectively cooled parallel plate channel, asymmetric solidification anal. 8−38404
- laminar heat transfer in tube, liq. solidification in thermal entrance region 8−18346
- materials processing in space 8−35296
- metal, solidifying, heterogeneous nucleation 8−39754
- molten salts, cellular convection, drastic viscosity, change *(French)* 8−14004
- nucleation of crystallization centres, low frequency vibration effects on rate *(Russian)* 8−15383
- polyethylene, partially crystalline test body prep. and characts. *(German)* 8−31398
- polypropylene, partially crystalline, test body prep. and characts. *(German)* 8−31398
- radioactive waste, volume reduction and solidification systems, economics 8−17396
- stability analysis, interfacial surface entropy effect in heat balance 8−26464
- steel, austenitic stainless, microstructural effects on US attenuation 8−11455
- steel, Cr, high C, ingot, macrostruct., effect of diffusion annealing, solidification condition *(Chinese)* 8−15429
- steel, high speed M2, charact. of solidification struct. within dendritic core 8−27504
- steel, high speed S6-5-2 Si content effect on solidification *(German)* 8−11213
- steel, high speed tool rapidly quenched, exam. of solidification struct. 8−39758
- steel, low C, structurally free cementite formation 8−23697
- steel, oxide inclusions 8−23648
- steel, residual stress influence on mech. props. *(German)* 8−27587
- steel, solidification of castings in mould *(Russian)* 8−27502
- steel, undirectionally solidifying melt, horizontal macrosegregation during solidification with heterogeneous layer *(German)* 8−19733
- thermal contact resistance, determ. for solidifying metal and mould 8−39759
- turbulent flow of liquid at its freezing temp. into a convectively cooled tube 8−34001
- Ag, adsorbing species in melt effect on solidification 8−23695
- Ag-Cu, directionally solidified, obs. of cutting deform. zone *(Japanese)* 8−15422
- Ag-Cu eutectic alloy, mechanism of lamellar spacing adjustment 8−31395
- Al, pure, dendritic growth, fluid flow effect 8−11215
- Al-alloy ingots, crystallisation condition effects on fan-shaped zone struct. *(Russian)* 8−3114
- Al-B, manufacture, use of $NaBF_4$, transfer of B 8−27453

solidification continued
- Al-Cr (3 to 11 at.%), cooling rate effect on solidification struct. and mech. props. *(Japanese)* 8−39755
- Al-Cu, dendritic growth, fluid flow effect 8−11215
- Al-Cu (Mg), vertically solidified, effect of fluid flow on solidification struct., and macrosegregation *(Japanese)* 8−48391
- Al-Cu (4.8 wt.%), secondary arms in dendritic growth, solidification effects *(Japanese)* 8−15387
- Al-Ti, manufacture, use of Na_2TiF_6, transfer of Ti 8−27453
- Al-Zn(Cu)(Ni), ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
- Al-Zn(Cu)(Ni) eutectic alloy, mechanism of lamellar spacing adjustment 8−31395
- Al-Zr (0.8 and 1.5 wt.%), hyperperitectic, non equilibrium solidification 8−3113
- Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
- Bi-Pb(Sn)(Tl), complex-regular eutectics, structural modification 8−23695
- Co-Ni-Cr-Ta-C (10, 10, 14, 1 wt.%), aligned eutectic, directionally solidified, fatigue crack propag. 8−27624
- Cu surface melt of spherical crysts., microscopic obs. 8−34599
- Cu-Al eutectic alloy, unidirection transform. controlled by heat flow *(Japanese)* 8−15386
- Cu-Ni-W melt, solubility of W, primary solidification 8−19726
- Fe, cast, nodular, solidification *(Japanese)* 8−11217
- Fe-(Ni)(Si)-C, cast, spheroidal graphite, metallography of solidification 8−19737
- Fe-Mn-C, cast iron and steel, Mn effects on struct. 8−23696
- Fe-Ni, segregation of inhomogeneities during crystallisation *(Russian)* 8−27521
- Fe-Ni alloy, cellular-dendrite struct., effect of temp. gradient and crystallisation rate on morphological singularities *(Russian)* 8−3115
- Fe-Ni-Al-Co-Cu-Ti, 38 to 40 wt.% Co, 8 to 8.5 wt.% Ti, alloy YuNDKT tempering and thermomagnetic treatments 8−3154
- Fe-Si (3 wt.%), tertiary products from deoxidation, electron emission microscope study *(Russian)* 8−11214
- FeCoC, unidirectionally transformed eutectoid, crystallography of herringbone pearlite, TEM obs. 8−31399
- α-Fe_2Si_5-ε-FeSi eutectic, orientation relationships 8−31397
- Ge film recrystallised by unidirectional solidification, GaAs film deposition 8−19671
- Ge-Si-Sb solid soln., prod. by 'Universal Furnace' expt. Sb and Si distrib. *(Russian)* 8−23692
- Hg, optical and elec. effects during solidification 8−47502
- In surface, impurity precipitation and resolution at melting point 8−14553
- $Li_2O.2SiO_2$, polycrystalline, oriented, fabrication by unidirectional solidification from melt *(Japanese)* 8−31371
- Mg-Al, unidirectional solidification, method for determ. of diffusion and thermal diffusion coeffs. in molten Mg 8−30772
- Mg-Fe, unidirectional solidification, method for determ. of diffusion and thermal diffusion coeffs. in molten Mg 8−30772
- Mg-Si, unidirectional solidification, method for determ. of diffusion and thermal diffusion coeffs. in molten Mg 8−30772
- (Nb,Ti)N_x, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
- Ni alloy Mar M200, directionally solidified Hf additions, effect of vol.% γ' on creep rupture 8−27526
- Ni superalloy, transient liq. phase diffusion bonding and mechanism *(Japanese)* 8−2279
- Ni-Al-Cr-Ti-W-Mo, US vibration applied during solidification, improved strength, corrosion resistance *(Russian)* 8−15382
- Ni-Cr-Al-Cr-Hf-Zr-C, directionally solidified eutectic with (Hf,Zr)C reinforcement, precipitation, and thermal cycling 8−44057
- Ni-W-Co-Cr, superalloy MAR 200, with Hf, cellular composite prod. by isothermal dendrite ripening 8−44150
- NiAl-Cr, eutectic, directionally solidified, temp. behaviour of misfit dislocations *(German)* 8−3119
- NiAl-V join, phase relations and eutectic directional solidification 8−31396
- O_2, EPR temp. depend. *(Russian)* 8−31103
- P, white, dendritic growth, fluid flow effect 8−11215
- Pb-Sn, ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
- Pb-Sn-Cd, eutectic and monovariant eutectic, ingot struct. 8−15388
- Si, large single crystal production, using directional solidification tech. 8−35298
- Sn-Pb, dil., undercooled alloy, solidification 8−3120
- Sn-Zn, ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
- TiC-base alloys, anomalous phase flaky precipitation *(Japanese)* 8−48401
- UO_2, condensate solidification onto steel struct. in above-core region of LMFBR after HCDA 8−17364
- VC, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
- V_3Ti, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
- Zn-Pb composite, production under conditions when gravity forces are balanced out by EM forces 8−31363
- Zn-Sn(Bi) alloys, morphology and mechanism of formation of eutectic *(Russian)* 8−6916

solids
- *Generalities only; for specific aspects see appropriate headings*
- *see also crystals; quantum solids; solid hydrogen; solid structure; solid theory*
- conference, Taiwan (April 1977) 8−10314
- conference on solid-state physics, Munster, Germany (Mar. 1977) 8−2401

solions *see transducers*

solitons
- Benjamin-Ono eqn., multi-soliton like solns. 8−28960
- Bethe-Salpeter eqn., quantised solitons 8−32985
- canonical description of solitary quantum decay 8−36881
- chiral SU(3)×SU(3) models, soliton solns. 8−4761
- classical soliton dynamics in nonintegrable systems 8−28996
- coupled nonlinear oscillators, Brownian motion, thermalised solitons and nonlinear response 8−29053
- covariant quantisation of solitons in gauge theories 8−16916

solitons continued
  covariant scheme of quantisation for one-soliton sector 8−8265
  cyclotron, generation of km wavelength terrestrial radn. *(Russian)* 8−40764
  cylindrical waves in variable depth water 8−40578
  Dirac field, linearly rising soliton trajectories, Lorentz and gauge invariant 8−4791
  Dirac spinor solitons or bags 8−12817
  dislocation motion, soliton-like, piecewise linear force model 8−2119
  dispersive media, nonlinear evolution eqns. soln., review 8−60
  displacive transformations, one-dimensional model, interaction of solitary wave soln. with phonons 8−22813
  double sine Gordon equation, exact multiple soliton solutions 8−20978
  electron gas, one-dimens., with backward scatt., soliton Green's functions 8−10386
  envelope soliton of random phase waves 8−26282
  euclidean image of soliton coherent state 8−32989
  evolution equations solvable by inverse spectral transform of rank 4 matrix Schrodinger eqn. 8−41187
  factorized U(n) symmetric S-matrices, two dimens., scatt. of solitons 8−45802
  fermion zero modes in soliton fields 8−8517
  ferromagnet, Landau-Lifshitz eqn., two soliton solns. for nonlinear dynamics *(Russian)* 8−43646
  ferromagnetic domain wall pinning, planar defects, coercive force and correl. length, soliton theory 8−31092
  φ^4 field theory, dynamics of collisions of two space-dimensional pulsons 8−8250
  geometrical interpretation, rigid body motion along helical space curves 8−24684
  Ginzburg-Landau (φ^4) field theory, solitary waves and electron localisation in disordered one-dimensional systems 8−14646
  heat pulses, soliton-like props. 8−22808
  Heisenberg continuous spin chain, soliton scatt. process 8−19203
  Heisenberg ferromagnet, quasiclassical description, soliton solutions 8−39282
  inelastic interaction, examples and Boussinesq. eqn., computer investigation 8−51
  inverse scattering method for equation $\sigma_{xt}=e^{\sigma}$, soliton soln. 8−389
  inverse scattering problem, N-soliton of eqn. $\sigma_{xt}=e^{\sigma}$ 8−8269
  ion acoustic, interpretation of expt. 8−38474
  ion-acoustic large-amplitude solitons, nonstationary theory *(Russian)* 8−1820
  ion-acoustic solitary wave excitation in collisionless plasma *(Russian)* 8−26267
  ion-acoustic soliton, in nonuniform plasma, theory 8−30436
  ion-acoustic soliton, refl. from sheath around negatively biased grid 8−38479
  ion-acoustic solitons in electromagnetically irrad. magnetoplasma 8−22485
  Kadomtsev-Petviashvili equation, two-dimensionaL solitons and their interaction 8−12575
  kinklike multisolitons in polynomial field theories 8−21014
  Klein-Gordon kinks with fourth order derivative self coupling 8−32970
  Korteweg de Vries soliton, in slowly varying medium, theory 8−30436
  Korteweg-de Vries eqn., higher order, prolongation struct., Lie algebra, soliton solns. 8−8249
  Korteweg-de Vries eqn. difference analogue 8−55
  Langmuir solitons, in inhomogeneous plasma, accel., theory *(Russian)* 8−26269
  Langmuir solitons, in nonequilib. plasma, nonlinear Landau damping effects *(Russian)* 8−22479
  Langmuir solitons in magnetised collisionless plasma *(Russian)* 8−47122
  lattice soliton, scatt. by mass interface, reductive perturbation method 8−18889
  lecture 8−24690
  linear equation associated with solitons, Green's function using scatt. theory 8−4507
  magnetic monopole soliton solns., gauge particles 8−16920
  massive Thirring model, complete S-matrix, sine-Gordon solitons 8−16936
  massive Thirring model, sine-Gordon eqn., soliton struct., Coleman correspondence 8−8509
  meson interactions, LSZ reduction formulae, soliton asymptotic theory 8−4774
  modulational instability growth, for randomised initial conditions 8−18406
  nonAbelian gauge fields *(Chinese)* 8−24917
  nonlinear equations with soliton solns. 8−45467
  nonlinear evolution eqns., soliton connection 8−16661
  nonlinear fermion system of self-interacting particles, field patterns 8−16909
  nonlinear magnons 8−6523
  nontopological, and appls. to hadrons 8−32968
  one dimensional magnet with easy plane, solitons and magnons 8−23260
  one-dimensional conductors, quantum solitons 8−6285
  plasma, electron-acoustic mode, two-temp. electrons 8−14141
  plasma, ion-acoustic solitons, strongly non-linear 8−5858
  plasma, ion-acoustic waves, Korteweg-de Vries soliton, higher order terms in reductive perturbation theory 8−1824
  plasma, laser irrad., soliton generation at resonance, density modification 8−14172
  plasma, laser irrad. pellet, role in two-plasmon decay instability 8−1842
  plasma, lower hybrid cones, nonlinear development 8−34306
  plasma, modulation instability and nonlinear waves *(Russian)* 8−22476
  plasma, nonlinear electron-beam self-induced transparency modulation mechanism 8−34341
  plasma, nonlinear evolution eqn., bifurcation of solitary waves *(French)* 8−38465
  plasma, nonlinear wave propag., solitons and envelope solitons 8−14158
  plasma, one-dimens. coupled Langmuir-ion acoustic waves, dynamics and stability 8−34296
  plasma, stabilisation of modulation instability, fast Langmuir solitons generation *(Russian)* 8−38470
  plasma, strong Langmuir turbulence, soliton flash, turbulent ion heating and relax. oscills. 8−1834

solitons continued
  plasma, transverse wave packets, momentum, mass and energy transport, solitons 8−1812
  plasma, wave excitation in relativistic electron beam heating 8−26307
  plasma wave, radially symm., Korteweg-de Vries eqn., spike soln. 8−47109
  polynomial field theories, nonlinear Klein Gordon eqn., exact multiple solution solns. 8−45773
  propagation, cloud generation, in nonlinear dispersive media with weak dissipation 8−47123
  quantisation using Bogolyubov transformation 8−16695
  quantum crystal, one-dimensional, solitary defectons 8−2332
  quantum expansion generalisation *(Chinese)* 8−24915
  quantum field theory, nonperturbative, resonance states, solitons 8−380
  quantum field theory, quasiclassical expansion and solitons 8−94
  quantum field theory, solitons and instantons 8−8495
  quark model, bag-like soliton solns. 8−8609
  quasione dimensional structures, collective excitation of CDW 8−18981
  review, classical soliton solns. and semi-classical quantisation techniques 8−8255
  Rossby solitary waves, theory 8−1678
  scattering by impurities in Toda lattice, localised modes 8−14420
  scattering of quantised solitons in non-linear Schrodinger theory, seminar 8−8256
  Schrodinger equation, nonlinear, perturbation expn. 8−47124
  Schrodinger nonlinear eqn., damped, soliton soln. 8−12605
  Schrodinger nonlinear eqn., exact stationary soliton soln. 8−12604
  self-dual network eqn., shock wave and hole type soliton 8−27
  self-induced transparency and superfluidity phenomena rel. to soliton wave packet propag. 8−22178
  semiclassical fields in soliton sectors 8−29232
  shallow water waves strong interaction in channel 8−46989
  sine-Gordon equation, difference analogue 8−20976
  sine-Gordon equation, N-soliton construction, domain walls appl. 8−19198
  sine-Gordon equations for 3-D solitons, classical $\lambda\varphi^4$, double and single eqns. 8−45785
  solitary wave diffraction in water, amplitude and direction determ. 8−22361
  spinor soliton as elementary particle, wave packet-soliton equivalence 8−12814
  stability and dynamic behaviour for one- and two-dimensional cases 8−47621
  stability in nonlinear propagation of lower hybrid waves in three dimensions 8−30424
  supersymmetric quantum theory construction around supertranslated soliton soln., Dirac's method 8−45783
  surface waves on water, soliton solns. of Davey-Stewartson eqn. for long waves 8−38351
  theory and applications 8−36811
  three-frequency wave interaction, waveguide and soliton solns. 8−41167
  Toda equation, difference analogue 8−20975
  turbulence in a system with weak dispersion, stochastisation of soliton motion 8−41169
  two-dimensional classical field theory, nontrivial interaction between solitons *(Russian)* 8−32698
  two-layer fluid, finite depth, solitary waves, exact stationary wave soln. to Whitham eqn. 8−22355
  WKB wave function, systems with many degrees of freedom, solitons and pseudoparticles 8−29255
  zero frequency mode contributions in soliton quantisation general scatt. amplitude 8−29234
  π field, nonlinear chiral models, many dimensional solitons 8−4792
  Ar-He plasma, ion acoustic soliton form., mechanism 8−18457
  ^{3}He, superfluid, B-phase, n-solitons, and NMR freq. calcs. 8−34670
  ^{3}He, superfluid, soliton solns. for spin orbital freedom wave eqns. *(Japanese)* 8−38904
  Pt complex, $(C(NH_2)_3)_2Pt(CN)_4Br_{0.23}.H_2O$, pseudo-one-dimens. cpd., solitary wave excitations, and cryst. struct. 8−6307

sols
  see also colloids; sedimentation
  light scattering matrix of artificial hydrosol, influence of form of scatt. particles *(Russian)* 8−5420
  Lyophobic sol stability in mixed media 8−11570
  photographic gelatin, gel-sol transition, gel characts. 8−35724
  sol crystals, grain boundary struct. and boundary diffusion obs. *(Japanese)* 8−15721
  Al_2O_3, transparent, polycrystalline, prep. by sol-gel method *(Japanese)* 8−19698
  Au, monodisperse sol, ordered struct. obs. 8−3384
  Se amorphous thin film photodeposition from hydrosols 8−11109

solubility
  see also phase equilibrium; solid solubility; solutions
  alkali n.-alkanoates, long-chain, ethanolic solns., temp. depend. 8−15724
  benzene-d_6, solubilization in hexadecyltrimethylammonium bromide aq. soln., D NMR 8−24015
  binary ordering alloy, gas absorption, correl. effects *(Russian)* 8−47525
  cyclohexane-d_6, solubilization in hexadecyltrimethylammonium bromide aq. soln., D NMR 8−24015
  dialkylammonium compounds, $(C_nH_{2n+1}NH_3)_2MX_4$, cryst. growth solubility, and props. 8−43999
  dilute alloys, solubility of H, isotope effect 8−14470
  F 8−43113
  fused, solubility of GaP, thermodynamics, rel. to epitaxial growth 8−34721
  GaAs:O, growth, O_2 solubility determ. rel. to temp. 8−34624
  gas-gas immiscibility in binary fluid mixtures 8−34627
  Incoloy 903, H_2 permeation and diffusion 8−26730
  Inconel 718, H_2 permeation and diffusion 8−26730
  isobutyric acid-d_{10}-D_2O, coexistence curve, liq. densities 8−18780
  Kordes eqn. for estimating impurity partition coeff. between liquid/solid phases 8−2258
  liquid-liquid nonpolar regular solution, symmetry and crit. consts. 8−34623

solubility continued
  o-nitrotoluene-saturated hydrocarbon soln., critical exponent, permittivity meas. 8−22858
  phlogopite, solubility in basic aqueous solns. under hydrothermal conditions 8−43127
  α,ω-polymethylene diammonium metal (II) tetrahalides, cryst. growth, solubility and props. 8−43999
  precipitation kinetics, effect of particle solubility and inhomogeneities 8−27530
  scaled particle theory results for dense mixtures of convex shaped mols. 8−1969
  semiconductors, electron traps, degeneracy factors, energy level estimates 8−14691
  simple liquids, thermodynamic props. and solubility parameters 8−2265
  β-spodumene-mica glass ceramics, phase evolution and TiO_2, MgF_2 additive effects, exam. 8−44089
  steel, C-Ni-Cr (0.6, 1, 1 wt.%), grain boundary segregation of S, N, P, As, Sb and Bi *(Japanese)* 8−15405
  transition metals, BCC, H impurity, calc. 8−6160
  Ventersdorp lavas, Ni partitioning between immiscible picritic liqs. 8−32069
  water, liq., solubility in compressed air 8−34631
  Ag-Cu, metastable solubility lines on Ag side 8−39737
  AgBr, crystal growth behaviour, influence of Gibbs-Thomson effect 8−24883
  Al-Cr-Zn (2.5, 1.5 wt%), phase equilibrium, solubility *(Russian)* 8−19723
  $BaSO_4$, in water, effect of ^{35}S tracer, particle size and imperfection 8−43126
  BeF_2-LiF, thermodynamically predicted miscibility gap 8−11209
  $BeSO_4.2H_2O$, composition of saturated solutions from 360 to 570K 8−22857
  C black, graphitized, theory constant for sorbed cyclohexane and benzene 8−6216
  C in $CaO-Al_2O_3$ melt in presence of graphite 8−38850
  CO_2, under magma genesis conditions, petrological implicatons 8−11886
  $CaO-Al_2O_3-CaF_2$, electroslag remelting slag, solubility of N_2 and C, equilibria 8−44110
  Ce-Ga (Al)(In)(Sn)(Pb)(Bi)(Zn) liquid, solubility and thermodynamic props. *(Russian)* 8−19717
  Co-W-C system at 1150°C, phase equilibria, isothermal reactions and thermodynamic study 8−31385
  Cu-Fe, dil. alloy solubility and diffusion of Fe 8−43170
  Cu-Ni-W melt, solubility of W, primary solidification 8−19726
  Cu-Pb-S system, at 1473K, thermodynamic anal. 8−39746
  Fe-Cr alloy, Cr rich, solubility of S *(French)* 8−30761
  Fe-Cr-Ni liquid alloy, N_2 soln. and TiN precipitation 8−6931
  Fe-Cr-Ni-Mn-Mo, liquid, N_2 solubility 8−44087
  Fe-Ni, influence of hydrogen press. on temp. of martensitic transform. *(Russian)* 8−27514
  Fe-Ni-C, Redlich-Kister eqns., activity coeffs., phase equilib. 8−23664
  Fe-Ni-Ge, liquid alloy, H_2 thermodynamic interaction, solubility *(Russian)* 8−11202
  FeO, wustite, simultaneous solubilities of Na and Ca *(French)* 8−31392
  Fe_3Si, 3d transition metal substituted, limits of solubility, mag. props. and electron conc. 8−10670
  Ga-In, liq., O diffusion coeff., thermodynamic activity and solubility 8−38860
  Ge, liquid, solubility and activity of O_2, 1233 to 1397K 8−44109
  Ge-Cu, liquid, solubility of O_2 at 1373K, in equilibrium with GeO_2 8−44109
  H_2, solubility in Ni, Ni-Cr, Ni-Mo, 500-1000°C *(Japanese)* 8−38845
  H_2O, under magma genesis conditions, petrological implications 8−11886
  H_2S, solubility in water, 10 to 180°C 8−18776
  Hg, of CdTe and $Cd_xHg_{1-x}Te$, rel. to LPE 8−35359
  $Hg_6O_4Cl_4$, cryst. struct. determ. 8−26516
  K, in Fe-S liquid, silicate-K-(Fe-S liq.) equilibria and planetary implications 8−11843
  $K(D_xH_{1-x})_2PO_4$, monoclinic and tetragonal forms, existence in aq. soln. 8−47262
  Li, liquid, of LiD, activity coefficient 8−2259
  LiF-NaF-KF molten mixture, diffusivity and solubility of H_2 8−34640
  Li_2O in liquid Li, solubility determ. by neutron activation anal. 8−11601
  Mo-N system, phase diagram of solid and liq., high and low press. 8−44083
  N, in $CaO-Al_2O_3$ melt in presence of graphite 8−38850
  N_2, liq., of solidified hydrocarbons and halogen-hydrocarbons, calc. by Preston-Prausnitz method 8−26686
  NaCl-KCl mixture, electrical, electromag., and acoustic props. *(Russian)* 8−30759
  Nb-H, incoherent spinodals, meas. by Gorsky effect 8−19712
  Nb-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
  $Nb(OR)_2Cl_3.L$, halo-alkoxide complex, prep. and props. 8−18605
  Ni, β-phase form., H enriched, at surface and grain boundaries, during H_2 absorption *(Russian)* 8−31410
  $Ni_xFe_{3-x}O_4$, solubility in high-temp. aqueous soln., appl. to PWR 8−4987
  RbCl, diffusion by $^{20}Ne(^{22}Ne)$, isotope effect 8−18841
  Ta-H, incoherent spinodals, meas. by Gorsky effect 8−19712
  Ta-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
  $Ta(OR)_2Cl_3.L$, halo-alkoxide complex, prep. and props. 8−18605
  U-Ce-C system, phase equilibrium exam. *(German)* 8−23670
  U-Nb-C system, phase equilibrium exam. *(German)* 8−23670
  V-H, incoherent spinodals, meas. by Gorsky effect 8−19712
  $YCo_5(Ni_5)$, H_2 solubility *(Russian)* 8−15356
  Zn_3As_2, solubility in Bi, LPE on $(Cd_xZn_{1-x})_3As_2$ 8−35324
  ZnS, of Ag_2S 8−22753
  α-Zr, of O, solubility limit meas. 8−11211

solute clustering *see segregation*

solution annealing
  steel, 18% Ni maraging, fatigue strength, effect of soln. treatment and inclusions 8−23805

solution annealing continued
  steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
  steel, austenitic stainless, 304, solution annealed, tensile flow behaviour after exposure to flowing Na, in temp. range 550 to 700°C 8−35463
  steel, stainless, 1Kh18N10T, solution annealed effect of cyclic stresses on corrosion rate in acid environments *(Russian)* 8−31577
  steel, stainless, neutron irrad., solution-annealed and cold-worked, swelling 8−13229
  steel, stainless, solution treated FV 548, irradiated with 22 MeV C^{2+} and 46.5 MeV Ni^{6+} ions void swelling 8−22771
  steel, stainless, type 304, solution-annealed and thermally aged, correl. of high- and low-cycle fatigue data 8−15532
  steel, stainless, type 316, stress-free swelling at high neutron fluence, rel. to LMFBR core environment 8−13239
  steel, stainless cold-worked austenitic, fatigue and creep crack growth at elevated temp. 8−48524
  Al alloy 2024-T3, work hardening in surface layers and bulk during fatigue 8−48428
  γ′-Al-Ag (15 wt.%), dislocation splitting mechanism, cessation above critical temp. 8−26572
  Fe-Cr-Co, mag. alloys, Mossbauer spectra 8−19386
  Fe-Ta alloy, mech. drawn and aged, exam. of electrical resistivity, hardness, microstruct., and mag. props. *(Japanese)* 8−48545
  Nb-Nb-Al-(Cr), γ/γ′-δ type eutectic, fatigue, effect of composition and microstruct. 8−48520
  Nb-Ti (60 at.%), aged, TEM exam. of precipitation process *(Japanese)* 8−48409
  Ni alloy Mar M200, directionally solidified Hf additions, effect of vol.% γ′ on creep rupture 8−27526
  Ni-Al (6.05 wt.%), prediction and meas. of precipitate number density 8−19756
  β IIITi alloys solution treated and aged, estimation of precipitate volume fraction using Young's modulus 8−39781

solution energy *see heat of solution*

solutions
  see also critical mixtures; Debye-Huckel theory; heat of solution; liquids; polymer solutions; solid solutions; solvation
  acetone-benzene(cyclohexane), vap.-liq. equilibria 8−30745
  acetone-chloroform solution, Monte Carlo calcs. for interface struct. with directed intermol. forces *(Russian)* 8−1975
  adsorption isotherm and solute activities from spreading pressure-surface charge data 8−14576
  albumin, bovine serum, five-component dielec. dispersion 8−15759
  alcohol-active soln., assoc. soln. thermodynamics, H^e, V^e curves 8−31671
  alcohol-inert soln., assoc. soln. thermodynamics, enthalpy, Gibbs free energy 8−31670
  alcohol-solvent, associated, excess free energy and enthalpy of mixing 8−31680
  alkali halide solns. with H_2O and D_2O, struct. and O isotope fractionation 8−22629
  alkali halide solutions, US determ. of hydration numbers 8−20027
  alkali metal-ammonia solns., spin site exchange mechanism for electron relax. times 8−27077
  n-alkane binary mixtures, infinite dilution activity coeffs. 8−15695
  aqueous electrolyte solutions, thermal diffusion, Soret coeffs. meas. 8−18811
  aqueous metals, adsorption on inorganic minerals 8−49006
  aqueous nonelectrolyte solutions, thermodynamic excess functions at high press. 8−18793
  aqueous organic solns., 25°C, solute/water rel. evap. rates 8−34614
  benzene-cyclohexane, solution, self-diffusion, capillary cell meas. 8−34637
  benzene-cyclohexane, vap.-liq. equilibria 8−30745
  benzene-toluene, solution, self-diffusion, capillary cell meas. 8−34637
  biomolecular aqueous solution, attractive and repulsive dispersion forces 8−44447
  brine, Dead Sea, KCl and H_2O activities 8−31673
  t-butanol-CCl_4, excess thermodynamic functions, 15, 30 and 45°C, composition depend. *(Russian)* 8−31677
  t-butanol-water, X-ray scatt. intensity composition depend., soln. struct. 8−6005
  t-butyl alcohol, struct. determ. from vibr. spectra, H-bonding and heat of mixing *(Russian)* 8−3368
  caffeine in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
  carbon tetrachloride soln. of Br, adsorpt. of Br on C 8−10273
  concentrated electrolyte, solutions, viscosity, mixture law 8−18818
  n-decanol-CCl_4, excess thermodynamic functions, 15, 30 and 45°C, composition depend. *(Russian)* 8−31677
  diffusion of small light solutes in solvent of larger heavier mols., isotopic mass effects 8−34639
  dipole solvation, one polar mol. dissolved in 499 moderately polar particles 8−47221
  Disjoining pressure of thin layers of binary solutions 8−15716
  electrolytic, struct. of free surface, single ion hydration energies 8−26752
  electrolytic aqueous solution, US study of apparent molar compressibility 8−10125
  enzyme-substrate interaction forces influence on reaction rates 8−31765
  ethanol, aq. subcooled soln., acoustic phenomena during nucleate boiling 8−10181
  ethyl alcohol, solution, struct. determ. from vibr. spectra, H-bonding and heat of mixing *(Russian)* 8−3368
  ethylcellosol, aq. soln., light scatt. rel. to conc. fluctuations *(Russian)* 8−3450
  ferrocene derivatives in smectic B phase liquid cryst. BBOA, ^{57}Fe Mossbauer study 8−27136
  formamide-water soln. permeability of cellulose membrane 8−11557
  Gibb's excess energy, thermodynamic restrictions on analytic expression 8−27817
  hydrocarbons, thermodynamic props., multiparameter conformal solution theory 8−18796
  hydrophobic effect, dil. soln. struct. and thermodynamic props., semi-empirical model 8−20060
  ionic solute hydration, thermodynamic and transport props., review 8−27815
  ionic solution in molecular polar solvent, stat. mech. 8−30527

solutions continued
- liquid-liquid nonpolar regular solution, symmetry and crit. consts. 8−34623
- macroionic solution, plus counter ions, Kirkwood theory, mean field phase transition 8−38812
- macromolecular liquids and solutions, statistical thermodynamics 8−18528
- macromolecular solns., self-diffusion coeff. 8−6168
- metallic, small ion currents, mag. scanning type spectrometer 8−8464
- methanol-benzene solutions, adsorption on carbon 8−14568
- methanol-water soln. permeability of cellulose membrane 8−11557
- mixed freshwater, seawater and brine solutions, chemical speciation of Cd, Cu, Pb and Zn 8−20409
- molecular orientation, cooperative, rel. to OH proton chem. shift 8−1974
- Nernst distribution law, use of thermodynamic excess functions 8−43123
- nitroethane, crit. soln. in cyclohexane, nonlinear dielectric effect 8−27152
- nonaqueous electrolyte solutions, ionic nuclei, quadrupolar interaction, mag. relax., infinite dilution limit 8−35692
- nonaqueous electrolyte solutions, thermal diffusion, Soret coeffs. meas. 8−18811
- nonelectrolytes, aqueous, excess heat capacity, H bonding 8−3362
- particle size meas. of crystallites in soln. by line-broadening meas. 8−18488
- polar/nonpolar mixtures, pot. of mean force, approx. theories, clustering of solute mols. 8−26401
- polydisperse rod suspension, elec. birefringence relax. 8−23430
- rhodamine 6G in ethanol, photobleaching mechanism *(Russian)* 8−48680
- salts, aq. solns., mechanical and electro-optical anharmonicity *(Ukrainian)* 8−2830
- saturated liq. low press. enthalpy function, corresponding states and pseudocriticals 8−31672
- sedimentation and density gradients, near liq.-liq. crit. soln. point, high gravit. field 8−47526
- surfactant, aq. subcooled soln., acoustic phenomena during nucleate boiling 8−10181
- toxic gas microconcentration determ. by automatic belt photometer *(Russian)* 8−28347
- trace elements, in acid solns., solvent extraction, chelation and thermodynamic activity *(French)* 8−27816
- uracil in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
- water-ethanol, inversion of Kirkwood-Buff theory 8−27807
- X-ray scatt. intensity composition depend., soln. struct. 8−6005
- $Ca(NO_3)_2$-H_2O solns., ice I homogeneous nucleation temp., slow vitrification mechanism 8−26666
- $CdCl_2$-KCl-H_2O, water activity, 0 and 50°C, conc. depend. *(Russian)* 8−31679
- Fe^{3+}-Fe^{3+} distances, in aq. NO_3^- and ClO_4^- solns., from small-ang. X-ray diffr. maxima 8−42880
- HCl aqueous soln., H^+ mobility, 15, 25, 40°C, up to 5000 atm 8−10207
- HCl-H_2O, p-V-T relations up to 773K and 1500 bars 8−43096
- HNO_3, aq. soln., heat capacity at 298.15K 8−3364
- $K_2Cr_2O_7$, acidic soln., UV absorbance standard verification 8−21092
- KNO_3, aq. soln., heat capacity at 298.15K 8−3364
- LiCl aqueous soln., ion-water clusters, electronic struct., Compton profile 8−47227
- LiCl+$NaNO_3$, apparent and partial molar volumes in aq. soln. 8−44396
- Mn^+, in soln., EPR relax. probe 8−31104
- Na-NH_3, nonmetal-metal transition, thermodynamics 8−18964
- NaCl, aqueous soln., Lennard-Jones parameters, mol. dynamics and X-ray obs. 8−9939
- $NaNO_3$, aq. soln., heat capacity at 298.15K 8−3364
- RbCl-KCl(H_2SO_4)-H_2O, water activity, 0 and 50°C, conc. depend. *(Russian)* 8−31679
- RbX-CdX_2-H_2O, X=Cl,Br,I, Gibbs free energy, H_2O activity, 25°C *(Russian)* 8−31678
- ThO_2, particle size of crystallites in soln. by line-broadening meas. 8−18488
- $UO_2(NO_3)_2$ solutions, cryoscopy and activity coeffs. 8−11544
- $ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831

solvated electrons
- alkaline glass: tryptophan (tyrosine), γ-irrad., electron traps, stimulated luminesc. 8−11536
- amino acids, aq. solns. EPR of spin-trapped radicals, hydrated electron reactions 8−27796
- aromatic hydrocarbons, singlet energies, correlation with anion radical protonation 8−40064
- chondromucoprotein, effects of ^{60}Co γ-irrad. 8−7400
- cytochrome c-phospholipid interaction, studied by pulse radiolysis 8−48746
- dipole polarisability, Compton profiles 8−27877
- ethanol-d_0,-d_1, solvated electrons reacting with scavengers, inverse isotope effects 8−31751
- fibrinogen solution, effect of scavengers on radiation-susceptible sites 8−11701
- fractional charge MO model 8−31752
- hydrated electron+O_2, rate const., Arrhenius parameters 8−20041
- methanol, solvated electron lifetime and reaction with hydroxymethyl radical, dose and base effects 8−20043
- methanol, solvated electron yield and spur decay following electron irrad. 8−20042
- organic liquid mixtures, positronium form., spur process 8−1113
- polar solvents, equilib. electronic states, basic eqn., broken symmetry 8−37535
- spectral broadening in alcohols, laser saturation 8−31750
- tryptophyl peptides, pulse radiolysis, hydrated electron reaction 8−48679
- LiCl-D_2O glass, trapped and quasifree electrons optical transitions, bound-continuum character 8−6660
- Na-ice condensate, EPR lineshape second moment, electron solvation struct. 8−3440
- Na^+-solvated electron, reversible capture by 1,1-diphenylethylene, equilib., kinetics 8−7177

solvated protons *see hydroxonium ion*

solvation
- *see also hydroxonium ion; solvated electrons*
- alkali halide solns. with H_2O and D_2O, struct. and O isotope fractionation 8−22629
- bacteriorhodopsin photocycle hydration effects, in thin purple membrane layers 8−7320
- binary solution, ion solvation, thermodynamic description *(Russian)* 8−31676
- dipole solvation, one polar mol. dissolved in 499 moderately polar particles 8−47221
- DNA, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
- DNA hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
- dynamics of solvated ions, mol. theory 8−35695
- electrical double layer theory, Poisson-Boltzmann eqn. including hydration forces 8−48668
- electrode-solution interfaces, role of water 8−40058
- electrolysis, solvent transport by ions, kinetic hydration and viscosity mechanisms 8−3347
- electrolyte, free surface struct., single ion hydration energies 8−26752
- ether-water mixtures, miscibilities, enthalpy of mixing, solvation *(German)* 8−18779
- formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566
- ionic solute hydration, thermodynamic and transport props., review 8−27815
- Lennard-Jones liquid mixtures, equimolar, mol. dynamics, struct. and thermodynamic props. 8−18517
- liquid-liquid phase equilibria, theory, chem. models 8−18781
- lysozyme bound water, thermally-stimulated press. and current 8−15757
- methanol-water, assoc. mixture, rot. barrier solvent effect, CNDO/2 calc. 8−29861
- monatomic ions, stoichiometric water mixtures, struct. changes due to hydration thermodynamic props. 8−7225
- phosphatidylcholine hydration, adsorpt.-desorpt. isotherm and PMR 8−15781
- polynucleotide hydration characts. in H_2O/D_2O frozen solns., γ irrad. effects, PMR 8−31772
- polynucleotides, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
- positronium formation in polar liquids, unsolvated electron effects 8−17826
- water, free surface struct., single ion hydration energies 8−26752
- Ag solvation in ice matrix, electron spin echo modulation 8−39396
- CO-He-O_2-H_2O laser discharge, stability, influence of recombination and ion chem. 8−17915
- Fe complex, tris-(4-morpholinecarbodithioate-S,S′)Fe(III), and dichloromethane solvate, Mossbauer and EPR spectra, spin 3/2 state 8−9169
- $Fe(ClO_4)_3$, soln., struct., X-ray scatt. obs. 8−34421
- HCl(-acetone)(-acetonitrile), soln., IR absorption, H-bonding, solvent effect 8−29778
- NH_4NO_3 conc. aqueous soln., X-ray scatt., NO_3^--H_2O interactions 8−42881
- Na-ice condensate, EPR lineshape second moment, electron solvation struct. 8−3440
- NaCl, aq. soln., isothermal compressibility, hydration parameters, up to 350°C and 10^3 kg cm^{-2} 8−10112

solvent effects
- acenaphthene in n-alkane matrices, Shpolskii spectra fluorescence 8−9190
- acetonitrile, ν_2, ν_3 and $2\nu_3$ bands, vibr. relax., Raman spectra of liq. and dil. soln. 8−9154
- alcohol homologous series, $^1HT_1$-relax. time, paramagnetic, diamagnetic shift reagent effects *(German)* 8−43673
- 1,8-anilinonaphthalene sulphonate, aq. and ethanolic solns., excited singlet state decay pathway 8−17703
- anthracene, melt and dil. soln., UV spectra, line broadening and shift vibr. struct. 8−17684
- anthracene, pure and d_n, PMMA soln., triplet lifetimes, 77-300K 8−25594
- anthracenes, anthronyl substituted, solvent-assisted form. of luminesc. intramol. exciplexes 8−25589
- p-(9-anthryl)-N,N-dimethylaniline derivatives, excited emitting states in polar solvents, fluoresc. 8−5263
- azoalkanes, fluoresc., solvent isotope effect 8−25591
- azoethane, in hydrocarbon glass, 77K, photoisomerisation, matrix memory effect, quantum yield 8−7213
- BBOT, time-depend. fluoresc. depolarisation, mol.-rot., slip boundary conditions in soln. 8−9179
- benzene, fluoresc. quantum yield in soln., dipole-dipole interaction 8−25598
- benzimidazole, excited states, solvent interactions, fluoresc. obs., rel. to chromophore 8−37670
- biological macromolecules, computer simulation of solvent struct. 8−40113
- β-carotene, in CS_2, reson. Raman spectra, room temp. 8−35803
- chemical reaction kinetics of dense fluid, correlated binary collisions 8−44347
- chemical reactions, Hammett correlation, explanation of solvent effects by frontier orbital method *(French)* 8−11604
- 3-chlorodiphenyl, in dipolar aprotic solvent, internal rot. barrier, ^{13}C T_1, obs. 8−29860
- chromophore, excited state, solvent interactions, fluoresc. obs. 8−37670
- 9,10-dicyanoanthracene, exciplexes, electronic struct. by electro-optical expts. 8−25581
- dielectric attenuation of substituent effects, field transmission in partially occluded cavities 8−2789
- 2-(2′,4′-dinitrobenzyl)-pyridine, photochromism, ns laser absorption spectra 8−48138
- 9,10-diphenylanthracene, luminesc. quantum yield, fluoresc. spectra polarisation effect, solvent viscosity depend. 8−27303
- diphenylene sulphide, phosphoresc. vibronic struct., solvent heavy at. effect 8−17710
- 2,5-diphenyloxazole, phosphoresc., 77K, solvent effect 8−42118

solvent effects continued
DNA, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
dyes in organic solvents of high viscosity, diffusion coeffs. 8−10203
eosin, in glycerine-water mixture, excitation and emission peaks, concentration shifts 8−33540
erythrosin, aq. soln., polarisation of fluoresc. spectra, aggregation of mols. 8−31227
exciplexes, electronic struct. by electro-optical expts. 8−25581
fluorenone fluoresc. in plastic, high press. effects., quantum yield 8−25601
fluoromethane, in liq. O_2(Ar), vibr. energy relax. obs. 8−5208
formaldehyde, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
fumaronitrile exciplexes, photoisomeris. and photoionis, dissolved O_2 effect 8−27789
hexamethylene tetramine in water-acetone soln., crystal growth kinetics 8−30554
hydrophobic effect, dil. soln. struct. and thermodynamic props., semi-empirical model 8−20060
indocyanine green fluoresc. spectrum in blood and other solvents, rel. to angiography 8−28057
indole, and derivatives, temp. fluoresc. quenching, rel. to H_2O solvent struct. 8−5265
indole, fluoresc. polaris., solvent effects 8−33542
indoles, excited states, solvent interactions, fluoresc. obs., rel. to chromophore 8−37670
indoles, fluoresc. anomalies, mixed valence-Rydberg states 8−17707
methanol-water, assoc. mixture, rot. barrier solvent effect, CNDO/2 calc. 8−29861
methyl iodide, in Ar and Kr, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
methyl iodide, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
methyl protons, NMR relax. in presence of chem. exchange 8−13515
molecular solution, excess electron optical absorption spectrum model, band shape 8−33500
naphthalene, fluorescence quenching by biacetyl, effect of viscosity 8−29810
β-naphthylmethyl amine, solvent-induced intramol. exciplex fluoresc. 8−25592
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
phenols, orthosubstituted, proton acceptor 1oln., PMR of H-bonding 8−13517
PMMA, methanol crazes, grown from cracks, exam. of growth criteria 8−48551
polyacrylamide gels, structural collapse in solvent, crit. endpoint 8−48702
polymer solutions, dielectric relaxation time, diluent effects 8−10843
polymer-solvent interaction from gas-liquid chromatography, open tubular column expts. 8−35753
polymethinecyanines, symm. solvent effects on electronic struct., ^1H, ^{13}C NMR 8−13516
polynucleotides, gamma-ray effects on hydration, PMR of frozen and liq. solns. 8−27900
porphin, free base, in n-octane crystal, S_1 from S_0 transition, freq. shift and dephasing temp. depend. 8−25584
protein dynamic states, role of geometry and elastic strains 8−48745
proteins, conform. changes in aqueous soln. and in mixed solvents, IR absorpt. spectra 8−15762
proton relay model systems, reaction field theory of solvent effects 8−44346
quinine sulphate, acid soln., edge excitation red shift and proton migration 8−1028
trans-retinal, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
trans-retylidene-n-butylamine, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
rhodamine 6G, delayed fluoresc. of simple associates in polar and nonpolar solvent mixtures *(Russian)* 8−48185
$tRNA_{yeast}^{phe}$, Fourier transform PMR in aq. soln., ^1H exchange and relax. rates meas. method 8−15049
rose bengal, excited state orientational relax., in protic and aprotic solvents 8−46383
rose bengale, fluoresc. polaris., solvent dipole moment effect 8−25596
scintillator systems, liq., organic, energy transfer, fluoresc. intensity-max. solvent depend. 8−21966
ternary electrolytes, viscosity and ion-solvent interactions in dioxane-water mixtures 8−18817
TMPD, fluoresc. in nonpolar organic liqs. for excitation energies above and below photoionis. threshold 8−1018
toluene, fluoresc. quantum yield in soln., dipole-dipole interaction 8−25598
triethylamine, gas (soln.), fluoresc. quenching by 'inert' perfluoromethylcyclohexane 8−46438
triethylenediamine, aq. soln., stimulated Raman scatt., struct. enhancing solute 8−27222
trifluoroiodomethane, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
trypsin, in suspension, radical form. and inactivation after Γ-irrad. 8−3564
tryptophan, Fourier transform PMR in aq. soln., ^1H exchange and relax. rates meas. method 8−15049
xanthione, solns., triplet state quenching by ground state xanthione 8−42180
CS_2, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
CS_2, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
Cu II complex, bis(pyrrolidonecarbodithioato) copper II, ESR, solvent effects 8−1008
Cu II complexes, 5-coord., ESR, optical absorpt., solvent effects 8−5253
Fe complex, halobis(morpholyldithiocarbamato)Fe(III), solvation effects, mag. susceptibility and Mossbauer spectra 8−27129
HBr, fundamental IR band, solvent effect *(Russian)* 8−13501
HCl(-acetone)(-acetonitrile), soln., IR absorption, H-bonding, solvent effect 8−29778
HgX_2 (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788

solvent effects continued
HgX_3^- (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788
HgX_4^- (X=Cl,Br), aprotic donor solns., Raman spectra, mol. vibr. and solvent strength 8−29788
I_2, in CCl_4 and cyclohexane solns., higher vibr. levels, dephasing lifetimes, from reson. Raman spectrum 8−42068
$I_2(B^3\pi_o{}^+{}_u)$, ps excitation, in CCl_4 soln., ultrafast decay and spectrum 8−9184
NO, EPR line shape in solvating mixtures 8−33532
NO_2, Ne matrix isolated, 6K, B←X band system 8−993
^{14}N NMR chemical shift, external neat nitromethane scale 8−24834
O_2, lifetimes and reactivity in aq. micellar system 8−46398
O_2, singlet state lifetime in D_2O soln., decay of micellar system 8−46301
OH, in inert gas matrix, H-bonding and charge transfer, fluoresc. 8−25602
Yb^{3+}, in dessicated (nondessicated) and protonated (deuterated) solvents, photoluminesc. energy degredation 8−19544

sonar
see also bioacoustics; navigation; underwater sound
AUTOBUOY directional array, ambient sea noise directionality meas. and processing 8−16025
broadband target classification using bionic sonar 8−18123
cable-laying using ship hull-mounted sub-bottom profiling 8−5620
distributed sensor concept for underwater detection 8−33944
echosonde antennas, echo carrier freqs. and antenna dimensions rel. to performance 8−1474
fibre optic sonar link, multichannel 8−42446
FM-CW acoustic sounder resolution rel. to modulation noise *(Japanese)* 8−30137
imaging with synthetic aperture technique 8−33943
interference rejection by amplitude shading of transducer arrays 8−38151
linear feedback AGC with input-level-invariant response times for sonar signal processing 8−30130
marine profiling images, recording, signal amplitude preservation 8−36326
mobile sonar technology (MOST), technical document information system 8−45003
ocean multipath propagation effects on sonar design and performance 8−5602
oceanography, integrating optics and sonar for deeply towed vehicle 8−45045
Oceans '77, conf., Los Angeles, USA (Oct. 77) 8−36193
Pacific Ocean floor relief meas. by side-scan sonar 8−36142
passive bearing estimation, removal of bias and 2π ambiguities 8−38150
passive sonar system adaptive processor 8−5622
piezoceramic tubes with capped or shielded ends, sensitivity above omnidirectional freq. range 8−1534
portable monolithic IC sonar unit *(French)* 8−13868
position location system, for ocean mining 8−45046
radio-acoustic sounders for remote sensing of lower atmosphere *(Japanese)* 8−16209
rare earth iron magnetostrictive underwater sound transducer 8−13881
sea floor analysis with deep tow techniques 8−33942
side looking sonar for sand wave study in White Sea 8−3999
signal processing, algorithms soln. with multi-microprocessor network 8−45044
signal processing, conference, Portovenere, Italy (Aug./Sept. 1976) 8−5614
signal processing, hydroacoustic scatterers identification, system optimisation *(German)* 8−42487
sofar floats for POLYMODE 8−45047
towed array system modelling, steady-state and transverse dynamic motion study 8−30112
transducer arrays, image prod., signal processing methods comparison 8−18122
transducer arrays, numerical calc. method for acoustic interaction *(Japanese)* 8−9521
underwater electric cable terminations 8−45041
underwater horns, directivity 8−18138

sonic boom *see shock waves*

sonic propagation *see acoustic wave propagation*

sonoluminescence
No entries

Soret effect *see thermal diffusion in liquids*

sorption
see also adsorption; chemisorption; desorption; surface diffusion
AVEhD 40/800 arc-sorption pumping system 8−227
binary ordering alloy, gas absorption, correl. effects *(Russian)* 8−47525
cation-exchange sorption microcalorimetry, automatic micro-injection system 8−24777
directional time-lag asymmetry in media with position-dependent sorption and diffusion props. 8−3372
gas sorption measurement at 12-150K, He cryostat system 8−32823
haemodialysis and haemoperfusion, joint system, evaluation of novel sorbent systems 8−7542
haemoperfusion systems, characterisation of solute removal 8−44689
kinetics, time-lag theory, diffusion coeff. 8−38937
laminate, fibre reinforced composites, moisture diffusion, 3-D Fick's law 8−10218
membrane transport sorption and desorption time lag meas. apparatus 8−38428
microporous graphite compact, anomalous diffusion of N_2, time-lag and transient-state kinetic analysis 8−34655
polyethyleneterephthallate, sorption of low MW solvents on struct. and mech. props. *(Russian)* 8−11358
sediments in laboratory-scale aquatic ecosystem, radioisotope behaviour 8−3831
solid sorption systems, spectroscopy via IR cell with Si windows 8−299
steel, H_2 absorption, effect of organic inhibitors *(Russian)* 8−35570
steel, mech. strength, effect of H_2 sorption and Al and N_2 surface treatment *(Russian)* 8−31570
subsoil, ^{241}Am, ^{237}Np and ^{99}Tc sorption on USA subsoils from differing weathering intensity areas 8−16014
Cu, crysts., absorbed H, strain anal., X-ray divergent beam method 8−15463

- **sorption** continued
  - D-T fusion reactor, tritium recovery using Zr, Y *(Japanese)* 8−29646
  - Er film, work function, effects of O_2 sorption 8−19125
  - $EuRh_2$, H_2 absorbing, degradation by cycling 8−34628
  - Fe, of water, visualisation using THO and autoradiography 8−26761
  - Fe, single crysts., absorbed H, strain anal., X-ray divergent beam method 8−15463
  - H_2, solubility in Ni, Ni-Cr, Ni-Mo, 500-1000°C *(Japanese)* 8−38845
  - $LaNI_5$, of H_2, absorption rates, diffusion consts. 8−14508
  - $LaNi_5$, activated, slow step for H_2 absorpt. (desorpt.) 8−18894
  - Mo film, work function, effects of O_2 sorption 8−19125
  - Ti film, work function, effects of O_2 sorption 8−19125
  - Ti sorption pump for molecular beam detector 8−21150
  - $Ti_{1-x}Zr_xMn_2$, hydride formation, hydriding characts. of reversible uptake 8−44402
- **SOS integrated circuits** *see field effect integrated circuits*
- **sound** *see acoustic waves; acoustics*
- **sound amplification** *see acoustic wave amplification*
- **sound broadcasting** *see radio broadcasting*
- **sound field** *see acoustic field*
- **sound generators** *see acoustic generators*
- **sound intensity** *see acoustic intensity*
- **sound measurement** *see acoustic variables measurement*
- **sound propagation** *see acoustic wave propagation*
- **sound ranging** *see sonar*
- **sound reproduction**
  - *see also audio acoustics; audio recording; pick-ups*
  - home cinefilm sound track using stereo tape recorder 8−16883
  - mobile sound reinforcement system for musical performances in New York City parks 8−1509
  - monitoring, acoustic factors in cinemas, dubbing theatres 8−33961
  - music, in small rooms, acoustic theory *(Spanish)* 8−38155
- **sound waves** *see acoustic waves*
- **space charge**
  - *see also limited space charge accumulation; space-charge-limited conduction; space-charge limited devices*
  - alkali metal tungsten bronzes, enhanced supercond. T_c, possible explanation 8−14850
  - amorphous solid, anomalous transient-time dispersion 8−31155
  - atmosphere, space charge generated by surf, meas. 8−36235
  - cavity plane magnetron, averaging method, electron tongues *(Russian)* 8−37037
  - collective ion acceleration in relativistic electron beam diode, intense slow space charge generation 8−9863
  - conducting medium, inhomogeneous, anisotropic, thermal fluctuations of current density, EM fields, and charge density 8−23067
  - current runaway in insulators affected by impact ionisation and drift 8−39501
  - dielectric liquid with electrolytic dissoc. of additive, weak conductivity *(Russian)* 8−27161
  - elliptic beam in cylindrical conducting pipe of circular cross section, space charge potential and field *(French)* 8−42261
  - glasses, high-resistivity, uniform and space charge polarisation, thermally stimulated depolarisation anal. 8−15085
  - Green's function for perfectly conducting cylinder *(French)* 8−25770
  - HF discharges, near-electrode layers of space charge effect on electrodynamic props. 8−30510
  - image convertor tubes for nanosecond, subnanosecond photography, dynamic range 8−38034
  - ion beam in plasma, reactive medium instability of space charge wave 8−18421
  - ion multiaperture sources, beamlet-beamlet interactions, effect on ion optics 8−46507
  - ion optical focusing in cylindrical mirror analyser, space charge effects 8−25791
  - ion optical system, expt., theory 8−9020
  - iris loaded waveguide relativistic electron beam interaction, electron energy distrib. space charge effects 8−46190
  - longitudinal carrier waves in solids, coupled mode anal. *(Korean)* 8−43403
  - nematic-liquid crystal, space charge freezing, electro-optic effect meas. 8−34436
  - neutral beam, charged particle separation by space target blowup 8−9018
  - n-octadecane, surface charge decay 8−43463
  - p^+-i-n^+ double-injection struct., regional approx. 8−14805
  - p-n junction, current-voltage charact. effect of generation-recombination *(Rumanian)* 8−2553
  - p-n junction with inhomogeneous impurity distrib., space-charge layer 8−30982
  - paper capacitor, dielec. loss, effect of simultaneous application of AC and DC voltages, freq. and temp. depend. 8−15091
  - Perspex, dielec. breakdown and space charge, treeing 8−27160
  - PLZT, optically induced birefr. change 8−43832
  - polyethylene, corona charged, direct drift mobility meas. 8−10837
  - polyethylene, high density corona charged, TSC, oxidation effect 8−26882
  - relativistic electron beam, propag., Poukey-Rostoker model 8−5412
  - Schottky injection currents, effect on time depend. 8−14735
  - semiconductor cyclotron resonance 8−6575
  - semiconductor resistivity meas., influence of space charge 8−23076
  - surface charge decay due to time dependent bulk cond. 8−23397
  - synchronous slow space-charge wave accelerator 8−17448
  - Teflon FEP, electron beam charged film, charge centroid location 8−15095
  - trapped-ion cyclotron reson. spectra, intensity oscills. characterisation 8−48716
  - Ag-halide microcryst., space charge characts. 8−15097
  - n-$Al_xGa_{1-x}As$, electrical props. 8−6381
  - $BaTiO_3$, X-ray irrad. effect on dielec. props. 8−15082
  - $BaTiO_3$-KCl composite cryst., F-centres, thermoluminesc., DC field and X-irrad. effects 8−2926
  - CdTe-metal, diode contact, elec. characts., generation-recombination space charge region *(Russian)* 8−39214
  - Ge, field effect characts. rel. to surface inhomogeneity 8−26933
  - KCl, low temp. space charge polarisation 8−43789
  - $KCl:Sn^{2+}$, thermally stimulated space charge decay 8−48111
  - MOS, photocurrent-voltage characts., insulator bulk trapped charge 8−30991
- **space charge** continued
  - NaCl, F-centres near monoenergetic proton stopping region, space charge effect 8−18640
  - NaCl, low temp. space charge polarisation 8−43789
  - $NaCl:Sn^{2+}$, thermally stimulated space charge decay 8−48111
  - Nb-Nb_2O_3-Al structures, oxide film space charge density obs. *(Russian)* 8−10579
  - Si, field effect characts. rel. to surface inhomogeneity 8−26933
  - Si p-n junction, microplasma instability, effect of space-charge field of mobile carriers 8−19140
  - Si:Au p-n junction, forward-biased, recombination current variation *(Rumanian)* 8−19131
  - TiO_2 rutile ceramics, capacitors, elec. cond. meas., anomalous conduction, ageing effects 8−14836
  - ZnO (0001) surface, hardness, electrolyte pH and bias voltage effect 8−47654

- **space-charge-limited conduction**
  - *see also limited space charge accumulation*
  - dielectric, radiation induced currents and cond. 8−30927
  - homogeneous insulator with traps, SCLC characts. 8−39122
  - insulator, extension of theoretical description of space-charge-limited currents 8−39128
  - insulator, inhomogeneity effects 8−19047
  - pentacene, evaporated film elec. cond. meas. for various temps., SCL 8−10584
  - pyrene-TCNE, vapour-grown cryst., transit-time meas. of photocarriers 8−39149
  - semiconductor, contact emission limited current with weak harmonic distortion of steady bias 8−39127
  - semiconductor-on-piezoelectric SAW convolver saturation phenomena 8−2358
  - n-CdTe, detector material, single crysts., activation energy anal. of defect levels 8−6321
  - GaAs anodic oxide film, direct current-voltage characts. 8−23186
  - GaAs:Cr, semiinsulating, I-V characts., photocond., Fermi level, and deep levels 8−39118
  - $Si_{12}Ge_{10}As_{30}Te_{48}$ chalcogenide glass threshold switch conductivity in high ohmic state *(Russian)* 8−43502
  - SiO_2 layers, thermally grown, undoped and ion implanted, elec. props. 8−23187
  - $Zn_{1-x}Cd_xS$ films, polycryst., reactively sputtered, MSM struct. obs. of dielec. props. and cond. mechanism *(French)* 8−14841
  - ZrO_2-CaO (12-19 mole%), AC elec. behaviour, 300-900°C, grain size, electrode material, and sintering effects 8−34649

- **space-charge limited devices**
  - *see also limited space charge accumulation*
  - No entries

- **space-charge limited solid state diodes** *see space-charge limited devices*

- **space-charge limited solid state triodes** *see space-charge limited devices*

- **space communication links**
  - *see also satellite links; space vehicles; telemetering*
  - extraterrestrial intelligence, telecommun. technology 8−32319
  - fibre optics tasks of NASA, review 8−42441
  - laser pumping, K-Rb arc lamp development 8−46646
  - outer planet research requirements 8−32318
  - solar pumped laser 8−46645
  - Space Shuttle/Orbiter S-band communication development problems 8−45197
  - Voyager planetary probes for outer planets, review 8−24435
  - Nd:YAG laser, appl. in space communications 8−28483

- **space groups**
  - *see also crystal atomic structure*
  - A15 compounds, elec. struct., 3-D k.p model 8−2405
  - centrosymmetric molecules in centrosymm. space group statistical anal. *(German)* 8−42940
  - crystal symmetry, 230 or 1651 space groups 8−30572
  - enantiomorphic space group identification by electron diffr. 8−9917
  - magnetic group, finite, irreducible tensor operators and Wigner-Eckart theorem 8−22678
  - magnetic space group, reality criterion for corepresentations 8−22677
  - $P2_1$, pairs, probability distribs., for two phase struct. semiinvariants 8−38643
  - $P2_1$, pairs, probability distribs. for two phase struct. semiinvariants 8−38641
  - $P2_1$, pairs, probability distribs. for two phase struct. semiinvariants 8−38642
  - sequences of maximal subgroups 8−9987
  - subgroups and changes of standard setting for monoclinic and triclinic space groups 8−9984
  - TTF-TCNQ, modulated phases in terms of four-and five-dimens. superspace groups 8−47310
  - two-phase and three-phase structure semiinvariants, estimation in $P\bar{1}$, via first representations 8−26473
  - $MgAl_2O_4$ spinel, optic frequencies, evidence for membership of F43m space group 8−48168
  - SiC (6H), piezoresist. meas. 8−2090
  - lett-SiC, space group refinement, P3 ml 8−47299
  - $Sr(NO_3)_2$, Raman and infrared spectra, structure of nitrate ion from space groups 8−43002
  - $ZnSeO_4.6H_2O:Cu^{2+}$, crystal struct. orientational degeneracy removal scheme, space groups, ESR spectra 8−47267

- **space heating**
  - district heating from Kaiseraugst nuclear power station 8−37462
  - district heating in Stockholm, nuclear power and oil-fired plant comparison 8−37458
  - district heating systems, combined generation by fossil fired and nuclear power plants 8−37457
  - duplex chemical system for storage and transport of heat from LWR, district heating 8−37460
  - low temp. heat extraction from nuclear power plants for district heating 8−37456
  - nuclear energy for combined electricity and district heating prod. 8−37459
  - nuclear power appl. to district heating systems 8−37454
  - PWR nuclear steam supply system for district heating and elec. prod. 8−37466

space research
see also artificial satellites; astronomy and astrophysics; space vehicles
- ALSEP-quasar differential very long baseline interferometry, for lunar position meas. 8−45245
- Ariane launch vehicle, model firing tests, acoustic field, heat flux, press. distrib. 8−4062
- astrometry from space vehicles, general principles 8−12082
- astrometry from space vehicles, limitations and prospects 8−12083
- astronautical congress, Anaheim, Calif., USA (Oct. 1976) 8−4054
- astronomy and space exploration, first 20 years *(Russian)* 8−16267
- astrophysical obs. by space vehicles (1966-76) *(Japanese)* 8−24417
- balloon space obs. (1966-76) *(Japanese)* 8−24419
- biophysics in space, Soviet research programme *(Russian)* 8−40354
- charged particle-beam interactions, space and laboratory plasma workshop 8−7821
- colonisation consequences 8−4187
- communications requirements for outer planets exploration 8−32318
- Earth observations by astronauts, potential appls. and results *(Russian)* 8−40795
- electron beam injection, beam-plasma discharge at low press. and mag. field strengths 8−42769
- electron beam interaction expts. planned for space shuttle 8−9796
- experimental precision, gravitation and general relativity 8−8333
- extraterrestrial intelligence, telecommun. technology 8−32319
- GEOS, dynamics response study mission 8−4072
- incoherent response method for space plasmas nonstationary processes, phase fluctuations effects 8−45184
- industrialization, prospects 8−36435
- inner planets exploration programme, US, telemetry data rate improvement appl. 8−32317
- International Sun-Earth Explorer, three-spacecraft programme for magnetosphere study 8−28485
- interplanetary H, Lyman α radiation meas. with absorpt. cell spectrophotometer 8−28519
- interplanetary low energy charged particle measurements, Compton-Getting effect complications 8−49269
- ion beam, fast, production technology, use in laboratory and space expts. 8−5889
- ionosphere, space vehicle obs. (1966-76) *(Japanese)* 8−24402
- Jovian atmospheric probe, mass loss, shape change, real-gas aerodynamic effects 8−4055
- Jupiter, magnetopause motion longit. control from Pioneer magnetopause crossings 8−49375
- Jupiter, orbiter probe mission, 1981, planning 8−4056
- LANDSAT, proposed parameters 8−7858
- mankind's future needs and aspirations in space, conf., Washington USA, 1976 Oct. 8−4078
- Mariner 10 expedition to Venus and Mercury *(Norwegian)* 8−49291
- Mars, Mariner 9 maps compared with canal system 8−16326
- Mars, Viking Landers and unsuccessfull search for life 8−49367
- Mars, Viking orbiter images IPL processing 8−20679
- Mars magnetic field, Mars 2 and 3 evidence 8−49361
- Mars magnetic field, Mars 3 evidence re-examined 8−49359
- Mars magnetic field, Mars 5 evidence 8−49362
- Mars magnetic field, Mars 5 evidence re-examined 8−49360
- Mars upper atmosphere, H Lyman α radiation meas. with absorpt. cell spectrophotometer 8−28519
- molecular shield for Shuttle Orbiter, effect of expts. on density distrib., model 8−22374
- NASA budget rel. to 1979 missions 8−45195
- orbiting ultrahigh vacuum facilities, appls. and characts. 8−7855
- otolith sensitivity assoc. with habituation to linear accels. capable of inducing motion sickness 8−44621
- outer planets, Voyager spacecraft mission 8−49289
- planetary atmospheres, results from space missions 8−32377
- planetary exploration, invited discourse before sixteenth general assembly of IAU 8−12076
- planetary exploration programme, US 8−32316
- plasma electron energy distrib. function meas. by probe *(Japanese)* 8−28474
- pulmonary function test automated apparatus for use on Space Shuttle 8−31912
- radiation safety, in high-altitude air traffic 8−44620
- rocket and satellite space obs. (1966-76) *(Japanese)* 8−28481
- Skylab, review of manned expts. in space 8−36429
- solar electric propulsion stage applications 8−4059
- Soyuz programme, analysis of Soyuz 1-18 achievements 8−12071
- space research programmes *(Japanese)* 8−24418
- Space Shuttle, use for science and engineering, Symposium, California (May 77) 8−36426
- spacecraft communication antennas, composite material for fabrication 8−4063
- spacecraft surface material performance modelling 8−4061
- Venus atmosphere, anal. by automatic interplanetary stations (Venera-4, 5, 6 and 8) 8−28520
- Venus rock density, method, equipment and results of Venera 10 meas. 8−28564
- Viking landers, locations and Mars physical ephemeris from radio tracking data 8−20685
- Viking mission, radio science investigations 8−20684
- Viking missions, example of planetary exploration 8−12076
- Viking missions, review of results *(Russian)* 8−20667
- Viking project, summary 8−20611
- Voyager cosmic ray detector system, energetic particle studies in outer heliosphere 8−24434
- Voyager imaging experiment 8−24427
- Voyager IR spectroscopy and radiometry experiments 8−24428
- Voyager low energy charged particle experiment 8−20618
- Voyager magnetic field experiment 8−24431
- Voyager mission objectives 8−24426
- Voyager photopolarimeter experiment 8−20616
- Voyager planetary probes for outer planets, review 8−24435
- Voyager planetary radioastronomy experiment 8−24433
- Voyager plasma experiment 8−20617
- Voyager plasma wave system 8−24432
- Voyager radio science experiment 8−24430
- Voyager UV spectrometer experiment 8−24429
- zero-gravity environment, possible expts. for films 8−12507

space science *see space research*

space-time configurations
see also general relativity
- $\mathcal{H}$-space formalism 8−21018
- absolute space-time theory 8−36921
- anisotropic fluid in spherical space-time, high freq. null radiation state 8−21016
- asymptotic symm., conformal struct. 8−21023
- asymptotically flat initial data for vacuum spacetimes 8−16702
- asymptotically flat space-times, approx. H-spaces 8−105
- Bianchi-type I universe, causally connected DeWitt's two vacuum states 8−12608
- black hole, slow rot., weakly charged, space-time and physical fields perturbs. *(Russian)* 8−36634
- black holes, Hawking's effect, quantum field theory applied in curved space-time 8−12268
- black holes, thermodynamics and space-time distortion 8−8041
- black holes and particle detectors 8−12287
- Bondi-Metzner-Sachs group, lifting of projective representations 8−21028
- Carter separable spacetimes, characteristaion 8−36867
- causality violation region, positive- and negative-energy states 8−29024
- causally continuous closed universes, props. 8−29011
- conformal Killing tensors in Riemannian space 8−4534
- conformal symm. breaking, quantisation in curved space-time 8−41434
- conformally flat space-time, space tensors, trace anomalies 8−12623
- conformally flat space-times of divergence free Riemann tensor 8−41220
- conformally flat spacetime, singularities 8−16703
- constant curvature spaces, Kepler problem and geodesic flows theory 8−40807
- constant mean curvature and canonical time, concept generalisation 8−98
- cosmic time functions, smoothing and extending 8−21020
- Cosserat continuum in space with torsion *(Russian)* 8−24715
- covariant quantum field theory, geometric quantization theory appl. curved space-time 8−12637
- curved space path integral, quantal Lagrangian and Hamiltonian for harmonic oscillators system 8−41193
- curved space-time, post geometric optics, dispersive effects of EM polaris. 8−96
- D type perfect-fluid solutions of Einstein's equations, classification 8−21019
- de Broglie wave packet, nondispersive 8−36858
- de Sitter space, dynamics of free particle systems 8−20958
- de Sitter space, quantised fields 8−92
- De Sitter symm. space, gravit. interaction and spinning electron eqn. 8−103
- de Sitter universe and mechanics 8−21034
- degenerate spacetime class, props. 8−36902
- Dirac field in curved spacetime, geometrodynamical superHamiltonian and supermomentum 8−45518
- dual charged solution in curved space time, Dirac quantisation, SU(2)×U(1) gauge theory 8−12827
- Einstein's eqns. for dust, gravit. collapse and radiation 8−99
- Einstein's field eqns. on curved background metric, approximation method 8−109
- Einstein-Maxwell fields with cosmological constant, null strings 8−21033
- Einstein-Maxwell theory, energy-momentum tensor, invariance transforms. 8−21036
- electrodynamics *(Italian)* 8−12840
- electrodynamics in general relativity 8−45471
- electron pair production by photons in constant electromagnetic field in general relativity 8−8568
- EM fields of embedding class one 8−36914
- evolution equations for Killing fields, vac. and Einstein Maxwell space-times 8−8279
- extended conformal spacetime interactions and dynamical groups of elementary particles 8−8290
- fibre bundles, almost complex manifold approach to elementary particles 8−12915
- fibre bundles, internal affine symm. of Dirac fields 8−24697
- Finsler spaces, curvature tensors P_{hijk}, S_{hijk}, special conditions, Ricci tensors 8−12625
- frequency solutions of massive vector field eqns. in curved static space-time 8−36909
- gauge theory, space-time inversion, classical approach 8−41416
- general relativity, space-like infinity, conformal structure 8−8293
- general relativity canonical formulation by analogy with elementary particle string model 8−8287
- general relativity conference, Trieste, Italy, 1975, July 8−8285
- geodesic property of general space time *(French)* 8−16701
- geometric quantisation and general relativity 8−8288
- geometric struct. of charged fields, Aharanov-Bohm effect 8−28994
- geometry of spacetime 8−36895
- gravitation, canonical many-time quantisation 8−8328
- gravitation, metric-affine theory as gauge theory of affine group 8−32746
- gravitation and inertia in general relativity 8−8317
- gravitational dual charge 8−36906
- gravitational energy, torsion of spacetime included in a quadratic Lagrangian 8−8316
- gravitational field asymptotic flatness of spacelike infinity 8−45532
- gravity in ray gauge 8−8313
- H space, the manifold of complex asymptotically shear free light cones 8−8292
- homogeneous isotropic space-time, with const. curvature, wave eqn. of nonrelativistic spin-s particle, Galileian limit 8−32740
- IR regularisation of massless scalar free field in two dimens. space time, Lorentz expansion 8−12818
- isolated systems, integral conservation laws, privileged vector fields method, general relativity, external Kerr metric *(German)* 8−16698
- Kerr geometry, wave mechs. of electrons 8−12622
- Kerr space-time, EM quadripotential of point change at rest on symmetry axis *(French)* 8−45541
- Kerr-Newman geom., equatorial circular geodesics 8−4533
- Killing horizon as event horizon, a necessary condition in general relativity 8−8295

space-time configurations continued
Killing tensor quantum nos. and conserved currents in curved space 8−29249
Lemaitre Universes, Jeans instability 8−12445
locally flat space-time, quantised metric, spontaneous dilatation asymm. 8−16713
magnetic symmetry, improper symm. and Neumann's principle 8−38646
massless scalar and spinor field theory in curved space-time 8−21321
matter field space-times, timelike symm. props. 8−24698
maximal surfaces in closed and open spacetimes 8−8294
Maxwell fields, time depend., in stationary geometry 8−8308
memory geometric-dynamic model in four-dimensional pseudoRiemannian space *(Russian)* 8−27923
metrical forms which admit [(11)(11)] Killing forms 8−32738
Minkowski space, causal logic 8−16739
Minkowskian spacetime, asymptotic, rel. to asymptotically simple spacetime 8−29019
N-type vacuum space-times as special functions in C^2 8−21021
naked singularity solutions, gravit. collapse with axial symm., geodesics, particle orbits 8−41215
particle creation in curved space-time, covariant treatment 8−12443
path integration in phase space 8−128
path structures on manifolds, analytic characterisation 8−4535
Pauli-Villars regularisation trace anomalies 8−45548
Peirce's theory of the geometrical structure of physical space 8−28906
periods on manifolds, quantisation, gauge, comments on Kiehn's work 8−8508
projective symmetries of dynamical systems, infinitesimal symm. transforms of vector field 8−32650
pseudo Riemannian manifold, maximal submanifold props. 8−12624
quadratic Lagrangian in space with torsion *(Russian)* 8−24714
quantum field theory in de Sitter space, renormalisation by point-splitting 8−29035
quantum topology, spacetime code 8−36859
quasispherical spacetimes of Szekeres, collapse without gravit. radiation 8−28510
quaternion limitations on higher dimension spacetimes for unified field theories 8−45545
radiation damping in general relativity 8−8310
Randers space of scalar curvature 8−4469
red-shift effect, local, relativistic 8−28788
Reissner naked singularity, spontaneous pair creation 8−24990
Reissner-Nordstrom metric, charged black holes 8−12277
Reissner-Nordstrom spacetime, spin coeffs. and electromagnetism 8−8309
rescaling problem of space-times admitting groups of conformal motions 8−36920
Riemann curvature tensor and closed geodesic paths, for teachers 8−24600
Riemannian manifolds, quantisation in spaces of constant curvature 8−12602
Riemannian metric description, of gravit. and EM interactions 8−36904
Riemannian struct. on states of quantum-like system 8−67
Robertson-Walker and Petrov G_4 VIII cosmologies, general relativistic kinetic theory 8−24586
Robertson-Walker metric, origin of matter in universe 8−20918
Robertson-Walker spacetime, path integral quantisation and cosmological particle prod. 8−12440
rotating disc experiments, absolute space-time theory 8−36823
rotating star, interior Kerr metrics, tests 8−28666
Schwarzschild field, Papapetrou eqn. motion of spinning particles, Wigner-Lubanski integral 8−108
segmented structures, space-time point segment 8−32
self-dual Yang-Mills fields, complex, in Minkowksi space time 8−41424
singular holonomy group 8−41206
singular space-times, classification scheme for boundary points 8−24699
singularities 8−8291
solution generating theorem, appl. to general relativity 8−21027
space like hypersurfaces of const. mean curvature 8−21025
spacially homothetic space-times, 3-surface intrinsic curvature 8−29018
spatially homogeneous universes 8−8318
spatially homothetic, intrinsic scalar curvature *(French)* 8−36893
spin half field theory in Rindler space, Green's functions 8−12826
spinless EM charge, geom. theory 8−45533
spinor field geometrodynamical superspace, quasi-catastrophe theory 8−41137
spinor gauge field in spinor space-time formalism 8−41401
static spherically symmetric stellar models, admissible coord. system 8−28665
sublcass of vac. metrics admitting Killing motion 8−36911
subluminal and superluminal transformations in six dimens. special relativity 8−41154
superluminal and subluminal causal transformations through transformations of metrics 8−28943
superluminal phenomena and frames in special and general relativity 8−36825
supertwistors and conformal supersymm. 8−29015
Taub's metric non-empty space-times *(French)* 8−45527
tensors, metric and Ricci, for D-type spacetime class 8−36903
time quantisation, discrete space-time model 8−20999
time varying inhomogeneous media, space-time considerations for Doppler effects 8−20965
Tomimatsu Sata space-times, Einstein eqns. soln., effective pot. for equatorial motion 8−32621
torsions in Riemann Cartan space times, U_4 reinterpretation, gravit. radiation solns. 8−45537
torsions in Riemann Cartan space-times, physical props., torsion classification scheme 8−45538
torsions in Riemann-Cartan spacetime, U_4 reinterpretation of null EM Einstein eqns. solns. 8−41212
translations as gauge transformations using fibre bundles formalism 8−12808
twistors and SU(2,2) induced representations 8−8229
vacuum tunnelling of gauge theory in Minkowski space 8−41425
Wheeler's superspace, correspondence eqns., variational principles 8−24696
whimper singularities, Newman-Penrose formalism 8−41205

space-time configurations continued
world time, reference systems, invariant content *(Russian)* 8−45530
Yang's gravit. field eqns., reduced spinor formalism *(Chinese)* 8−119
Yang-Mills instantons, space-time topology 8−8522

space vehicle power plants
air-scooping nuclear-electric propulsion for advanced orbital transportation missions 8−45188
reactor hybrid-organic Rankine cycle power system 8−8993

space vehicles
see also artificial satellites; rockets; space vehicle power plants
aeromanoeuvering orbit transfer vehicles, for space transport system 8−4060
astronautical congress, Anaheim, Calif., USA (Oct. 1976) 8−4054
astrophysical obs. by space vehicles (1966-76) *(Japanese)* 8−24417
bidirectional reflectance and transmission for optical diffusers use in space projects 8−36438
cruise engines optimal thrust in interorbit flights, analytical determ. 8−4069
Earth-Mars-Venus orbital transfer minimal flight time calc. 8−4090
HELIOS 1 and 2 and STIP Intervals I and II participation 8−49295
Helios 1 and 2 mission, general aspects 8−20615
interstellar travel, optimum transfer in uniform motion 8−20614
ionosphere, space vehicle obs. (1966-76) *(Japanese)* 8−24402
Jupiter orbiter, nuclear-electric propulsion, fast numerical analysis 8−45189
location determ. on planetary surface from Sun's azimuth meas. 8−49287
long duration exposure facility, utilisation of vacuum developed in wake zone 8−36433
lunar polar orbiter, NASA 1980 global survey study 8−4064
Mariner 10 expedition to Venus and Mercury *(Norwegian)* 8−49291
Mariner 2, data anal. rel. to solar wind protons cooling 8−40789
Mars 4-7 space probes, meas. with H absorption-cell spectrophotometer for Lyman α radiation 8−28519
Mars entry vehicle, lifting spacecraft control and ballistics 8−16264
Mars rover laser rangefinder accuracy estimate 8−24437
mission analysis mathematical background, orbit selection and mission constraints 8−40790
motion in vicinity of collinear libration point, semianalytical method 8−4066
motion in vicinity of collinear libration point, statistical estimates in control problem 8−4067
navigation, celestial reference coord. system 8−49346
navigation, planetary mission, Givens transformation techniques for Kalman filtering 8−4473
nosetip ablation holography in 10 MW plasma arc facility 8−20621
nosetip recession meas. using implanted radioactive sources, error analysis 8−16272
optimal attitude control of descent to surface of atmosphere-less planet 8−16265
optimum low-thrust multiple rendezvous between inclined orbits 8−4086
orbital transfer, optimal, low-thrust, limited power, elliptical orbits 8−4087
perturbed motion about centre of mass, element formulation 8−41150
Pioneer 10 and 11 obs. of solar wind streams and shocks 8−49283
Pioneer 11 post-Jupiter trajectory midcourse manoeuvre sequence for Saturn targeting options 8−7857
Pioneer Venus 1978, prospects 8−36436
planetary atmosphere probes, flight characts., scale model expts. 8−7854
radiation protectio design considerations for man in geosynchronous orbits 8−28096
re-entry vehicle acoustic/vibration environment expt. 8−20620
re-entry vehicle flight tests, boundary layer acoustic meas. 8−16275
relative motion around orbiting station, guidance method 8−16263
robot probes for hostile planetary atmospheres and surfaces 8−4065
Salyut-4, equipment for measuring X-ray emission from extraterrestrial sources 8−28521
Shuttle payload preparation at Kennedy Space Center 8−12073
Shuttle programme details *(Norwegian)* 8−49292
Skylab, spacecraft-produced neutron fluxes meas. 8−28486
solar electric propulsion stage applications 8−4059
Solar Maximum Mission GSTDN/TDRSS compatible RF system 8−45198
Soyuz 22 and MKF-6 multispectral camera 8−40794
Soyuz programme, analysis of Soyuz 1-18 achievements 8−12071
Soyuz-Apollo launching, lower ionosphere disturbances obs. 8−45110
Space Shuttle, first free flight test 8−7860
Space Shuttle, history, principle features and uses 8−36427
Space Shuttle, long duration exposure facility 8−36432
Space Shuttle, methods of improving vacuum for expts. 8−32825
Space Shuttle, operational features, review 8−36428
Space Shuttle, orbital environment 8−36430
Space Shuttle, use for science and engineering, Symposium, California (May 77) 8−36426
Space Shuttle external insulation, acoustic emission inspection 8−16276
Space Shuttle lightning current distrib., circuit modelling and exptl. verification 8−49293
Space Shuttle orbiting molecular beam laboratory 8−35242
space shuttle reentry, unsteady nonequilib. chemically reactive flow, parallel computation 8−47065
Space Shuttle/Orbiter S-band communication development problems 8−45197
space stations for the international future, review 8−32322
space-shuttle thermal-protection coating, testing techniques at 870°C 8−35604
Spacelab, general design and operation 8−12072
Spacelab, holographic interferometry feasibility study *(German)* 8−33711
Spacelab, material processing facilities and expts. 8−36431
Spacelab, materials processing 8−35295
Spacelab, use of ion beams in near-surface anal. 8−35755
Spacelab pallet, C fibre reinforced plastic appl. 8−45186
starship, single-stage constant-power, optimal exhaust vel. programming 8−20613
station-keeping manoeuvre, operational requirements and geometry 8−45180
surface material performance modelling 8−4061

space vehicles continued
- thrust limited relativistic, interstellar drag effects on minimum time trajectory 8−49286
- thrust-aided sub-orbits 8−45181
- transpiration-cooled system, thermal response in radiative and convective environment 8−32323
- Venera 10, Venus rock density meas. method and results 8−28564
- Venera 9 and 10, ion-flux characts. meas. in solar wind/Venus interaction region 8−4051
- Venera 9 and 10, meas. of interplanetary background due to low-energy particles 8−4049
- Venera 9 and 10, results of two-freq. radioscopy of Venus daytime ionosphere 8−4129
- Venera-4, 5, 6 and 8, gas anal. equipment 8−28520
- Venus entry probes and orbiters, spectral photometric data rel. to cloud layer optical model 8−4130
- Viking lander biology instrument 8−49347
- Viking landers on Mars, longitude determ. 8−16327
- Viking orbiters, scientific missions 8−20612
- Voyager, receiver for measuring LF planetary radio emissions 8−4075
- Voyager cosmic ray detector system, energetic particle studies in outer heliosphere 8−24434
- Voyager imaging experiment 8−24427
- Voyager IR spectroscopy and radiometry experiments 8−24428
- Voyager low energy charged particle experiment 8−20618
- Voyager magnetic field experiment 8−24431
- Voyager mission objectives 8−24426
- Voyager photopolarimeter experiment 8−20616
- Voyager planetary probes for outer planets, review 8−24435
- Voyager planetary radioastronomy experiment 8−24433
- Voyager plasma experiment 8−20617
- Voyager plasma wave system 8−24432
- Voyager radio science experiment 8−24430
- Voyager reconnaissance missions to Jupiter and Saturn *(German)* 8−20619
- Voyager spacecraft, journey to outer planets 8−49289
- Voyager UV spectrometer experiment 8−24429
- Voyagers 1 and 2, missions and prospects 8−7859

spacecraft *see space vehicles*

spallation (nuclear) *see nuclear spallation*

spark chambers
- *see also position sensitive particle detectors*
- amplifier-discriminator for magnetostriction spark chambers 8−868
- emulsion stack connected with ionis. calorimeter for high energy cosmic ray obs. 8−25386
- flash chamber calorimeter, fine grain 8−37496
- gamma ray spark chamber telescope for range 10-100 MeV 8−36459
- hybrid spark chamber for radioisotope distrib. meas. 8−46227
- low mass wire film spark chambers, capacity readout 8−29715
- magnetic detector, SPEAR, PbO-SiO$_2$ wall addition 8−37494
- magnetic large acceptance spectrom. using wire chambers 8−46207
- MEA, magnetic detector at Adone 8−33367
- missing data reconstruction in principal component anal. 8−17537
- narrow gap chambers, effect of high gas density and energy control on spark width 8−33390
- parallel plate, efficiency characteristics calc. 8−33393
- parallel recording system for magnetostrictive spark chambers 8−867
- photographs analysis with PA-BESM-4 system, exchange apparatus 8−9045
- plasma memory and read-out *(French)* 8−46223
- rectangular electrode frame prestressing and deformation 8−29708
- wide-gap chamber for gamma-ray astronomy, Soviet-French design 8−17503
- wire type, operation in extreme conditions 8−5094

spark counters
- corona counters, exptl. results *(Slovak)* 8−33388
- wide gap, π^0 photoprod. on ^{4}He meas. 8−29694

spark erosion machining *see spark machining*

spark-gap voltmeters *see voltmeters*

spark gaps
- COMBI SPARK, single or multiple spark gap 8−42401
- electric breakdown in gases, optical investigation *(German)* 8−30497
- high-voltage pulse generator, controlled spark gaps 8−5965
- needle gaps, spark voltage charact. *(Korean)* 8−1931
- rod-rod and rod-plane gaps, influence of positive and negative impulses on breakdown voltage, obs. *(German)* 8−5981
- vertical single-pole earthed sphere gap, voltage measurement influence of neighbouring surfaces *(German)* 8−29880

spark machining
- carbide, effect of mech. props. on erosion resist. under spark machining conditions 8−11421
- complex profiled surface alloying, automatic electrode feeding *(Russian)* 8−19936
- computerised control, conference New Delhi, India (1977) 8−4590
- dielectrics break-up, mathematical model, non-ore materials milling appl. *(Russian)* 8−27653
- electroerosion, anode dissolution by pulsed current *(Russian)* 8−27652
- electrospark coating formation factors *(Russian)* 8−19908
- metal electrospark deposition mechanism regularities *(Russian)* 8−19932
- metallic powder, spark erosion prep. 8−27452
- metallic surface alloying methods *(Russian)* 8−19931
- metallic system, thermodynamically unstable, produced by spark discharge *(Russian)* 8−19933
- solid-alloy-liquid-metal systems, surface layer spreading and formation kinetics *(Russian)* 8−27668
- steel, unalloyed, electric metallisation, corrosion resistance tests *(Russian)* 8−19935
- thin film microstructures, with and without stencils *(Russian)* 8−27651
- Fe$_{72}$Ni$_8$P$_{13}$C$_7$, glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- Mo-Cu, electrical erosion resistance during electrospark machining 8−35531
- Pd$_{781}$Gi$_{35}$Si$_{164}$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- Ti, surface layer alloying element distrib. *(Russian)* 8−19934
- TiN-AlN, composite, erosion resist. in electron stream 8−11365

spark machining continued
- W-Cu, electrical erosion resistance during electrospark machining 8−35531
- ZrN-AlN, composite, erosion resist. in electron stream 8−11365

sparks
- *see also electric breakdown; lightning*
- air, electric breakdown between coaxial cylinders in crossed elec. and mag. fields 8−5963
- calorimeter for routine use 8−37010
- COMBI SPARK, single or multiple spark gap 8−42401
- dielectric spark discharge, conditions for building up compression rings 8−38493
- discharge, appl. to multielement spectrochem. anal. 8−40103
- electrical field of laser spark ignited near conducting target *(Russian)* 8−9884
- electronically controlled spark source, for anal. emission spectroscopy 8−16857
- high voltage high frequency spark, with electronic control, for emission spectral anal. *(Russian)* 8−35771
- high voltage unipolar spark discharge, spectrochem. anal. *(Russian)* 8−15750
- high-voltage spark source, characterisation, computational method 8−45717
- laser radiation absorpt. mechanism in deionis. stage *(Russian)* 8−22583
- laser spark, photographic study by picosecond techniques 8−42826
- light sources, reproducibility for emission spectroscopy 8−3429
- pressure depend. of spark constant 8−30504
- repetitive electric discharge, time-gated spatially resolved spectrometric obs. 8−45727
- silhouette photography, high-speed, of small biological subjects 8−44743
- sliding spark capillary discharge and electron beam device, physical props. 8−5974
- small spark form. mechanism 8−18469
- spark tracing, high frequency, application in engineering and aerodynamics 8−38434
- underwater, current pulse characts. in RCl circuit 8−9886
- underwater, induced cavity collapse 8−42636
- vacuum spark, electron density, interferometric meas. 8−5962
- Cu-Al (0.5-17.6 at.%), mol. ions in spark source mass spectra 8−44427
- He-Ne mixtures, spark channel formation 8−1936
- N$_2$, electric breakdown between coaxial cylinders in crossed elec. and mag. fields 8−5963

spatial filters
- acousto-optic modulator, improved contrast using spatial filtering 8−9448
- apodisation filters, atm. turbulence effects on central irradiance in Fraunhofer diffr. by slit apertures 8−25796
- apodiser, optimum, simulation by binary filters 8−5539
- background noise attenuation, spectrum anal., geological appl. *(French)* 8−9338
- binary filters simulating apodizers, expt. results 8−46780
- coherent optical feedback technique, multiplicative disturbance suppression 8−22094
- complex controllable nonholographic image filter production and implementation *(Russian)* 8−46516
- complex signal addition by matched spatial filtering 8−29905
- computer-generated hologram spatial filter for large object formats, interpolation 8−22099
- cytological preparation image processing, filter construction *(German)* 8−36026
- differentiation by spatial filtering 8−1171
- Fourier plane spatial filtering, real time operations on spectral and temporal envelopes 8−22093
- generalised sampling theorem for Dirac Δ functions, appl. to computer-generated transparencies 8−42284
- hologram, computer generated, as space-variant optical elements 8−37856
- holographic, optical images analysis appl. *(Russian)* 8−37809
- holographic matched filter, increasing information capacity 8−25815
- hybrid image processing 8−25810
- image enhancement for objects embedded in scatt. media, mammary growth diagnosis appl. 8−40288
- image reconstruction by modified back projection methods, reconstruction error determ. 8−33682
- interferential spectrometry, matched filtering, real time spectral recognition 8−37822
- multiple image formation by sampling Fraunhofer diffr. patterns 8−1334
- noise problems in image processing by spatial filtering 8−37817
- noisy blurred image restoration by smoothing spline filter 8−33679
- nonlinear, adaptive spatial filter for image classification *(Russian)* 8−42292
- nonlinear, two-dimensional high accuracy signal processor 8−46532
- optical processor, real-time, for pattern recognition of biological specimens 8−40454
- phase contrast objective, point spread functions of annular phase filters 8−25805
- phase filter with specified pulse response modulus, design *(Russian)* 8−13813
- pseudo colour equidensitometry, analogue optical method 8−32903
- real-time filtering of cytological preparations *(German)* 8−36025
- rotating wedge spatial filter, pattern recognition of biological speciemens (algae) 8−33837
- schlieren system, phase object projection, imaging characts., recording conditions 8−25977
- speckle reduction in coherent imaging, two-step process 8−37819
- square root, phase image differentiation with linear intensity output, theory 8−33839
- straubel apodisation filter systems, effects of defocusing on point spread function 8−25804
- Straubel apodisation filters, for straight edge coherent imagery 8−25808
- volume hologram representation of space-variant systems 8−33696

spatial orientation control *see attitude control*

spatial variables measurement
- *see also angular measurement; area measurement; curvature measurement; diameter measurement; displacement measurement; distance*

spatial variables measurement continued
measurement; height measurement; length measurement; level measurement; particle size measurement; position measurement; surface topography measurement; thermal expansion measurement; thickness measurement; volume measurement
helical motion of rigid body, meas. by double exposure speckle method 8−16775
optical fibre dimensional nonuniformity, automatic measuring techniques *(Japanese)* 8−37982
US shadow immersion exam. of defects, dimension determ., error anal. 8−44305

speakers *see loudspeakers*

special purpose computers
see also process computers
biomedical computer, low cost 8−36045
heart rate on-line statistical anal. 8−35984
nuclear medicine, buyer's guide to current performance and future promise 8−48883
scientific calculating system with number-oriented microprocessor 8−36983

special relativity
see also Lorentz transformation
accelerated observer, proper reference frame and local coords. 8−42
appearance of objects moving at relativistic speeds, computer programs 8−12484
causality, problems in theory of tachyons 8−28945
causally connected events, obs., means of perception 8−28944
Cherenkov losses of relativistic neutron in conducting medium 8−5410
classical interacting fields, virial theorem and stability of localised solns. 8−21342
classical null strings, free Nambu strings 8−12560
clock problem, perception and meas. by accelerated observer 8−4482
clock synchronisations comparison, first order tests of special relativity 8−44
Coulomb law and relativity theory in electromagnetism, Horak method approach *(Polish)* 8−13639
discrete spectrum of singular velocities 8−8239
Doppler effect, for teaching 8−24609
Doppler effect expt. to test special relativity 8−20963
Einstein's 1907 essay, discussion 8−12454
Einstein's relativity paper (1905) and the electromagnetic world picture 8−16616
Einstein's velocity addition theorem using invariant double ratio 8−36822
Einstein relativistic two-particle systems 8−41152
Einsteinian vel. addition and phase vel. 8−16665
elasticity of dissipative media, wave propagation modes 8−4485
electrodynamics of moving media, drag effect involving dispersion term *(Chinese)* 8−12558
electron currents in vac. relativistic generalisation of Child/Langmuirs laws *(German)* 8−36843
EM plane wave propagation in moving dielectrics, contradiction with Einsteinian addition of velocities, geometric resolution 8−24673
extended relativity, absorpt. of tachyons 8−32672
fundamentals of relativity, general, special and cosmological, book 8−29007
harmonic oscillators, relativistic two-body interaction, exactly soluble system 8−16955
light velocity meas., Marinov's expt. 8−32673
light-like motions of particles in gravitational fields 8−4480
mass velocity dependence without momentum principle, for teaching 8−24613
noninertial systems, synchronization of clocks 8−24665
optical tests, second order 8−20964
particle spectra line shapes after γ emission in flight 8−41665
relative simultaneity, empirical determ. 8−16642
relativistic synchronization procedures, geophysical tests in rotating frame 8−24662
restricted relativity theory, vel. of light postulate 8−41153
Riemannian metric description, of gravit. and EM interactions 8−36904
rotating disc experiments, absolute space-time theory 8−36823
rotating frames anal. 8−36824
simultaneity and clock synchronization, test theory of special relativity 8−43
speed of light independence of source vel. extraterrestrial test 8−8241
spinning tachyons as particle constituents, free spinning point particle theory 8−41155
subluminal and superluminal transformations in six dimens. special relativity 8−41154
superluminal and subluminal causal transformations through transformations of metrics 8−28943
superluminal phenomena and frames in special and general relativity 8−36825
superluminal transformations 8−8240
time, the concept in physics 8−28946
time quantisation, discrete space-time model 8−20999
time varying inhomogeneous media, space-time considerations for Doppler effects 8−20965
variations in light velocity due to motion of earth 8−24666
Vavilov-Cherenkov effect in motion of source with velocity exceeding velocity of light in vacuum *(Russian)* 8−12582
zero-rest-mass fields, boundary conditions at past null infinity 8−24661

specific gravity *see density*

specific gravity measurement *see density measurement*

specific heat
see also Debye temperature; Gruneisen coefficient; specific heat of gases; specific heat of liquids; specific heat of solids
calorimeter, adiabatic heat capacity small sample low temp., with automatic data acquisition system 8−12697
electron gas, one-dimens., with backward scatt., soliton Green's functions 8−10386
epoxy resin ED-5, specific heat during solidification *(Russian)* 8−38816
gas-particle mixture, shock wave structs., particle specific heat effect 8−14072
Heisenberg magnet, relaxation-shape function, specific heat series 8−31036

specific heat continued
molecules, without internal rot., ground state heat capacity and entropy MINDO/3 calc. 8−33450
negative specific heat paradox, astronomical and physical appls. 8−9557
random magnet, Ginzburg-Landau model 8−10704

specific heat at constant pressure *see specific heat*

specific heat at constant volume *see specific heat*

specific heat of gases
diphenyl mixtures, press. depend. at 298K 8−42702
free-electron gas, n-dimens., specific heat and density of states 8−12466
polyatomic gas viscosity related to Cp and molal vol. 8−34248
steam-air mixture, condensation, transport and thermodynamic props. *(Japanese)* 8−34251
H_2, rot. energy, specific heat, temp. depend. determ., demonstration 8−12465
WO_3, force field, normal coord. anal., kinetic consts. method, thermodynamic props. 8−25504
Xe lamp, pulsed, effect of gas heat capacity on characts. 8−42838

specific heat of liquids
alkali nitrates, molten, pVT data, internal energies, eqn. of state 8−43098
binary liquid mixtures, nonassociated, thermodynamics 8−18797
configurational heat capacity, correlation formula, corresponding states method 8−30766
configurational properties near glass transition 8−26662
1,2-dichloroethane+benzene(toluene)(p-xylene), liq., molar heat capacities 8−18787
ethanol, plural glass-transitions, thermodynamic functions 8−38820
n-hexane, superheated liq., US wave vel., adiabatic compressibility, heat capacity 8−2198
p,n-hexyloxybenzylideneamino-p′-chlorobenzene, liq. cryst., sp. ht. meas. 8−22831
nonelectrolytes, aqueous, excess heat capacity, H bonding 8−3362
organic compounds, partial molar heat capacities, in aq. solns., additivity schemes calcs. 8−22861
perfluoromethylcyclohexane-tetrachloromethane, specific heat temp. depend., critical composition mixture near critical temp. 8−26689
triethylamine-water, near crit. soln. pt., sp. ht. at const. press. and crit. conc., −1-22°C 8−38847
viscous liquid, glass transition, mol. mechanism for thermodynamic second order transition 8−2237
water, transport and thermodynamic props. *(Japanese)* 8−34251
Ba, thermophysical properties, up to 1800K 8−30767
Bi, U. vel. and thermophysical props. meas., 500-1000K 8−38778
Cd, US vel. and thermophysical props. meas., 500-1000K 8−38778
Cd-Bi, US vel. and thermophysical props. meas., 500-1000K 8−38778
cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
DI, thermodynamic properties 8−47517
D_2O, eqn. of state, up to 380°C and 1000 bar, derived functions 8−26655
H_2, perturbation theory and quantum effects, thermodynamic props. and quantum stat. corrections *(Russian)* 8−22867
HI, thermodynamic properties 8−47517
HNO_3, aq. soln., heat capacity at 298.15K 8−3364
^3He, superfluid, heat capacity, spin susceptibility, NMR and viscosity *(Danish)* 8−22921
^3He superfluid, phys. props. *(Danish)* 8−2325
^3He, superfluid, strong coupling effects 8−47626
^3He-He II mixture, dil., possibility of obs. of weak bound state for ^3He quasiparticles 8−22925
^4He, confined film near T_λ, sp. ht. scaling 8−38894
^4He, superfluid, thermodynamic properties, at very low temps., rel. to interacting boson systems 8−2320
Hg, P-V-T relations for temperatures of 40 to 240°C and press. up to 1400 kg cm^{-2} 8−6140
KNO_3, aq. soln., heat capacity at 298.15K 8−3364
Mo, liquid, thermophysical measurements up to 4300K 8−43136
$NaNO_3$, aq. soln., heat capacity at 298.15K 8−3364
Sn, US vel. and thermophysical props. meas., 500-1000K 8−38778
Sn-Bi, US vel. and thermophysical props. meas., 500-1000K 8−38778
Ta, heat capacity, 10^8-10^9 K s^{-1} pulsed heating, (2-4)$\times10^3$K 8−14473
Ta, liquid, thermophysical measurements up to 7500K 8−43136
TcF_6, heat capacity, entropy Gibbs energy, 2.23-350K 8−38852

specific heat of solids
see also Schottky anomaly
alkali halides, anomalous sp. ht. Ising model and Monte Carlo calcs. 8−47989
alkali metal, bulk properties, computer simulation 8−30729
alkali metals, anharmonic effects in thermodynamics *(Russian)* 8−43145
alkali metals, lattice sp. ht. and thermal vibrs. 8−30768
alloy, dilute, sp. ht., electronic, mass renormalisation and band density of states influences 8−43137
amorphous dielectric solids, low energy atomic motions and anomalies at low temps. 8−30724
amorphous semiconductor, non-polar, mobility gap temp. variation calcs. 8−10339
anharmonic crystal, thermal expansion contribution to free energy and heat capacity to order λ^4 8−6138
antiferromagnetic degenerate semiconductor, thermal and mag. props. 8−19224
benzil, heat capacity near phase transition 8−2250
borides, ternary, struct. classification, props., book contrib. 8−47309
chromocene, heat capacity meas., phase transitions 8−38853
cryolite, hydrothermal synthesis of large synthetic single crystal, props. 8−19654
cubic crystal, surface contribution to low temp. sp. ht., elasticity theory 8−18790
cyclohexane, thermal cond. and sp. ht. under press. 8−22906
dibenzene chromium, heat capacity meas., phase transitions 8−38853
Eccobond solder 56 C, 1.3-300K 8−16804
epoxies, Epo-Tek H31LV, 4 to 25K, and H62, 4 to 40K 8−43138
ethanol, plural glass-transitions, thermodynamic functions 8−38820
ferroelectric, anomalous sp. ht. Ising model and Monte Carlo calcs. 8−47989
ferrous-formate dihydrate, mag. system model, mag. sp. ht. *(Japanese)* 8−31091

specific heat of solids continued
filled samples, sp. ht., density 8−5645
frozen food, hydrostatic press. effect on phys. props. 8−26706
glass ceramic, low temp. heat capacity, glassy and devitrified states 8−22862
L(+) glutamic acid halogen acid salts, crystallographic, optical and calorimetric meas., halide effect 8−34505
graphite, Poco AXM-5Q1, thermal and elec. transport props., 4-3000K 8−6375
graphite intercalation compounds with alkali metals and halogens, physical props. 8−31050
graphite intercalation compounds with K and Cs, low temp. specific heat meas. and XPS 8−26693
graphite intercalation compounds with K and tetrahydrofuran *(French)* 8−26692
graphite-nitrate residue compounds, phys. props. 8−10199
heat capacity meas. low temp., mag. fields to 4.5 T 8−16798
Heisenberg ferromagnet, with single-ion anisotropy, correlation functions calc. 8−31076
Heisenberg model, critical behaviour, high temp. susceptibility and internal energy series 8−34987
Hubbard model, one-dimens. half-filled band Holstein-Frolich modified, transport props. 8−23237
ice, VII to VIII transition, lattice model 8−10187
inorganic compounds, empirical estimation, 298K to melting point 8−43140
intermediate valence compounds, mag. susceptibility and sp. ht., mean-field theory of periodic Anderson model 8−47937
Ising antiferromagnet, BCC, in mag. field, Monte Carlo calcs. 8−31032
Ising ferromagnet, FCC, cluster variation approx. 8−27049
Ising model, dipolar antiferromag., phase transition at negative absolute temp. *(Russian)* 8−43594
Ising model, random bond, susceptibility and specific heat of glass like phase, cumulant expansion 8−6533
Ising model, three dimensional, free energy, lower bound approx. 8−10707
Ising system, cubic $S={}^1/_2$ model, lattice dimensionality crossovers anal. 8−39347
Ising system, periodically layered, cooperative effects in crit. phenomena in sp. ht. 8−23284
low temperature depend. of elec. resist., mag. suscept., heat capacity, Hall const. *(Russian)* 8−30900
mag., heat capacities refrigerant materials, low temp. 8−37012
manganese formate dihydrate, 2-D Heisenberg antiferromag., sp. ht. 8−14965
melting, dislocation model 8−26657
metal, degree of deform. effect on thermophys. props. at high temps. 8−26694
metal, entropy/free energy relation 8−15368
metal, equilibrium vacancy conc. 8−38694
metal, monovalent, low temp. eqn. of state 8−22820
metal, thermodynamic properties, outer electron contributions *(French)* 8−43091
metal film, quench-condensed, 0.6-4.4K 8−41309
metal heating by laser radiation, calc. allowing for thermal props. temp. depend. 8−30770
metal particles, thermodynamics and paramag. props. of electrons 8−31051
modified heat pulse method, 0.2-4.2K range 8−21143
molecular solids, intermol. forces and eqn. of state, pseudoharmonic approx. calcs. 8−30731
PMMA, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
PMMA, thermophysical props. at high hydrostatic press. 8−2317
polyacrylonitrile and copolymers with polyisobutylene, specific heat and glass transition temp. meas. *(German)* 8−34603
polycarbonate, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polyisobutylene and copolymers with polyacrylonitrile, specific heat and glass transition temp. meas. *(German)* 8−34603
polymer, conformational sp. ht. determ. method 8−14474
polymers, effect of glass transition temp. on thermal props. *(German)* 8−30742
polystyrene, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
pyrazine, phase transitions, sp. ht., X-ray diffr., LF vibr. spectra 8−43122
quasi-one-dimensional systems, free energy of Ginzburg-Landau field, equiv. Hamiltonian 8−6293
random system, density of states, essential singularities, sp. ht., free energy 8−18729
rare earth-Al_2, cubic Laves phases, prep. and phys. props. *(German)* 8−23075
rare-earth compounds, antiferromag., mag. props., cryst. field theory 8−27006
rare-earth compounds, antiferromag., mag. props., cryst. field theory 8−27007
refractory, thermophysical props. in rarefied gaseous medium 8−34664
Rochelle salt, phase transitions, high-resolution sp. ht. meas. 8−48128
semi-metal or degenerate semiconductor, beta effect of sp. ht. due to impurities, in external mag. field 8−10401
spin glass, dipolar, anomalous sp. ht. Ising model and Monte Carlo calcs. 8−47989
spin glass, generalised mean field theory with spin correls. 8−2691
spin glass, phenomenological theory 8−19263
spin systems, random annealed, crit. amplitudes for specific heat 8−43600
standard unit, 1800-2800K, USSR 8−12665
step model critical behaviour high temp. susceptibility and internal energy series 8−34987
superconducting alloys, Kondo effect, specific heat jump at transition temp. 8−6479
superconductor, high T_c, dynamic instabilities 8−10607
TCNQ complexes, $Qn(TCNQ)_2$, NMePh.TCNQ, and Li^+TCNQ^-, mag. susceptibility and sp. ht. 8−43556
TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
TCNQ salt, HMTTF-TCNQ, metallic organic charge transfer complex, chemical prep. and phys. props. 8−2471

specific heat of solids continued
TCNQ salt, quinolinium $(TCNQ)_2$, random-exchange Heisenberg antiferromag. chain, 0.07-5K 8−14976
TGS, calorimetry, sp. ht., 0-80°C 8−15122
TGS, deuterated and undeuterated, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
TGSe, sp. ht. anomaly, AC calorimetric obs. 8−23414
triglycine fluoberyllate, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
TTF-DETCNQ, metal-insulator transition, struct., elect. cond. and sp. ht. expts. 8−14662
weakly disordered uniaxial ferromagnet, phase transition *(Russian)* 8−23291
X-Y model, spin 1/2, thermodynamic props. in three dimens., high temp. series expsn. 8−47930
X-Y model critical behaviour, high temp. susceptibility and internal energy series 8−34987
Ag, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
$AgGaTe_2$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
AgI type solid electrolytes, sp. ht. anomaly, theory *(Russian)* 8−10198
$AgInTe_2$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
$AgNa(NO_2)_2$, Landau behaviour of sp. ht. close to nearly tricritical ferroelec. phase transition 8−10861
Al, Nernst-Ettingshausen coeff., transport heat capacity 8−26848
Al-Li alloy, thermal anal. of precipitation 8−15417
β-Al_2O_3-M_2O_3 (M=Li,Na,K,Ag), 0.1-1 K, evidence for localised low-energy excitations 8−34632
$Al_{10}V$, well defined local modes, low temp. heat capacity meas. 8−26648
$Al_{10}V$-Ga, dil., well defined local modes, low temp. heat capacity meas. 8−26648
Am, elec. resist. and sp. ht. 8−47762
As, amorphous, 2 to 23K, phonon frequency distrib. 8−30723
As, bulk amorphous, sp ht. meas., 1.8-20K 8−22866
Au, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Au-Cd alloy, α and ξ phase, low temp. sp. ht. 8−18789
BN, hexagonal, parallel to basal planes, thermal conductivity 8−22907
$BaTiO_3$, soft mode dielec., anomalous low temp. sp. ht. 8−14423
Be, spin susceptibility, electronic effective mass, spin density functional calcs. 8−43291
C, amorphous, anomalous low temp. mag. and thermal props. 8−10647
C, vitreous, low temp. sp. ht., thermal cond. and US vel. meas. 8−47533
$C(NH_2)_3V\ (SO_4)_2.6H_2O$, low temp. mag. props., mag. sp. ht. *(Japanese)* 8−19268
CaBr(Cl)(I), Gruneisen γ and other thermodynamic props. at zero and elevated press. 8−43142
CaF_2+Yb^{3+}, Stark level Zeeman energies, mag. susceptibiltiy, Schottky specific heat, crystal field splitting 8−26831
$CaV_{12}O_{30}$, phase transitions, elec. cond., susceptibility and sp. ht. meas. 8−14776
Cd, phonon dispersion relations, specific heat by modified Cheveau model 8−38792
CdF_2, low temp. heat capacity 8−47490
Cd_3P_2, Cd_3As_2, sp. ht., thermodyn. props. 8−22863
Ce-alloys, abnormal ordered Kondo lattice 8−47947
$CeH_{2.70}$, low temp. phase transition, sp. ht. meas. 8−47535
CeP(As), single crystals, low temp. thermal, electrical and mag. props. meas. 8−27051
Co complex, $Co(C_5H_5NO)_6I_2$, simple cubic X-Y mag., specific heat, mag. exchange anisotropy meas. 8−39346
CoB, thermophysical props., 296-2000K 8−14477
$CoCl_2.2NC_5H_5$, quasione dimens. Ising system, thermodynamic props. 8−27042
Cr, lattice sp. ht., Clark-Gazis-Wallis ang. force model 8−22799
$CrSb_2$, heat capacity and thermodynamic props., mag. transition, enthalpy of decomposition 8−43591
Cu complex, hexa(pyridine-N-oxide)$(BF_4)_2$, Heisenberg antiferromag., mag. props. and sp. ht. 8−23287
Cu, modified CGW model calcs., phonon dispersion, sp. ht. and equiv. Debye temp. 8−10135
Cu-Mn, classical RKKY model, thermodynamic props. 8−39333
$CuCr_2O_4$, heat capacity, entropy, polymorphic transition, 298-1000K 8−10196
$CuInSe_2(S_2)(Te_2)$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
$Cu(NO_3)_2.2{}^1/_2H_2O$, singlet ground-state system, mag. props., short-range ordered state 8−23289
cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
DI, thermodynamic properties 8−47517
DX, X=Cl, Br, I, thermodynamic properties, phase transitions 8−47518
Dy_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
$Er_xMo_6Se_8$, long-range antiferromag. order and supercond. coexistence 8−10715
Er_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
Eu_2O_3, mech. and physical props. rel. to reactor control rod appl. 8−21641
EuS, heat capacity near ferromag. transition 8−47986
$EuSO_4$, sp. ht. and susceptibility meas. 8−14977
$Eu_{1-x}Sm_xO$, mag. semicond., thermodynamics of mag. quasimols. 8−19266
Fe complex, bis(N,N-diethyldithiocarbamato)-iron chloride, ferromag., sp. ht. meas., 0.4-20K 8−19258
Fe complex, hexa(pyridine-N-oxide)$(ClO_4)_2$, sp. ht., comparison with simple cubic S=1/2 Ising magnet 8−23290
α-Fe, lattice sp. ht., Clark-Gazis-Wallis ang. force model 8−22799
Fe, phase transition thermodynamics 8−18769
Fe-Ni alloys, lit. review *(Russian)* 8−18805
FeB, thermophysical props., 296-2000K 8−14477
$Fe(HCOO)_2.2H_2O$, heat capacity 8−22865
$Fe_{40}Ni_{40}P_{14}B_6$ glass, ferromagnetic, low temp. meas., electronic, phonon contribution 8−10689
γ-Fe_2O_3:Fe_3O_4, magnetite impurity determ. by C_p calorimetry 8−2152

specific heat of solids continued
  $Fe_{90}P_{14}B_6$ glass, ferromagnetic low temp. meas., electronic, phonon contribution 8−10689
  $Fe_{75}P_{15}C_{10}$, glassy ferromag., crit. sp. ht. meas. 8−10716
  Ga metastable states, supercooling and polymorphism *(French)* 8−14325
  GaS, 2-30K, expt. compared with theory 8−18791
  Gd_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
  GeO_2, amorphous, 2 to 23K, phonon frequency distrib. 8−30723
  GeS_x, neutron irrad., thermal and elec. conductivity and heat capacity 8−2165
  HI, thermodynamic properties 8−47517
  HX, X=Cl, Br, I, thermodynamic properties, phase transitions 8−47518
  He, specific heat high temp. anomaly, quasi-average and averages, translational symmetry breakdown 8−30811
  He-H_2 mixtures, isobaric sp. ht. 8−18788
  ^4He, isobaric 8−18788
  $Hg_{2.86}AsF_6$, linear chain, anomalous low temp. sp. ht. 8−14476
  Hg_2Br_2, sp. ht. near phase transition region meas. 8−38855
  KAg_4I_5, ionic conductivity and heat capacity near T_c 8−47584
  $La_{1-x}Au_x$, supercond. splat cooled amorphous alloy 8−19182
  $La(Ce)Sn_{3-x}Pb_x$ system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
  $(La_{1-x}Gd_x)_{1.0}Mo_6Se_8$, Gd-rich, supercond. state, phase transition, lambda-type sp. ht. anomaly obs. 8−6480
  $LaGe_x$, specific heat in range $0.07 \leq T \leq 10K$, comp. depend. 8−43517
  $LaH_{2.69}$, low temp. phase transition 8−14665
  $LaMnO_3$, ferromag.-paramag. phase transition, neutron diffr., calorimetric investigs. 8−31072
  $La_{1-y}Tb_yAg$, crystal field effects, normal and superconducting states 8−2621
  $La_{1-y}Y_y(Ce)$ system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
  $LiMSO_4$, M=Li, Na, K, Li_2SO_4-$ZnSO_4$, ht. capacity and ht. of transform. 8−26690
  Lu-H alloy, influence of H on low temp. sp. ht. 8−38854
  Mg, spin susceptibility, electronic effective mass, spin density functional calcs. 8−43291
  MgO, lattice dynamics and vibr. sp. ht. 8−47482
  $MgUO_4$, standard enthalpy of formation, high-temperature thermodynamic functions 8−27811
  MnF_2, specific heat, Heisenberg to Ising crossover near Neel temp. 8−47980
  Mo, standard ref. material, enthalpy and heat capacity 8−18792
  Mo-Re (5 at.%), enhanced lattice sp. ht. due to LF reson. modes 8−14882
  $Mo_5SnGa_xS_6$ heat capacity from 2 to 25K 8−43518
  $NH_4Ag_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
  Na alloys, very dilute, sp. ht. meas. close to melting point 8−47501
  $Na_{1.9}V_{12}O_{29.7}$, phase transitions, elec. cond., susceptibility and sp. ht. meas. 8−14776
  Nb, mixed state, sp. ht., 0.03-0.3K, electronic and nucl. contribs. 8−10621
  Nb:N, H, atomic tunnelling of interstitial pair, specific heat meas. 8−47600
  NbC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
  NbC_xN_{1-x}, 4.2-100K, phonon anomaly rel. to supercond. transition 8−14880
  $NbH_{0.3}$, α-α′ phase transition, sp. ht. anomaly 8−39764
  NbO_2, low temp. elastic consts. and Debye temp. 8−47463
  $Nb_{1-x}Sn_x$, sp. ht., supercond. T_c and martensitic transform. *(French)* 8−43508
  $Nb_{1-x}W_xSe_2$ x=0 to 0.15, elec. resist., mag. suscept., heat capacity, structural, supercond. transition *(Russian)* 8−31006
  $NdH_{2.70}$, low temp. phase transition 8−14665
  Ni complex, $[Ni(OCH_3)(acac)(CH_3OH)]_4$, sp. ht., 0.4-285K, methyl group internal rotation 8−47531
  Ni complex, $[Ni(en)_2Cl]_2Cl_2$, heat capacity, X-ray diffraction and mag. meas., phase transition 8−47515
  Ni complex, hexa(pyridine-N-oxide)$(ClO_4)_2$, field-induced mag. ordering in S=1 singlet ground-state 8−23288
  Ni_3Al, refractory transition metal alloying effects 8−26691
  $NiBr_2.6H_2O$, antiferromag. ordering and paramag. behaviour 8−14941
  $Ni(ClO_4)_2\ 6H_2O$, sp. ht. between 2 and 17K 8−47532
  $Ni_{80}P_{14}B_6$ glass, low temp. meas., electronic, phonon contribution 8−10689
  $P_2Se_xS_y$ glass, thermophysical props., 303-413K, struct. interpretation 8−47615
  $PbMo_{5.1}S_6$, high supercond. T_c, soft mode behaviour 8−14855
  $PbZr_{0.95}Ti_{0.05}O_3$, soft mode dielec., anomalous low temp. sp. ht. 8−14423
  Pd, ultrafine particles, size effect on vibr. sp. ht. 8−10153
  Pd-H(D), isotope effects in supercond. properties 8−6471
  $PrCl_3$, cooperative Jahn-Teller ordering of elec. dipoles in non-Kramers doublets 8−15115
  Pt, lattice dynamics, ang. forces and normal vibrs. 8−22810
  Pt-Mn, dil. alloy spin glass, mag. sp. ht. 8−14966
  $RbAg_4I_5$, ionic conductivity and heat capacity near T_c 8−47584
  $RbAg_4I_5$, struct. transition at 209K, Ising like behaviour 8−14460
  $RbAg_4I_5$, superionic cond., US absorpt., ionic cond., relaxing sp. ht. 8−14505
  $RbCaF_3$, sp. ht. anomaly at struct. transform. 8−14426
  $RbNO_3$, single cryst., DC cond., dielec. and thermophys. props., temp. depend., transitions interpret. 8−26682
  Re, plastic deform. rel. to low temp. sp. ht., supercond. *(Russian)* 8−31005
  Se, trigonal or amorphous, thermal expansion and Gruneisen coeffs., 10-300K 8−22870
  Si:P, heavily doped, electronic sp. ht. meas., rel. to metal-nonmetal transition 8−6162
  SiO_2-Al_2O_3-Fe_2O_3-CaO-MgO-Na_2O-SO_3 glass, thermophysical props. 8−18849
  $Sm_{1-x}Gd_xS$, calorimetric exam. of metal-semiconductor transition 8−18967
  Sm_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
  $SnMo_5S_6$, high supercond. T_c, soft mode behaviour 8−14855
  Sr, specific heat and thermodynamic props. 5-350K 8−47534
  $SrTiO_3$, heat capacity crit. behaviour 8−10857

specific heat of solids continued
  $Sr_{1.1}V_{12}O_{29.9}$, phase transitions, elec. cond., susceptibility and sp. ht. meas. 8−14776
  Ta, heat capacity, 10^8-10^9 K s^{-1} pulsed heating, $(2\text{-}4)\times10^3$K 8−14473
  TaS_2 (2H), sp. ht. and resist. near CDW phase transitions 8−34786
  TaS_2 (2H) single crystal, specific heat meas. in mag. field, 0.3 to 3K, AC calorimetry technique 8−43516
  $TaSe_2$ (2H), sp. ht. and resist. near CDW phase transitions 8−34786
  $TbPO_4$, specific heat from 1.2 to 6K 8−14475
  Tb_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
  TcF_6, heat capacity, entropy Gibbs energy, 2.23-350K 8−38852
  Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8−23474
  $Te_{0.81}Ge_{0.15}As_{0.04}$, amorphous and cryst., 1-20K 8−22864
  Th-Y-Ce, supercond., magnetisation of Ce impurities, sp. ht. meas. 8−47904
  $Th_{65}Sc_{35}Ce$, supercond., magnetisation of Ce impurities, sp. ht. meas. 8−47904
  Ti, pulse heating method, 1500 to 1900K 8−43139
  Ti_5O_9, phase transitions, elec. cond., mag. susceptibility, sp. ht., EPR and struct. aspects 8−10526
  $TiSe_2$, mechanism for 200K transition, sp. ht. meas. 8−22853
  TlBr, soft mode dielec., anomalous low temp. sp. ht. 8−14423
  U_3As_4, ferromagnetic transitions and heat capacities from 5 to 950K 8−14955
  U_3Sb_4, ferromagnetic transitions and heat capacities from 5 to 950K 8−14955
  V, electronic density of states, effective mass, electron-phonon interaction, Coulomb pseudopot. *(Russian)* 8−26804
  V, lattice dynamics, vibr. spectrum and sp. ht., CGW model 8−22793
  V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8−10594
  $V_3Ga(Si)$, high T_c supercond., rel. to density of states sharp struct. effect on electron-phonon coupling 8−14877
  V_6O_{11} single crystals, heat capacity anomaly at 172K 8−10197
  V_3Si, sp. ht. anomaly at struct. transform. 8−14426
  W, lattice sp. ht., Clark-Gazis-Wallis ang. force model 8−22799
  $Y_2[Pt(CN)_4]_3.21H_2O$, first order phase transform., spectroscopic and thermodynamic anal. 8−38829
  $YbMo_6S_8$, supercond., low temp. thermal and mag. props. 8−14904
  Zn_3P_2, Zn_3As_2, sp. ht., thermodyn. props. 8−22863
  ZrC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
  $Zr_{0.7}Pd_{0.3}$, amorphous supercond., sp. ht. and thermal cond., 0.1-10K 8−26991

specific volume *see density*

specimen preparation
  see also biological specimen preparation; replica techniques
  air-lock system for reactive sample transfer to Philips 300S electron microscope 8−41382
  alkali halide crystals, ultrahigh vacuum equipment for surface charge and pot. meas. 8−12708
  bronzes, ancient, chem. polishing and etching for metallographic exam. 8−356
  ceramics, mounting and polishing technique, for microstruct. exam. 8−48580
  colloid freeze-fracture, for electron microscopy 8−337
  crystal heater supply using controlled electron bombardment 8−181
  crystal turning in common lathe 8−18482
  dispersion staining technique for microscopical particle anal. 8−24855
  electron diffraction camera, convergent-beam, contamination suppression 8−14252
  electron microscope study, book 8−19989
  electron microscopy, ion techniques 8−32947
  electron microscopy, staining and X-ray microanal., book 8−4739
  field ion (emission) microscope tip prep. from sheet and block metal 8−7155
  film casting method for electron microscopy samples, particularly elastomers 8−29213
  freeze drying microscope stages 8−45681
  gasoline, sample preparation for P determ. by at. absorpt. 8−31729
  glass, heat treated, thin foil prep. for TEM obs. 8−7154
  glass fibre reinforced plastics, winding device for mech. test specimens prep. 8−7138
  grinding device for radioactive tracer diffusion studies in hard ceramics 8−41291
  III-V semiconductors, film, sample preparation for TEM studies 8−14258
  ion beam sputtering, application to high resolution electron microscopy 8−32925
  ion beam techniques for SEM, TEM and optical microscopy 8−24778
  laser-heated miniature oven, for prop. of matrix isolation samples for Raman studies 8−45737
  liquid nitrogen cooler, for specimen manipulator of LEED-AES experiment *(Japanese)* 8−45639
  mechanical system for multi-specimen cleavage and rotation in secondary electron emission studies 8−36987
  metallographic specimen prep. using micromilling device *(German)* 8−19980
  metallographic specimens, grinding and polishing apparatus 8−23889
  micropipet, digital high precision device 8−24774
  neutron diffraction crystallography, liquid sample freezing with quartz wool 8−18502
  organic media, sample preparation for P determ. by at. absorpt. 8−31729
  organic specimens, calcination methods, for spectrochem. anal. *(Russian)* 8−23997
  polyethylene, partially crystalline test body prep. and characts. *(German)* 8−31398
  polymer, partially cryst., electron microscope struct. anal., soln. and melt-grown films as model specimens 8−30523
  polymer multicomponent systems, selective electron beam etching 8−45603
  polypropylene, partially crystalline, test body prep. and characts. *(German)* 8−31398
  powder for spectral anal. 8−23884
  rare earth oxide, lattice images *(French)* 8−26397
  remotely controlled computer-guided preparation facility for X-ray fluoresc. anal. at fuel reprocessing plant *(German, English)* 8−17399

specimen preparation continued
SEM sample preparation apparatus for freeze drying and vacuum evaporation 8−335
spherical crystal marking for identical remounting 8−18497
steel, high alloy, preparation for instrumented anal., HF induction melting, casting 8−48607
thin specimen preparation by sputter-etching 8−24893
tree rings, ^{14}C radial flow and chemical pretreatment for ^{14}C meas. 8−28346
water-in-oil-in-water emulsions, electron micrography 8−7245
worn ball, metallographic micro prep. method 8−3274
Au, Au-rich alloys, electropolishing for electron microscopic examination 8−35589
Cu, cracks in fatigue early stages, direct obs. of substruct. by electron microscope *(Japanese)* 8−7028
In, electrodiffusive conc. of impurities for analysis 8−22752
Mo, high rate sputter deposition for TEM specimens 8−47451
Ni base superalloy, preparation for instrumented anal., HF induction melting, casting 8−48607
Ni superalloy powder, thinning technique for microstruct. obs. using analytical electron microscopy 8−48587
Si, spreading resistance calibration, effect of specimen preparations 8−10450
Si wafers, preparation of preselected areas for TEM 8−24887
Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8−6975
$^{235}UO_2$ single crystals, electrochemical prep. 8−37478
W support film for high resoln. electron microscopy, phase contrast, computer modelling 8−1144

speckle
acoustic holograms, speckle size 8−13864
amorphous materials, thin, dark field speckle patterns in high resolution electron microscopy 8−34402
amphibian middle ear dynamics using laser speckle interferometry 8−40198
astronomical speckle interferometry, defocusing effects 8−40834
α Aurigae (Capella) AB, angular diams. by two telescope interferometry 8−8055
Bragg diffraction imaging systems, speckle size 8−13864
camera and analyser for surface displacement and tilt meas. 8−32790
coherent imaging, two step laser speckle reduction process 8−37819
combustion phenomena deflection mapping, speckle superposition techniques 8−44379
contour slope meas. of an object, coherent optical method 8−32862
contrast measurement in and near image plane 8−42287
decorrelated diffusers interferometer, description, exam. of interference phenomena 8−37051
displacement determination in special alloys by holographic and speckle interferometric methods 8−27688
double exposure photographic technique, strain, small displacement measurement appl. *(German)* 8−1616
dynamic laser speckle interferometry, appl. to transient flexure 8−32861
electronic speckle pattern interferometry, optimal signal processing 8−16837
electronic speckle pattern interferometry, small vibrations meas. 8−32865
eye, human, pupil diameter and depth-of-field as meas. by laser speckle 8−15826
fluid velocity measurement by speckle photography and interferometry 8−26221
fringe visibility, recovery from recorded images quantised to two levels 8−12104
helical motion of rigid body, meas. by double exposure speckle method 8−16775
image information processing and evaluation *(Czech)* 8−29147
image reconstruction of single stars, by speckle interferometry 8−32350
image speckle contrast, depend. on object surface profiles 8−1168
image speckle patterns rel. to object surface profile, computer simulation 8−13660
in-plane mechanical vibrs. meas. by speckle imaging, sub Å range 8−30247
information processing experiment set for undergraduates 8−28885
interference fringe localisation, by double exposure speckle photography 8−37803
interferometry, ang. diameter of asteroid Vesta 8−20712
interferometry, stellar diameters and close binary star separation meas. *(Russian)* 8−40922
interferometry fundamentals and appl. *(Czech)* 8−29148
laser speckle granularity growth, appl. to surface inspection 8−12750
laser speckle photography for fluid flow vel. meas. 8−14112
lens aberrations, effect on speckle photography 8−32866
metal surface, rough, orthogonally polarised speckle images, cross correlation, effect on fringe visibility in speckle interferometry 8−37808
metal surface roughness meas. using laser speckle 8−8383
multifold independent partially polarised speckle fields, and coherent background, superposition statistics 8−1155
noise and object contrast, detection thresholds eval. technique 8−5434
optical systems and speckle 8−46515
phase problem, zeroes of entire functions 8−29900
photography, meas. of longit. rot. and lateral motion of diffuse surfaces 8−21235
properties and applications *(Japanese)* 8−22085
rough surface, far field polychromatic speckle, external angular dispersion effect 8−22086
solar granulation, one-dimensional speckle interferometry 8−45299
statistical properties of sum of partially developed patterns 8−1162
stellar speckle interferometry, S/N ratio 8−12102
structural deformation meas. by holographic speckle interferometry *(French)* 8−30249
surface displacement and vibration meas. using laser speckle *(French)* 8−4686
surface roughness properties meas. using polychromatic speckle 8−21210
telescope with severe aberration, MTF for speckle interferometry 8−12103
thermoplastic moulding quality assurance using holography and speckle photography 8−27720
ultrasound B-mode scans, speckle reduction 8−22233

speckle continued
velocimeter, non-contact, using laser produced speckle patterns *(Japanese)* 8−178
Young's experiment with n holes, appls. *(French)* 8−42274
Pt-electrolyte interface laser speckle movements related to electrode pot., H_2 adsorb. 8−40052

spectra
see also alpha-particle spectra; astronomical spectra; atmospheric spectra; atomic spectra; beam-foil spectra; beta-ray spectra; Brillouin spectra; cosmic ray energy spectra; electron spectra; energy level crossing; gamma-ray spectra; light scattering; luminescence; mass spectra; matrix isolation spectra; microwave spectra; molecular spectra; multiphoton spectra; neutron spectra; nonradiative transitions; optical double resonance; oscillator strengths; photon echo; proton spectra; quantum beat spectra; Raman spectra; spectra of inorganic liquids and solutions; spectra of organic molecules and substances; spectra of solids; spectral line breadth; spectral line shift; spectrochemical analysis; Stark effect; stimulated scattering; time of flight spectra; time resolved spectra; transition moments; tunnelling spectra; X-ray spectra
No entries

spectra of diatomic inorganic molecules
see also infrared spectra of diatomic inorganic molecules; radiofrequency and microwave spectra of diatomic inorganic molecules; Raman spectra of diatomic inorganic molecules
C_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
diatomic molecule, wave functions and intensity factors, using effective Hamiltonian *(French)* 8−5114
diatomic molecule Hamiltonian, homogeneous derivation for spectrum anal. *(French)* 8−5113
Ag_2, dispersion absorption spectra, 1500 to 5300 Å, rot. anal. 8−42089
AgO, electronic spectra in rare gas matrix 8−996
AlH, (1,1)-band emission of $b^3\Sigma$-$a^3\Pi$ system 8−42092
AlO, spectra, vibr. consts., pot. curves, Franck-Condon factors and r-centroids 8−42243
Ar_2^+, bound-free absorpt. cross section for Π and Σ states 8−5140
Ar_2^+, near UV absorption spectra, config. interaction methods 8−17680
AuO, electronic spectra in rare gas matrix 8−996
BaI, visible spectra, 5200-5700 Å, vibr. consts. 8−25549
Bi_2, in Ar matrix, electronic states, vis. and near IR absorption spectra 8−5213
Br_2, and isotopic forms, new rot.-vibr. lines, laser reson. fluoresc. obs. 8−991
C_2, in comets, synthetic spectra calcs. 8−28579
C_2 interstellar (0-0)R(0) transition at 2312 Å, UV obs. of ξ Ophiuchi cloud 8−41022
C_2 molecule in solar spectrum, wavelength shift determ. method 8−49340
C_2 molecule produced by laser irrad. of polyethylene 8−42777
CN ($A^2\Pi$-$X^2\Sigma^+$) transition, Franck-Condon factors, r-centroids, by Langer's approx. method 8−37685
CN, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
CN violet ($B^2\Sigma$-$X^2\Sigma$) band system, photoelec. intensity meas., transition probabilities 8−37649
CO, $d^3\Delta_i$ v=4 state dipole moment, laser-induced transition in mol. beam 8−25513
CO isotopes in Ar matrix, vibr. energy accumulation 8−13485
CO, photoabsorption and photionisation, UV region meas. 8−42087
CO, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
CS, near UV spectra, rot. anal. of $a^3\pi_r = X^1\Sigma^+$ transition 8−5242
Ca_2, matrix isolated, vis. and near IR spectra 8−5214
CaCl, $E^2\Sigma$-$X^2\Sigma$ transition, rot. anal. 8−37652
CaCl, free radical, $A^2\Pi$-$X^2\Sigma^+$ system obs. by saturation spectroscopy 8−46353
$^{35}Cl^{35}Cl$, $B^3\Pi(0^+) \rightarrow X^1\Sigma^+$, 6300 to 9900 Å, rot. anal., mol. consts., equilib. internuclear separation 8−42082
$^{35}Cl^{37}Cl$, $B^3\Pi(0^+) \rightarrow X^1\Sigma^+$, 6300 to 9900 Å, rot. anal., mol. consts., equilib. internuclear separation 8−42082
Cs excimer states, mol. satellites of 6^2S-7^2P doublet 8−17632
Cs_2, absorpt. spectrum in visible and near visible 8−46356
CuO, electronic spectra in rare gas matrix 8−996
CuO, red $^2\Delta$-$x^2\Pi_i$ transition, $^2\Delta_{5/2}$ state consts. 8−9163
CuO, rot. anal. of red $A'\ ^2\Sigma^+ - X\ ^2\Pi_i$ system 8−13508
D_2, photoabsorpt. spectra, rovibronic interactions 8−992
FeS, X-ray and visible spectra, SCF-Xα scatt. wave anal. 8−5138
GeO, RKRV Franck-Condon factors and r-centroids, ($A^1\Pi$-$X^1\Sigma^+$) transition, pot. energy curves 8−29817
H_2, photoabsorpt. spectra, rovibronic interactions 8−992
H_{22} quadrupole vibration-rotation transition probabilities 8−25512
HCl, linewidths and shifts in fundamental band broadened by D_2 and H_2 *(French)* 8−972
HD, dipole spectrum, influence of intracollisional interference 8−33492
HD, elec. dipole vibr.-rot. spectrum, line strengths, ab initio calcs. 8−25514
HD, nonadiabatic effects in the B, C and E, F states, rot. line strengths 8−5148
HI, UV absorpt. spectra, ionis. limit region, assignment 8−21940
He_2, molecular spectrum and structure, singlet Π states 4pπ-9pπ 8−42080
Hg_2, absorpt., fluoresc. and two-photon spectroscopy 8−998
Hg_2, fluoresc. and absorpt. spectra anal., pot. energy curves 8−999
I_2, B-X band system, intensity factors 8−25551
I_2, B←X(0-0) band, visible spectrum obs. 8−5238
I_2, energy levels near B-state dissoc. limit, two-photon spectra 8−9210
I_2, molecular absorption spectra, line identification band atlas, 19000 to 18000 cm^{-1} 8−42079
$^{127}I_2$, hyperfine struct. in electronic spectrum, saturated absorption spectroscopy 8−37645
$^{127}I_2$, visible spectra, HFS at 586.82 nm 8−9395
IrO, ground state, matrix isolation spectra 8−46352
Kr_2^+, near UV absorption spectra, config. interaction methods 8−17680
KrX, (X=He, Ne, Ar, Xe), VUV absorpt., van der Waals mols. props. 8−13513
Li_2, far UV photoabsorpt. spectra, core-excited states and CI calcs. 8−37655

spectra of diatomic inorganic molecules continued
  LiH, isotopic species, $A^1\Sigma^+ \rightarrow X^1\Sigma^+$ bands 8−42091
  LiI, electron-mol. beam collisions, autoionising states, electronic spectra *(Russian)* 8−22023
  LiO, struct., spectra, SCF MO calcs. 8−17559
  Li_2O (LiOLi, LiLiO), struct., spectra, SCF MO calcs. 8−17559
  LiOO, struct., spectra, SCF MO calcs. 8−17559
  Mg_2 matrix isolated, vis. and near IR spectra 8−5214
  N_2, photoabsorption, moment anal. 8−46321
  N_2, photoabsorption and photionisation, UV region meas. 8−42087
  N_2, transition moments between excited electronic states 8−5204
  N_2 UV spectra, new band, $^3\pi_u$ state lower vibronic levels 8−17682
  N_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
  N_2, vertical electronic spectrum, MRD-CI method calcs. 8−42033
  N_2, vibr. and rot. anal. of vis., UV spectra, RF discharges in N_2, H_2, CH_4 mixtures 8−5241
  N_2^+, 1NG: $B^2\Sigma_u^+ \rightarrow X^2\Sigma_g^+$, 3800 to 4750 Å spectra, mol. consts. 8−42081
  ND, $d^1\Sigma^+$-$c^1\Pi$, spectra, equilib. consts., dissociation energy 8−33517
  NH, $d^1\Sigma^+ - c^1\Pi$, $d^1\Sigma^+$-$b^1\Sigma^+$, spectra, equilib. consts., dissociation energy 8−33517
  $N_2(N_2^+)$, UV, visible spectra in Ar plasma, 230-620 nm 8−13456
  NO, electronic spectrum, press. induced config. demixing 8−42090
  NO, γ (1,0) band auroral emission at 2150 Å probably N_2 feature 8−45083
  NO, $I^2\Sigma^+$ state, valence bands, absorpt. spectra 8−46361
  NO, photoabsorption and photionisation, UV region meas. 8−42087
  NO^+, R_e-function of A-X system, rel. to astrophysical meas. 8−13554
  NaNe, van der Waals mol., form., laser spectroscopy 8−29797
  Ne_2^+, near UV absorption spectra, config. interaction methods 8−17680
  O_2 0.762 μ band absorption coeff. in atmosphere *(Russian)* 8−28315
  O_2, $A^3\Sigma_u^+$, $C^3\Delta_u$ and $C^1\Sigma_u^-$ states in van der Waals solids, electronic spectra, dynamics 8−1000
  O_2, EUV absorpt. cross sections from thermosphere occultation profiles 8−28356
  O_2, electronic spectra, parity nonconservation effects *(Russian)* 8−13488
  O_2, photoabsorption and photionisation, UV region meas. 8−42087
  O_2, photoabsorption cross-section, 55-350 Å 8−46364
  O_2^+, $b^4\Sigma_g^-$-$a^4\Pi_u$ band, rot. lines, rel. intensities, theoretical and exptl. results 8−13505
  O_2^+, radiative lifetimes and UV spectra, $b^4\Sigma_g$-$a^4\Pi_u$, $A^2\Pi_u$-$X^2\Pi_g$ transitions 8−17724
  O_2+N_2, collision induced UV absorpt., Herzberg continuum, dimer form. 8−9167
  OH emission as recorder of internal gravity waves near mesopause 8−12031
  OH, vibr. ground-state, MFS, rot. spectra and electronic band anal. 8−5206
  $OH+OH \rightarrow H_2O+O$, rate meas. by UV absorpt., 1200 to 1800K 8−35642
  ^{16}O, $^{18}O_2$, vac. UV absorpt. spectra, band intensities and designations 8−5245
  PCl, visible and near IR emission, $A^3\Pi \rightarrow X^3\Sigma^-$ and $b^1\Sigma^+ \rightarrow X^3\Sigma^-$ systems vibr. anal. 8−21938
  PH, $b^1\Sigma^+$ band emission visible and UV regions 8−46357
  Pb_2, in Ar matrix, excitation and emission spectra, vibr. freq. 8−13507
  PrO, visible spectra, 7500-8500 Å, VII and X systems, rot. anal. *(French)* 8−46355
  PtO, ground state, matrix isolation spectra 8−46352
  PtO, ground state identification from 3800-7000 Å emission spectrum 8−21937
  Rb_2, absorpt. spectrum in visible and near visible 8−46356
  SbN, 3300-4000 Å, rot. and vibr. perturbations and rot. anal. *(French)* 8−37651
  ScD, emission bands in 5580 and 8603 Å regions 8−990
  ScH, emission bands in 5580 and 8603 Å regions 8−990
  SiC, Si K_α X-ray emission spectra chemical shifts, linewidths and intensities 8−13461
  SiCl, ($A^2\Sigma^+$-$X^2\Pi$) transition, rot. anal., equilib. consts. 8−37648
  SiO, nonmaser emission lines from expanding envelopes around evolved stars 8−28650
  SiO, transition moment of $A^1\Pi$-$X^1\Sigma^+$ band, 260-290 nm 8−13552
  SiS, electronic spectra, parity nonconservation effects *(Russian)* 8−13488
  Sr_2, matrix isolated, vis. and near IR spectra 8−5214
  SrF, $B^2\Sigma^+$-$X^2\Sigma^+$ system, rot. anal. using a cw tunable dye laser 8−9165
  TiO 7120 Å band strength in metal-rich globular star clusters 8−49487
  Xe_2^+, near UV absorption spectra, config. interaction methods 8−17680
  XeF, B-X transition vibr. anal., flash photolysis UV absorpt. spectroscopy 8−42088
  XeX, (X=He, Ne, Ar, Kr), VUV absorpt., van der Waals mols. props. 8−13513

spectra of inorganic liquids and solutions
  alkali halides, aq. solns. with extrinsic O_2^- ions, spectral props. *(Russian)* 8−6766
  cell, thin-wedge-shaped, for highly absorbent liqs., Lambert absorpt. coeffs. meas. 8−45720
  cholesteric liquid crystal, stabilisation, multicomponent mixtures, refl. spectra, clarification temp. and melting point meas. 8−9951
  far IR absorpt., statistical functions of motion *(French)* 8−39534
  heavy water, optical consts., 6-450 cm^{-1}, 19°C 8−6649
  heavy water, VUV reflectance, refr. index, absorpt. coeff., isotope effects 8−6695
  hydrogen bonded liquids, elec. anharmonicity on H-stretching bands 8−48167
  liquid metal, electron states, esp. opt. and mag. props., review 8−2882
  molecular liquids, IR absorpt. lineshape, orientation density fluctuation effects 8−48171
  molecular liquids, IR spectra, calc. involving vibr. and reorientational relax. 8−48170
  polar liquid, integrated absorpt., microstruct. effect *(French)* 8−10823
  salts, aq. solns., mechanical and electro-optical anharmonicity *(Ukrainian)* 8−2830

spectra of inorganic liquids and solutions continued
  transition metal complex ions, MY_4^{n-4}, MY_6^{n-6}, alkali metals and alkaline earth outer-sphere cations, spectroscopic splitting parameters 8−39075
  water, far IR transmission spectrum 8−4713
  water, optical consts., 6-450 cm^{-1}, 19°C 8−6649
  water, VUV reflectance, refr. index, absorpt. coeff., isotope effects 8−6695
  AgBr-NaCl(Br) solutions, UV spectra 8−39560
  Ar-HCl, liq. density fluctuations, far IR absorpt., neutron scatt. mol. dynamics calc. 8−19461
  CS_2, liquefied gas solns. bound exciton model for Rydberg bands 8−31214
  Cl_2, liq., mol. reorientation, Raman spectra obs. *(French)* 8−31192
  Co_4 $(CO)_{12}$, heptane soln. Co-Co force consts., prereson. Raman spectra, rel. to solid IR spectra *(French)* 8−31193
  D_2O-H_2O, IR absorption spectra, statistical charact., continuous model of liq. struct. confirmation 8−6671
  $Eu(ClO_4)_3$, aq. soln., Eu^{3+} $^5D_{0,1,2} \leftarrow {}^7F_{0,1,2}$ transitions, MCD and absorpt. spectra 8−19446
  Fe-Si alloys, liq., refractive index, absorpt. coeff., elec. cond. 8−43830
  I_2, in CCl_4 and cyclohexane solns., higher vibr. levels, dephasing lifetimes, from reson. Raman spectrum 8−42068
  $K_2Cr_2O_7$, acidic soln., UV absorbance standard verification 8−21092
  Mg-Bi alloy, liq., far IR reflectivity rel. to possible transport processes 8−2827
  Pd complex, $Pd(C_{18}H_{25}O_3)_2$, synthesis and props., possible mesomorphism 8−18749
  $ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831

spectra of inorganic molecules
  see also spectra of diatomic inorganic molecules; spectra of polyatomic inorganic molecules
  No entries

spectra of inorganic solids
  see also impurity and defect absorption spectra of inorganic solids; infrared spectra of inorganic solids; luminescence of inorganic solids; radiofrequency spectra of inorganic solids; Raman spectra of inorganic solids; visible and ultraviolet spectra of inorganic solids
  semiconductor film, quantised, indirect interband absorption rel. to surface irregularity 8−39618
  transition metal complex ions, MY_4^{n-4}, MY_6^{n-6}, alkali metals and alkaline earth outer-sphere cations, spectroscopic splitting parameters 8−39075
  $CuGaS_2$, exciton absorption energies, appl. of modulated phase-shift-difference method 8−39565
  GaSe, group theoretical anal. of phonon assisted optical transition 8−39564
  InAs, three-photon absorption, transition effects *(Russian)* 8−35147
  Si (100) surface accumulation layer, subband struct. and inter-subband absorption in strong mag. field 8−39177
  Si polymorphs, optical props., orthogonalized LCAO calc. 8−10345
  SiC crystal, energy band struct. and optical spectra 8−18962

spectra of organic molecules and substances
  see also infrared spectra of organic molecules and substances; luminescence of organic solids; radiofrequency and microwave spectra of organic molecules and substances; Raman spectra of organic molecules and substances
  acenaphthene, vibronic spectra, electronic-vibr. interactions 8−1021
  acetaldoxime, photoelectron and far UV absorpt. spectra 8−17712
  acetone complex with Br_2, electronic absorpt. spectral calc. *(Russian)* 8−37628
  acetone oxime, photoelectron and far UV absorpt. spectra 8−17712
  acetylene, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
  acridine, T-T absorpt. build-up, following picosec. pulse singlet excitation, in gas phase 8−9161
  acrylonitrile, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
  amines, caged, multiphoton ionisation, two-photon transition resons. 8−33558
  ammonium bioxalate monohydrate spontaneous parametric scatt. spectra, polariton wave vector and Stokes lines analysis 8−43885
  aniline, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
  aniline, vibronic perturbations of UV spectrum 8−37654
  anils, cryst., high-press. optical effects 8−31170
  anils, polystyrene soln., high-press. optical effects 8−31171
  anisotropic media, molecular distrib. determ., using polarised absorption and emission spectroscopy 8−27298
  anthracene, 340-310 nm absorption spectrum dichroism, masked ^1L_b-$^1A_1$ transition 8−17685
  anthracene, melt and dil. soln., UV spectra, line broadening and shift vibr. struct. 8−17684
  anthracene, singlet-triplet absorpt. spectra, 2-300K, photoexcitation spectra 8−43890
  anthracene, thin film vacuum deposited, exciton reflection spectra *(Russian)* 8−15194
  anthracene like crysts., optical transitions to electron-exciton bands 8−10365
  anthracene-β-sulphonic acid, 340-310 nm absorption spectrum dichroism, masked ^1L_b-$^1A_1$ transition 8−17685
  anthracene-PMDA, charge transfer cryst., 2K, zero-phonon lines, singlet spectra 8−23484
  arachidate monolayers, optical props. integrated optics meas. 8−35214
  aromatic hydrocarbons, in organic glasses, nonphotochemical burning, impurity site relaxation 8−25548
  aromatic molecules in O_2 matrices, singlet-triplet absorpt. spectra 8−17683
  bacteriochlorophyll of green bacteria, resolution of absorpt. and fluoresc. spectra into components 8−20152
  bacteriorhodopsin 580 nm ultrafast transient, psec kinetics 8−44455
  benzene, Jahn-Teller active states, vibronic struct., vibr. perturbation, spectral obs. 8−13440
  benzene, liq., light scatt. coeff. determ., absolute method 8−2868
  benzene, liquid, visible absorpt. expt. using wavelength-modulation spectroscopy 8−24868
  benzene, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995

spectra of organic molecules and substances continued
benzene-d$_6$:benzene-d$_0$, phonon side bands of specular optical transitions 8−26649
benzened$_0$:phenol, phonon side bands of specular optical transitions 8−26649
benzyl, circular dichroism 8−27178
bilirubin, aq. soln., pulse radiolysis 8−48761
1,1′-binaphthyl, conformational changes, picosec. dynamics 8−25625
bromoethane, and -d$_5$, first s-Rydberg transitions 8−42094
1,3-butadiene, UV spectra, polarisation of strongest Rydberg transitions 8−46360
n-butyl retinal Schiff bases, absorpt. spectral props., rel. to bathochromic shift in visual pigments 8−40117
tert-butyl sulphide, UV spectra, assignments 8−46359
n-butyraldoxime, photoelectron and far UV absorpt. spectra 8−17712
calcium tartrate tetrahydrate:VO^{2+}, optical absorption spectrum 8−6713
carbamides, electronic absorpt. spectra, expt. and CNDO calcs. *(Russian)* 8−37647
carotenoids related to visual chromophore, electronic struct., band shape model 8−20142
cellulose acetate, gamma-ray effect on light absorption used as dose meas. technique 8−13345
charge-transfer and hydrogen-bonded complexes, electronic absorpt. spectra calc. *(Russian)* 8−37628
chlorofluoroethanes, gas, photoabsorption cross-sections, 46-100 Å 8−42095
chlorofluoromethanes, gas, photoabsorption cross-sections, 46-100 Å 8−42095
chloroform, liq., light scatt. coeff. determ., absolute method 8−2868
chlorophyll pigments, aggregated forms in soln., spectral-luminesc. characts. *(Russian)* 8−23529
chlorophyll-a, spectral props. of liquid crystal solutions 8−27291
cinnamaldehydes, electronic spectra, CNDO CI calcs. 8−29774
copper porphine, Xα multiple scatt. calcs., EPR and electronic spectra 8−13426
coronene-TCNQ, solid complexes, spectra, stoichiometry 8−23435
9-cyanoanthracene, cryst., excimer emission, spectra, photochem. and multiphonon processes 8−10914
cyclopenta[h]cycl[4.2.2]azine, photoelectron and visible, and UV spectra 8−5286
diacetylene single crystals, photopolymerisation, optical transmission spectroscopic exam. 8−27757
dialkylammonium manganese tetrachloride, quasi two-dimensional antiferromag., temp. depend. of absorption spectra 8−43894
4,10-diazachrysene, absorpt. spectra and luminesc. in cryst. and glassy matrices, 77K 8−37650
1,4-dibromonaphthalene, S_0 to T_1 exciton transition, optical dephasingUtime and lineshape function 8−15183
(1,4)-dibromonaphthalene, triplet exciton scatt., absorpt. spectra 8−6696
dichroic dye in chiral nematic host, visible absorpt., pitch relationship 8−48193
diethylammonium manganese tetrachloride, quasi two-dimensional antiferromag., magnon sideband in absorption spectra 8−43895
dihalogenoacetylene radical cations, $C_2X_2^+$, emission spectra, $A^2\Pi \to X^2\Pi$ band systems 8−17679
dimesitylboranes, phenyl substituted, absorption and emission 8−27311
2-(2′,4′-dinitrobenzyl)-pyridine, photochromism, ns laser absorption spectra 8−48138
1,6-diphenyl-1,3,5-hexatriene and derivatives in n-paraffins, electronic spectra and fluoresc. 8−13509
DNA from mouse tissue, UV irrad. studies, UV absorpt. spectra 8−11702
ethylene, V←N transition origin determ. 8−13510
fibrinogen solution, effect of scavengers on radiation-susceptible sites 8−11701
fluorobenzene, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
formaldehyde, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
formaldehyde, mag. rot. spectrum, singlet-triplet perturbations 8−25580
formaldoxime, photoelectron and far UV absorpt. spectra 8−17712
haemoglobin, absorpt. spectra, light scatt. method meas. *(Russian)* 8−21939
halogenoacetylene radical cations, C_2HX^+, emission spectra, $A^2\Pi \to X^2\Pi$ band systems 8−17678
α-(β-)heptacyclene, vibronic spectra, electronic-vibr. interactions 8−1021
7-hydroxycoumarin, absorpt. and emission spectra, ionic forms 8−21955
7-hydroxycoumarine, one- and two-photon absorption, fluoresc. obs. 8−46407
7-hydroxycoumarine, two-photon visible absorpt. spectra, fluoresc. obs. 8−42147
2-hydroxytropone, in β-cyclodextrin complex, UV circ. dichroism spectrum assignments, complex struct. 8−46358
indane, 271 nm spectrum, rot. band contour anal., puckering vibr. 8−1001
iodomethane, first s-Rydberg transitions 8−42094
lactate dehydrogenase+free radicals, reactions, pulse radiolysis 8−7214
methane, 4350-10600 Å bands, intensity profile, vibr. assignments, rel. to major planets spectra 8−42084
methane, ν_2 and ν_4 bands Coriolis interaction, using a general Hamiltonian formalism *(French)* 8−5192
methane, shock-tube oxidation, equilibrium and nonequilibrium radiation emission 8−27760
methyl iodide, in Ar and Kr, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
methyl iodide, liquefied gas solns. bound exciton model for Rydberg bands 8−31214
methyl iodide, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
methyl iodide, UV absorpt. spectra, ionis. limit region, assignment 8−21940
methyl radicals, reactions behind shock waves, UV absorpt. obs. 8−46362
3-methylpentane, C-H stretching diagonal local mode anharmonicity, intermol. perturbation 8−25524

spectra of organic molecules and substances continued
molecular crystal, optical transitions to electron-exciton bands 8−10365
molecular crystal, singlet and triplet biexciton spectra, optical transitions 8−10366
molecular solution, excess electron optical absorption spectrum model, band shape 8−33500
myoglobin, oxyhaeme complex, single cryst., visible spectrum, electronic struct., coord. geometry 8−44456
naphthalene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
naphthalene-d$_8$:β-methylnaphthalene -d$_{10}$, phonon side bands of specular optical transitions 8−26649
p-nitroaniline, cryst., electronic excited states, config. interaction calcs., UV spectrum 8−10913
p-nitroaniline, exciton level directional dispersion, absorpt. band profiles 8−48192
3-nitropyrene, triplet state, absorption spectra in soln. 8−33440
1,3,5,7-octatetraene, UV, visible, and fluoresc. spectra and assignments, evidence for ^1A_g state 8−33518
pentacene, evaporated on quartz, optical absorption, substrate temp. depend. 8−2932
peptide-Cu II interaction, EPR and optical absorpt. 8−27881
peroxidase, low-temperature radioreduction, MCD and absorpt. spectra 8−31763
phenanthrene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
phenazine, T-T absorpt. build-up, following picosec. pulse singlet excitation, in gas phase 8−9161
phenol, singlet-singlet electron transitions, modified CNDO-CI method exam. 8−25552
phenylene compounds in n-paraffins, electronic spectra and fluoresc. 8−13509
polar liquid, integrated absorpt., microstruct. effect *(French)* 8−10823
polyatomic molecules, structure recognition, from IR, UV, NMR and mass spectra, computer method 8−25737
polydextran, γ-irrad. frozen gel, electron trapping, EPR and optical obs. 8−20030
polydiacetylene, reflection spectra, thermochromism, temp. hysteresis and phase transformation 8−19452
polydiacetylene PTS crystal, Davydov splitting in spectra at 15000 to 19000 cm^{-1}, at low temp. 8−31212
polydiacetylene-bis(toluenesulphonate), refl. spectra, 0-15 kbar, doublet press. shift 8−43891
polymer, polydispersity anal. in photon correlation spectroscopy 8−27247
polymethinium dye, excitonic fluoresc., absorpt. trapping spectra 8−27302
polyphenylene oxide-polystyrene blends, spectroscope exam. of chain conform. and bonding 8−42925
proteins, UV irradiated, luminesc. quenching, EPR and absorpt. spectra 8−15768
PTS polydiacetylene single cryst. reflection spectra, exciton site splitting 8−31211
pyrazine complexes with H_2O, Br_2 and I_2, electronic absorpt. spectra calc. *(Russian)* 8−37628
pyrene-naphthalene complex radical cation, in γ-irrad. glass, visible spectrum obs. 8−44385
pyridazine, elec. field induced spectrum, 0_0^0 band near 3752Å 8−17700
pyridine, in benzene single cryst., electronic spectrum Stark modulation, dipole moment 8−29814
quinoxalinones, new class of high-efficiency laser dyes 8−46597
resorufin, in PMMA, site selection spectra, hole burning and Stark effect 8−9159
retinal electronic structure 8−15764
rhodamine dyes, soln. induced singlet-singlet absorption spectra 8−46363
rhodopsin and intermediates, absorpt. spectra and orientational change of chromophore 8−7321
shift in electron levels, method for estimating *(Russian)* 8−46403
solids, cryst. and amorphous, optical spectra, Urbach rule, struct. disorder effect 8−23479
stilbene, trans-, cis-forms, singlet excited state, picosecond dynamics 8−17677
TCNE, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
TCNQ, metallic reflection band, vibronic struct. 8−19502
TCNQ, semiempirical CNDO calcs. of electronic struct. and absorpt. spectra 8−995
TCNQ salts, electron arrangement in ground state, optical spectra interpretation 8−47715
TCNQ salts with alkali metals, optical absorpt. spectra of small particles 8−19505
TCNQ-HMTSeF, polarised single cryst. reflectance obs. and one-dimens. behaviour interpret. 8−6690
tetracene single crystals, Davydov splitting, press. depend., phase transition obs. 8−27250
tetrachlorobenzene, triplet exciton spectral line shape, 2-45K 8−19498
s-tetrazine, fluoresc. excitation spectra, 1K rot. struct. 8−1020
s-tetrazine, visible absorpt. band assignment, vibr. anal. 8−994
thioformaldehyde-d$_0$,-d$_2$, far UV spectrum meas. 2200 to 1800 angstroms 8−25553
thiophene, flash photolysis, new transient absorption spectrum, C_4H_3 radical, assignments 8−46354
thiophosgene, a^3A_2-X^1A_1, dye laser excitation spectra, 539 to 610 nm 8−42083
1,2,3-timethoxybenzene, weak electronic transition, solid, and in rigid glass, UV assignments 8−17681
tribromomethane-propyl alcohol conc. fluctuation kinetics, holographic study *(Russian)* 8−19508
trifluoroiodomethane, liquefied gas solns. bound exciton model for Rydberg bands 8−31214
trifluoroiodomethane, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
2,4,6-trimethyl pyridine-N-oxide, linear dichroism in liq. cryst. matrix, out-of-plane components 8−17701
trimethylammonium manganese chloride dihydrate, optical absorpt. spectrum, 300K, 90K, cryst. field parameters 8−27253
trimethylsilyl sulphide, UV spectra, assignments 8−46359
TSeF salts, mol. props., one-dimens. cond. salts form. 8−6363

spectra of organic molecules and substances continued
TTF-TCNO, optical evidence for Coulomb interactions, review 8−6704
TTT-I_n, charge transfer salt, electronic spectra in soln. and solid state 8−2878
vinyl sulphides, divalent S linking with multiple bonds, spectrosc. obs. *(Russian)* 8−21929
visual pigments, oil droplets and spectral sensitivity, pigeon 8−11655
xanthone, single cryst., polarised UV absorpt. spectra 8−19500
zinc porphin, in n-alkane crystals. at 4.2K, Zeeman spectra for Jahn-Teller instability 8−27256
CH^+, CD^+, $A^1\Pi$-$X\ ^1\Sigma^+$ band system, spectroscopic consts. and radiative lifetimes 8−5237
CH_2 radical, fluoresc. induced by laser 588.9-595.6 nm, $(a^1A_1-X^3B_1)$ energy separation 8−42121
C_4H_3, in flash photolysis of thiophene, transient absorption spectrum 8−46354
ClCF radical in solid Ar, emission and excitation spectra, vibr. anal. 8−9164
Cu complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367
Gd^{3+} in solution, absorpt. spectrum intensity *(Russian)* 8−35169
Pd complex, L-alanyl-L-serine, PMR, EPR and absorpt. spectra 8−46367

spectra of polyatomic inorganic molecules
see also infrared spectra of polyatomic inorganic molecules; radiofrequency and microwave spectra of polyatomic inorganic molecules; Raman spectra of polyatomic inorganic molecules
strontium halides, absorpt. spectra in air-acetylene flame, using AAS with data processing 8−20102
structure recognition, from IR, UV, NMR and mass spectra, computer method 8−25737
transition metal tetrahalogeno anions, ligand field spectra, MO model 8−17654
XY_4 spherical top mols., general rot.-vibr. Hamiltonian formalism *(French)* 8−5192
AlI_3, UV absorbance, dimer-monomer dissoc. equilib., vap. press. of solid 8−13511
C_2N_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
CO_2, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
CS_2, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
CS_2, solns. with liq. Ar, Kr, Xe, CH_4 and CF_4, Rydberg band positions, temp. depends. 8−17686
ClNO, phys. and chem. data 8−27727
$ClNO_2$, phys. and chem. data 8−27727
$ClNO_3$, phys. and chem. data 8−27727
$CrAl_3Cl_{12}$, gas, mol. struct., ligand field spectrum *(German)* 8−37762
$CrCl_2O_2$, electronic transition origin band identification with the van der Waals complex 8−5239
Cu II complexes, 5-coord., ESR, optical absorpt., solvent effects 8−5253
DCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
D_2O, Rydberg states, visible spectra 8−9162
D_2O, vac. UV absorption spectra, Rydberg series vibr. anal. 8−42093
Fe_2B_6, UV-visible absorpt. spectrum 8−13512
$FeBr_2$, UV-visible absorpt. spectrum, vaporisation thermodynamics 8−13512
$FeBr_3$, UV-visible absorpt. spectrum 8−13512
Fe_2Br_4, UV-visible absorpt. spectrum 8−13512
FeS_2, X-ray and visible spectra, SCF-Xα scatt. wave anal. 8−5138
$(GeH_3)_2S$, UV spectra, assignments 8−46359
HCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
HCN, valence excitation energy and UV spectra, HAM/3 calc. 8−25453
HO_2, vertical electronic spectrum, MRD-CI calcs. 8−37646
H_2O, Rydberg states, visible spectra 8−9162
H_2O, vac. UV absorption spectra, Rydberg series vibr. anal. 8−42093
H_2O_2, UV absorpt. cross sections 8−42086
$H_2O(D_2O)$, VUV absorption spectra, Rydberg series, rot. line shapes, quantum defect 8−5244
HO_2NO_2, in stratosphere, UV absorpt. spectrum rel. to abundance 8−20467
$HgBr_2$, UV absorpt. cross-sections of vapour 8−25554
HgI_2, UV absorpt. cross-sections of vapour 8−25554
$Li^+NO_3^-$ ion pairs and hydrated ion pairs, MO calcs., matrix isolation data 8−46267
$Mo(CO)_6$, polarised absorption, field effects in condensed media 8−997
NO_2, Ne matrix isolated, 6K, B←X band system 8−993
N_2O, photoabsorption and photionisation, UV region meas. 8−42087
N_2O, valence excitation energy and UV spectra, HAM/3 calc. 8−25454
$(O_2)_2$, struct., energy transfer, high resolution electronic spectra 8−25550
O_3, Huggins bands, vibr. anal. 8−42085
OPF_3, forbidden transitions, mol. beam elec. reson. obs. using avoided crossings 8−29775
PH_3, vac. UV photolysis, emission spectra 8−46357
SF_6, spectroscopic consts. calc. from saturated absorption spectrum *(French)* 8−971
S_2O, 3400 Å bands, rot. anal., upper state struct. 8−13506
$(SiH_3)_2S$, UV spectra, assignments 8−46359
SiO_2, Si K_α X-ray emission spectra chemical shifts, linewidths and intensities 8−13461
SnX_2 (X=Cl, Br, I), UV absorpt. cross-sections of vapour 8−25554
$Tc_2Cl_8^{3-}$ ion, visible spectra, electronic struct. 8−5240
XeOH exciplex, UV emission 8−37653

spectra of solids
see also impurity and defect absorption spectra of solids; luminescence of solids; spectra of inorganic solids; spectra of organic molecules and substances
Brillouin zone scheme 8−15190
diamagnetic excitons in crossed mag. and elec. fields, optical absorption 8−10874
dipole absorption due to electron-electron interaction of electrons occupying Landau levels 8−27195

spectra of solids continued
electronic transitions, optical dephasing times and line shape functions 8−35162
exciton resonance region, energy density and flux 8−48201
exciton-phonon system, spectral parameter calc. *(Russian)* 8−43311
excitonic state of assembly of double mol. chains oriented in non-reson. matrix, optical response *(French)* 8−10358
Frenkel excitons, kinematical interaction at light absorption and luminesc. 8−10359
g-shifts, correl. with optical absorption spectra 8−23485
Jahn-Teller effect, equal coupling to ε and τ_2 vibrs., Γ_8 quartet 8−2454
lectures on interaction of radiation with condensed matter, Trieste, Italy (Jan.-March 1976) 8−27172
mixed crystal, line profile of absorpt. and Raman spectra, calc. 8−48183
molecular crystals, biexcitonic level splitting 8−10362
multiphoton absorption, intense field effects 8−10921
noncrystalline materials, optical props., lecture 8−27263
noncrystalline materials, optical props., lecture 8−31219
one dimensional Hubbard chain, optical spectrum 8−10920
phonons and polaritons, general lecture 8−26638
plastic crystal, dipolar autocorrelation function, phonon contrib., IR absorption 8−42928
semiconducting solid solutions, optical transitions, review 8−2908
semiconductor, absorption of EM and sound waves in strong coupling case, effect of acoustic superlattice 8−26630
semiconductor, direct-gap, final state interactions in gain and absorpt. spectra of electron-hole liq. 8−43305
semiconductor, EM properties, general lecture 8−27173
semiconductor, impurity-level assisted two-photon interband absorption of laser radiation 8−23464
semiconductor, many-photon absorption by intraband transitions in mag. field 8−27261
surface, light interaction effects and spatial dispersion role *(Russian)* 8−23481
temperature dependence, transport eqn. 8−23421
thin crystal, interference spectra, size quantisation of excitons 8−47708

spectral analysers
see also spectral analysis; transient analysers
arc discharges, periodic processes, spectral emission characts., vidicon system investig. *(Russian)* 8−9848
direct readout system for clinical and research purposes 8−3488
double-exposure technique improves spectrum analyser photographs 8−12714
frequency analyzing equipment, device for scientific education in oscillatory phenomena 8−41126
integrated optical RF spectrum analyzer, feasibility 8−5431
LF real-time spectral analyser design and operation *(French)* 8−20538
LF spectral analyser with HF SQUID, threshold sensitivity 8−41328
microwave spectrum analysis, using microcomputer 8−41329
photodetector noise power spectrum density meas. 8−21197
principal error classification and assessment 8−41326
SAW spectrum analyser, digital signals processing 8−26007
speech disorder evaluation using basilar membrane electronic model 8−40206
US Doppler signal, calc. of blood flow 8−44573
visual speech vocoder as teaching aid for deaf 8−36069

spectral analysis
see also spectral analysers
acoustic emission pulses evaluation, freq. anal. appl. 8−18126
atmosphere, freely convecting, above water surface, oscills. spectral density function *(Russian)* 8−11964
atmospheric mean daily pressure over Mediterranean 8−3913
baseline recognition and baseline flattening algorithm 8−262
biological rhythm research, second-order correlation functions and bispectra 8−3441
biomedical signal high efficiency freq. anal. and data compression through digital filtering 8−31939
bubble size spectra, acoustical determs. 8−9735
colour photography of accidental thermal burns, diagnosis appl. 8−3648
completely monotonic operators, spectral props., resolvent 8−8226
cosmic ray intensity fluctuations, spectra rel. to interplanetary mag. field spectra 8−28457
coupled nonlinear oscillators under modulation conditions in intestinal modelling, spectral analysis 8−44754
deconvolution of experimental spectra using moments method 8−29094
dolphin communication signal spectrum, fine struct. anal. 8−20197
Earth crust, spectrum characts. appl. to seismic stations calibration *(Russian)* 8−49158
earthquakes, spectral analysis of 1976 Friuli aftershocks 8−24240
edge waves in NW.Pacific Ocean, wavenumber-freq. spectrum *(Russian)* 8−44841
EEG, rel. to haemodialysis 8−31968
EMG of muscular exterior carpi radialis, form recognition by freq. spectrum 8−15939
EMG of Vastus medialis for graded isometric torque tensions, power spectrum distrib. 8−44673
EMG spectra, effect of motor-unit firing time statistics 8−31804
erythrocyte-rouleaux formation, US detect. by spectral anal. 8−40280
ESR, conc. determ. and resolution of multiple-component spectra 8−259
Eurasian earthquakes and explosions, discrimination using P codes spectral characts. 8−7576
filtered image, geological appl. *(French)* 8−9338
foetal heart rate variability anal. using spectral anal. 8−28111
Friuli earthquakes, response spectra analysis for different sites 8−24248
geomagnetic field annual oscillation 8−40470
HF diffraction of arbitrary incident field by half plane, asymptotic techniques 8−42264
Hilbert spaces, nested, spectral props. in class of operators and group representations 8−4459
images in optical-electronic processor, discretisation using holographic filter *(Russian)* 8−37809
Indian monsoon, spectrum anal. appl. 8−44957
industrial X-ray film information processing methods *(German)* 8−15637

spectral analysis continued
infrasound signals, dynamic spectral anal. by FFT *(Chinese)* 8−1453
interferential spectrometry, matched filtering, real time spectral recognition 8−37822
interpolation by zero fill or convolution 8−25803
intestinal motility study by computerised anal. of sounds and EMG wall pots. *(German)* 8−31944
ionospheric f_0F_2 vars. correl. with stratospheric O_3 content vars. 8−45098
land-use photo classification, scale and resolution effects 8−12023
laser beam, spectral analysis, photomixing method 8−46698
laser Doppler particle meas. system, using nonsinusoidal forced vibr. and bispectral analysis 8−41285
magnetic field anomalies, comparison of Moon and Earth 8−4122
magnetotelluric data, tensor anal. for two-dimensional geological structs 8−40471
mechanical light modulator, harmonic anal. of noise spectrum 8−1362
mesoscale motion in western North Atlantic Ocean, space and time scales 8−49035
microoptic signal processing research, review 8−38073
microphone signals, cross-spectral density for acoustic intensity meas. 8−9514
multicomponent HF skywave arrival elevation angle meas. 8−24408
neutron moderation, linear Boltzmann operator, in various geometries, contributions to spectral theory *(Rumanian)* 8−46128
NMR analysis system, LAOCOON3-type, reliability efficiency and error estimates 8−258
ocean short period internal waves, spatial spectrum 8−3800
phonocardiogram classification, linear prediction analysis appl. *(Japanese)* 8−36010
physiological signal pre-forming system for automatic freq. anal. 8−3621
Poltava latitude differences from obs. of bright zenith stars 8−28488
Quaternary palaeomag. data from British Columbia, rel. to geomag. secular var. 8−11806
random data, effects of detrending and smoothing 8−40685
real-time multichannel optical spectral analysis, by liq. cryst. display 8−38042
real-time optical Fourier spectrum analysis using acousto-optic diffr. 8−5430
second derivative UV absorpt. spectrometry, improving analysis 8−45731
seismic records, combined spectral anal. for determ. of geologic section props. *(Russian)* 8−40696
seismic response from local earthquakes at Lipari, Eolian Islands, anal. 8−40494
seismology, optimal vel. anal. in common depth point method *(Russian)* 8−40698
solar activity-weather correlation, anal. 8−40628
solar granulation, power spectrum from one-dimensional speckle interferometry 8−45299
solar radiation, total and net intensities, power spectral anal. 8−40617
solar wind, electron density spectrum from interplanetary scintillation 8−45178
solar wind velocity, dispersion anal. rel. to spatial and temporal spectra 8−7852
speech, speaker identification by long-term spectra under normal and distorted conditions 8−11677
speech analysis, PES method for formant freqs. extraction 8−11674
stratiform cloud radar obs. 8−7686
stratosphere, lower, power spectral anal. of meteorological data 8−40616
UPEAK spectral decomposition routine 8−32798
variable stars, short-period, max. entropy method appl. 8−16436
visual cortex, image description model 8−40143
Walsh transformation processing, matrix relationship with discrete Fourier transformation *(Russian)* 8−26
water inflow to Clutha Lakes rel. to atm. circulation indices and rainfall 8−11926
weather satellite data, complex demodulation 8−49177
wind speed and atm. elec. field near ground, spectra and cospectra 8−11950

spectral line breadth
see also atomic spectral line breadth; chemical shift; Davydov splitting; Doppler effect; EPR line breadth; molecular spectral line breadth; NMR line breadth; Stark effect; Zeeman effect
absorption spectra in QSOs, line shape analysis 8−36718
alloys, oxidation, ZZ 8−14600
anthracene, singlet-triplet absorpt. spectra, 2-300K, photoexcitation spectra 8−43890
anthracene mol. cryst., exciton-lattice interaction and exciton absorption line shape 8−18968
astronomical spectra, Doppler broadening parameters meas. without spectrograph 8−20646
benzene-d_6, liq., Raman spectra vibr. relax. and band widths 8−23440
biexcitons recombination, polariton effects 8−23033
blue variable stars at high galactic latit., spectral line profiles 8−32482
3C 286 radio absorpt. line, profile rel. to cosmological deceleration meas. 8−20902
coherent antiStokes Raman scattering, reson. excitation, lineshape 8−9415
colour-centre-phonon many-mode interaction, absorption band shape, adiabatic approx. 8−2883
crystal impurities, zero-phonon transitions, spectral characts. 8−2884
crystals, theory of phononless line broadening for impurity center 8−35180
cyclotron lines in Hercules X-1 spectrum, first harmonic splitting 8−20912
1,4-dibromonaphthalene, S_0 to T_1 exciton transition, optical dephasing time and lineshape function 8−15183
(1,4)-dibromonaphthalene, triplet exciton scatt., absorpt. spectra 8−6696
electron cyclotron reson. lineshape analysis for cylindrical cavity field inhomogeneities 8−13560
ferromagnetic resonance line, uniform, at finite temps., dislocation broadening 8−19334
AM Herculis, X-ray binary, vel. curves for emission lines broad and sharp components 8−32513
heuristic model for line profiles, general Lorentz function *(German)* 8−37074

spectral line breadth continued
hollow cathode lamp, spectral lines width and intensity, high freq. field effects 8−16856
impurity absorption and fluorescence spectra, quadratic electron-phonon interaction and impurity-ion band shape 8−6731
interstellar spherically symmetric radially moving clouds, spectral line shapes 8−20865
IR intensity measurements, by band contour anal. 8−29182
liquid, US-induced birefringence, Brillouin scatt. linewidth, sound absorption coeff. 8−27180
liquid phase band contours, data processing, band shape corrections 8−27215
localised centres in strong EM fields, multiquantum transitions 8−10936
Lorentz function of n-th degree represent. of line profiles *(German)* 8−37075
luminescence, nonuniform broadening profile, optical excitation migration effects 8−48215
macromolecular, solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas., review 8−48187
metal, XPS and X-ray absorption spectra, thermal broadening of core levels, many-electron effects 8−31284
3-methylpentane-nitroethane, binary fluid, Rayleigh linewidth meas. near crit. point 8−48190
2-methyltetrahydrofuran glass, 77K matrix ENDOR line shape model and expt. 8−6600
mixed crystal, line profile of absorpt. and Raman spectra, calc. 8−48183
molecular crystals, exciton-lattice interaction and exciton absorption line shape 8−18968
molecular liquids, IR absorpt. lineshape, orientation density fluctuation effects 8−48171
molecular liquids, vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8−27221
Mossbauer line profile, effect of diffusion in external force field *(Russian)* 8−19382
naphthalene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
naphthalene-TCNB (PMDA), Raman spectra orientational disorder, charge transfer cryst. 8−19459
nitroethane-3-methylpentane, binary liq., depolarised light scatt. at crit. point 8−39558
non-equilibrium gas, Doppler broadened spectral and time correl. functions 8−14122
ρ Ophiuchi dark cloud, atomic and mol. line widths rel. to contraction 8−41013
optical absorption band shapes, reconstruction from moments 8−37686
organic solids, cryst. and amorphous, optical spectra, Urbach rule, struct. disorder effect 8−23479
overlapping components of spectral line, numerical method for separation 8−21227
phenanthrene, molecular cryst., phonon scatt. and exciton linewidths 8−15185
Phonon-cyclotron absorption in a transverse electric field 8−2741
photon echo, anomalous time shape, induced by two successive light pulses 8−18021
photon kinetic equation for Doppler line broadening, soln. 8−9751
plasma, spectral lines, complex level shift 8−26253
plasma, turbulently heated, electron cyclotron radiation spectral line width collisional broadening 8−34369
pressure line shape in impact approx. with Debye screening, semiclassical and quantum calcs. 8−37591
α-quartz, Raman spectral lines, radiation and temp.-induced changes in width and intensity 8−2859
Raman effect in solids, interacting elementary excitations, review 8−43846
Raman spectral line shape, quantum field theoretic formulation 8−31187
rare earth tellurides, electron density distrib. from Mossbauer spectra 8−23374
ruby, cryst., lasing action, spectrum, luminesc. spectrum effects *(Russian)* 8−13716
ruby, radiative spectral transfer, time resolved fluoresc. 8−2900
saturation spectroscopy, lineshape, vel. changing collisions *(French)* 8−12765
semiconductor, impure, exciton absorpt. line shape calc. *(Russian)* 8−10934
semiconductor, Wannier-Mott polaritons in mag. fields, review 8−2437
semiconductor, weakly inhomogeneous, impurity absorpt. and impurity photocond. line profiles 8−19098
silicate galss:Eu^{3+}, fluoresc. linewidth variation, electron-phonon coupling 8−19531
silicate glass: Cr^{3+}, optical props., 88-273K, energy levels in crossing region 8−6709
solar faculae and pores, Fe I line profiles families 8−49408
solar spectral lines, improved value for microturbulent broadening filter function 8−20796
solar UV spectra, evidence, for chromosphere nonthermal line broadening 8−45313
solvated electrons in alcohols, spectral broadening, laser saturation 8−31750
spin waves in absorptive mag. material, light scatt. lineshape 8−23476
tetrachlorobenzene, triplet exciton spectral line shape, 2-45K 8−19498
tobacco mosaic virus, solutions, Rayleigh scatt., elec. induced variations, spectral width and intensity meas. 8−48187
Voigt profile, fast calculational algorithm, line-by-line transmittance 8−7767
X-ray diffraction and spectral line breadth, anal. method using Voigt function 8−34387
X-ray diffraction instrumental line broadening with non-ideal standard specimen, anal. 8−41391
Al-Co, electron irradiated, self-interstitials trapped at Co impurities, Mossbauer line shape anal. 8−6615
AsD_3, solid and liq., vibr. relax., Raman ν_1 band, 54, 160K 8−27198
$BaTiO_3$, ferroelec. temp. depend. of broad A_1 (TO) phonon Raman linewidth 8−2857
CO, condensed film, UPS linewidths 8−31294
CO liq. and CO-O_2 $(N_2)(Ar)$ mixtures, polarised vibr. Raman scatt. lineshapes 8−27199
$CaWO_4$:Nd^{3+}, thermal behaviour of shape and width of 9145 Å laser line 8−6755

spectral line breadth continued
- Cl_2, liq., mol. reorientation, Raman spectra obs. *(French)* 8−31192
- Cu-Mn alloys, Mn K X-ray emission and XPS lines, width and asymm. 8−19605
- F spectral lines, neutral, in shock tube plasma, Stark widths and shifts 8−9117
- Fe-V alloys, Mossbauer study, hyperfine field effect on formation of local moments 8−27134
- p-GaP, Raman scatt. by coupled plasmon-phonon oscills. 8−6687
- Gd, ferromag. reson. line width *(Russian)* 8−39406
- H_b line profiles for white dwarfs with dipole and quadrupole magnetic fields 8−8004
- HCl, linewidths and shifts in fundamental band broadened by D_2 and H_2 *(French)* 8−972
- ^4He, liq., Rayleigh linewidth meas. 8−14522
- $(In_2SnTe)_x$-$(2InSb)_{1-x}$ system, semicond., Mossbauer absorption line of ^{119}Sn 8−27146
- KCl, F-centre phonon many-mode interaction, absorption band shape 8−2883
- $LaCl_3$:Pr^{3+}, hyperfine struct. of 6011 Å line, laser-induced absorpt. line narrowing 8−15196
- N_2, condensed film, UPS linewidths 8−31294
- N_2, liq., vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8−27221
- Na_2, liq., vibr. line broadening, Zwanzig-Mori theory and quasi-elastic processes 8−27221
- $NaNO_3$, disordered, temp. depend. of Raman spectra, Rayleigh wing scatt. 8−31209
- Nd^{3+}:glass, inhomogeneously broadened spectra, struct., selective laser excitation obs. *(Russian)* 8−35181
- Pt, single cryst., oxidation, ZZ 8−14600
- Si, single cryst., oxidation, ZZ 8−14600
- Ta, surface layers, Mossbauer conversion electron studies 8−15068
- TlN_3, press. induced phase transition, Raman scatt. meas. 8−19468
- $Y_3Al_5O_{12}$:Yb^{3+}(Nd^{3+}), one-phonon satellites in luminesc. spectra, rel. to effective phonon density 8−6730
- YIG:La film, for microwave applics., growth and ferromag. reson. meas. 8−3008
- ZnS:Pb^{2+}(Mn^{2+}), high press. luminesc., localised excitations 8−19534
- ZnTe, magnetoreflectance meas. on Γ_6-Γ_8 exciton 8−6656

spectral line profiles *see spectral line breadth*

spectral line shift
- *see also chemical shift; isomer shift; isotope shifts; Lamb shift; radiative shifts; red shift; Stark effect; Zeeman effect*
- alloys, oxidation, ZZ 8−14600
- aminophthalimides, dynamic dipole induced interactions in absorption spectra 8−13553
- anthracene, melt and dil. soln., UV spectra, line broadening and shift vibr. struct. 8−17684
- anthracene, singlet-triplet absorpt. spectra, 2-300K, photoexcitation spectra 8−43890
- astronomical spectra, Doppler shifts meas. without spectrograph 8−20646
- atom, spin-1/2, general higher-order effects of freq. shifts in optical-RF double reson. 8−21884
- atom+atom anisotropic collisions, spectral line breadth and shift, polarisation depend. 8−46305
- atomic hyperfine transitions in buffer gas, quantum theory *(Russian)* 8−21881
- benzene, electron impact-induced generalised oscill. strength, 400 eV, 500 eV, momentum change depend. 8−1088
- biexcitons recombination, polariton effects 8−23033
- bromanil and radical anion, Raman and IR freq. shifts 8−33516
- bromomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
- chloranil and radical anion, Raman and IR freq. shifts 8−33516
- cholesteric liquid crystal, nonmesomorphic solutes, effect on cholesteric pitch, max. refl. wavelength shift *(Russian)* 8−38620
- chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
- cyanomethane, collisional rot.-line widths and shifts, microwave region 8−25619
- dianthronylidene ethane, luminescent excimer geometries, intermol. shift 8−27294
- diatomic molecules, shifts and widths of predissoc. levels 8−5304
- 1,6-diphenylhexatrienes, electronic and fluoresc. spectra, solvent effects, 77K 8−21959
- 2,5-diphenyloxazole, phosphoresc., 77K, solvent effect 8−42118
- electron cyclotron reson. lineshape analysis for cylindrical cavity field inhomogeneities 8−13560
- eosin, in glycerine-water mixture, excitation and emission peaks, concentration shifts 8−33540
- EPR, introductory student expt. 8−41119
- ESCA expt., charging and rotational dependence of time position 8−21970
- fluoromethanes, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
- formaldehyde, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
- gravitational, review of laser appl. to precision meas. 8−42246
- high-sensitivity multipurpose remote sensor 8−40684
- hydrogenic orbitals, Compton shift *(French)* 8−42012
- indole, and derivatives, temp. fluoresc. quenching, rel. to H_2O solvent struct. 8−5265
- iodomethane, and isotopic forms, self-broadening and self-shifting of rot. spectra 8−13551
- iodomethane, collisional rot.-line widths and shifts, microwave region 8−25619
- IR molecular absorption spectra, effect of rotational coupling on torsional bands 8−13497
- methane, nonlinear optical reson. shift in mag. field, vibr.-rot. transition 8−13549
- methyl iodide, in Ar and Kr, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
- molecule, method for estimating shift in electron levels *(Russian)* 8−46403
- pionic atoms, 2p level shifts and widths 8−46469
- polydiacetylene-bis(toluenesulphonate), refl. spectra, 0-15 kbar, doublet press. shift 8−43891

spectral line shift continued
- polydiacetylenes, electronic structure, bond length variations effect, Xα SCF calc. 8−5378
- porphin, free base, in n-octane crystal, S_1 from S_0 transition, freq. shift and dephasing temp. depend. 8−25584
- 1-propanol, electron traps, prestabilised electron relax. model 8−27803
- quinine sulphate, acid soln., edge excitation red shift and proton migration 8−1028
- Raman spectral line shape, quantum field theoretic formulation 8−31187
- ruby, optical spectra freq. shifts press. depend., nonperturbative theory 8−23499
- ruby fluorescence line shift, appl. to press. distrib. meas. in diamond anvil press 8−12710
- solar spectral lines, improved value for macroturbulent displacement filter function 8−20796
- solutions, dilute, freq. shift, method of local field calcs. 8−13553
- tetrachloromethane in dilute soln., dynamic dipole induced interactions in absorption spectra 8−13553
- trichloromethane in dilute soln., dynamic dipole induced interactions in absorption spectra 8−13553
- X-ray, lineshifts in nonrelativistic and relativistic approxs. 8−951
- α-Al_2O_3:Cr^{3+}, electronic Raman transition from optically pumped excited state 8−39531
- Au, K-shell X-rays, energy shifts and excitation mechanism 8−41990
- B, amorphous, X-ray Raman scatt. 8−48157
- Ba, quadratic Zeeman effect, diamagnetic shift, Rydberg series, strong field mixing 8−946
- C_2 molecule in solar spectrum, wavelength shift determ. method 8−49340
- CS_2, in Ar, medium perturbations of extravalence excitations, VUV absorpt. 8−1002
- Ca+He(Ne), press. broadening, line shifts 8−5290
- ^{114}Cd+He, collisional effects on 326.1 nm line rel. to temp. and conc. 8−5336
- CdS(Se), ps. spectra, high density exciton system 8−19554
- chloromethane, collisional rot.-line widths and shifts, microwave region 8−25619
- Cs vapour, general higher-order effects of freq. shifts in optical-RF double reson. 8−21884
- F spectral lines, neutral, in shock tube plasma, Stark widths and shifts 8−9117
- FCN, IR laser Stark spectra, C-F stretching mode, dipole moments, rot. consts. 8−1022
- $(Fe_xMn_{1-x})_3C$ in steel, X-ray K-absorpt. spectra *(Russian)* 8−6813
- p-GaP, Raman scatt. by coupled plasmon-phonon oscills. 8−6687
- Ge, electron-hole drops size effect on far IR absorption and scatt. *(Russian)* 8−10903
- H, multiphoton absorpt., reson. shift and power broadening, truncated model semiclassical calcs. 8−17644
- p- H_2, solid, induced near IR absorption spectrum, freq. shift, intensity, up to 10 kbar 8−6658
- HCl, linewidths and shifts in fundamental band broadened by D_2 and H_2 *(French)* 8−972
- HCl(-acetone)(-acetonitrile), soln., IR absorption, H-bonding, solvent effect 8−29778
- H_2O-HCl(HBr)(DBr) complexes, IR matrix isolation spectra, struct. 8−29781
- He-Ne-methane stabilised ring laser, freq. stability calcs. *(Russian)* 8−9401
- Hg doubly K ionised, energy shift between K_α X-ray and its hypersatellite line 8−9107
- I+Ar, press. induced freq. shifts in I photodissociation laser 8−37875
- K, 5^2P to 4^2S resonance line, rare gas perturbations, broadening, shift and dipolaris. 8−9126
- Li+He, press. broadening, line shifts 8−5290
- Li*+He(Ar), Li principal series line broadening and shift, interat. pot. consts. 8−42165
- Mn^+, in soln., EPR relax. probe 8−31104
- N_2, solid, Raman spectra vibron and lattice freq. shifts, librational force consts., α- and γ-phases 8−19460
- NO_2, Ne matrix isolated, 6K, B←X band system 8−993
- NaCN, Raman spectrum, hydrostatic press. effects 8−6663
- $NaD_3(SeO_3)_2$, ^{23}Na NQR, second-order quadrupole shift, temp. depend. 8−15055
- $NaMO_2$, Stark shift of visible absorpt. of NO_2^- 8−19499
- OCS, collisional rot.-line widths and shifts, microwave region 8−25619
- Pt, single cryst., oxidation, ZZ 8−14600
- Rb, $5^2P_{1/2}$→$5^2S_{1/2}$ resonance line perturbed by inert gases, depolaris., broadening and shift 8−21880
- ^{87}Rb resonant frequency change, due to spectral profile of pumping light 8−45590
- Sb (III) compounds, orbital population anal. using ^{121}Sb Mossbauer data 8−21953
- Si, single cryst., oxidation, ZZ 8−14600
- Si:P, heavily doped, IR bound-exciton luminesc. spectra 8−15211
- Sr, quadratic Zeeman effect, diamagnetic shift, Rydberg series, strong field mixing 8−946
- Ta, K X-ray energy, excitation mode depend. 8−17597
- Ta, K X-ray energy, excitation mode depend. 8−17598
- Xe, atom and ions, relativistic Dirac-Fock-Slater calc., fluoresc. yield, X-ray energies shift 8−25450
- Xe, K X-ray energy shifts following electron capture beta decay, role of nucl. hyperfine struct. 8−5166
- ZnS, interimpurity high press. luminesc. 8−19532
- ZnSe:Cu, Cl, high press. luminesc. 8−19532

spectral linewidths *see spectral line breadth*

spectral methods of temperature measurement
- *see also pyrometers*
- atmospheric temp., surface to orbit gas laser, absorpt. of vibr.-rot. band 8−12015
- atomic vapour excitation temperature in graphite furnace AAS 8−7298
- comparator of spectral radiances, use in realising temp. scale above 1337.58K *(Japanese)* 8−8407
- digital pyrometry in solar furnace *(Japanese)* 8−32821
- flame, laser Raman spectroscopy method *(German)* 8−32900
- flame, spectral remote sensing 8−32818
- flame, temperature and OH concentration, simulatenous determ. by high-resolution laser absorpt. spectroscopy *(German)* 8−35776

spectral methods of temperature measurement continued
gas sample, IR spectra, nonlinear least squares method 8−15738
geological materials, spectrographic thermometry and manometry using DC arc 8−16796
high-current, graphite cathode vaporisation, composition and temp. spectral determ. 8−14228
IR pyrometer for remote temp. meas. of high-power radiation-generating equipment 8−24799
line-reversal method, effect of fluctuations and nonuniformities 8−8404
multiplicative comparator of spectral radiances, systematic errors *(Japanese)* 8−29139
photoelectric pyrometer using non-cooled $Hg_{1-x}Cd_xTe$ detector, 0-700°C range *(Polish)* 8−41313
pyrometer, wide spectral range, temp. scale calc. 8−217
pyrometric system image quality in temp. meas. of nonisothermal objects 8−41312
radiation pyrometers, principles and appl. *(German)* 8−32819
CO_2 4.3 μ band radiance meas. of internal combustion engine gas temp. *(Japanese)* 8−29119
OH radicals in glow discharge, rot. levels distrib., temp. meas. 8−47169
W filament lamp, temp.-calibrated, standard, characts. 8−218

spectrochemical analysis
see also atomic absorption spectroscopy; atomic emission spectroscopy; X-ray fluorescence analysis
absolute mass detection limits using laser microprobe anal. with cross excitation 8−7297
acid oxygen carbon electrodes, electrochemical measurements and surface studies, ESCA method appl. 8−31651
AES principles, developments and applics. 8−35781
air, nonlinear least squares method for IR spectra 8−15738
air pollutant emission and emission meas. by laser *(German)* 8−40665
alloys, liq., composition determination during electron bombardment furnace fabrication, X-ray emission spectrography *(French)* 8−3427
atomic spectrochemical measurements using Michelson interferometer Fourier transform spectrometer 8−3399
autoanalyser chart peak height digitiser 8−44431
benzophenone, sensitised crosslinking, polymerisation, UV curing, IR investig. 8−35709
binary mixtures, anal. by computer decomposition of mol. fluoresc. spectra 8−15735
biological molecules, chem. reactions, Raman difference spectroscopic obs. 8−44368
bone powder and ash, PMR and IR spectra, chem. anal., bond lengths 8−3414
brass, Auger spectral anal. of oxide corrosion films, quantitative methods 8−35557
carbon steel, S determ., flame chemiluminesc. method 8−48711
catalytic surface phenomena, Raman spectroscopy using rot. vacuum cell 8−16852
chemiluminescence analyser, process industry appl., air pollutants monitoring 8−40094
chromatography, liquid, detector characts. and use, book 8−15751
clathrate hydrates, identification from NMR line shapes 8−27861
combined retrieval system for IR, ^{13}C NMR and mass spectral data 8−31717
combustion products, Raman scatt., fluoresc. interference 8−15728
conference, Grenoble, France (Sept. 1975) 8−3424
DC arc techniques, transport mechanism 8−22464
diamond, powders, oxidised surfaces, thermal desorpt. spectra 8−47661
dimethylnitrosamine, in aq. soln., detect. and meas. by laser Raman spectroscopy 8−15725
direct solution analysis, using arc source, with two rot. plasmas in graphite tube 8−40105
dual-wavelength spectrophotometry, precision, theoretical assessment 8−29163
dust analysis using LMA 10 laser microspectral analyser 8−24385
Eimac arc lamp, 300 W, spectral and noise characts. 8−32878
electrodeless discharge lamp, microwave excited, fabrication and operating conditions effects 8−29179
electron microprobe Auger spectrometer with ultra high vac. SEM capability *(Japanese)* 8−27849
electronic absorption spectra, digital anal. appls. 8−8448
electronically controlled spark source, for anal. emission spectroscopy 8−16857
entrance slit mask, for rotating step sector or 8-step filter for emission spectrography 8−29165
enzyme activity, kinetic assay, progress curve algorithm for spectrophotometric meas. 8−20083
ESCA, chem., technical and industrial appls., lecture 8−27875
far IR spectroscopy, variable path length solution cell, for use in vacuum 8−45736
flame, temperature and OH concentration, simulatenous determ. by high-resolution laser absorpt. spectroscopy *(German)* 8−35776
fluorescence, spectrophotometric detection system for HPLC 8−48737
fluorescence detection system for HPLC 8−48735
fluorescence spectra, synchronously excited, peak wavelength and intensity prediction 8−20082
fluorescence spectral files for chem. characterisation, data compression by Fourier transformation 8−35744
fluorescence spectroscopy in study of biochem. processes review 8−11784
fluorometric flow cell, using fibre optic system, design and evaluation 8−32879
Fourier transform, IR spectroscopy, microscopic technique for sub-ng level anal. 8−32901
Fourier transform interferometric IR spectrometer, performance evaluation 8−29181
Fourier transform IR spectrometry, chem. and environmental anal. appls. 8−20100
Fourier transform IR spectroscopy, least squares curve fitting, appls. to polymer systems 8−15726
Fourier transform spectrochemical measurements, using modular Michelson interferometer 8−29177
gas sample, nonlinear least squares method for IR spectra 8−15738
glass, boric acid content, differential-photometric determ. using SPEKOL spectrocolorimeter 8−23984

spectrochemical analysis continued
homogeneity investigations with LMA 10 laser microspectral analyser 8−23983
hydrocarbons, substituted, chemisorbed monolayers on Pt (100) surface, AES quantitative anal., calibration 8−31724
immersion microsampling technique for Fourier transform IR spectroscopy 8−12777
immunochemical analysis, standardisation of light scatt. meas. 8−36081
indole decapeptide luteinising hormone, high-press. liq. chromatography, fluorometric detect. 8−20096
inductively coupled plasma emission spectroscopy, using photodiode array spectrometer with correl. readout system 8−31726
inductively coupled plasma source, emission spatial profiles, self-scanning photodiode array obs. 8−16850
inorganic compounds, XPS chem. anal., chem. shift, core binding energy 8−20134
interferometric IR spectroscopy-gas chromatography data, chromatogram reconstruction method 8−35737
IR data files, hierarchical preprocessing 8−15731
IR spectra, computer-assisted interpretation, pattern recognition and artificial intelligence methods 8−15732
IR spectrophotometers, grating and FT types, rel. advantages of interferometers and monochromators 8−16861
IR spectroscopy of gas chromatographic peaks, high resolution 8−20101
IR technique, for in situ identification of TLC spots 8−15727
isopropylbenzene, IR spectra of oxidation products *(Rumanian)* 8−23838
kaolinite-mullite reaction sequence, interpretation from IR absorption spectra, comment 8−48720
lanthanide ion fluorescent probes, spectroscopic obs. system 8−11573
laser PROBE technique, density profile meas. of specific constituent 8−28320
laser selective detection of ultralow concentrations of atoms 8−3407
liquid chromatography, spectrometric detect., computer control of data acquisition, reduction and display 8−27850
metallurgical substances, standard specimens for spectral analysis, review 8−7273
8-methoxypsoralen detection in ocular lens, rel. to psoriasis treatment with photosensitising agent 8−15937
microchemical environment, anal., electron and photon beam appls. 8−44434
microsampling techniques, for IR spectroscopy 8−16862
mild steel, S determ., flame chemiluminesc. method 8−48711
molecular microprobe, microscope system 8−45686
molecule, method for estimating shift in electron levels *(Russian)* 8−46403
molluscan shells, IR spectral anal. 8−3413
multicomponent deposition processes, monitoring and controlling techniques, review 8−11113
multicomponent fluorescent mixtures, quantitative anal. of data 8−27833
neutral density filters, for UV-vis. spectrophotometry, calibration 8−45734
nonconducting powders, emission spectrographic anal. using plastic bounded electrode 8−48714
nonuniform samples, Fourier transform IR spectroscopic meas. 8−15730
nuclear spectra, model uncertainty and bias in evaluation, smoothest consistent baseline theory 8−11591
organic specimens, calcination methods, for spectrochem. anal. *(Russian)* 8−23997
oxyanions, in nuclear waste materials, laser Raman spectrometric determ. 8−35743
phenol (oestrogen) compounds, high-press. liq. chromatography, fluorometric detect. 8−20096
phosphates, uranium content, alpha-ray autoradiography, comparison of results 8−20414
photoelectric spectrometer, drift correction procedure 8−29178
photoemission, many-electron theory, in electron spectroscopy book 8−17714
photographic emulsion, for spectrographic anal., calibration curve computer calcs. 8−4706
picogram analysis using microwave excitation with sealed atomisation cells, buffer effects 8−48729
pipette, multichannel, for parallel aliquoting into centrifugal analyser minidiscs 8−7267
pollution samples, X-ray anal., absolute sensitivity and detection limits 8−7261
polymers, pyrolysis-IR anal. 8−3404
pottery composition from Ayios Stephanos, rel. to Minoan potters on Greek mainland 8−355
powdered sample, in graphite tube, anal. using double plasma DC arc 8−16858
propanolol, (adrenergic blocking agent), high-press. liq. chromatography, fluorometric detect. 8−20096
quantitative laser micro-spectrochemical analysis, of samples with high concentrations 8−40099
Raman scattering diagnosis, laser modulated particulate incandescence effects 8−20117
Raman spectroscopy, recent advances, reivew 8−41359
Raman spectroscopy, vap., medium resolution, appls., review 8−42065
refractory alloys, spectrochem. anal. using high-voltage unipolar spark discharge *(Russian)* 8−15750
resonance Raman spectra, adsorbed species anal. 8−42066
scanning dye laser, microprocessor controlled, for spectrometric anal. systems 8−20081
SEM cathodoluminescence detection system for transmission optical fluorescence analysis 8−23999
SEM cathodoluminescence microscopy, mirror detector system 8−24000
solid sorption systems, use of IR cell with Si windows 8−299
solid surface fluorescence analysis, calibration curves 8−31719
spark discharge, appl. to multielement anal. 8−40103
spectra, deconvolution and background subtraction by least-squares fitting with prefiltering 8−31718
spectrophotometer transmittance transfer standards 8−45728lic
spectrophotometric titration, equivalence point determ. by computerised curve fitting 8−7258
spectrophotometry, uses and limitations of standard additions methods 8−3405

spectrochemical analysis continued

- spectroscopy, fundamental techniques, spectrographs and spectrochem. anal. *(Japanese)* 8−8452
- stable molecules, matrix isolation spectroscopy obs., appls. 8−46320
- steel, construction type, spectrochem. determ. of Ca 8−7275
- steel, stainless, metallic element depth distribution, in passivation layer, luminescent discharge spectrometry exam. *(French)* 8−31585
- steel, surface dacarburation, luminescent discharge spectrometry exam. *(French)* 8−31585
- strontium halides, absorpt. spectra in air-acetylene flame, using AAS with data processing 8−20102
- subway air pollutants, (sulphates, nitrates, bromates, SiO_2, acrolein $(NH_4)_2SeO_4$) IR anal. 8−36273
- sultams, characteristic band in IR region, Raman obs. 8−29784
- super modified simplex, appl. to flame spectrophotometry 8−3397
- surface trace analysis *(Japanese)* 8−40102
- temperature jump sample cell 8−32881
- thick liquid films, absorbance ratio, IR spectra determ. 8−48710
- time-dependent fluorescence, anal. by method of modulating functions 8−48715
- trace analysis by IR spectroscopy, preconcentration, separation and computer techniques 8−31730
- trace gas analysis, with reson. optoacoustic cell operating inside CO_2 laser cavity 8−27836
- transmission spectroscopy, interference fringe 8−16851
- two-photon excited molecular fluorescence, in optically dense media 8−33534
- unknown spectra identification, computer systems, performance evaluation 8−3398
- Br, determ. using Ar^*+Br_2 lamp, line absorpt. meas. 8−46466
- CaF_2, trace impurities, carrier distillation-spectrographic determ. 8−3412
- $CaO-Fe_2O_3-B_2O_3$ glasses, phys. props. rel. to struct. and comp. 8−23331
- Cd, detection, using forward scatt. of reson. radiation with Voigt effect 8−23993
- $^{249}CfCl_2$, prep. by reduction of $CfCl_3$, spectrochem. anal. 8−27756
- Fe film, vacuum-evaporated contamination, conversion electron Mossbauer spectroscopic obs. 8−23985
- Ge(Li) gamma-ray spectra, interfering peak anal., using resolution enhancement filters 8−11590
- Ge(Li), well-type detectors for low-level radiochemical analysis 8−37119
- H, determ. in metals, spectrochemical method *(Russian)* 8−31748
- HCl+Ba, beam-gas reaction, multiphoton ionisation, product identification 8−23946
- H_2O, determ. in organic solvents, IR spectrophotometric method 8−31731
- HPO_3^{2-}, in $NaH_2PO_2-Na_2HPO_3$, quantitative anal. by relative Raman intensities obs. *(Japanese)* 8−23991
- $H_2PO_2^-$, in $NaH_2PO_2-Na_2HPO_3$, quantitative anal. by relative Raman intensities obs. *(Japanese)* 8−23991
- He glow discharge, spectroscopic element detector for gas chromatography 8−31721
- He-O_2-acetylene flame atom cell, for at. spectrometry, characterisation 8−32876
- I_2 vapour low conc. detect. by laser fluoresc. excitation 8−27871
- $^{129}I_2$ radioisotope detection in nuclear fuel cycle, intracavity selective absorpt. analysis 8−46182
- K_2O-SiO_2 glass, Raman scattering of dissolved CO_3^{2-} ions 8−27848
- Li, natural isotope ratio, spectroscopic determ. *(Russian)* 8−23996
- $LiNbO_3$, optically active centres, form. by electron and γ-irrad. 8−18642
- Mg alloy trace element determ., emission spectrographic method 8−48713
- Mo film on Si surface, $MoSi_2$ form. conditions *(French)* 8−43270
- N_2-Cu thermal plasma, effect of Cs on intensity of spectral lines, quantitative spectral anal. appl. *(German)* 8−30417
- NO, combustion gas sampling system and valves for sampling during engine expansion process 8−24380
- NO, in exhaust gas, direct optical detect., transverse sensitivity *(German)* 8−35751
- NO_2, optoacoustic detect. using pulsed dye laser 8−27835
- NO_x source, continuous chemiluminescent analysis, using diffusion interface module 8−40095
- $NaCl:PbCl_2$ crysts., melt grown, Pb distrib. determ., UV spectrochem. anal. 8−40101
- O_3+ethylene, dioxirane form., identification by microwave spectra 8−15659
- $SO_3^-+BrO_3^-$, fast oxidation in acid medium, laser Raman multichannel spectroscopy 8−27754
- Si:As, ion implanted, glow discharge optical spectroscopy 8−22755
- Si_3N_4, CVD films, chemically trapped H reflection spectrometry 8−10081
- SnO_2, from rocks, quantitative determination by Mossbauer effect *(Rumanian)* 8−49178
- Ti, corrosion inhibition in acid medium, electrochem., Auger investigs. *(French)* 8−44430
- W-Mo-Co high-speed cutting steels, Co determ. 8−3416

spectrography *see spectroscopy*

spectrometer components and accessories

see also mass spectrometer components and accessories

- catalytic surface phenomena, Raman spectroscopy using rot. vacuum cell 8−16852
- cell, for liquid differential absorpt. meas. in far IR 8−24872
- cell, IR, with Si windows for solid sorption systems 8−299
- cell, thin-wedge-shaped, for highly absorbent liqs., Lambert absorpt. coeffs. meas. 8−45720
- cooling system, for light sources and detectors in low-light level systems 8−45718
- correlation readout system for photodiode array spectrometer for ICP emission spectroscopy 8−31726
- cryostat for Raman scatt. meas. 8−290
- cuvette attached to UR-20 spectrophotometer for recording refl. spectra of adsorbed mols. 8−298
- cylindrical mirror analyser, transmission props. viewed in energy-angle space 8−15745
- cylindrical mirror analyser system for AES, Auger electron appearance pot. spectroscopy and disappearance pot. spectroscopy 8−23986
- DC arc, for emission spectroanal., transport mechanism 8−22464

spectrometer components and accessories continued

- diaphragm scanning system for Michelson interferometer 8−12764
- Doppler-free two photon and saturation spectroscopy, using thermionic detector 8−46465
- double plasma arc source, for powdered sample analysis in graphite tube 8−16858
- elastic parallelogram mechanism 8−16859
- electron gun, pulsed, for electron spectroscopy 8−5413
- electronically controlled spark source, for anal. emission spectroscopy 8−16857
- electrostatic electron energy analysers, cylindrical mirror appls. 8−21265
- electrothermal atomiser, for AAS 8−31715
- entrance slit mask, for rotating step sector or 8-step filter for emission spectrography 8−29165
- EPR multipurpose cavities, 1.6-1300K appl. 8−8430
- EPR sample tube, gas-permeable 8−260
- fine wire free standing grids for mm and sub mm waves 8−5559
- flameless atomic absorption spectrometer, modification for background correction 8−11581
- fluorometric flow cell, using fibre optic system, design and evaluation 8−32879
- glow discharge, cathodic sputtering atomisation for AAS 8−44415
- graphite atomiser, for atomisation under pressure in graphite furnace AAS 8−11600
- graphite platform atomisation system, for graphite furnace AAS 8−32877
- graphite thermal atomiser, sample vapour supply and removal rates meas. 8−29164
- grating spectrograph, self-calibrating, for light wavelength meas. 8−24869
- high pressure cell, quantitative absorpt. meas., variable thickness *(German)* 8−12769
- high pressure optical cell for Raman studies of gases, liquids and molecular solids 8−12767
- high voltage high frequency spark, with electronic control, for emission spectral anal. *(Russian)* 8−35771
- high voltage unipolar spark discharge, spectrochem. anal. *(Russian)* 8−15750
- high-intesnity arc, anal. appls. *(Russian)* 8−35772
- instrument developments, overview *(French)* 8−293
- Intensified Silicon Intensified Target (ISIT) tubes, medium speed gating 8−12766
- interferometers, in IR spectrophotometers, optical and digital advantages 8−16861
- IR polariser grid prod. process *(Russian)* 8−46795
- IR reflectance accessory, for obs. of surface films on medium size crysts. 8−35591
- laser heterodyne, for high resolution optical spectrometer *(Russian)* 8−29180
- laser-heated miniature oven, for prop. of matrix isolation samples for Raman studies 8−45737
- lock-in amplifier, for NQR spectrometer 8−256
- low temp. cooling device with DRON or URS-50 spectrometers 8−24910
- microphotometer with micrometer attachment, for absorpt. or emission band wavelength meas. on Ebert plates 8−16853
- modular Michelson interferometer for Fourier transform spectrochemical meas. 8−29177
- monochromator, constant-deviation, defocusing compensation with concave diffr. grating 8−46792
- monochromator, minicomputer controlled, with repetitive optical scanner 8−27843
- monochromator, vacuum UV 6 m, photoabsorpt. obs. in atm. gases 8−37969
- monochromator drive, using high-speed digital servo 8−36992
- monochromators, in IR spectrophotometers, optical and digital advantages 8−16861
- mount grating efficiency, triangular and sinusoidal groove gratings 8−32889
- neutral density filters, for UV-vis. spectrophotometry, calibration 8−45734
- neutron activation, epithermal, coaxial Ge(Li) and low-energy photon detector systems 8−20123
- NMR, double, probehead based on crossed slotted tube resonator 8−265
- NMR, double, simple single-coil probe 8−264
- NMR, Faraday screen for crossed coil instrument 8−4670
- NMR probe, for combined homonuclear multiple pulse decoupling and magic angle spinning 8−12735
- NMR spectrometer modification for high pressures 8−45664
- NQR scanning spectrometer, improved super-regenerative oscillator and quench generator 8−8429
- nuclear spectrometry, 4k, using 2k ADC with two biased amplifiers 8−46234
- oven, for laser induced fluorescence spectroscopy of U 8−21230
- photoacoustic cell design, reson. enhancement, background signals 8−4700
- photoacoustic high-performance cell 8−8451
- photographic emulsion, for spectrographic anal., calibration curve computer calcs. 8−4706
- photothermophone, device for absolute calibration of photoacoustic spectrometers 8−16854
- pipette, multichannel, for parallel aliquoting into centrifugal analyser minidiscs 8−7267
- plastic bounded electrode, for emission spectrometric anal. of nonconducting powders 8−48714
- pulse aspiration sampling system, for flame AAS of small sample vols. 8−27838
- pulsed NMR spectrometer incorporating microprocessor, operational, software and hardware details 8−45666
- RC filters, iterated, for signal recording in pulse atomisation AAS *(Russian)* 8−3436
- resolution enhancement filters, for interfering peak anal. of Ge(Li) γ-ray spectra 8−11590
- resonance cell for ENDOR spectrometer, 120-350 G field 8−4671
- rigid W collar, for sensitivity enhancement in flameless atomisation systems 8−35770
- sample introduction, high solids aerosol, for flame at. absorpt. 8−3396
- scanning dye laser, microprocessor controlled, for spectrometric anal. systems 8−20081

spectrometer components and accessories continued
sealed atomisation cells, for picogram anal. by microwave excitation, buffer effects 8−48729
signal shaper-discriminator 8−33387
solution cell, variable path length, for IR spectroscopy in vacuum 8−45736
spark discharge, appl. to multielement anal. 8−40103
square wave modulator, bidirectional, for NQR spectrometer 8−256
Teflon, powder pellets for near-IR spectra 8−3401
temperature jump sample cell 8−32881
toroidal diffraction grating, monochromatic image of entrance slit, form., theory *(Russian)* 8−12770
transmittance transfer standards 8−45728
two crystal diffractometer, neutron spectrometer component, luminosity 8−21807
UV absorption detector for HPLC 8−45707
UV detector, high sensitivity, for HPLC 8−45709
UV detectors, for high-press. liq. chromatography 8−45706
UV monitor, variable wavelength, for HPLC 8−45708
X-ray electron spectrometer reference voltage supply 8−21307
X-ray focal plane spectrometer, high voltage power module and charge amplifier design 8−40826
He-O_2-acetylene flame atom cell, for at. spectrometry, characterisation 8−32876
^{242}Pu preparation by EM isotope separation, for use as α-spectrometry and mass spectrometry tracer 8−9011
W filaments as electrothermal atomisers 8−27860
W filaments as electrothermal atomisers, choice of solvent, gases and nebuliser assembly 8−44432
W filaments as electrothermal atomisers, design of atomiser and power supply 8−44433

spectrometers
see also interference spectrometers; magnetic resonance spectrometers; mass spectrometers; microwave spectrometers; particle spectrometers; radiofrequency spectrometers; X-ray spectrometers
astronomical, with holographic and ruled diffr. gratings 8−40831
astronomical IR instrumentation on NASA airborne observatories 8−45224
atomic absorption spectrometer, graphite furnace, modified for Li at. emission obs. 8−31727
calibration samples, homogeneity investigations with LMA 10 laser microspectral analyser 8−23983
computerised rapid-scan spectroscopy, at NAVWPNSUPPCEN Crane 8−41362
concentric spectrograph using holographic grating 8−32896
correlation spectrometer, computer assisted, for remote sensing of air pollution 8−4002
Correlation Spectrometer Remote Sensor, baseline drift minimisation 8−16167
directional spectral reflection on plane surfaces meas. device *(German)* 8−12745
echelle Czerny-Turner spectrometer, 5 m, instrumental functions 8−8449
electron impact spectrometer, low energy, computer controlled, for mol. energy loss spectra 8−25756
electron microprobe Auger spectrometer with ultra high vac. SEM capability *(Japanese)* 8−27849
Fick Observatory rasdial velocity spectrometer 8−12098
flame emission spectrometer, automatic spectral interference registration, for trace element determ. *(Russian)* 8−35775
Golay-type static multi-slit spectrometer 8−295
IR, measurements and control, Meteor 25 satellite appl. *(German)* 8−32321
IR and sub-MM spectroscopy, conf., Bonn, Germany (Mar. 1977) 8−12778
IR astronomical instrumentation at U.C. Berkeley, current status 8−16293
IR Fourier spectrometer, lamellar grating type, for balloon-borne telescope 8−16294
IR Fourier transform spectrometers for astronomy 8−16309
IR instrumentation of Calar Alto telescopes 8−16295
IR spectrometers, on Viking orbiters 8−20612
laser, high-speed, high-resolution, short-wave region *(Russian)* 8−45735
laser absorption polarising spectrometer, for meas. of small absorpt. coeffs. *(Russian)* 8−29175
laser absorption spectrometer, long path length, effect of scintillation and multiwavelength coherence 8−40653
laser scattering system for marine aerosol meas. 8−36316
laser system, for high resolution optical spectrometry, separate laser heterodyne *(Russian)* 8−29180
laser-ion coaxial beams spectrometer 8−12775
microwave wavemeter molecular rotational resonance investigation, calibration *(Polish)* 8−29866
Mossbauer spectrometer based on Motorola MEK 6800D1 microprocessor 8−37120
OSO-8 Univ. of Colorado UV spectrometer expt., optical design 8−49326
photodiode array spectrometer, for ICP emission spectroscopy, correl. readout system 8−31726
photodiode array spectrometer for David Dunlap Obs. 8−12097
photoelectric spectrometer, drift correction procedure 8−29178
plane grating spectrometer with off-axis parabolic mirrors, slit curvatures 8−24865
pseudorandom noise dielectric spectrometer, appl. of Fourier synthesis 8−16813
small-angle intensity fluctuation spectrometer, appl. to Rayleigh linewidth meas. in liq. ^{4}He 8−14522
space telescope, design features 8−45229
spectropyrometric unit, for vibr. relax. meas. in supersonic flow 8−9275
spin-flip Raman laser spectrometer as source for high resolution mol. spectroscopy and photochem. review 8−32894
stellar echelle spectrograph, balloon-borne UV 8−49318
stellar spectrography with crossed dispersion 8−49337
time-gated, spatially-resolved system, for repetitive elec. discharge obs. 8−45727
two-photon, based on flashlamp-pumped dye lasers 8−16860
UV calibration, using acidic $K_2Cr_2O_7$ soln. as absorbance standard 8−21092

spectrometers continued
UV stellar spectrograph BUSS, optical system, appls. *(Dutch)* 8−7880
VUV Eagle spectrometer, 2 m, design, construction, operation *(German)* 8−45732

spectrophotometers
see also spectrophotometry
atomic absorption double-beam spectrophotometer operation and applications *(Russian)* 8−27864
atomic absorption fluid-analytical spectrophotometers *(Russian)* 8−27863
atomic absorption spectrophotometer, AAS 1N 8−37084
atomic absorption spectrophotometer, microcomputer control and data reduction 8−35762
atomic absorption spectrophotometer, pulsed hollow cathode lamp *(Japanese)* 8−45669
atomic absorption two-wave and dispersionless spectrophotometric systems *(Russian)* 8−27862
automated atomic absorption spectrophotometer, operation and specifications *(Russian)* 8−27865
colour meas. appl., metrological qualification *(Hungarian)* 8−24841
differential spectrophotometer for hydro-optical studies 8−3997
digital colour integrator 8−29138
double wavelength rapid scanning spectrophotometer, appls. 8−4699
errors and calibration procedures 8−32849
fluorescence, spectrophotometric detection system for HPLC 8−48737
goniospectrophotometer, high angular resolution recording, for visible and UV 8−45671
IR heterodyne radiometer using tunable diode laser local oscillator 8−267
IR spectrophotometers, grating and FT types, rel. advantages of interferometers and monochromators 8−16861
low-temperature device for SPECORD UV VIS spectrophotometers 8−21229
observatory scanning spectrophotometer *(French)* 8−20638
phase modulation spectrophotometer, for polarisation spectroscopy, optical calculi 8−45715
phase-measuring recording system, double modulation of source 8−29174
Schumann UV spectrophotometer system for absorpt. and refl. meas. on thin films and solids 8−12772
single-beam absorption-emission flame spectrophotometer design *(Russian)* 8−27866
small-spot scanning IR spectrophotometer head 8−29133
solid state image sensor, photometric characts. *(Japanese)* 8−4677
UR-20 spectrophotometer, cuvette for recording IR multiple refl. spectra of adsorbed mols. 8−298
UR-20 with two-channel cryostat 8−24800
UV absorbance standards, $K_2Cr_2O_7$ in perchloric acid soln. 8−32851
H absorption-cell spectrophotometer for Lyman α radiation, on Mars 4-7 space probes 8−28519

spectrophotometry
see also colorimetry; spectrophotometers
analysis, uses and limitations of standard additions methods 8−3405
astronomical, using intensifier Si vidicon 8−32356
atmosphere, total O_3, spectrophotometric determ. using interference filters 8−16180
colour difference meas., spectrophotometric random errors effect 8−12741
dielectric thin films, refractive index and thickness, spectrophotometric determ. 8−29144
double wavelength rapid scanning spectrophotometer, appls. 8−4699
dual-wavelength spectrophotometry, precision, theoretical assessment 8−29163
errors and calibration procedures 8−32849
glass, boric acid content, differential-photometric determ. using SPEKOL spectrocolorimeter 8−23984
IR transmission spectrophotometry of solid sorption systems, via cell with Si windows 8−299
light source development support spectroradiometric system *(Japanese)* 8−45733
narrow band interference filter, spectral transmission curve meas. 8−297
photodiode array, self-scanned, for high dispersion astronomical spectrophotometry 8−45230
photoresist, negative, as phase profile material for near IR, IR spectrophotometric meas. 8−37953
photosynthetic systems, computer-assisted scanning and kinetic spectrophotometry 8−48950
radiation power of lines, appl. *(Japanese)* 8−8453
trans-retinal, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
trans-retylidene-n-butylamine, ground and excited state dipole moments, permittivity, solvent effects, spectrophotometry 8−27883
sheet with chipped surface, spectral transmission curve meas. 8−297
spectrophotometric titration, equivalence point determ. by computerised curve fitting 8−7258
spectroradiometry, principles *(Japanese)* 8−4678
spectroradiometry automation and applications 8−12740
specular reflectance meas. with double-beam spectrophotometers 8−45674
standardisation in spectrophotometry and luminescence meas., conf., Gaithersburg, USA (Nov. 1975) 8−32846
super modified simplex, appl. to flame spectrophotometry 8−3397
transmission, standardisation in UV and visible regions 8−32850
transmittance standards, semi-transparent metallic thin films use 8−32852
vacuum UV photometric measurements, spectrosc. eqpt. appls. *(Russian)* 8−32897
Venus, data from entry probes and orbiters rel. to optical model of cloud layer 8−4130

spectroscopes *see spectrometers*

spectroscopic light sources
arc source, with two rot. plasmas in graphite tube, for direct solution analysis 8−40105
continuum source, for at. fluoresc. spectroscopy 8−11578
double plasma arc source, for powdered sample analysis in graphite tube 8−16858
dye laser, CW freq. stabilised, spectroscopic and metrological appl. 8−9395
Eimac arc lamp, 300 W, spectral and noise characts. 8−32878

spectroscopic light sources continued
electronically controlled spark source, for anal. emission spectroscopy 8−16857
far IR-submm spectroscopy using tunable laser 8−4713
glow discharge, for optical spectroscopy of ion implanted Si:As 8−22755
heterogeneous plasma discharge, spatial information modelling and processing algorithms 8−14229
high-frequency bulb tube, Hg linewidth meas. *(Russian)* 8−4708
high-voltage spark source, characterisation, computational method 8−45717
hollow cathode discharge, LTE and non-LTE conditions effects *(German)* 8−32891
hollow cathode lamp, cooling system 8−45718
hollow cathode lamp, spectral lines width and intensity, high freq. field effects 8−16856
inductively coupled plasma discharge, gas flow injection system modifications 8−3400
inductively coupled plasma source, emission spatial profiles, self-scanning photodiode array obs. 8−16850
IR lasers, and laser techniques in mol. spectroscopy 8−8455
microwave induced plasma discharge, emission source appls. 8−32880
microwave-excited electrodeless discharge lamps. fabrication and operating conditions effects 8−29179
picosecond parametric light source, narrow output spectrum, high pulse rate 8−33780
power supply for Hg-Ar high press. DC 125 W lamp 8−12722
pulsed, circuitry and characts., AAS applic. *(Russian)* 8−46740
reproducibility for emission spectroscopy, hollow cathode, glow discharge and sparks 8−3429
single-beam absorption-emission flame spectrophotometer design *(Russian)* 8−27866
solid laser wavelength identification using reference absorber 8−5513
spark source, electronically controlled, adjustable waveform, spectrometric obs. 8−45727
submillimetre laser spectroscopy, complete freq. coverage with CH_3OH, CH_3OD, CD_3OD, CH_2CF_2 8−25860
synchrotron radiation, appls., review 8−9010
synchrotron radiation for VUV and X-ray spectroscopy, lecture 8−24870
synchrotron radiation source, monochromatic, for fluorescence spectroscopy 8−296
tunable diode laser, for high resolution matrix IR spectroscopy 8−45739
UV, syncyrotron orbital radiation appl. *(Japanese)* 8−25941
windowless AR discharge VUV lamp, for matrix isolation spectroscopy, spectrosc. evaluation 8−45730
As continuum source, for atomic fluorescence spectrometry 8−45716
Br_2+Ar* lamp, for meas. of Br atom concs. 8−46466
F Kα X-ray line, from KF, for excitation of electron spectra 8−29865
Fe Zeeman tuned mag. confined arc lamp, appl. to U 8−17593
H_2 plasma, UV spectral radiance calibration *(French)* 8−12774
HCN, 337 μm tunable radiation in laser-klystron link through Schottky diode or metal-semicond. point contact 8−46714
He, low press. discharge lamps, reson. line broadening of O I and N I 8−9123
N_2 laser, TEA, for sub ns spectroscopy, modified elec. field 8−17964
Ne-filled discharge lamp, for AAS isotope anal. of B 8−20097
$Pb_{0.93}Sn_{0.07}Te$ tunable diode laser for IR spectroscopy 8−33511
Rb vapour D-line profiles for spherical lamp *(French)* 8−18032

spectroscopy
see also beam-foil spectroscopy; computerised spectroscopy; electron spectroscopy; Fourier transform spectroscopy; interference spectroscopy; mass spectroscopy; matrix isolation spectroscopy; microwave spectroscopy; modulation spectroscopy; optical double resonance; photoacoustic spectroscopy; quantum beat spectroscopy; radiofrequency spectroscopy; Raman spectroscopy; spectroscopy computing; time resolved spectroscopy; tunnelling spectroscopy; two-photon spectroscopy; X-ray spectroscopy
absorption coefficients at 632.8 nm intracavity laser meas. 8−8454
absorption spectroscopic technique using waveguide loss meas. 8−45729
astronomical, high-resolution Michelson interferometer for Isaac Newton Telescope 8−4105
atmosphere, submillimetre wave spectroscopy 8−7796
atmospheric spectroscopy and pollution monitoring by tunable dual CO_2 laser 8−3977
atom, narrowed optical lines, laser and accel. beam method 8−37770
ATR, for, film absorpt. coeffs. meas. 8−37073
ciliary activity obs. by laser light-scatt. spectroscopy 8−36076
circular dichroism in presence of birefr. and linear dichroism, meas. method 8−27178
conference, Grenoble, France (Sept. 1975) 8−3424
correlation spectroscopy appl. to dispersion from tall stacks 8−3932
cyclohexylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724
deconvolution and background subtraction by least-squares fitting with prefiltering 8−31718
diffuse reflectance spectroscopy, applics., standards and calibration 8−32848
Ebert plates, wavelength determ. using microphotometer with micrometer attachment 8−16853
electric dichroism spectroscopy 8−1013
electronic absorption spectra, digital anal. appls. 8−8448
electronic emission spectroscopy, instrumentation, review 8−29166
far IR research, grating era (1925-60) 8−4455
far IR research, Rubens era (1892-1925) 8−4454
far IR-submm spectroscopy using tunable laser 8−4713
fast atomic beams, collinear laser spectroscopy 8−37078
fluctuation spectroscopy, determ. of chemical reaction rates based on optical density fluctuation 8−27730
fluorescence polarisation measurements, correction for finite apertures 8−21224
fluorescence spectroscopy, in study of biochem. processes, review 8−11784
fundamental techniques, spectrographs and spectrochem. anal. *(Japanese)* 8−8452
geological materials, spectrographic thermometry and manometry using DC arc 8−16796
high temperature techniques, achievement of high-temp. and material selection *(Japanese)* 8−45726

spectroscopy continued
high-resolution laser spectroscopy with minute samples 8−17822
instrument developments, overview *(French)* 8−293
intensity correl. spectroscopy, spherical particle continuous distrib. meas. 8−21228
intracavity absorption spectroscopy theory, mode competition 8−32890
intracavity laser spectroscopy, absorpt. line profiles determ. 8−12776
intracavity laser spectroscopy, spectral distrib. kinetics 8−1293
intracavity laser spectroscopy, with continuous and quasicontinuous operation lasers *(Russian)* 8−37080
IR, microsampling techniques 8−16862
IR and sub-MM spectroscopy, conf., Bonn, Germany (Mar. 1977) 8−12778
IR heterodyne technique, appl. to NH_3 lines near 11 μm 8−5230
IR high-resolution, using optically pumped continuously tunable mol. lasers 8−13678
IR intensity measurements, by band contour anal. 8−29182
IR internal reflection spectroscopy, appl. of diamonds 8−24871
IR lasers and laser techniques in mol. spectroscopy, book contrib. 8−8455
IR spectroscopy of gas chromatographic peaks, high resolution 8−20101
IR transmission spectroscopy, variable temp. UHV cell for surface studies 8−41361
IR vibrational spectroscopy, modern trends, book 8−13503
laser, coherent transient effects 8−1112
laser, Doppler-free, bibliography 8−302
laser, summer school, Les Houches, France (June 1975) 8−301
laser broadening technique mode competition 8−29991
laser induced fluoresc. spectroscopy, using induction heated oven, appl. to U 8−21230
laser spectroscopy, present problems and tunable laser status, review 8−24867
laser spectroscopy, review of new techniques 8−32893
laser spectroscopy measurement technique, high sensitivity 8−37082
laser-acoustic diffraction spectroscopy, mol. dephasing and radiationless decay meas. 8−37667
laser-induced absorpt. line narrowing for ions in crysts., appl. to $LaCl_3:Pr^{3+}$ 8−15196
lateral waves along interface, used in detecting surface absorption 8−4707
linear dichroism spectroscopy, and its applications 8−1011
linear laser spectroscopy, review of absorption, opto-acoustic and fluorescence techniques 8−29170
liquid, reflectivity meas. by gas ionisation, vac. UV 8−294
low-temperature techniques, review *(Japanese)* 8−291
microcomputer techniques *(Japanese)* 8−16855
molecular electronically excited states, small mols., vis. and UV laser techniques, book contrib. 8−9277
molecular IR and RF spectroscopy, IR laser cavity techniques, book contrib. 8−9278
nonlinear high resolution laser spectroscopy, review of techniques 8−29171
nonlinear laser, gas laser tuning using SAW light diffraction grating *(Russian)* 8−33759
nonlinear laser spectroscopy, inside Doppler line *(Russian)* 8−21231
nonlinear molecular systems, identification by spectroscopic methods 8−29168
overlapping components of spectral line, numerical method for separation 8−21227
phenylcyclohexanes, substituted, anisotropic liq. cryst. solvent for optical absorption spectroscopy 8−45724
photodiode array spectrometer, for ICP emission spectroscopy, correl. readout system 8−31726
photoelectron statistics rel. to photon correlation spectroscopy, book 8−25842
photon correlation spectroscopy, biomedical appls. 8−3575
photon correlation spectroscopy meas. of bacterial translation 8−44738
photothermal spectroscopy 8−32808
picosecond, review 8−37081
quantum optics, introductory lecture 8−25843
radiation power of lines, spectrophotometric appl. *(Japanese)* 8−8453
reflectance spectroscopy, metal surface oxidation appl. 8−39958
reflection spectroscopy, causality calcs. optical consts. determ. as function of wavelength 8−32887
resonance fluorescence, high resolution technique 8−42244
resonant internal-refl. prism spectroscopy, using surface, guided and Fabry-Perot EM waves 8−41358
resonant Rayleigh type optical mixing, appl. to ultrafast relax. process obs. 8−42373
resonant Rayleigh type optical mixing, appl. to ultrafast relax. in dye solns. 8−42374
saturated absorption spectroscopy, optical feedback effects suppression by phase modulation of refl. light 8−21225
saturation spectroscopy, lineshape, vel. changing collisions *(French)* 8−12765
saturation spectroscopy, recoil component intensity, level degeneracy *(French)* 8−12762
saturation spectroscopy, with delayed pulses, Lamb dip profiles 8−21221
second derivative UV absorpt. spectrometry, improving analysis 8−45731
single frequency intra-cavity spectroscopy, anal. *(Russian)* 8−37079
solid sorption systems, use of IR cell with Si windows 8−299
spectral reflectance curves estimation from multispectral image data 8−32886
Stark effect in Gaussian noise field, three-level system 8−41266
subDoppler spectroscopy, motional Stark effect in high mag. fields 8−947
subDoppler Stark spectroscopy in crossed elec. and mag. field 8−948
submillimetre waves and applications, conf., San Juan, Puerto Rico (Dec. 1976) 8−4712
transmission spectroscopy, interference fringe 8−16851
tunable dye laser, isotope shift meas. at Isolde mass separator CERN *(German)* 8−41863
UV spectral radiance calibration using H_2 plasma *(French)* 8−12774
UV spectroscopy with Copernicus satellite 8−16310
wavenumber calibration of Pb salt tunable diode lasers, using etalons 8−45738
H_2SO_4, vapour, foreign gas broadening diode laser spectroscopy in IR 8−36261

spectroscopy applications of computers *see computerised spectroscopy*

spectroscopy computing
  see also computerised spectroscopy
  activation analysis, photopeak area computation methods 8−11593
  aerosol loaded filters, X-ray fluoresc. anal., absorpt. corrects. calcs. 8−7311
  alpha spectrum anal. program 8−29692
  analysis code for automated reduction of gamma ray data 8−23978
  atomic spectra, classification, pattern recognition method, H model appls. 8−41982
  atomic spectra, classification, pattern recognition method, appl. to Cm energy levels 8−41983
  baseline recognition and baseline flattening algorithm 8−262
  beta-ray spectra, complex, processing method, 'Betarz' programme 8−41884
  binary ^{13}C NMR spectra, ^{1}H noise decoupled, classification 8−27832
  binary mixtures, anal. by computer decomposition of mol. fluoresc. spectra 8−15735
  combined retrieval system for IR, ^{13}C NMR and mass spectral data 8−31717
  diatomic molecules, spectral line collisional broadening, numerical method 8−25622
  electronic absorption spectra, digital anal. appls. 8−8448
  EPR, conc. determ. and resolution of multiple-component spectra 8−259
  fluorescence spectral files for chem. characterisation, data compression by Fourier transformation 8−35744
  gamma-ray spectra, for activation anal., computer programmes for anal. 8−7287
  gamma-ray spectra, monoenergetic, mathematical model of spectra from Ge(Li) detector 8−13372
  graphite, polycryst., EPR meas. rel. to temp., crystallite orientation, paramag. suscept. 8−35023
  graphite intercalation compounds with Rb, Raman scattering, computer fit of doublet 8−35130
  HISLIB, comparison method for GC/MS profiles of complex mixtures 8−7268
  IR data files, hierarchical preprocessing 8−15731
  IR spectra, computer-assisted interpretation, pattern recognition and artificial intelligence methods 8−15732
  IR spectral interpretation, artificial intelligence program 8−300
  liquid chromatography, spectrometric detect., computer control of data acquisition, reduction and display 8−27850
  mass spectra, elemental compositions, computer assignment from isotopic abundance 8−20085
  mass spectra, graphic display, dynamically refreshable controller with vertical line generator 8−314
  mass spectra, low capacity codes, based on statistical moments 8−255
  mass spectra, mol. substructures identification and retrieval, K-nearest neighbour methods 8−20084
  mass spectrometry, on-line literature search system 8−15734
  molecular vibrational spectra calculations, mol. fragments effects *(Russian)* 8−5203
  multicomponent fluorescent mixtures, quantitative anal. of data 8−27833
  neutron activation analysis, for anal. of γ-ray spectra modification and appl. of SPECTRA program 8−20107
  neutron spectra determination program, computer ES 1030, algorithm SAND-II *(Russian)* 8−48723
  NMR analysis system, LAOCOON3-type, reliability efficiency and error estimates 8−258
  NMR T_1 computation, from pulsed data, least-squares formula 8−24837
  nuclear, loss-free counting, real time compensation of dead time and pile up losses 8−17465
  pattern recognition applications to mass spectra classification 8−48722
  photographic emulsion, for spectrographic anal., calibration curve computer calcs. 8−4706
  photosynthetic systems, computer-assisted scanning and kinetic spectrophotometry 8−48950
  polyatomic molecules, structure recognition, from IR, UV, NMR and mass spectra, computer method 8−25737
  polysaccharides, vibr., conformation, IR spectra, computer anal. *(Russian)* 8−13637
  radioisotope identification and mass determination, using SAMPO programme with IDENT subroutine 8−48731
  reduced tensor matrix elements program, AAKP, adaptation for tensor product evaluation 8−17587
  secondary ion mass spectroscopy, image quantitation, by microphotodensitometry and digital processing 8−32914
  solar radioastronomy, spectrograph data processing *(Russian)* 8−49320
  spark source mass spectra, on photoplate, conversational data processing by computer *(Japanese)* 8−8468
  spectrophotometric titration, equivalence point determ. by computerised curve fitting 8−7258
  spherical top molecules, IR spectra, diagonal $F^{(4)}$ and $F^{(6)}$ coeffs., computer listing 8−17669
  spin-orbit interaction, matrix elements, computer program AAKL adapted to spectroscopic notation 8−891
  steroids, mass spectra, computer-aided interpretation by pattern recognition, preprocessing effects 8−15733
  strontium halides, absorpt. spectra in air-acetylene flame, using AAS with data processing 8−20102
  trace analysis by IR spectroscopy, preconcentration, separation and computer techniques 8−31730
  unknown spectra identification, computer systems, performance evaluation 8−3398
  UPEAK spectral decomposition routine 8−32798
  Voigt profile, fast calculational algorithm, line-by-line transmittance 8−7767
  X-ray fluoresc. anal., FORTRAN IV program 8−7313
  X-ray powder diffractometer proportional counter detector system, digital read-out 8−4751
  X-ray spectra, energy dispersive, peak separation from background 8−7310
  ^{13}C NMR chem. shifts, estimation by computer program based on additivity rules 8−13518
  ^{13}CH fragment, selective population transfer expts., density matrix formalism appl. to NMR spectroscopy 8−15059

spectroscopy computing continued
  HO_2 radical, near IR emission bands, vibr. and vibronic transitions 8−37633
  H_2O, IR line intenisties and widths, ν_2 rot.-vibr. band 8−9200
  H_2O, vap., simulation of depolarised Rayleigh scatt. and Raman spectra 8−33513
  $K_5(UO_2)F_9$, optical spectra, vibr. freqs. calcs. *(Russian)* 8−31205
  KrF*, bound-free emission spectra, simulation 8−29806
  NO, and isotopic forms, $X^2\Pi$ state, IR obs., mol. consts. 8−42045
  XeF, B-X transition vibr. anal., flash photolysis UV absorpt. spectroscopy 8−42088

spectrum *see spectra*

spectrum analysers *see spectral analysers*

speech
  see also hearing
  articulation development, possible nonlinear time varying control in feedback path 8−35870
  Bengali vowels in connected speech, format freqs. *(Japanese)* 8−3524
  bilabial stop consonants differing in voice onset time, noncategorical perception 8−11676
  distinctive features and acoustic cues, distinction 8−11681
  electric potentials, cranial and facial, assoc. with speech prod. 8−11675
  extraction from noise by adaptive digital filtering *(Japanese)* 8−13863
  feature detectors for voice onset time, voiceless anal. channel 8−3505
  feature processing initial consonants, non-independ. 8−27972
  fundamental voice freq., correl. anal. of physiological factors 8−40201
  glottal wave, male and female, vars. 8−11678
  infant babbling, effect of final-syllable position on vowel duration 8−11679
  laryngeal films, ultra high speed, automated anal. 8−36023
  lip-opening area, new fast continuous meas. method 8−3520
  neuromuscular model of laryngeal control for pitch change in Japanese word accentuation *(Japanese)* 8−40205
  perception, order effect of acoustic segments of VC and CV syllables on stop and vowel identification 8−27967
  phonemes processing, speed-accuracy study 8−20193
  respiratory tracking of dichotically presented tonal amplitudes 8−27973
  speaking rate effect on vowel formant movements 8−40202
  stammer inhibition, pocket sized DAF unit, bucket brigade delay lines, PCB 8−31825
  tongue movement observation using dynamic palatography 8−44687
  tongue shape, factor anal. 8−3522
  voice frequency meas. using fast freq. meter *(German)* 8−3518
  voicing distinction in initial stop consonants, dissociation of spectral and temporal cues 8−3519
  vowel articulation, transmission behaviour of human speech generating system 8−15849
  vowel formant freqs., piecewise-planar representation 8−31822
  vowel sounds, control of vocal-tract length 8−11680
  He speech, translation via segmentation, partial-rejection and expansion 8−31823

speech analysis
  basilar membrane electronic model for evaluation of speech disorders 8−40206
  formant frequencies extraction, PES method 8−11674
  fundamental freq. contours at syntactic boundaries 8−3521
  hypernasality quantitative evaluation using acoustic perception computer method 8−27971
  linear predictive analysis using small anal. segment, error evaluation *(Japanese)* 8−31824
  speaker identification by long-term spectra under normal and distorted speech conditions 8−11677
  vibrotactile frequency discrimination, for speech parameter encoding 8−11772
  visual speech vocoder as teaching aid for deaf 8−36069
  voicing distinction in initial stop consonants, dissociation of spectral and temporal cues 8−3519

speech compression *see bandwidth compression*

speech intelligibility
  see also hearing
  conference halls, mathematical model of insonification rel. to speech intelligibility *(French)* 8−13857
  distinctive features and acoustic cues, distinction 8−11681
  electronic models to simulate sensory distortions on speech perception by the deaf 8−3507
  frquency compression for moderately hearing impaired subjects, speech intelligibility 8−20188
  German, speech intelligibility test, DIN 45621 recommendation, acoustics and phonetics *(German)* 8−35867
  nonsense-syllable mimicry in prosodic phenomena studies 8−40203
  peripheral and central processes in selective adaptation of place of articulation in stop constants 8−3523
  translation system, real-time, for hearing impaired 8−7546
  unsteady synthetic vowel perception under various formant conditions 8−40196
  word perception, prosodic cues 8−40204
  He speech, translation via segmentation, partial-rejection and expansion 8−31823

speech recognition
  NMR spectroscopy, ^{1}H, automatic PMR spectra interpretation system 8−32840
  speaker identification by long-term spectra under normal and distorted speech conditions 8−11677
  Tadoma vibrotactile speechreading, preliminary results 8−28127
  He speech, translation via segmentation, partial-rejection and expansion 8−31823

speech synthesis
  fundamental freq. contours at syntactic boundaries 8−3521
  vowel articulation, transmission behaviour of human speech generating system 8−15849

speech transmission *see voice communication*

speed *see velocity*

speed control *see velocity control*
speed indicating instruments *see velocity measurement*
speed measurement *see velocity measurement*

spelter *see zinc*

spherical aberration *see aberrations*

spheroidizing
- steel, C (0.2 and 0.45 wt.%), spheroidization at 680 to 690°C, struct. changes *(Russian)* 8−15431
- Fe-Si-Mn-C, east, Ce additions, nonmetallic inclusions *(Russian)* 8−19710

spicules *see solar prominences*

spin
- *see also electron spin; hyperon spin and parity; isotopic spin (elementary particles); meson spin and parity; nuclear spin and parity; spin density waves; spin hamiltonians*
- elementary particle spin, reln. to universal props. of matter 8−21329

spin arrangements *see magnetic structure*

spin decoupling (NMR) *see double nuclear magnetic resonance*

spin density waves
- antiferromagnet, itinerant, effect of imperfect nesting of band struct. 8−31045
- antiferromagnetism itinerant electron theory, spin susceptibilities 8−6504
- electron gas, one-dimens., with backward scatt., soliton Green's functions 8−10386
- itinerant-electron ferromagnetism, possible coexistence with itinerant-electron antiferromagnetism 8−39286
- linear conductor, interchain coupling role 8−6294
- one-dimensional Hubbard model, antiferromag. and Peierls instability 8−23233
- quasi-one-dimensional systems, three-dimens. ordering in system of weakly coupled chains 8−6295
- TCNQ-HMTSeF, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
- TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
- TTF-TCNQ, nucl. spin relax. obs., diffusive character of response function and interchain coupling 8−10797
- TTF-TCNQ electronic props., PMR 8−2763
- Cr, antiferromag., mag. and non-mag. impurities, hyperfine interactions, ^{181}Ta and ^{100}Rh TDPAC meas. 8−43704
- Cr, antiferromag., uniaxial anisotropy, itinerant model 8−10640
- Cr, strain and spin-flip transition, Landau theory 8−39318
- $(SN)_x$, quantum chem. calcs. of electronic struct. 8−6257

spin disorder resistivity
- antiferromagnetic alloys, spin disorder resistivity, coherent potential approx. 8−14722
- antiferromagnetic metals, two band model for elec. resist. 8−14720
- ferromagnetic ternary alloy, spin-disorder resist. in CPA weak scatt. limit 8−39100
- Cu-Ni film, struct. and mag. order effects on electron transport props. 8−6460
- Dy-Y alloy, scatt. of cond. electrons by spin disorder 8−47778
- α-Fe, C drift velocity for electromigration temp. depend. in paramag., ferromag. phases 8−18835
- Gd, cryst., elec. resist. meas., 4.2-600K 8−14706
- $Gd(Al_{1-x}Cu_x)_2$, C15 struct., elec. resist., comp. depend. 8−14705
- LiCr ferrite, elec. resist., thermoelec. power and Nernst-Ettingshausen meas. near compensation point 8−10487
- Ni-Cu, hydrogenated, Curie point, cluster magnetism 8−14960
- $NiS_{2-x}Se_x$, elec. resistivity temp. depend., pressure depend., paramagnetic-antiferromagnetic transition 8−10690
- Pd-Cr (11-18 at.%), resistivity comparison with canonical spin glass system 8−10432
- Pd-Ni, thermopower and crit. conc., spin fluctuation system 8−30909
- Pt-Mn dilute alloys, spin glass, low temp. resist. meas., cluster model explanation 8−26851
- V_5S_8, metallic evidence of spin flopping by magnetoresist. meas. 8−6352

spin dynamics
- *see also spin density waves; spin disorder resistivity*
- antiferromagnet, sound generation by EM wave near orientational phase transform. of first kind *(Russian)* 8−39329
- Bethe lattice, random ordered phase and glasslike phase 8−29060
- copper benzoate, antiferromag. reson. below 1K, Neel temp. determ. 8−39407
- copper benzoate, spin 1/2 system, one-dimensional nucl. relax. 8−39427
- disordered magnet, spatial correl. of spins 8−23276
- disordered magnets, spin glass phase, spatial spin correlation function 8−10691
- disordered media, ferro- and antiferromag., and spin glasses, dynamic props. *(Russian)* 8−39350
- fermion system, nearly ferromag. absence of $T^2 lnT$ term 8−10692
- ferromagnet, anisotropic, crit. line shape anomalies 8−10698
- ferromagnet, high freq. crit. dynamics above T_c *(Russian)* 8−10718
- ferromagnet, Landau-Lifshitz eqn., two soliton solns. for nonlinear dynamics *(Russian)* 8−43646
- ferromagnet, spin reorientation and magnon-phonon hybridization 8−19233
- ferromagnetic plane rotors, crit. temp. and correl. functions 8−14974
- Heisenberg antiferromagnet, anisotropic, spectrum and correl. functions in spin-flop phase in generalized HF approx. 8−39283
- Heisenberg antiferromagnet, magnon renormalisation, two-magnon Raman scatt., kinematic interaction 8−23228
- Heisenberg classical nearest-neighbour chain, dynamics, exact perturbative results 8−10700
- Heisenberg ferromagnet, two-dimens., spin dynamics, renormalisation group calc. 8−47966
- Heisenberg linear chain, diffusion coeff. at infinite temp. *(French)* 8−10636
- Heisenberg linear spin systems, dynamical spin correlation functions 8−31035
- Heisenberg model, classical low temp. spin wave dynamics 8−6501
- Heisenberg model with one-ion anisotropy, closing relns. for Green's functions 8−2642
- Heisenberg paramagnet, sixth frequency function of relaxation shape function 8−39348
- Heisenberg paramagnets, low freq. props., nonlinear Langevin eqn. 8−31038
- Heisenberg spin glass, spin diffusion 8−6538
- Hubbard chain, strong coupling, electron dynamics 8−39342

spin dynamics continued
- Ising model, relax. dynamics, cluster approx. *(Russian)* 8−10635
- Ising model, spin-spin correl. function, high temp. expansion and equipartition theorem 8−31089
- Ising model, square-lattice, four-spin correl. function 8−39345
- itinerant electron ferromag., spin fluctuation *(Japanese)* 8−47936
- itinerant electron magnets, effect of spin fluctuations on elec. field gradient 8−39078
- kinetic Ising model with quenched relaxing impurities, crit. dynamics 8−10167
- magnetic metals, crit. transverse US attenuation, spin fluctuations 8−48022
- multiple pulse, spin dynamics *(Russian)* 8−35057
- nonmagnetic-paramagnetic transition in one-dimens. electron system due to spin excitations *(Russian)* 8−43606
- nuclear spin diffusion under magic angle conditions, calc. 8−19363
- one dimensional magnet with easy plane, solitons and magnons 8−23260
- paramagnet, anisotropic, effect of bond dilution on dynamics at high temp. 8−39343
- planar ferromagnet hydrodynamic mode microscopic theory 8−39280
- quenched random spin systems, dynamical replica methods, nonequilib. critical phenomena 8−43602
- rare earth ferrite garnet single crystals, spin reorientational phase transitions *(Russian)* 8−39349
- rare earth metal, anomalous sound attenuation near mag. transition temp. 8−15004
- semiconductor, violation of σH invariance accompanying optical orientation of spin *(Russian)* 8−35068
- spin glass, Heisenberg model *(French)* 8−39336
- spin-$^1/_2$ system, two-point correlations decay for decreasing pots. 8−19202
- spin-lattice relax., effect on mol. groups in solids of symm.-restricted spin diffusion 8−39431
- spin-lattice relaxation of nuclei due to impurity nuclei under magic angle conditions, influence of spin diffusion 8−15061
- TMMC, linear antiferromag., 3D ordering and spin correlations, mag. field effect 8−19262
- TMMC, one dimens. Heisenberg system, shift of half-field EPR line 8−23325
- type II superconductor, spin diffusion in inhomogeneous mag. fields 8−2618
- X-Y model, classical, one and two dimens. 8−34997
- CaF_2, spin diffusion under magic angle conditions, calc. 8−19363
- $CeIn_{3-x}Sn_x$, conduction electrons role in valency fluctuations 8−47741
- $Ce_{0.74}Th_{0.26}$, mixed valence alloy, spin dynamics 8−10708
- Co, small-angle crit. neutron scatt. 8−31087
- Cr, strain and spin-flip transition, Landau theory 8−39318
- $CsMnF_3$, spin echo form., parametric mechanism, spin dynamics *(Russian)* 8−23367
- Cu complex, $CuCl_2.2NC_5H_5$, spin 1/2 system, one-dimensional nucl. relax. 8−39427
- Cu-Mn, spin glass alloy, magnetic excitations, neutron scatt. 8−10695
- $Er_{0.8}Dy_{0.2}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
- $Er_{0.3}Ho_{0.7}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
- $Er_{0.5}Tm_{0.5}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
- $Er_xY_{3-x}Fe_5O_{12}$, spin reorientation transitions 8−2686
- Eu chalcogenide, spin-disorder Raman scatt., mag. phase depend., theory 8−10887
- Fe_3BO_6, spin reorientation by mag. field, Mossbauer meas. 8−35074
- Fe_3BO_6, spin-reorientation, elec. resist. and microwave absorption 8−14751
- Fe_3BO_6, weak ferromagnetism and spin reorientation, antiferromag. reson. spectra 8−6580
- $(Fe_{65}Ni_{35})_{75}P_{16}B_6Al_3$, amorphous ferromag., high temp. spin dynamics 8−47965
- β-FeOOH, colloidal suspension, ionic spin relax. theory for Mossbauer spectra 8−19384
- $GdAl_2$, ferromag., spin reorientation 8−39334
- $GdAl_2$, spin reorientation 8−39335
- ^{3}He, liq., hydrodynamic modes, macroscopic dispersion relations, two fluid model 8−10242
- ^{3}He, liq., hydrodynamic modes, microscopic dispersion relations, transport coeffs. 8−10243
- ^{3}He superfluid B-phase, dynamic magnetism relaxation, wall-pinned mode 8−43201
- ^{3}He-^{4}He liquid mixture, conc. ^{3}He spin diffusion expts. 8−34671
- ^{4}He:^{3}He, solid spin diffusion coeff. and T_2, impuritons, temp. depend. 8−34675
- $MnCO_3$, spin echo form., parametric mechanism, spin dynamics *(Russian)* 8−23367
- $NdCo_5$, ferromag., thermomag. charact. in mag. field *(Russian)* 8−23273
- Ni, dynamical spin susceptibility, noninteracting spin band model 8−31059
- Pd, triplet pairing, spin fluctuation contrib. 8−10711
- $RbMnF_3$, Heisenberg antiferromagnet, paramag. region, NMR, spin pair correl. 8−15032
- $RbMnF_3$, Heisenberg antiferromagnet, spin diffusion below T_n 8−34968
- $RbMnF_3$, zone-boundary magnon energy and damping, Raman scatt. meas. 8−31202
- $Sm_{0.7}Er_{0.3}FeO_3$ spin reorientation photomagnetic motor 8−2695
- $SmFeO_3$, magnetostriction meas. in spin reorientation region 8−2721
- $Sm_xY_{3-x}Fe_5O_{12}$, spin reorientation transitons 8−2686
- $SrEu_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
- $SrTb_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
- $Tb_xY_{3-x}Fe_5O_{12}$, spin-reorientation phase transitions, neutron depolarisation factor 8−27037
- $YFe_{1-x}Co_{x/2}Ti_{x/2}O_3$, magnetostriction meas. in spin reorientation region 8−2721
- $YFe_{1-x}Mn_xO_3$ orthoferrite, spin reorientation, mag. torque meas. 8−47979
- $YFeO_3$, induced spin reorientation near Neel point 8−19267

spin echo (EPR)
glassy material, nuclear modulation 8−2727
hydroxymethyl radicals, adsorption on A-type zeolites, electron spin echo obs. 8−21947
Ag solvation in ice matrix, electron spin echo modulation 8−39396
H_2SO_4:Fe^{2+}, frozen aq. soln., photolysis, H form., distrib. and diffusion 8−20044
Li, metallic, obs. of intrinsic spin-lattice relax. of conduction electrons 8−10774

spin echo (NMR)
^{13}C NMR, proton-decoupled, spin-echo determ. of short T_2 values, errors, appl. to protein mobility 8−2769
adamantane, nucl. spin echoes ^{13}C magnetisation and intermol. dipolar coupling 8−35062
Brownian motion and NMR spin relax., book 8−15054
coherence transfer echoes, coherence defocusing and refocusing occurring at two freqs. 8−48078
cyclododecanone, photolytic biradical anomalous CIDNP enhancement, pulse spin echo NMR obs. 8−46369
cyclopropane, liq., mol. dynamics, self-diffusion, quasielastic neutron scatt. and NMR spin-echo meas. 8−10201
flow measurement, difference method, plug and laminar flow, appl. to plant stem 8−14110
fluid flow profiles, convective and press.-driven, meas. using pulsed NMR 8−14109
formic acid, heteronuclear double reson., spin echo modulations 8−1009
Gd-alloy, ferromagnetic, nuclear spins as probe for mag. coupling and crystallographic order 8−10799
Heusler alloys, hyperfine fields at sp sites, spin echo NMR meas. 8−19371
input pulse phase depend., statistical tensor method *(Russian)* 8−23368
J spectroscopy, two-dimensional suppression of spurious signals 8−15057
liquid, self-diffusion meas., automated technique, using NMR spin echo 8−27114
NMR spin-lattice relax., periodically-irrad. system, master eqn. predictions 8−43664
pyridine, proton-coupled ^{13}C J NMR, strong coupling 8−17691
quasiquadrupolar echoes in solid with dipolar coupled rotating methyl groups 8−23366
radiative detection, single-pulse and spin-echo NMR 8−8428
rare earth dil. alloy, nucl. spin-lattice relax. of ^{165}Ho 8−48069
rare earth-transition metal intermetallics, struct. and props. review 8−10668
relaxation data anal., superimposed exponentially decaying signals, computer technique 8−23360
^{13}C coupled with ^1H, spinor character for spin $^1/_2$ nucleus via NMR interferometry 8−17699
Co, acoustic nucl. spin echo obs. at 4.2K *(Russian)* 8−6599
Co-Fe, dil., effective mag. field at ^{59}Co, impurity conc. depend., spin echo expts. 8−48080
Co-Ni, dil., effective mag. field at ^{59}Co, impurity conc. depend., spin echo expts. 8−48080
Co_2TiAl, ferromag., ^{59}Co NMR 8−2760
Cr-Te system, NMR meas., effect of heat treatment 8−27112
$CsMnF_3$, spin echo form., parametric mechanism, spin dynamics *(Russian)* 8−23367
$Dy_{1-x}Gd_xAl_2$, ordered alloys, ^{163}Dy NMR, hyperfine field 8−10801
$Dy_{1-x}Y_xAl_2$, ordered alloys, ^{163}Dy NMR, hyperfine field 8−10801
Fe film, enriched, NMR obs. 8−39443
Fe, triple pulse reson. studies of ^{60}Co nuclei 8−43675
Fe-Co-Mn, BCC, mag. state of Mn, NMR and saturation magnetisation meas. 8−39442
Fe-Ni-Mn, BCC, mag. state of Mn, NMR and saturation magnetisation meas. 8−39442
$FeBO_3$, dynamic NMR frequency shift for ^{57}Fe *(Russian)* 8−43677
^{57}Fe nuclei, spin-echo signal recording by pulse generator and fast signal averager 8−21188
$(Gd,Dy)Al_2$, spin adjustment, NMR spin echo obs. 8−15058
$Gd_{0.99}Ho_{0.01}(Rh_{1-x}Fe_x)_2$, spin echo meas. on ^{165}Ho, quenching effect of Fe substitution 8−48079
Ge_2FeGa, and Fe_2CoGa, site preference and local environment effects, Mossbauer and NMR expts. 8−43710
$H_{1.6}MoO_3$ bronzes, proton mobility 8−39426
^3He adsorbed on graphite, NMR relax. times below 4.2K 8−38898
^4He:^3He, solid spin diffusion coeff. and T_2, impuritons, temp. depend. 8−34675
$K_2Mn_{1-x}Ni_xF_4$, antiferromagnets, impurity associated and host magnetizations, NMR exam. 8−10800
β-Mn alloys, weakly antiferromag., hyperfine fields, NMR meas. 8−39441
$MnCO_3$, spin echo form., parametric mechanism, spin dynamics *(Russian)* 8−23367
$Mn_xFe_{3-x}O_4$ NMR of Mn^{3+} in B-sites 8−35061
$Mn_4N_{0.8-1}$, NMR of ^{55}Mn, reson. curve fine splitting, spin echo meas. 8−2768
$NaNO_2$, ^{14}N NQR, multiple spin echoes 8−19365
Ni-Fe-Mn alloy, NMR signals due to Mn atoms with antiparallel moments 8−27113
Ni-Mn alloy, NMR signals due to Mn atoms with antiparallel moments 8−27113
^{31}P, $Fe_{75}P_{15}C_{10}$, $Fe_{75}P_{15}C_{10}$, amorphous, ferromag. state, ^{31}P NMR 8−2770
$Pd_2Mn_{1-x}Nb_xSn$, Heusler alloy, NMR and mag. coupling 8−43676
Pd_2MnSn, Heusler alloy, NMR and mag. coupling 8−43676
Rb_2CrCl_4, NMR of ^{53}Cr 8−10798
Sm-Al(Fe)(Co)(Pt), hyperfine field exam. by NMR spin echo 8−23365
Tb-Al(Ag), hyperfine field exam. by NMR spin echo 8−23365

spin glasses
see also mictomagnetism
amorphous ferromagnet, spin-glass and ferromagnetic behaviour induced by random uniaxial anisotropy 8−39338
amorphous magnetism, Curie temperature and mag. excitation spectrum 8−10693
amorphous substance, ferromag. or spin glass transitions 8−2690
binary magnetic systems, conc., spin glass behaviour, Monte Carlo study 8−2694

spin glasses continued
close packed lattices of ferro- and antiferromag. exchange integrals, glass-like phase 8−10697
conference on magnetism, Munster, Germany (Mar. 1977) 8−10626
critical temperature, scaling 8−10714
dilute RKKY spin glass, Bethe-Peierls theory 8−39351
dipolar spin glass, anomalous sp. ht. Ising model and Monte Carlo calcs. 8−47989
disordered magnets, spin glass phase, spatial spin correlation function 8−10691
dynamic properties, theory *(Russian)* 8−39350
ferromagnets, random, large exchange interaction, Green function theory 8−6537
freezing temperature, conc. and Fermi momentum depend. 8−14970
generalised mean field theory with spin correls. 8−2691
Heisenberg, spin diffusion 8−6538
Heisenberg model, spin dynamics *(French)* 8−39336
Ising, two-dimensional, Monte Carlo evidence for absence of phase transition 8−19260
Ising model, frustration and ground-state degeneracy 8−31090
Ising model, random bond, susceptibility and specific heat of glass like phase, cumulant expansion 8−6533
Ising model, spin glass state, mixed nearest-neighbour exchange interaction 8−39341
Ising model, spin-glass, renormalisation group calc. for two dimens. models 8−14968
Ising model, vanishing of Edwards-Anderson parameter 8−43597
Ising model of bond mixtures, spin glass transition, renormalisation group approach 8−43601
Ising model spin glass, Monte Carlo calc. of mag. suscept. 8−31079
Ising model with random exchange bonds, phase diagram 8−43604
Ising spin glasses, two-, three- and four-dimensional, defect energies 8−39330
low temp. renormalisation group, critical behaviour 8−10688
mean field theory and ε-expansion 8−10705
phase transitions, instability for Heisenberg, X-Y and Ising systems 8−23285
phenomenological theory, weak singularities of susceptibility, sp. ht., near transition point 8−19263
quenched random spin systems, dynamical replica methods, nonequilib. critical phenomena 8−43602
quenched random spin systems, spin glass and related orderings 8−10706
random bond Ising model, high temp. series expansion 8−16741
random mixture of ferro- and antiferromag. exchange interactions, high temp. expansion 8−23280
random spin systems, non-analyticity of entropy and Nernst's law 8−2692
relax. of magnetisation and order parameter 8−27043
review, recent developments *(Japanese)* 8−47993
roughening transition in crystal growth theory, rel. to spin glass transition 8−27045
Sherrington-Kirkpatrick model, finite system, low temp., susceptibility, entropy 8−34993
spin waves, hydrodynamic theory 8−6524
statistical props. *(Russian)* 8−35000
superconductivity coexistence with mag. order 8−19177
theory, review 8−2696
time-dependent Ginzburg Landau model 8−39340
two-level system, general formalism and two-dimens. model 8−19257
two-level systems in spin-glass model, three-dimensional model and mag. field effect 8−39331
type II magnetism, existence discounted 8−47983
type II magnetism in mixed magnets and spin glasses 8−23281
vector and Ising, lower critical dimensionality 8−43603
Ag-Mn, spin glass, anomalous Hall effect 8−30908
Au-Mn(Cr)(Fe), dil., spin glass state and Kondo effect, nucl. orientation of ^{54}Mn 8−6514
Au-Mn(Fe)(Cr), spin glass, anomalous Hall effect 8−30908
$CoO-Al_2O_3-SiO_2$, spin glasses, low-field susceptibility, freq. depend. 8−47981
Cu-Mn, classical RKKY model, thermodynamic props. 8−39333
Cu-Mn, dil., spin-glass dynamics, NMR meas. 8−31120
Cu-Mn, mag. irreversibility and metastability 8−19279
Cu-Mn, spin glass, anomalous Hall effect 8−30908
Cu-Mn, spin glass alloy, magnetic excitations, neutron scatt. 8−10695
Cu-Mn spin glass neutron diffr. expts. *(French)* 8−43593
Eu_xCa_{1-x}, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
$Eu_xSr_{1-x}S$, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
$Eu_xSr_{1-x}SO_4$, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
Fe-Pt-Ir, Mossbauer effect of ^{193}Ir and ^{57}Fe, hyperfine field, isomer shift 8−15072
$(Fe_{0.04}Ni_{0.96})_{80}P_{10}B_{10}$, amorphous, mictomagnetic to ferromag. transition 8−34981
$Gd_{0.37}Al_{0.63}$ sputtered film, amorphous, conc. spin glass, microwave reson. spectrum obs. 8−15018
^3He, BCC, mag. ordered phase, complicated spin-glass-like phase 8−22928
$(La,Gd)B_6$, dil. alloy, spin glass behaviour, 4.2 to 200K AC mag. susceptibility, RKKY calcs. 8−47994
$(La,Gd)B_6$, mag. susceptibility, zero field, 0.04 to 10K 8−10696
$Mn_xNi_{1-x}Sb$, spin glass state and synthesis in high temp. and press. atmospheres 8−23277
$MnO-Al_2O_3-SiO_2$, spin glasses, low-field susceptibility, freq. depend. 8−47981
Pd-Cr (11-18 at.%), resistivity comparison with canonical spin glass system 8−10432
Pd-Fe-Mn, ferromagnetic-spin glass transition 8−39339
Pt-Cr alloy, (13-18 at.% Cr) resistivity and AC susceptibility, temp. 1.4−300K 8−2461
Pt-Mn, dil. alloy, mag. sp. ht. 8−14966
Pt-Mn dilute alloy, cubic foil, Mn spin behaviour, nuclear orientation technique 8−27044
Pt-Mn dilute alloys, spin glass, low temp. resist. meas., cluster model explanation 8−26851
Zr-Mn (up to 0.3%), high-magnetic field magnetism and magnetoresistance 8−10652

spin Hamiltonians
Anderson Hamiltonian, quantal spin system, classical representation and scaling props. of spin Hamiltonians 8−14919
antiferromagnet cubic, with exactly-known ground state 8−43540
channel model in exchange theory 8−39311
conductivity electrons-localized d(f) electrons, exchange interaction, energy within Hartree-Fock theory *(Russian)* 8−43580
diamond type crystals, polarization of μ^+ in muonium atom *(Russian)* 8−39492
Dicke Hamiltonian, spin-spin interaction on super-radiant phase transition 8−16762
disordered linear chain, exchange probability distrib., Hubbard model 8−10641
disordered one-dimensional system, Hubbard model 8−10642
double group theory, half-shell and two-level systems, rot. and half integral spin states 8−45447
elastic magnetic system, one-Fermion-one-Boson model 8−43539
EPR, quadrupole interaction for nucl. spin=3/2 systems 8−48027
EPR parameters for orbital singlet of d^1 ion in cryst. 8−10751
ferromagnetism, manyelectron exchange Hamiltonian in theory 8−19199
ferrous-formate dihydrate, mag. system model, mag. sp. ht. *(Japanese)* 8−31091
Heisenberg exchange integral, in nonorthogonal basis, for anti- and ferromag. systems 8−2641
Heisenberg Hamiltonian generalisation for case of atomic system with variable atomic spin value 8−14669
high spin d^5 system, isotropic g-tensor 8−10757
Hubbard Hamiltonian, quantal spin system, classical representation and scaling props. of spin Hamiltonians 8−14919
Ising Hamiltonian, crit. points, behaviour of thermodynamic quantities 8−6532
Jahn-Teller ions, spin Hamiltonian parameters, temp. depend. 8−30891
Kondo Hamiltonian, quantal spin system, classical representation and scaling props. of spin Hamiltonians 8−14919
l 8−10657
linear chain of classical spins with arbitrary nearest-neighbour interaction 8−10632
magnon problem, anisotropic spin chain with exchange interaction 8−6502
metal ions, exchange coupled, pair hamiltonian, coupled representation matrix 8−48026
methylammonium chromium alum, single cryst., Cr^{3+} EPR, g-factor, hyperfine splitting 8−2729
one-dimensional magnetic compounds, orbital interaction 8−6494
one-dimensional system, strongly interacting, Efetov-Larkin model 8−6288
orbital singlet ions, rotational invariance and phonon-induced contribs. to spin-Hamiltonian parameters 8−10410
percolation models, spin representation and cluster distribs. 8−34998
radical pair with axial symmetry, EPR parameters and linewidth components 8−6573
random site Ising model near percolation threshold 8−23282
rare earth trichloride hexahydrate:Gd^{3+}, EPR meas. 8−15017
reggeon couplings, analogue quantum-spin model 8−45813
Reggeon field theory, ordered phase, Hamiltonian formulation, scatt. amplitude calc. 8−4807
thermodynamics of spin system, contrib. of spin-phonon interaction 8−2635
$Bi_{12}GeO_{20}$:Cr^{3+}, level distrib. of Cr^{3+} ion, spectroscopic parameters, spin Hamiltonian, EPR spectrum 8−48030
EuO, Eu rich, insulator-metal transition, model Hamiltonian 8−2422
FeF_2, antiferromagnet, fourth-order spin Hamiltonian terms for Fe^{2+} 8−10628
GaAs:Cr^{2+}($3d^4$), Jahn-Teller distortion, photoinduced charge conversion, EPR 8−10758
^3He, solid mag., review 8−38906
InP:Fe^{3+} (Cr^{2+}), EPR, symm., spin Hamiltonian parameters 8−10759
KCl, F centre pairs, ODMR, close and distant pairs 8−43691
$KTaO_3$:Gd^+, influence of external elec. field on EPR 8−15020
MgO:Mn^{2+} EPR, X-band freq., powder pattern for cubic symm. anal. *(Spanish)* 8−43636
$NiBr_2.6H_2O$, antiferromag. ordering and paramag. behaviour 8−14941
$RbCaF_3$:Gd_2O_3, Gd^{3+}-O^{2-} pair, EPR study of displacive transform. *(French)* 8−27088
Si:B, ESR at zero and small external stress, interpreted in spin Hamiltonians 8−43641
TiO_2:Mn^{2+}(Mn^{4+}), anatase single cryst., ESR spectra at 77K, 300K 8−10764
YbIG, mean field phase diagrams 8−23269

spin-lattice relaxation
see also electron spin-lattice relaxation; nuclear spin-lattice relaxation
bacteria, photosynthetic, triplet-state EPR spin polaris., intramol. model 8−44469
ferromagnet in mag. field, spin relax., crit. anomalies 8−43669
methyl (CH_3D) group tunnelling in solids, quantum model rel. to two T_1 temp. depend. minima 8−2028
NMR in coupled spin systems, review 8−48072
organic solid, exciton motion effect on proton relax. 8−14671
PAA, methyl group rotation in solid and nematic phases, NMR obs. 8−6595
porphyrin, triplet-state EPR spin polaris., intramol. model for photosynthetic bacteria 8−44469
ruby:Ni, cross relaxation 8−39389
Δ^5-steroids, methyl group rot. barriers from ^{13}C relax. data, geometry effect 8−13626
$CaSO_4.2H_2O$, mol. reorientations and mol. diffusion, PMR 8−43671
^3He superfluid, A and B phases, pulsed NMR, nucl. susceptibility, spin-lattice relax., freq. shifts 8−47628
KD_2PO_4, dispersion, central mode evidence 8−15108
LaF_3, self diffusion studied with ^{19}F relaxation 8−6180
$NaH_3(SeO_3)_2$, dispersion, central mode evidence 8−15108

spin-orbit interactions
activated crystals, Jahn-Teller effect in optical bands of impurity centres 8−6706
alkali chloride: V^{2+}, phonon induced zero field splitting 8−39073
alkali halide, chalcogen^{2-} vacancy centres, absorpt. and fluoresc. spectra 8−48204
alkali halide phosphors, Tl^+ doped, uniaxial stress effects 8−48202

spin-orbit interactions continued
benzaldehydes, in mixed cryst., T_1/T_2 interstate interactions, modulation polaris. phosphoresc. spectra, 4.2K 8−9185
bromoethane, and -d_5, first s-Rydberg transitions 8−42094
bromotrifluoromethane, photoelectron spectra, spin-orbit splitting, vibr. fine struct. 8−21974
charge transfer, resonant, spin depend. *(Russian)* 8−29850
chromocene, solid, Raman transition assignments, mag. susceptibility, mag. moment 8−43861
(d,τ) reactions, 52 MeV, analyzing powers, spins of proton hole states 8−25111
diamond-type crystals, energy levels of Mott excitons 8−6282
dihalogenoacetylene radical cations, $C_2X_2^+$, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17679
EPR parameters for orbital singlet of d^1 ion in cryst. 8−10751
halogenoacetylene radical cations, C_2HX^+, emission spectra, $A^2\Pi \rightarrow X^2\Pi$ band systems 8−17678
heavy ion collisions, rotational transitions, effect of spin-orbit coupling 8−13573
iodomethane, first s-Rydberg transitions 8−42094
iodotrifluoromethane, photoelectron spectra, spin-orbit splitting, vibr. fine struct. 8−21974
Jahn-Teller impurity centres, piezo-optics and magneto-optics 8−39579
Jahn-Teller problem, $T \times \varepsilon_g$, spin-orbit allowed tunnelling splitting, zero-phonon line splitting 8−19006
matrix elements, computer program AAKL adapted to spectroscopic notation 8−891
matrix isolated metal atoms, matrix influence, theory 8−46290
microscopic ion-ion spin-orbit pot., appl. to $^4He+^9Be$, and $^{40}Ca+^{13}C$ 8−17163
molecular crystal, exciton band spin-orbit coupling 8−39025
nuclear mass depend. of spin-orbit splitting in A=176-208 region 8−29405
nuclear optical model calcs., tensor spin-orbit interaction 8−13112
pseudo pot. model Hamiltonian, spin-orbit splitting, intercombination and relativistic orbital reorganisation 8−25424
relativistic average of config. wavefunctions, applicability to at. and ionic intermediate coupling props. 8−17574
semiconductor, mixed, EPR theory 8−39402
tetrachlorobenzene, mol. crystal, exciton band spin-orbit co7pling 8−39025
(p,p) 1 GeV, Glauber theory of spin-orbit interactions 8−37336
Ag, spin-orbit projected d density-of-states 8−38999
Ar^+, mobility in Ar, spin-orbit coupling effect 8−26232
Ar_2^+, bound-free absorpt. cross section for Π and Σ states 8−5140
Ar_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
Au, spin-orbit projected d density-of-states 8−38999
Au, spin-polarised LEED from low-index surfaces 8−14556
$^9Be+^4He$, microscopic ion-ion spin-orbit pot. 8−17163
BrCl, photoelectron spectrum, assignments 8−5284
$^{40}Ca+^{13}C$, microscopic ion-ion spin-orbit pot. 8−17163
CdS, surface photovoltage in exciton absorpt. range 8−19119
CdTe:Ti^{2+}, Jahn-Teller effect on $^3T_1(^3F)$ state, resonance on $^3T_1(^3P)$ state 8−27271
Co (VII), semiempirical investigation of spectra 8−33434
Cr, spin-density-wave antiferromagnet, uniaxial anisotropy 8−10640
Cr^{3+} in octahedral fluoride lattice, optical spectrum open shell SCF MO cluster CI calc. 8−19501
$Cs_2Cr_2Cl_9$, Cr (III) trigonal pair, exchange interactions, theory 8−19008
$Cs_3Cr_2Cl_9$, optical absorpt., MCD, exchange interactions 8−10917
Cu, Auger spectra, comparison with multiplet struct. calc. 8−31287
$CuAlS_{2x}Se_{2(1-x)}$, excitonic structure, spin-orbit and cryst. field splittings 8−2872
$CuGaS_{2x}Se_{2(1-x)}$, excitonic structure, spin-orbit and cryst. field splittings 8−2872
D_2, $G(3d)^1\Sigma_g^+$ and $g(3d)^3\Sigma_g^+$ singlet-triplet anticrossing 8−42138
$DyFeO_3$, influence of mag. field on Faraday effect 8−27196
EuO, mag. semicond., dielec. and optical props. 8−10824
EuO(S)(Se), rel. to spin assisted Raman scatt. theory 8−43866
EuSe, mag. semicond., dielec. and optical props. 8−10824
Fe complex, Fe (II) pseudo-tetragonal high-spin cpds., paramag. susceptibility amd Mossbauer quadrupole splitting 8−26834
Fe complex, Fe(5-methylpyrazole)$_4X_2$, X=Cl, Br, I, mag. susceptibility, mag. saturation; Mossbauer and ligand field spectra, single model interpretation 8−23064
Fe complex, Fe(pyrazole)$_4X_2$, X=Cl, Br, I, mag. susceptibility, mag. saturation; Mossbauer and ligand field spectra, single model interpretation 8−23064
$FeBr_4^-$, circularly polarised Raman spectra, spin-orbit induced vibr. antisymmetry 8−5232
GaAs:Co, neutral state of Co impurities, optical absorption and mag. susceptibility 8−39578
GaAs-$Ga_{1-x}Al_xAs$ superlattices, resonance enhanced Umklapp Raman process 8−39547
GaAs-GaSb, threshold energies for impact ionisation by electrons and holes 8−6390
Ge, Auger spectra, comparison with multiplet struct. calc. 8−31287
^3He, superfluid, A-phase, coupled spin orbit relaxation theory 8−6192
I, chemical generation of population inversion between spin-orbit states 8−17767
$IrCl_6^{2-}$, circularly polarised Raman spectra, spin-orbit induced vibr. antisymmetry 8−5232
$(IrCl_6)^{2-}$, electronic Raman spectra, spin-orbit components of ground state, vibr. 8−5231
KBr, F-centre luminesc., MCD effects 8−39598
KBr(F), orbital g-factor and spin-orbit splitting of F-centre excited state, magnetoabsorpt. and MCD 8−2886
KCl, F-centre luminesc., MCD effects 8−39598
K_2CuF_4, optical absorption spectra, correl. with g-shifts, reduced spin-orbit coeff. determ. 8−23485
KH_2PO_4;Tl, UV absorption bands obs. 8−27266
KI, F-centre luminesc., MCD effects 8−39598
KI, MCD of α and β bands 8−27192
KLu_3F_{10}:Eu^{3+}, crystal field and spin-orbit parameters 8−30892
KY_3F_{10}:Eu^{3+}, crystal field and spin-orbit parameters 8−30892
Kr_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
$LaCl_3$:Ho^{3+} parametric energy level anal. 8−18991
NO, and isotopic forms, $X^2\Pi$ state, IR obs., mol. consts. 8−42045

spin-orbit interactions continued
- NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8-25518
- Na, in Xe matrix, 3s excitation, UV and vis. spectra 8-46291
- Na, vap., sum frequency generation, via reson. quadrupole transition, theory 8-42385
- NaCl(Br), orbital g-factor and spin-orbit splitting of F-centre excited state, magnetoabsorpt. and MCD 8-2886
- Ni (VIII), semiempirical investigation of spectra 8-33434
- Ni, magnetocrystalline anisotropy energy, temp. and magnetisation depend. 8-6525
- PbSe, spin-orbit splitting in valence bands, angle-resolved UV photoemission 8-2991
- Pd, spin-orbit projected d density-of-states 8-38999
- $PrVO_3$, neutron diffr. exam. of first order mag. transition 8-2685
- Pt, spin-orbit projected d density-of-states 8-38999
- Pt, spin-polarised LEED from low-index surfaces 8-14556
- Te compounds, X-ray photoemission, core level binding energy shifts rel. to Mossbauer isomer shifts 8-2984
- Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8-33443
- $YFeO_3$, influence of mag. field on Faraday effect 8-27196
- Zn, Auger spectra, comparison with multiplet struct. calc. 8-31287

spin-phonon interactions
- *see also spin-lattice relaxation*
- acoustic superradiance, quantum theory 8-10128
- arsenates, ferroelec. phase, E-mode splitting 8-15163
- ferromagnet in mag. field, spin relax., crit. anomalies 8-43669
- glass, spectral diffusion, phonon echoes and US saturation recovery 8-10149
- itinerant magnets, anomalous sound attenuation near mag. transition temp. 8-15004
- lattice instabilities in coupled pseudospin-phonon systems 8-10157
- naphthalene, in durene, photoexcited triplet state spin-lattice relax., local phonons effects 8-6605
- orbital singlet ions, rotational invariance and phonon-induced contribs. to spin-Hamiltonian parameters 8-10410
- paramagnet, velocity of sound, temp. depend. modification due to spin-phonon interaction, phonon relax. 8-19303
- paramagnetic ion, reson. phonon scatt. 8-18716
- rare earth metal, anomalous sound attenuation near mag. transition temp. 8-15004
- ruby, excited state spin-phonon interaction, time resolved spectroscopic exam. 8-19549
- spin system, thermodynamics, contrib. of spin-phonon interaction 8-2635
- Eu chalcogenide, spin-disorder Raman scatt., mag. phase depend., theory 8-10887
- n-InSb, magneto-photoconductivity, phonon assisted combined reson. magneto-optical absorpt. reson. 8-47831
- KH_2PO_4, damping of transverse acoustic and ferroelec. modes 8-14413
- $MgO:Cr^{2+}$, reson. scatt. of phonons by ions 8-18716
- PbI_2-piperidine intercalations rel. to NQR, spin-lattice relax. temp. depend. *(Russian)* 8-27108
- Pd, triplet pairing, spin fluctuation contrib. 8-10711
- $ZnS:Co^{2+}$, spin-lattice relax., phonon heating effect *(Russian)* 8-19317

spin polarised electron emission
- nonferromagnetic metals, spontaneously broken parity state 8-48277
- polarisation effects in penetration of nonrelativistic electrons through potential barrier with appl. mag. field 8-11084
- surface magnetisation, size effect 8-15008
- EuO:Gd, surface depolarisation of photoelectrons 8-15286
- Tl, photoionis. cross section, spin polaris. and ang. distrib. of photoelectrons, RPA calc. 8-13478
- W, photoemission of spin polarised electrons 8-35248
- W-EuS interface, electron spin polarisation in field emission 8-35265

spin-spin nuclear coupling in molecules *see molecular nuclear coupling*

spin-spin relaxation
- alkali metal-ammonia solns., spin site exchange mechanism for electron relax. times 8-27077
- amniotic fluid, human proton relax. times in low field range, appl. to nucl. magnetography *(French)* 8-3574
- bottlenecked EPR, singly, doubly, multiply bottlenecked systems 8-27078
- dilute gases, nucl. mag. relax., theory 8-25559
- hydrocarbon chain, gauche-trans isomerisation, ^{13}C relax. times and nucl. Overhauser enhancement model 8-33520
- metal tritides, ^3He NMR and distrib. 8-30661
- Mossbauer relaxation spectra, breakdown of white noise approx. 8-27141
- Mossbauer spectra, complications in theory due to spin-spin relaxation *(Russian)* 8-43757
- muscle water transverse and longit. NMR relax. rates 8-35810
- nuclear acoustic resonance spectrum, kinetics of spin system for spin quantisation by strong acoustic field 8-15052
- phosphatidylcholine hydration, adsorpt.-desorpt. isotherm and PMR 8-15781
- pyridenes ^{15}N NMR chem. shifts, paramag. relax. reagent effect 8-15042
- superimposed exponentially decaying signals, computer-aided anal. technique 8-23360
- trichlorophosphazenes, ^{35}Cl NQR spectra and reorientational motion of PCl_3 group 8-25567
- tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8-26681
- BaF_2, NMR relax., ionic cond. and self-diffusion 8-23362
- ^{13}C, interacting with strongly irradiated proton system, longit. mag. relax., Overhauser enhancement 8-19377
- ^{13}C pulsed NMR, simultaneous T_1 and T_2 meas., Fourier transform. visualization 8-24838
- ^{13}CH fragment, selective population transfer expts., density matrix formalism appl. to NMR spectroscopy 8-15059
- n-$CdCr_2Se_4$, single crystal, transport props. near Curie temp. *(Japanese)* 8-6406
- $Cs_2NaYbCl_6$, freq. depend. of spin-spin relax. rate from Mossbauer spectroscopy 8-48095
- $Cs_2NaYbCl_6$, Mossbauer relax. spectra, breakdown of white noise approx. 8-27141

spin-spin relaxation continued
- Fe $(NO_3)_3.9H_2O$, spin-spin relax., Mossbauer effect studies, 4.2K 8-31128
- Fe, triple pulse reson. studies of ^{60}Co nuclei 8-43675
- H^+, tranverse relax. time in H_2 gas at 300K 8-42099
- ^3He adsorbed on graphite, NMR relax. times below 4.2K 8-38898
- ^3He-^4He solid mixture, ^3He-^3He and ^3He-^4He tunnelling motions, NMR meas. 8-38908
- ^4He:^3He, solid spin diffusion coeff. and T_2, impuritons, temp. depend. 8-34675
- K_2TeO_3, D_2O soln., $^{123,125}Te$ Fourier transform NMR 8-15046
- MnSi, NMR and susceptibility above T_c 8-43665
- ^{15}N, interacting with strongly irradiated proton system, longit. mag. relax., Overhauser enhancement 8-19377
- Na_2TeO_3, D_2O soln., $^{123,125}Te$ Fourier transform NMR 8-15046
- Ni complex, hexamethylphosphorotriamide Ni (II), paramagnetic, pulsed NMR, substitution reaction *(French)* 8-10793
- ^{17}O NMR, proton decoupling 8-2752
- Si, heavily irrad., ESR study of annealing characts. 8-10771
- UF_6, isotope enrichment, ^{19}F NMR in gas, liq. and solid 8-23364

spin systems
- *see also magnetic properties of substances; magnetism*
- AX spin 1/2 system, double reson. interferometry, relax. times 8-6603
- conservation of ang. momentum and thermal mixing *(French)* 8-6562
- critical behaviour of random annealed spin systems at n=-2 8-43600
- dimensionality dependence of T_c in 1/n expansion 8-32772
- elastic magnetic system, one-Fermion-one-Boson model 8-43539
- ferromagnetic scalar spin systems, wall and boundary free energies 8-155
- ferromagnets, random, large exchange interaction, Green function theory 8-6537
- fluids, magnetic relaxation in Bogolyubov hierarchy of relaxation times 8-39383
- geometric formulation of Hamilton's Principle, spin particles 8-45482
- Heisenberg model, classical, compressible spin system, zero temperature phase diagram 8-6536
- Heisenberg spin systems, absence of mag. phase transitions, Hubbard identity calcs. 8-34992
- high spin d^5 system, isotropic g-tensor 8-10757
- isotropic N-component spin systems, crossover exponent to order ε^3 8-34990
- Kadanoff renormalisation for s-state Potts model in 3-d 8-21074
- lattice model, analyticity and cluster props. of unbounded spin systems 8-45571
- linear chain of classical spins with arbitrary nearest-neighbour interaction 8-10632
- magnetic susceptibility of s=1/2 crystallographic two sublattice system 8-14914
- momentum-shell recursion relations in 2+ε dimensions 8-6498
- Monte Carlo simulation of quantum spin systems, two dimens. X-Y model 8-27011
- multilevel spin systems, selective excitation and detection, single transition operators 8-2771
- nearly ferromagnetic Fermi systems, spin-conserving approx. spin susceptibility 8-47982
- noncollinear, spin waves, hydrodynamic theory 8-6524
- nuclear acoustic resonance spectrum, kinetics of spin system for spin quantisation by strong acoustic field 8-15052
- one dimensional system with phase transform., exact linear renormalisation 8-32769
- one-dimensional, free energy series expansion, renormalisation group series 8-31081
- optically polarized spin system, long relaxation time meas. *(Russian)* 8-12737
- paramagnet, solid, in alternating longitudinal field, kinetic eqns. 8-2725
- position space renormalisation of spin systems with long-range forces, hyperscaling breakdown 8-24755
- quantal spin systems, classical representation and scaling props. of spin Hamiltonians 8-14919
- quantum, propagation properties study 8-12642
- quantum model of single spin system, von Neumann algebra 8-45459
- quasi-low dimensional spin system, 3-D mag. ordering, randomness effects 8-10710
- random, with short range interaction, static crit. behaviour 8-39328
- random chain of classical spins, statistical mechanics 8-10630
- random spin systems, non-analyticity of entropy and Nernst's law 8-2692
- reggeon couplings, analogue quantum-spin model 8-45813
- spherical limit for n-vector correls., spin correl. functions 8-24726
- spherical model, accel. of convergence of 1/d expansion for crit. temp. 8-19265
- supersymmetric, extensions 8-21344
- thermodynamics, contrib. of spin-phonon interaction 8-2635
- tricritical phase transition, critical exponents, classical N-component spin systems 8-4579
- tricritical phase transition, eqn. of state, critical exponents, logarithmic corrections 8-27048
- Wilson's renormalisation group recursion eqns., critical phenomena 8-4581

spin tickling (NMR) *see double nuclear magnetic resonance*

spin wave resonance *see ferromagnetic resonance*

spin waves
- *see also magnetostatic waves; magnons*
- antiferrimagnet, two-sublattice, spin waves, magnetocaloric effect 8-31073
- antiferromagnet, mechanism for hard excitation of spin waves *(Russian)* 8-19235
- antiferromagnet, nonsymmetric distrib. of parametrically excited waves *(Russian)* 8-47967
- antiferromagnet, randomly dil., excitations 8-23258
- antiferromagnet, spin wave parametric instability *(Russian)* 8-34971
- antiferromagnet, spin wave relaxation in strong mag. field 8-2747
- antiferromagnetic metals, two band model for elec. resist. 8-14720
- antiferromagnetism itinerant electron theory, spin susceptibilities 8-6504
- dipole-exchange spin waves in cylindrical ferromag. *(Chinese)* 8-6521
- disordered media, ferro- and antiferromag., and spin glasses, dynamic props. *(Russian)* 8-39350

spin waves continued
- dispersion relations for energy eigenvalues of two magnon bound state 8-47964
- ferrites, stability of nonlinear homogeneous magnetisation precession *(Russian)* 8-48001
- ferroelectric-magnetic coupled oscills., excitation by electron beam *(Russian)* 8-23257
- ferromagnet, dispersion relations for energy eigenvalues of two magnon bound state 8-47964
- ferromagnet, high frequency, kinetic and thermodynamic props. *(Russian)* 8-19340
- ferromagnet, Landau-Lifshitz eqn., two soliton solns. for nonlinear dynamics *(Russian)* 8-43646
- ferromagnet, nonsymmetric distrib. of parametrically excited waves *(Russian)* 8-47967
- ferromagnet, surface spin waves and surface spin correlations in presence of mag. surface reconstruction 8-6522
- ferromagnet, uniaxial, quantum anomalies in susceptibility during second order phase tansitions *(Russian)* 8-19226
- ferromagnet, with weakly bound ferromag. impurity, thermodynamic and dynamic props. *(Russian)* 8-27032
- ferromagnetic film, tangentially magnetized, spin wave instability 8-2712
- ferromagnetic metallic glass, hyperfine field and spin wave excitations, $T^{3/2}$ depend. 8-10672
- ferromagnetic metals, simple theory of spin-wave relax. 8-19231
- ferromagnetic semiconductor in quantizing mag. field, spin wave spectrum 8-19236
- ferromagnetic surface spin waves, microscopic theory, mag. field effects 8-35044
- ferromagnetism, itinerant, local band theory, spin waves 8-31041
- Heisenberg antiferromagnet, dil. two dimensional, mean spin per site in linearised spin-wave theory 8-39304
- Heisenberg ferromagnet, dil., CPA theory, spin-wave stiffness and Curie temp. 8-31080
- Heisenberg ferromagnet, two-dimens., spin dynamics, renormalisation group calc. 8-47966
- Heisenberg model, classical low temp. spin wave dynamics 8-6501
- Heisenberg model, magnetic excitations on ideas and atomically rough surfaces 8-14944
- Hubbard antiferromagnetic semiconductor, collective excitations, weak coupling limit 8-19210
- hydrodynamic theory for spin glass or noncollinear spin system 8-6524
- isotropic model ferromagnet, longitudinal magnetisation spectrum calc., spin wave interaction 8-10627
- kinetic exchange interaction, doubly degenerate narrow bands 8-23263
- lecture 8-27026
- light scattering lineshape for absorptive mag. material 8-23476
- mag. excitations, atomically rough surfaces, isolated cluster of overlayer spin 8-31102
- metal, EM props., general lecture 8-26901
- microcanonical high-temp. expansion 8-2638
- neutron inelastic scatt. expts., book contrib. 8-1959
- paramagnetic impurities in conductors, relaxation and indirect exchange interaction 8-2728
- Pd_3Fe, ferromag. spin wave meas., inelastic scattering of polarised neutrons 8-2665
- random magnet, LF response function 8-6493
- spin glass, Heisenberg model *(French)* 8-39336
- surface magnetic moment, induced, effect on spin-wave spectrum 8-19234
- thin ferromagnetic resonators, intermodulation distortion, spin waves 8-48048
- TMMC, antiferromag. reson. below 1K 8-39408
- transition metal, itinerant-localised electron model for magnetism 8-14918
- weak antiferromagnetic exchange field system 8-43577
- weak exchange field systems 8-43576
- X-Y model, classical, one and two dimens. 8-34997
- Co, small-angle crit. neutron scatt. 8-31087
- EuO, light scatt. from bulk and surface spin waves 8-19497
- Fe, spontaneous magnetisation data up to 0.98 T_c, reanalysis 8-47959
- Fe-Ni films, scatt. of homogeneous spin waves by anisomeric oriented plane, ferromag. reson. 8-19336
- $FeBO_3$, spin wave dispersion at small wavevectors, Brillouin scatt. and ferromag. reson. 8-47962
- $Fe_{78}Mo_2B_{20}$, amorphous ferromag., $T^{3/2}$ depend. of hyperfine field 8-39474
- $Fe_{40}Ni_{40}P_{14}B_6$, high-field suscept. and spin wave spectrum 8-10662
- $(Fe_{65}Ni_{35})_{75}P_{16}B_6Al_3$, amorphous ferromag., high temp. spin dynamics 8-47965
- $Fe_{75}P_{15}C_{10}$, amorphous, mag. excitations, inelastic neutron scatt. 8-10674
- ^{3}He-He II degenerate soln., kinetic coefficients, thermodynamic props., hydrodynamic, acoustic and spin wave propag. *(Russian)* 8-18867
- HoZn, spin wave spectrum, Green function analysis 8-2666
- Mn ferrite, monocrystalline epitaxial layers, surface spin-wave modes in ferromag. reson. 8-2743
- Mn-Cu alloys, stressed, diffuse neutron scatt. exam. 8-47950
- $MnCO_3$, nuclear spin waves from antiferromag. reson. line temp. depend. *(Russian)* 8-48050
- MnSi, weak itinerant ferromag., mag. excitations, neutron scatt. obs. 8-34969
- $NdAl_2$, mag. excitation spectrum, neutron inelastic scatt. 8-10673
- Ni complex, hexa(pyridine-N-oxide)$(ClO_4)_2$, field-induced mag. ordering in S=1 singlet ground-state 8-23288
- Ni, spontaneous magnetisation data up to 0.98 T_c, reanalysis 8-47959
- Ni-V(Mo)(Ru)(Cr), weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8-31063
- $NiBr_2$, ^{1}Eg spin-forbidden transition, temp. depend. and magnetoabsorpt. 8-48151
- $NiBr_2.6H_2O$, antiferromag. ordering and paramag. behaviour 8-14941
- Pd_3Fe, spin wave dispersion, neutron inelastic scatt. meas. 8-14943
- $RbMnF_3$, Heisenberg antiferromagnet, spin diffusion below T_n 8-34968
- $RbMnF_3$, nucl. spin waves *(Russian)* 8-34973
- YIG film, on GdGaG, mag. excitations, diffusion layer effects 8-31112
- YIG, light scatt. by parametric spin waves with longit. pumping *(Russian)* 8-43648
- YIG, polycrystalline, microwave relax. at low power levels 8-39409
- YIG, spinwave dispersion curves 8-19230
- YIG, surface spin waves, microscopic theory, mag. field effects 8-35044

spinodal decomposition
- alloy, struct. transform. during ageing, book contrib. 8-11199
- Alnico 5 and 8, spinodally decomposed magnetic alloy, magnetic flux temp. coeff. *(Japanese)* 8-35006
- critical fluid mixtures, spinodal decomposition and fluctuation spectrum 8-22825
- dynamics, generalised diffusion eqn., numerical soln. 8-10193
- glass, decomposition, phase separation processes, diffusion coeffs. determ. *(Germany)* 8-39736
- light scattering, depend. on method of quench 8-18782
- light scattering, polarised 8-31380
- liquid-vapour system, microheterophase state, characteristic time and size *(Russian)* 8-18740
- 2,6-lutidine-water, spinodal decomposition, light scatt. obs. 8-34625
- thermoplastic-photoconductor hologram recording media, frost suppression 8-17869
- Ag-Cu (50 at.%), splat-cooled, struct. of γ' extended solid solution 8-3147
- Al-Zn, Guinier-Preston zone form. kinetics study using linear localisation probe *(French)* 8-15413
- Al-Zn (18 at.%), position of coherency spinodal curve 8-23660
- Cu-Ni-Cr, microstruct. behaviour and mechanical hardening 8-47281
- Cu-Ni-Fe alloys superparamag. early stages of decomp. *(Russian)* 8-6890
- Fe-Cr-Co, spinodally decomposed magnetic alloy, magnetic flux temp. coeff. *(Japanese)* 8-35006
- Ni-Cr, ordering by nucleation and growth and by spinodal decomposition *(French)* 8-27471
- Ni-Cu-Al(Si), spinodal decomposition, morphology of microstructure, elastic strain energy anisotropy effect 8-15354
- Ni-Mn, ordering by nucleation and growth and by spinodal decomposition *(French)* 8-27471
- Pt-Au, amorphous struct. produced by Au implantation, spinodal decomp. TEM obs. 8-31379
- αTi-Fe, plastically deformed, α→ω transform. 8-3095

spinor groups *see group theory*

spirality *see elementary particle theory*

splines (mathematics)
- *see also function approximation; interpolation*
- cathodic protection of pipeline systems, spline function method for polarisation effect calc. *(Russian)* 8-31566
- electrocardiogram baseline noise estimation and removal using cubic splines and state space computation techniques 8-11755
- ferromagnetic material, magnetisation characts. approximation *(Russian)* 8-31094
- geological data automatic contouring techniques 8-7820
- image restoration by spline functions 8-42280
- molecular potential energy data, spline interpolation method 8-46412
- neutron radiography, high-speed system, modulation transfer function 8-7158
- potential flow about boundary shape, method of singularity with spline fit distrib. 8-22324
- simplified cubic spline for gravity and magnetic anomaly direct computation 8-7780

sponges *see porous materials*

sponginess *see porosity*

spontaneous fission
- ^{262}[105] spontaneous fission, fragment mass distrib., total kinetic energy release 8-17256
- minerals, radiography of geological specimens for determ. of α- and fission-activity 8-20540
- superheavy elements, synthesis and identification 8-46239
- superheavy nuclei, spontaneous fission, natural 8-13172
- superheavy nuclei, Z>106, lifetimes >2 ps, search in $^{208}Pb+^{86}Kr$ expt. 8-46102
- ^{252}Cf, beta, positron, prompt gamma events, superhigh density nuclei formation *(Russian)* 8-17263
- ^{252}Cf, charge distrib., determ. of fractional cumulative yields of ^{134}Te and ^{135}I 8-41791
- ^{252}Cf, determ. of heavy-ion interaction pot. *(Russian)* 8-41765
- ^{252}Cf, fission product charge distrib. 8-13176
- ^{252}Cf, low energy neutron spectrum meas. using ^{6}Li spectrom. 8-17477
- ^{252}Cf, mass distribution of fragments *(Russian)* 8-29517
- ^{252}Cf spontaneous fission, forward-backward anisotropy of prompt neutron emission 8-25254
- ^{252}Cf, spontaneous fission, yields and isomer ratio in A=134 chain 8-41786
- ^{252}Cf, spontaneous ternary fission, multiplicity distrib. of prompt γ rays 8-21615
- ^{244}Fm, fragment detection in on-line system of ionisation chambers 8-46226
- ^{254}Fm, distrib. of mass, KE and neutron yield 8-17257
- ^{237m}Np fission isomer from ^{238}U(p,2n), statistical model anal., fission to γ branching ratio 8-25256
- ^{236}Pa, β-delayed fission, search *(Russian)* 8-46033
- ^{238}Pa, β-delayed fission, search *(Russian)* 8-46033
- ^{232}Pu, fission barrier determ., from β-delayed fission 8-29518
- ^{240}Pu, mass distribution of fragments *(Russian)* 8-29517

spontaneous magnetisation
- amorphous ferromagnet, micromagnetic theory 8-10661
- Elinvar, Curie point, magnetisation and susceptibility, heat treatment effects *(Russian)* 8-47973
- ferromagnetic binary alloys, strictly regular, quasi chemical model 8-39316
- Heisenberg ferromagnet, nearly one- and nearly two-dimensional, long-range order, upper bound for magnetisation 8-34947
- Ising model with random quenched broken bond disorder, bounds on crit. temp. 8-2688
- itinerant-electron ferromagnetism, possible coexistence with itinerant-electron antiferromagnetism 8-39286

spontaneous magnetisation continued
- manganese stearate, mag. two-dimensional system, mag. susceptibility 8−10669
- TMNB, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
- TMNC, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
- triangular Ising model, anisotropic ferromag., corner transfer matrices, spontaneous magnetisation 8−10629
- V-Fe (29-35 at%), ferromag., mag. props. near crit. conc. for ferromagnetism 8−19225
- $Ba_2Zn_2Fe_{12}O_{22}$, model for low mag. moment, magnetisation meas., 5-1375K 8−2655
- $CdCr_2Se_4$, crit. behaviour near Curie point 8−31068
- $Co_{2-y}Zn_yTiO_4$, cation distrib. and mag. props. 8−14939
- $CsNiF_3$, linear S=1 ferromag., easy plane anisotropy, low-temp. mag. props. 8−23250
- $CuCr_2Se_4$, crit. behaviour near Curie point 8−31068
- $CuFe_2S_3$, cubanite, spontaneous magnetisation, polarised neutron obs. *(French)* 8−23245
- Fe, data up to 0.98 T_c, reanalysis 8−47959
- γ-Fe epitaxial film, ferromagnetism, spontaneous magnetisation and Curie temp. determ. 8−2711
- Fe_3Se_4, mag. props., 4.2-600K 8−43570
- $HgCr_2Se_4$, crit. behaviour near Curie point 8−31068
- Ni, data up to 0.98 T_c, reanalysis 8−47959
- Ni-Pt alloys, mag. props. under hydrostatic press. 8−6556
- $SmFeO_3$, magnetostriction meas. in spin reorientation region 8−2721
- $YFe_{1-x}Co_{x/2}Ti_{x/2}O_3$, magnetostriction meas. in spin reorientation region 8−2721

spontaneous symmetry breaking
- $^3P_0$ generalised model, reln. to Melosh transform. 8−12885
- Σ models of spontaneously broken symmetries 8−399
- Abelian spontaneously broken gauge model, perturbation expansions *(Chinese)* 8−8500
- asymptotic symm. for charmed mesons, new duality 8−21348
- asymptotically free massless field theory, self-consistent β functions 8−16911
- baryon resonances, hadronic decay, broken SU_3 and total reduced width 8−17017
- bilocal fields for study of quantum corrections to dynamically broken symmetries 8−16985
- boson system, scaling equation of state, renormalisation group transformation 8−12643
- bound state spectra in φ^4 theory and Gross-Neveu model, temp. depend. 8−4770
- broken SU_3 theory, correlations in multiperipheral resonance prod. model 8−45891
- charmed meson decay, simple symm. breaking 8−21418
- chiral properties of fermionic determinant in two-colour QCD, symm. breaking 8−25015
- chiral quantum field theory, covariant formulation 8−21347
- chiral SU(4)×SU(4) model, scalar meson decays 8−4801
- chiral $SU(4)\otimes SU(4)$ symmetry breaking parameter, meson mass 8−12838
- chiral symm., anal. of cold matter at super-nuclear densities including pion condensates 8−17128
- conformal symm. breaking, quantisation in curved space-time 8−41434
- CP violation, radiative symm.-breaking, fermion and Higgs boson masses 8−41435
- Dirac particle in mag. field, symmetry breaking by monopole singularities 8−16977
- dual string model, standard, spontaneous symm. breaking 8−41508
- E_6 model, basic fermion masses and mixings 8−24972
- Euclidean Higgs fields, topology 8−4759
- extended PCAC hypothesis, soft-meson chiral symm. breaking 8−21353
- four-quark model, $SU_{2l}\times SU_{2r}\times U_1$ gauge group, Cabibbo angle and quark masses 8−25002
- gauge field in stability subgroup of vacuum in nonlinear realization 8−390
- gauge sypersymmetry eqns., spherically symm. soln. 8−4532
- Gell-Mann-Okubo formula, total widths of unstable hadrons 8−45805
- geodesic in gauge supersymm. 8−12634
- Goldstone bosons in two dimens., ground state, IR divergences 8−12815
- gravitational interaction spontaneous symm. breaking 8−36918
- Gross-Neveu model, exact S-matrix theory 8−24937
- harmonic confinement, relativistic approx. to meson spectrum 8−29303
- heavy lepton model of rare μ and K decay modes 8−45898
- Higgs boson, charged and trimuon events in neutrino reaction 8−21413
- Higgs boson, mass, upper and lower limits *(Russian)* 8−4795
- Higgs bosons from two-gluon annihilation in pp collisions 8−41501
- Higgs effect, supergravity and supersymm. massless QED 8−29268
- Higgs mechanism, implementation 8−24921
- Higgs mechanism, spontaneous symm. breaking in local gauge quantum field theory 8−396
- Higgs meson mass and decay of metastable vac. state. 8−4819
- Higgs scalar effects on gravity, Nambu Jona Lasinio type model 8−41467
- hydrodynamic model, nonlinear pion+pion chiral Lagrangian, $e^+ + e^-$ and p+p collisions 8−32966
- interaction of scalar field with nonstationary vector field, spontaneous breaking of gauge invariance 8−8545
- lattice fermions, Dirac fields and Thirring fields, spontaneous breaking of chiral symm. 8−24962
- left-right symmetry, spontaneous breakdown, parity violation, leptonic right handed, currents 8−21351
- left-right-symm. unified theory of quarks and leptons 8−41466
- local QFT, higher symm. interpretation, spontaneous symm. breaking, quarks and flavours 8−16942
- magnon fields, finite temp. effective pot. methods, loop expansions 8−2640
- mass generation in a normal product formulation 8−25027
- massive supergravity nonlinear realisation of orthosymplectic gauge symm., coupling to spin 1/2 spin 1 multiplet 8−33019
- matter interactions in weak gravit. fields, spontaneous origin of Newtons const., modified Einstein eqns. 8−12853
- mechanism of spontaneous symmetry breaking, various appls. 8−45510

spontaneous symmetry breaking continued
- neutral currents and quark charge origin 8−21373
- nonAbelian theories with nontrivial gauge transforms., topological tunnelling, Goldstone gluons 8−24956
- Oxford Rutherford type model, semianalytic treatment, dual unitarisation scheme, trajectory parameters 8−16996
- PCAC, chiral anomalies and quark masses 8−8556
- phase transitions, first-order, in spontaneous broken gauge theory 8−24943
- projective geometry and group contraction 8−8551
- pseudoscalar meson decay, symm. breaking in chiral SU(4)×SU(4) model 8−21424
- pseudoscalar mesons, sum rule, symm. breaking of chiral SU(4)×SU(4), decay const., masses 8−33000
- quark charges, developed by spontaneous breaking of colour symm. 8−21387
- quark models, noninvariance groups, internal symms. and ghost symms. 8−25007
- quark-diquark model with broken colour symmetry, hadron spectrum 8−12874
- relativistic QFT, boson transformation, extended objects 8−37140
- Schwinger model, canonical surface formalism, axial anomaly, chiral symm. breaking 8−12816
- six-quark model of quantum flavourdynamics, Cabibbo angle and quark masses 8−33017
- stepwise breaking of gauge and discrete symm. 8−29269
- SU_3 symmetry breaking, dynamical 8−21346
- SU(2)×U(1), gauge theory of weak interactions 8−21328
- SU(2) gauge theory, sypersymm. breaking by pseudoparticles, supergravity implications 8−24959
- SU(3)×SU(3) chiral renormalisable gauge model, nonleptonic decays 8−24938
- SU(4) symm. breaking, e.m. props. of D mesons calc. 8−8668
- SU(N) gauge models, symm . of Higgs pot. 8−32980
- supersymmetric vector-like model of lepton interaction 8−412
- two-body equal-time wave eqn., quark-antiquark system 8−32992
- two-dimensional model, pseudoparticles and massless fermions 8−24974
- U gauge in Abelian and non-Abelian gauge theory, Gribov ambiguities 8−45788
- ultralocal static field theory with imaginary bare mass 8−8499
- unified theories of strong+weak+EM interactions, Weinberg angle, dynamical symm. breaking *(Russian)* 8−413
- unified vectorlike gauge theory based on group SU(6) for quarks+leptons 8−4818
- Yang-Mills theory, gauge symmetries 8−359
- Yang-Mills theory, spontaneously broken, reggeon field theory appl. 8−8512
- zero eigenvalues for quantum fluctuations, instanton, spontaneous breakdown of conformal symm. 8−12821
- π struct., gauge model, spontaneously broken chiral symmetry 8−45841
- Q, axial vector mesons, dynamical mixing model 8−24973

spooling *see winding (process)*

sporadic-E layer
- auroral activity in midnight sector, electrojet and precip. particle characts. 8−12039
- auroral zone, short and long term movement 8−16235
- daytime C-type E_s-layer behaviour over Lindau, wind shear theory 8−40735
- electron temperature gradients in mid-latit. E_s-layers, obs. 8−28397
- enhancements over Brazilian Geomagnetic Anomaly, assoc. magnetic storm 8−28431
- equatorial formation, electric fields and neutral winds effect 8−12045
- equatorial sporadic-E, multifreq. HF radar studies of plasma instabilities in Africa 8−36370
- HF and VHF signals amplitude fluctuations due to ionospheric scatt. and E_s-layer refl. 8−45105
- HF reflection and transmission coeffs. for horiz. polarised waves 8−32290
- Huancayo recordings during min. sunspot years 8−16230
- nocturnal E_s-layer, effect on ELF radio waves propag. 8−36392
- radiowave absorption meas., differences between sporadic-E and normal E-layer refls 8−40734
- radiowave propagation, directional dispersion between 9 and 14 MHz 8−28412
- satellite radio signals amplitude scintillations rel. to spread-F and sporadic-E over Brisbane 8−49209
- transparency characts. 8−40759

sports and entertainment
- university sports areas, reverberation and noise levels 8−9497

spray coating techniques
- *see also flame spraying; plasma arc spraying; powder spraying*
- In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8−15314

spray coatings
- *see also electrostatic coatings; flame sprayed coatings; plasma arc sprayed coatings; powder sprayed coatings*
- powder metal sprayed coatings, bond strength, influence of surface preparation 8−11150
- CdS, spray pyrolysis prep., elec. transport props. 8−2590
- CdS sprayed films, elect. and optical props. 8−39241
- Cd_2SnO_4, $CdSnO_3$ electrodes, elec. sheet resist. and optical transparency 8−27401
- Cu_xS-CdS thin film solar cell using chem. sprayed CdS film 8−43465
- Si, on glass ceramic, thermosprayed, bonding 8−11367
- Si, thermosprayed, bonding to glass ceramic 8−23848

sprays
- *see also aerosols; drops; jets*
- atomisation as nonequilibrium process, doplet disintegration distrib. function 8−38387
- disinfection sprays for hospitals 8−7548
- drop size in dense fuel sprays, in-line holography meas. 8−37827
- evaporation of atomised liquid *(Russian)* 8−38828
- hot-film anemometer for cylinder wake pattern with spray cooling 8−34238
- liquid, electric spraying, drops charge to mass ratio *(Japanese)* 8−17835
- tall-form spray chamber, residence-time distribution of air 8−9679
- water-air, dispersion characts., orifice shape depend. 8−34182

spurions *see elementary particles*

sputtered coatings
see also reactively sputtered coatings
alumina film, RF sputtered, stability 8−22993
cooling by thin film coating on polymer substrate 8−197
dielectric inhomogeneous coating, produced by high temp. sputtering, spectrophotometric props. *(Russian)* 8−39613
high rate film growth, book contrib. 8−11117
metal film, compressive stress transition 8−10310
optical film, production by RF cosputtering of dielectrics, and optical props. 8−6849
oxidation of metallic coatings, during uncooled cathode sputtering in inert atm., X-ray diffr. obs. 8−3041
Permalloy film preparation by RF sputtering 8−3044
present state and future prospects *(Russian)* 8−23614
rare earth Fe garnet, difference in comp. between targets and sputtered films, expt. 8−6848
steel, stainless, amorphous film, sputtered, prep. and characterisation 8−43266
techniques, comparison between electron beam evaporation and high rate with plasmatron 8−11110
thickness distribution determ. by electron backscatt., layer on metal collector 8−18927
Al film, getter sputtered at low temp. 8−35305
Al, sputtered and electron gun evaporated films, grain size and orientation obs. 8−10308
Al, sputtered film, thermal ageing, thickness dependent effects 8−6462
Al_2O_3, RF sputtered, transient currents 8−23184
Au, microporosity induced by nucleation and growth processes, TEM expts. 8−10303
Au, on Al, thickness distrib. determ. by electron backscatt. 8−18927
Au overlayer, on GaP photoelectrode 8−14812
$Bi_{12}TiO_{20}$, RF sputtered epitaxial film on $Bi_{12}GeO_{20}$, for optical waveguiding 8−9462
C, amorphous, elec. transport props. 8−6457
Cr_2O_3/Cr cermet film, RF sputtered, for selective black absorbers 8−30046
Cs halides, storage layers stability under electron bombardment 8−27355
Cu based materials, sputter deposited at high rate, microstruct. and props. 8−22988
Cu-base alloy formed by high rate sputtering 8−11368
Cu-Ni alloy, sputtered altered layers, in-depth profile, model 8−19613
$Cu_xMo_6S_8$, sputtered, supercond. crit. currents and scaling laws 8−47923
Cu_2S sputtered on CdS substrate for solar cell appl. 8−39692
Fe-Cr, Fe-Cr-Al(Si) film heaters, lifetimes for 800 to 1000°C temp. range 8−215
Gd-Co, and Gd-Co-X (X=Mo, Cu, Au), sputter deposited amorphous alloy, substrate bias, magnetic anisotropy, annealing 8−48006
Gd-Co alloy, sputtered film, mag. props. determ. *(Chinese)* 8−2714
Gd-Fe, sputter deposited amorphous alloy, substrate bias, magnetic anisotropy, annealing 8−48006
Ge, amorphous and polycryst. layers, sputtered, elec. cond. and thermoelec. power 8−2586
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
In_2O_3-SnO_2 thin film, effects of heat treatment on resist. and optical absorpt. 8−43495
Kr.$2SiO_2$, props. of vitreous deposits 8−22664
Mo_3Ge, supercond. crit. temp. 8−14853
MoS_2, RF sputtering, coating on steel surface as solid lubricant, morphology 8−6239
Nb-Ge, supercond., TEM expts., correl. of struct. and elec. props. 8−14628
Nb_3Ge film, low temp. sputter deposition 8−48315
$Pb_xSn_{1-x}O_2$ film, optical props. 8−39616
$Pb_xSn_{1-x}Te$, RF sputtered films, struct., lattice parameter, stoichiometric comp., RHEED 8−38975
Pt, microporosity induced by nucleation and growth processes, TEM expts. 8−10303
Re_5Ge_3, supercond. crit. temp. 8−14853
Si, amorphous, optical absorption at high press. 8−35216
Si, amorphous film, IR and Raman spectra of Si-H bonds 8−19482
Si:P, RF sputtered polycryst. film, MOS compatibility 8−6455
Si:P, sputter-deposited polycryst. films, resist. meas. 8−14842
p-Si-metal Schottky contact surface state spectra and current transport mechanism *(Russian)* 8−43472
Si_3N_4, encapsulant for annealing of GaAs, photolum. and AES evaluation 8−27657
Sn-Ni metastable equiatomic alloy, sputter deposition 8−3043
SnO_2, sputtered film, thermal ageing, thickness dependent effects 8−6462
steel, Hadfield, hollow cathode sputtering 8−11433
Ta, thermal oxidation, reaction kinetics 8−39959
Ta_2N, thermal oxidation, reaction kinetics 8−39959
TiC, RF sputtered film on steel, transition region 8−39956
Zn, sputtered film, thermal ageing, thickness dependent effects 8−6462
$Zn_{1-x}Cd_xS$, polycryst., reactively sputtered, MSM struct. obs. of dielec. props. and cond. mechanism *(French)* 8−14841
ZnO, DC sputtered, prep. and characterisation 8−3040
ZnO/SOS monolithic SAW amplifier 8−6205
ZnS, RF sputtered film, stoichiometry, chem. comp. 8−34727
$ZrGe_2$, supercond. crit. temp. 8−14853

sputtered layers *see sputtered coatings*

sputtering
see also d.c. sputtering; diode sputtering; radiofrequency sputtering; reactive sputtering; triode sputtering
alkali halide, under bombard. by multiply charged Ar^+-Ar^{5+} and Kr^+-Kr^{5+} ions 8−11046
alkali halides, electron sputtered atoms, energy distrib., time of flight method 8−48263
alloy film, monitoring and controlling techniques, review 8−11113
alloy film codeposition using pure metallic wire mesh 8−39688
alloy surface, enhanced diffusion effect on preferred sputtering 8−43973
angular distributions of sputtered material, anal. by autoradiograph technique 8−27362
atomic excitation mechanism 8−43971
cathode, at low energies, theory 8−19624

sputtering continued
coating techniques, comparison between electron beam evaporation and high rate sputtering with plasmatrons 8−11110
coating thickness, effect of process parameters *(Russian)* 8−31340
Cs, pulsed sputter negative ion source 8−33347
dielectric films on semiconductor devices, review of deposition techniques 8−23611
electron microscope specimen preparation techniques 8−32947
erosion, symmetric triangular microprofile, apparent growth and equilib., angular ranges 8−23571
excitation efficiency of atoms during ion-beam sputtering 8−19623
excited atom sputtering, cascade and quasi-thermal processes 8−35239
excited states amongst sputtered particles, thermal origin 8−35238
fusion neutron induced nuclear recoil emission probabilities 8−15256
Galilean satellites, ice sputtering and water products contrib. to Jupiter magnetosphere 8−45268
getter sputtering at low temp. 8−35305
high rate film growth, book contrib. 8−11117
ice, sputtering by MeV light ions, erosion rate 8−48268
insulating film for semicond. devices, props., rel. to deposition conditions 8−23612
interstellar grains, destruction by sputtering 8−45382
ion beam sputtering, application to high resolution electron microscopy 8−32925
ion beam sputtering as microsectioning technique, for small diffusion coeff. meas. 8−47551
ion microprobe analysis, elemental imaging errors, polarity role 8−20103
iron germanate glass, ion-beam sputtering, excitation efficiency of atoms 8−19623
magnetron high rate sputtering with coaxial cylindrical electrode config. *(Japanese)* 8−23617
magnetron sputtering target/substrate configuration 8−39687
mask synthesis, for diffr. limited waveguide Luneburg lenses 8−38076
metal alloys containing second-phase precipitates, glow-discharge optical spectra 8−48264
metal atoms from cathode in discharge, excited states emission 8−1939
metal coating of optical fibres, for strengthening and surface protection 8−30103
metal surface, 14.8 MeV neutrons, radionuclide product ejection range 8−15257
metal surface, excited atom emission, survival probabilities 8−48266
mica, alpha-particle tracks, prompt process and post effect 8−43053
negative ion formation, by sputtering, work function depend. 8−39645
negative ion formation on sputtering metals and semiconductors with Cs^+, alkali metal monolayer effect 8−46204
ohmic contacts, sputter-etch plus evaporated film technique for contacts to Si devices 8−23165
Permalloy film oxidation, microbalance, AES, ESCA and sputter profiling 8−15600
plasma sputtering, interaction of particles in liquid phase *(Russian)* 8−35306
Sputter ion pump *(Japanese)* 8−21152
Stewart-Thompson theory, surface topography, glow discharge and ion-microprobe sputtering, obs. 8−43977
surface layer composition changes in sputtering 8−2343
TEM thin specimen preparation by sputter-etching 8−24893
thin and thick film technology, conference, Augsburg, Germany (1977) *(German)* 8−39685
thin film circuit preferential sputtering process *(German)* 8−39691
torsion vacuum microbalance appl. to sputtering yield meas. *(Japanese)* 8−19622
yield dependence on incident atomic number, surface correction 8−43978
Ag, low energy sputtering by Ar and Xe ion bombardment 8−15269
Ag-Au, sputtering by 6 keV Xe^+ ions, energy distribs. 8−43969
Au foil, radiation damage from sputtering by fission fragments 8−2968
Au, low energy sputtering by Ar and Xe ion bombardment 8−15269
Au, sputtering yield at low energy for light-ions 8−19620
Au-Cu-O surface, quantitative Auger analysis using relative sensitivity factors 8−7295
Au-Ni-O surface, quantitative Auger analysis using relative sensitivity factors 8−7295
$CaCO_3$, calcite, sputtering behaviour, optical and electron microscopy 8−43968
Cu bombarded by Ne^+, Ar^+, Kr^+, average kinetic energy of sputtered atoms *(German)* 8−19619
Cu, by Ar^+, appl. of torsion vacuum microbalance to sputtering yield meas. *(Japanese)* 8−19622
Cu matrix, small oxide precipitates, two-phase system, sputtering and secondary ion emission 8−39650
Cu, self diffusion at low temp., low energy ion beam sputtering 8−18821
Cu, sputtering coefficient, temp. depend. 8−19625
Cu-Ni (50 wt.%), preferential sputtering, thickness and in-depth comp. profile of altered layer, AES 8−39649
Cu-Ni; preferential sputtering, Auger meas. 8−27358
Gd, sputtered vapour, neutral ground state population, laser obs., appl. to isotope separation *(Russian)* 8−29759
GdF_3:H films, H, F profiles meas. by sputter-induced optical emission 8−47407
Mo (100), negative ion form., Cs overlayer effect 8−39645
Mo, blistering and surface roughening, room temp. ageing effects Ar^+ ion bombardment 8−34550
Mo, sputtering yield at low energy for light-ions 8−19620
Na, from NaI target, velocity spectrum meas. by Doppler shift laser spectrometer 8−19621
Nb, cathodic sputtering by Hg^+ ions, mech. of positive ionisation of atoms 8−27363
Nb, fast neutron sputtering 8−15255
Nb, sputtering by energetic neutrons and protons, round robin expt. 8−11052
Nb superconducting film prod. by electron beam sputtering *(Russian)* 8−15308
Nb-Ge superconducting film, prod. by electron beam sputtering *(Russian)* 8−15308
Nb_3Si, superconducting, high transition temp., sputtering 8−15309
Ne-Cu laser, discharge processes, cathode sputtering 8−5463
Ni, tarnishing in air, 23-200°C, relative humidities from ambient to 95%, monitoring 8−19940

sputtering continued
NiFe alloy, ion-beam sputtering, excitation efficiency of atoms 8−19623
Ta thin films, magnetically enhanced sputtering appl. to Penning cylindrical system 8−3042
U, excited state radiative lifetime, sputtering technique 8−17602
U, sputtering yield meas. by fission track technique 8−39646
V$_3$Ge, superconducting, high transition temp., sputtering 8−15309
W, polycryst., bombardment with Na and K ions, neutral component of scatt. 8−11047
W$_6$Co$_6$C cemented carbide, with CVD TiC coating, structure, composition and hardness exam. 8−11425
Zr, excited state radiative lifetime, sputtering technique 8−17602

SQUIDs *see superconducting junction devices*

stabilisation *see stability*

stabilisers *see controllers*

stability
see also flow instability; frequency stability; limit cycles; Lyapunov methods; plasma instability
A^4-phonon theory, free energy instability in ground state of A^4-phonon theory 8−41257
accelerator cavities, improvement by mutual coupling *(Slovene)* 8−29663
active acoustic suppression systems with finite number of couplings, approximation and stability aspects 8−18111
aerodynamics, unsteady, modelling, for arbitrary motions 8−14033
aeroelastic stability of complete rotors in forward teetering flight 8−5677
alumina film, RF sputtered, stability 8−22993
asthenosphere, thermal stability or instability of shear flow 8−20370
autoparametrically coupled systems, stochastic stability of stationary response 8−20961
bar, dynamic stability, subjected to impulse loading 8−46901
bar, impact vibr., motion and dynamic stability analysis 8−26081
bar, localised damage region effect on parametric excitation 8−30215
beam, nonuniform, static and dynamic instability analysis 8−13942
Beck's column subjected to vertical+follower forces, vibr., stability 8−9583
bifurcation and nonequilibrium phase transitions of limit cycles and multiperiodic flow 8−24759
binary stars, stability criterion from influence of nonsphericity and radiation press. 8−28658
bodies disposed from aircraft, dynamic flight characteristics *(Polish)* 8−18311
circular cylinder carrying flow, unsteady fluid dynamic forces rel. to stability anal. 8−13936
composite cylindrical shells, reinforced, stability loss under isotropic external pressure 8−42554
composite materials, cylindrical shells, probability anal. of stability, mass minimisation 8−42553
conservative elastic continua, stability anal. with adjacent equilibrium method 8−28951
continental shelf wave side band instability and long wave resonance 8−16030
cylinders, stiffened, subjected to pure torsion, min. weight design 8−1582
cylindrical envelope, stability under effect of axial contractive power and cross pressure *(Russian)* 8−42550
Dedekind ellipsoids, dynamical instability in post-Newtonian approximation to general relativity 8−32734
dendritic crystal, growth, stability effects 8−26802
discs, stationary and rotating, stability under edge load 8−38219
dissipative systems, numerical expts. on trajectory instabilities trajectory instabilities 8−41235
ductile notched fracture toughness specimens, instability prediction, approx. flow stress model 8−δ σθππορτσ ον σταβιλ÷ ιτυ ×−30224
elastic beams subjected to successive loading, bending, stability eqns. *(German)* 8−26045
elasto-plastic continua, quasi-bifurcation in dynamics 8−38223
elasto/visco-plastic finite element analysis, unconditionally stable algorithms 8−34030
elastodynamics, linear, stability theorems for abstract eqn. in Hilbert space 8−36832
Euler method application for case of follow-up load preset on part of body surface *(Russian)* 8−28948
evolving systems instability, elastic stability theory and catastrophe theory approaches 8−44442
excitable medium, auto-oscillatory, 1-dimens., stability complex regimes 8−15752
extremely metal-poor stars, theoretical evolution and radial mode pulsational stability 8−28677
ferrites, stability of nonlinear homogeneous magnetisation precession *(Russian)* 8−48001
field emission instability effects on SEM display, electronic removal device 8−21279
flexible viscoelastic cylindrical shell, dynamic stability 8−5678
fracture mechanics, stability conditions 8−13974
Freeman's elliptical stellar cylinder model, stability 8−28731
glass fibre reinforced shell of rotation, stability 8−13938
gyroscope, stability of Staude's permanent rot. with damping 8−21126
gyrostabilized platform, nonlinear response to transient input 8−30219
Hamiltonian system, two-dimensional, stability of equilib. position in case of equal frequencies *(Russian)* 8−36814
hot degenerate stars in steady-state accretion, thermal stability 8−40929
infinite classical system, stability, equilib. and KMS 8−21055
ion-laser discharges, high-power, stability limits 8−37872
Jupiter-Saturn-Sun systems, long-term numerical solns. 8−24450
laser, CW, stability of quantum model, Lyapounov function approach, using Scully-Lamb theory 8−5445
linac cavities, field theoretical approach to stabilisation 8−33309
lipid bilayer, saddle splay instability, crit. elastic modulus 8−44462
liquid phases interface, hydrochemical stability 8−22933
magnetic fields, twisted, stability 8−45217
mass unit of 1 kg, secondary standards, USSR 8−4595
N-degree-of-freedom system, imperfection sensitivity of compound branching 8−13934

stability continued
nerve, temporal stability of solitary impulse solns. of nerve eqn. 8−35830
nerve impulse theory, Hodgkin-Huxley eqns. appl. 8−48782
neural populations, simplified model eqns. and envelope eqns. 8−31798
neutron stars, rotating, existence of ergoregion instability 8−24523
nonhamiltonian systems with one degree of freedom, forced periodic motion *(Russian)* 8−20959
nonlinear structures, progressively changing equilib. eqns. soln. 8−1581
numerical stability of complex finite elements 8−32659
orthotropic annular plate, stability *(Polish)* 8−18209
perturbed motion stability anal. *(Russian)* 8−16640
photoelectric inclinometer, sensitivity stabilization by negative feedback *(Russian)* 8−4012
photomultiplier using Pb glass channel type secondary electron multiplier, stability behaviour *(German)* 8−852
planetary orbits stability, soln. to Poincare problem in celestial mechanics 8−28492
plastic deformation in tension, stability concepts and conditions 8−26046
plate, multilayer sandwich, stability and buckling analysis by finite strip method 8−26069
plate, thin, unlimited, with noncircular hole, stability problem soln. *(Russian)* 8−18201
polyhedral crystal growth from soln., morphological stability 8−26466
projectile, axisymmetrically rotating, stability of nonstationary motions *(Russian)* 8−24659
PSR 0809+74, pulsar, phase stability in drifting subpulse pattern 8−40980
reaction-diffusion eqns., stability of solns. 8−16759
reactors with delayed temp. feedback, linear stability anal. 8−29551
red giant stars, envelopes dynamic instability and mass loss 8−20824
reinforced rectangular plate, compressed in two directions in a manner conducive towards stability 8−22289
resistance thermometer, Ge, stability at 20K 8−41307
restricted three-body problem, second generation periodic orbits and regions of stability 8−24453
rib-reinforced orthotropic cylindrical shell, structural design effect on stability 8−22288
rigid shaft in short journal bearings, aperiodic behaviour 8−46905
rod with nonlinear curvature, dynamic stability theory, lateral bending problem under torsion *(German)* 8−54
rotating body, stabilisation by passive dampers, asymptotic methods use *(Russian)* 8−20957
rotating stars secular stability, Lagrangian perturbation theory of nonrelativistic fluids 8−49305
satellite, elastic, gravitationally oriented, spatial oscills. and stability of relative equilib. 8−4068
satellite, gravity oriented, with thermally flexed appendages, librational dynamics 8−7868
self-oscillating system, parametrically excitable, forms of movement, stability conditions *(Russian)* 8−16635
shaft, rotating, with single disc, nonlinear inner damping forces *(German)* 8−1562
shaft, whirling motion, stability analysis 8−13894
shell, circular cylindrical, of anisotropic material, plastic stability under axial compression *(German)* 8−1585
shell, cylindrical composite, with viscoelastic filler, parametric oscills., dynamic instability *(Russian)* 8−38221
solar evolving force-free magnetic fields, stability of configurations and motion of medium 8−12176
solar quiescent corona, dynamical stability 8−40885
solidification, stability analysis, interfacial surface entropy effect in heat balance 8−26464
solids, uniqueness and stability under config. depend. loading 8−30194
solitons, theory and applications 8−36811
spectrometric channel control using blocks 8−866
spherical envelope, two layer, stability under uniformly distributed external press. 8−38222
spherical shells, local stability 8−1587
spinning annular plates reinforced with edge beams, vibration and stability 8−38225
star in thermal imbalance, pulsational stabilities, comparison of methods 8−45316
stars, equilib. and stability of Jeans spheroids with toroidal mag. fields 8−45319
stars in thermal imbalance, broadened definitions of instability 8−16397
stars in thermal imbalance, vibr. stability 8−24506
stars in thermal imbalance, vibrational stability 8−40916
structural dynamics, unconditionally stable explicit algorithm 8−48
thermonuclear device flute plasma oscillation, analogue simulation 8−26336
thermostat, with stability of ±3.5 μK 8−21132
thin shells, variational analysis of nonlinear problems 8−5673
time varying systems, stability anal. 8−37
train, stability of unperturbed motion *(Russian)* 8−18160
tubes, infinitely long cylindrical elastic, collapse under bending, press. and axial loads 8−18204
van der Pol oscillator, functionals over discontinuous sample paths 8−29052
vibration problems, Zienkiewicz four-time-level scheme for numerical integration 8−1594
CuO-Ag film solar absorbers, mechanism of high-temp. instability 8−22971
^{3}He superfluid A phase, stability of superflow 8−14532
Nd:YAG laser, reduction of passive Q-switch output jitter 8−46648
Si-SiO$_2$ interface, elec. props. and influence on service performance and stability 8−23171

stability criteria
see also Nyquist criterion
cylinders, thin necked, thermoplastic deformations, stability analysis *(German)* 8−22281
Hill equation, simplified stability criterion, applications 8−36820
minimum uncertainty states, conditions on Hamiltonian for stability 8−24683
two-phase flow through porous media, starting algorithm for numerical simulation 8−38388

stability of numerical methods *see convergence of numerical methods*

stacking faults
- acoustic emission rel. to stacking fault energy 8−14365
- alkali feldspar, deformation, plastic defects, TEM investig. 8−32066
- amorphous semiconductor, tetrahedrally bonded, random stacking model, X-ray scatt. intensity 8−9953
- Cu-Al, FCC, study of dipoles using weak-beam electron microscopy 8−22724
- diamond, natural, rel. to flat bottomed trigonal pits 8−26582
- erionite, cryst. struct. exam., stacking faults 8−2083
- extended growth defect characterisation, review 8−30649
- FCC crystal, extrinsic faults, X-ray diffr. matrix intensity eqn. 8−38575
- G 8−44130
- hardened, martensite struct. characts., Cu and Al additions effect *(Russian)* 8−19709
- III-V compounds, stacking fault energy and ionicity 8−30651
- ionic crystal, stacking fault computer simulation 8−30652
- metal, BCC, computer simulation of stacking faults 8−30653
- metal, fatigue fracture-stacking fault energy correlation *(Russian)* 8−15499
- metal, FCC, climb model of extended dislocations 8−6059
- MOS, capacitors, SEM investigs. using electron beam induced current technique 8−23177
- RHEED, Bragg diffraction imaging of cryst. surface defects 8−9920
- SEM, crystalline contrasts from defects in thin and thick specimens 8−22611
- semiconductor substrate surface, low loss electron and Auger images correl. 8−22944
- steel, α-martensite formation in crossing range of ε-martensite platelets *(German)* 8−3126
- steel, austenitic stainless, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
- steel, austenitic stainless, grain size effect on softening *(Russian)* 8−23731
- steel, austenitic stainless, stacking fault energy, composition depend. 8−38733
- steel, austenitic stainless, stacking fault energy measurement, by weak beam electron microscopy 8−18661
- steel, stainless AISI 304, single phase FCC, stacking fault energy and delamination wear 8−3239
- steel, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
- STEM microdiffraction patterns, effect of cryst. defects 8−22610
- TEM, stacking fault contrast using weak-beam imaging conditions 8−34401
- time-defect densities in tilt boundaries of f.c.c., b.c.c., h.c.p., crystals 8−2142
- X-ray powder patterns for polytypic struct. with stacking faults anal. 8−38577
- X-ray topograph, computer simulation 8−30513
- α-Ag-Ge, cold-worked, lattice imperfections, X-ray diffr. study 8−38732
- Al, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
- Al, single phase FCC, stacking fault energy and delamination wear 8−3239
- Al_2O_3-SiO_2, sillimanite, lattice defects, crystallo-chemical model, TEM obs. *(French)* 8−26570
- Au foil, radiation damage, in situ study by HV electron microscopy 8−6101
- Au, quenched and annealed, conduction electron scattering 8−47774
- Au, stacking fault tetrahedra, critical nucleation temp. 8−26581
- Au-Cd (47.5 at.%), modified 2H and 9R martensites 8−14366
- Be-Si-O-N system, polytype periodicities, direct obs. 8−18662
- C, partially graphitised, K intercalation-desorpt. cycle rel. to stacking faults 8−47396
- $CaMg(CO_3)_2$, dolomite, partial dislocations and stacking faults obs. 8−3761
- CdTe, aB glide dislocations, dissociated into two Shockley partials, stacking fault energy 8−43024
- Cu, ⟨100⟩ oriented single crystal plastic deform. and prominent cross slip 8−19852
- Cu and Cu-Si, deformation and fracture under dynamic loading 8−35442
- Cu solid solutions, single phase FCC metal, stacking fault energy and delamination wear 8−3239
- Cu, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
- Cu-Al-Ni alloys, deformed, fine struct. of martensite *(Russian)* 8−6923
- Cu-Ni (10 at.%), struct. changes during deform. *(Russian)* 8−19818
- Cu-Ni-Zn alloy, FCC, cold-worked, X-ray diffr. obs. 8−3143
- Cu-Si, mech. of formation of martensitic struct. *(Russian)* 8−23702
- Cu-Zn-Al, internally faulted martensite, TEM obs. 8−3124
- GaAs-GaAlAs LPE layers, DH material, TEM obs. of crystal defects 8−6241
- $GdFe_2$, Mossbauer sample, X-ray diffr. obs. 8−22737
- Mo_2BC, planar intergrowth defects and nonstoichiometry 8−2145
- Ni, computer simulation of point defects and planar defects 8−43013
- Ni, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
- Ni film, on (001) Ag, FCC and BCC metal-on-metal epitaxy, geometric factors, electron microscopy 8−22980
- Ni, single phase FCC stacking fault energy and delamination wear 8−3239
- Ni_3V, deform. propag., electron microscopy obs. 8−6070
- Ni_3V, dissociation of $^{1}/_{2}\langle 112\rangle$ perfect dislocations and nature of slip dislocations 8−43022
- Pb, estimation of stacking fault and twin boundary energies using phonon dispersion curve 8−43031
- n-Si (100), oxidation-induced stacking faults, O_2 partial press. depend. 8−39922
- Si, CCD processing, elimination of stacking faults 8−10065
- Si, CVD epitaxial film, nucleation and growth 8−10064
- Si Czochralski wave, oxid. induced stacking fault, oxygen content influence 8−10062
- Si, deformed, faulted dipole, TEM obs. 8−38712
- Si, dislocation free, O_2 precipitation, stacking fault form. 8−38731

stacking faults continued
- Si homoepitaxy in high vac., stacking fault nucleation, crit. temp. for SiC growth 8−14620
- Si, integrational etching composition and method 8−10055
- Si, oxidation induced, wafer orientation and ion implantation effects 8−10063
- Si, oxidation induced stacking fault growth, role of point defects 8−10061
- Si, oxidation without stacking fault form. 8−7062
- Si, self-implanted, ⟨100⟩ and ⟨111⟩, crystallised layers by laser annealing, struct. 8−47644
- Si, surface layer defects, influence of multiple oxidation *(Russian)* 8−47650
- Si, wafer, suppression of oxidation stacking fault generation by preannealing in N_2 atm. 8−30648
- Si:B, heavily implanted wafers, secondary defect generation suppression by HCl oxidation 8−10069
- Si:B, implanted, oxidation-induced stacking faults, EBIC and TEM expts. 8−39923
- n-Si:Cs, ion implanted, minority carrier lifetime and defect struct., annealing effect 8−6395
- SiC (2H), vapour grown, growth and deform. faults, X-ray obs. 8−30650
- $SiTe_2$, dislocations and stacking fault energy 8−47378
- $TiS_{1.7}$, hexagonal polytypes form. mechanism 8−9990
- V, polycryst., struct. changes during deform. *(Russian)* 8−48447
- Yb, film, energy-scanning X-ray diffr. technique *(French)* 8−43264
- Zn film, vac. deposited, X-ray diffr. study of microstruct. 8−26796
- ZnS, natural and stress induced birefringence dispersion 8−6651
- ZnS:Ag, struct. and mech. props. 8−22753

staff *see personnel*

stainless steel
- *see also austenitic stainless steel; martensitic steel*
- acoustic emission rel. to stacking fault energy 8−14365
- acoustic emission signals in plastic deform., amplitude distrib. *(Japanese)* 8−6978
- AES, expts. and interpretation, for steel EN58E 8−27354
- air contamination effect on compatibility with liquid Li in stainless steel vessels at 600°C 8−25285
- amorphous film, sputtered, prep. and characterisation 8−43266
- biphase struct. changes for steel 0Kh12G14N4Yu2, due to plastic deform. when under elongation with superplasticity 8−44176
- α-brass, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
- burst tests of type 316 steel for LMFBR and P1 cladding tubes 8−44210
- cold worked, pitting corrosion in NaCl soln. 8−44257
- cold worked swelling increase due to inreactor temp. reduction 8−34547
- corrosion, Cs enhanced, Te influence 8−23866
- corrosion, intercrystallite, testing using potentiostatic etching method 8−7113
- corrosion, local, investigation techniques *(Dutch)* 8−15582
- corrosion by hydrazine, electrochemical mechanism for room temp. inhibition 8−44249
- corrosion crack initiation at growing pits under pulsating load *(Japanese)* 8−11409
- corrosion crack initiation in active potential range under pulsating loads *(Japanese)* 8−11408
- corrosion fatigue characts. of 1Kh18N10T, soln. annealed, effect of cyclic stresses on corrosion in acid environments *(Russian)* 8−31577
- corrosion fatigue of Kh18N10T, quinoline salt inhibitors for corrosion in $MgCl_2$ soln. *(Russian)* 8−31579
- corrosion in formic acid at 70°C, effect of Mo additions 8−35551
- corrosion resistance increase by Fe-Cr-Pd electrospark deposition *(Russian)* 8−27669
- creep, steady state, microstructural parameters 8−39870
- creep failure time of 20% cold worked type 316 8−19894
- creep fracture propag., elongation, tensile strength, yield stress meas. applicability of fracture mechanics parameters 8−35508
- creep resistant, AISI 304, residual lifetime assessment by low cycle fatigue testing *(German)* 8−15485
- creep rupture testing between 400 and 700°C const. stress, accel. temp. method 8−31495
- cyclic creep behaviour of type 316, as func. of maximum applied stress 8−48460
- deoxidation in melting with Si *(Korean)* 8−19947
- dewar prod. 8−16801
- diffusion bonding with Zircaloy-4 8−34658
- dislocation substruct. around fatigue cracks, SEM obs. 8−15516
- dislocation substruct. prod. by elev. temp. fatigue crack propag., TEM obs. 8−19863
- electrohydraulic effect and struct. changes *(Russian)* 8−23783
- embrittlement of 15Kh25T, 400 to 550 degrees C, grain size and cooling rate effects 8−44203
- fatigue, low cycle, elevated temp., heat treatment effects 8−27626
- fatigue, low cycle, relation with striation spacing, macroscopic crack growth at 625°C 8−11317
- fatigue characteristics, low-cycle, theoretical predictions and expt. 8−27641
- fatigue crack growth, effect of grain size on threshold stress intensity 8−44216
- fatigue crack propag. and crystallographic orientation *(Japanese)* 8−7027
- fatigue crack propag. in neutron irradiation of type 304 and 308 and weld materials 8−23815
- fatigue crack propag. rate and stress intensity factor at varying stress ratio 8−7049
- fatigue props. at elevated temps. 8−27643
- Fecralloy, ferritic with and without Y, oxidation in Ar-H_2O-H_2 atmosphere 8−35584
- ferrite nucleation, appl. to B hardenability 8−27505
- ferritic, 18%Cr, stress/strain curve, H_2 charging influence, room temp. *(Japanese)* 8−39884
- ferritic, Cr-Al, corrosion in S vapour and H_2S-H_2 mixtures 8−23875
- ferritic, metallic second phases, effect on steel behaviour, review 8−31503
- ferritic nuclear pressure vessel, methodology for fracture props. variability evaluation 8−33257
- ferritic weldment, US testing of defects, charact. and size 8−7104

stainless steel continued
fibre reinforced epoxy composite, static tensile behaviour *(Japanese)* 8−15482
fibre reinforced wustite, strength and toughness 8−27602
filament produced by glass-coated melt spinning, tensile strength 8−31488
FIM atom probe microanalytical expts., review 8−35622
fracture mech. appl. to crack propag. under creep, in type 304 *(Japanese)* 8−27606
fretting wear, role of adhesion and delamination 8−35533
fusion reactor first wall lifetime considerations 8−17419
fusion reactor material, long term radioactivity minimisation 8−772
FV 535, fatigue crack propag. theory 8−5692
heat treating and melting with scanning laser or electron beam 8−11406
heat treatment procedures for obtaining low degassing rates in type 316L 8−23730
hot rolled texture, effect on cold rolled and annealed textures *(Japanese)* 8−48425
hydrogen embrittled, fractography 8−35503
hydrogenation effect with, different stability characts. 8−35383
internal pressure creep rupture strength of boiler tubes, anisotropy effect 8−23825
ion bombardment, primary recoil energy spectra characts. 8−10103
irradiated 316, void swelling incubation period, stress effects 8−6105
irradiation induced swelling, stress effects 8−34545
joint endoprostheses, long-term stability 8−36059
liquid phase bonding with Ni-P plating *(Japanese)* 8−7082
long-term strength under in-pile irrad. conditions of Kh18N10T 8−6940
maraging, high strength, notch toughness, effect of ageing *(Japanese)* 8−11311
martensite nucleation and growth, expt. study 8−3125
martensitic, new etchant to reveal prior austenite grain boundaries 8−3290
mechanical description between 20 to 1000°C, thermoplastic calc., stress strain relations *(French)* 8−35449
mechanical property characterisation in support of HTR design 8−29577
metallic element depth distribution, in passivation layer, luminescent discharge spectrometry exam. *(French)* 8−31585
Mossbauer absorption line-width reduction, US excitation 8−27148
nervous system electrostimulation, stainless steel electrode corrosion control 8−7464
neutron effects, atom displacement and He prod. using fusion reactor first wall neutron spectrum 8−46168
neutron induced charged particle spectra on type 316 steel 8−5024
neutron irrad., point defect conc. and void radius change, appl. of model for void growth 8−47436
nitride phase determination method 8−7276
nitriding charact. at low atmos. press. of NH_3, thermodynamic calc. *(Russian)* 8−15573
oxidation, ESCA characterisation 8−15584
oxidation in melting *(Korean)* 8−19946
oxide dispersed, prod. by spray dispersion method, mech. props. exam. of mech. props. *(Japanese)* 8−48419
with passive film, depth profiling by quantitative AES 8−19611
photoetching, props. of liq. photoresists 8−39942
pitting corrosion, stochastic theory 8−7077
plastic zones around creep and fatigue cracks at 650°C 8−48523
polishing for optical appl. 8−5587
precipitate phases in type 321 after ageing 17 years at 600°C 8−27525
proton and photon induced X-ray emission anal., depth sensitivity 8−23988
reversibility of plastic strain during fatigue with martensitic transform. 8−31526
sigma phase stability and irrad. effect 8−11200
sintered sheet material, stopping power and pore size relationship 8−19693
solution treated FV 548, irradiated with 22 MeV C^{2+} and 46.5 MeV Ni^{6+} ions void swelling 8−22771
solution-annealed and thermally aged, correl. of high- and low-cycle fatigue data 8−15532
stacking fault energy and delamination wear in single phase FCC AISI 304 8−3239
static yield props., changes during fatigue cycling 8−23790
statistical fatigue props. of heat treated JIS steel SUS 403 8−44222
steel, stainless, Cr-Ni, for cryogenic engineering, mech. props. 8−11240
strain induced γ to α' transform in 18-8 type polycrystal *(Japanese)* 8−11221
stress corrosion cracking, chloride effect, constant strain rate testing in high temp. water 8−35568
stress corrosion cracking, intergranular 8−15597
stress corrosion cracking in 5 mol/l H_2SO_4/0.1 mol/l NaCl soln., temp., strain effects 8−31590
stress corrosion cracking in high temp. water, constant strain rate meas. of type 304 8−31565
stress corrosion cracking inhibition in chloride soln. 8−35558
stress corrosion cracking of BWR cooling system pipes 8−23880
stress corrosion cracking susceptibility and anodic behaviour in phosphate solns. at 100°C 8−7096
stress corrosion morphology in H_2SO_4/NaCl soln. at room temp., electrochemical potential effect 8−15596
stress distribution effect on chipping of blanking punch *(Japanese)* 8−31543
substrate, ion plating of hard TiN decorative coatings 8−11441
sulphide stress corrosion cracking resistance, improvement by heat treatment 8−7076
surface, 10-30 keV H ion bombardment, energy refl. meas. 8−27359
swelling, effect of free surface 8−10097
tensile deform. induced α' martensite, morphology, in $\alpha+\gamma$ phase 8−44122
thermal conductivity, effect of material on working parameters of cryosurgery instruments 8−36037
thermal transfer of C *(Russian)* 8−6174
thermocyclic treatment effects, 0Kh13N7, 0Kh13AN7, struct., phase composition and mech. props. exam. 8−44204
type 304, neutron irrad., solution-annealed and cold-worked, swelling 8−13229
type 304 forging, weld overlaid with type 308 8−13230

stainless steel continued
type 304-L, reactivity worths of fixed neutron absorbers 8−21654
Type 316, electron beam heating effect on extracted intermetallic precipitate 8−35394
type 316, neutron irrad. damage simulation using HVEM, surface effect on void swelling 8−29572
type 316, Neutron irradiation using HFIR for evaluation as fusion reactor material 8−13324
type 316, stress-free swelling at high neutron fluence, rel. to LMFBR core environment 8−13239
type 316, struct. life anal. for fusion reactor first-wall appl. 8−13326
type 316 and 321, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
void shrinkage during electron irrad. 8−34540
wear at high sliding speed of AISI 304 8−3237
wear by magnetic tape, Auger spectroscopy exam. *(Japanese)* 8−39916
wetting of UO_2 cracked fuel pellets by molten cladding in LMFBR transient undercooling accident 8−4993
wire, effect of stress on phase transformations 8−44119
wire, mechanical and heat treatment effect on static and cyclical strength *(Russian)* 8−35410
Co-Cr casting, fatigue at welds, hip replacement appl. 8−44697
Cr-Mo (2.25, 1 wt.%), duplex LMFBR steam generator tubing, US equipment for NDT 8−11469
Cr-Ni, for cryogenic engineering, mech. props. 8−11240
Cr-Ni, localized corrosion 8−35555
CrNi, localized corrosion *(Slovak)* 8−19948
D transport through membranes at low driving press. and 15 keV D bombardment 8−34552
Fe-Cr-Mn (11.5, 3 wt.%), microduplex ferritic-martensitic steel, exam. 8−39862
ferrite, FeC form. kinetics, Monte-Carlo simulation *(German)* 8−39779
He ion irradiation of type 0Kh16N15M3B struct. and mechanical props. 8−19848
Nb, oxidation in Ar-H_2O-H_2 atmosphere 8−35584
Nb-stainless steel bimetallic strip Cu interlayer struct. during thermal fatigue *(Russian)* 8−15498
W, brittle spiral fibre, densification of particulate materials, general law 8−19692

standard microphones *see microphones*

standard voltage generators *see signal generators*

standardisation
collaborative tests, reference material certification procedures 8−28922
COMOD, program for standardizing mineral resource commodity data 8−20524
electronic industry, Spain measuring equipment choice, criteria *(Spanish)* 8−36963
industrial ear protectors, standardisation of testing, current developments 8−22225
light source development support spectroradiometric system *(Japanese)* 8−45733
metrological characteristics of meas. methods and systems 8−41273
mullite, quantitative X-ray anal., standardisation, texture *(German)* 8−11176
noise measurement, hearing damage prevention appl. *(German)* 8−9496
optical fibres, connectors, military appl. 8−30083
physically handicapped persons' apparatus standardisation *(Japanese)* 8−44699
prosthetics and orthotics, standardisation of technical terms *(Japanese)* 8−44700
quartz, quantitative X-ray anal., standardisation, milling effect on degree of disorder *(German)* 8−11176
spectrophotometry and luminescence meas., conf., Gaithersburg, USA (Nov. 1975) 8−32846
standard CANDU 600 MWe nuclear plant for Point Lepreau 8−29637
vacuum couplings, small bore British system, complementary to ISO recommendations 8−21148

standards
see also CAMAC; constants; measurement standards; units (measurement)
440 Hz standard A tone generator 8−46863
biomedical regulatory standards development, as educational and design review process 8−44647
CIELAB and CIELUV colour spaces, colour difference evaluation *(Hungarian)* 8−29135
eddy current meter standards 8−27709
EM non-ionising radiation, influence of quality on bioeffects, exposure standards 8−44558
emergency medical telemetry, development and implementation 8−3635
fibre optic connector system characteristics, aerospace user's viewpoint 8−46804
gravity survey standards 8−7558
microwave radiation, emission and exposure standards 8−44619
orthopaedic implants and biomaterials, mech. testing 8−36057
radiation protection derived standards, Euratom directive and ICRP recommendations 8−35969
radiation protection legislation in West Germany, aspects *(German)* 8−5049
radioprotection, medical regulations and standards in France *(French)* 8−48897
solar system, numerical values of consts. of IAU Commission 4 Working Groups Joint Report 8−40845
speech intelligibility test, DIN 45621 recommendation, acoustics and phonetics, German test *(German)* 8−35867
USA nuclear standards index 8−29662
X-ray diagnostic system compatible with DHEW standards 8−7445
X-ray machines output rating, equivalent DC power *(German)* 8−3650
X-ray production equipment, USA safety standard 8−29223
Zn radionuclide dosimetry standards and crit. organs 8−35961

Stark broadening *see Stark effect*

Stark effect
see also atomic spectra
atomic Hamiltonians in DC fields, dilatation transformation 8−41999
atoms, dispersion relations and AC Stark effect 8−945
chloroethylene, CO_2 laser absorption, Stark modulation 8−17671

Stark effect continued
- coherent optical spectroscopy 8−1112
- cubic crystals, electrooptic absorption of anisotropic Jahn-Teller centres 8−27188
- dense plasma, Lyman-α line broadening, of H and hydrogenic ions 8−42811
- diatomic polar mol., rot. level Stark effect in strong field 8−25611
- excited atoms, orientation in elec. field *(German)* 8−25472
- fluoromethane, and other optically pumped lasers, dynamic Stark effect 8−17911
- fluoromethane-d_3, laser Stark spectra, ν_6 band, vibr.-rot. consts., dipole moment 8−5277
- formaldehyde, $\nu_5 \rightarrow \nu_6$ difference band, laser Stark spectra 8−5227
- glass, rare-earth activated, polarised luminesc. 8−48224
- iodomethane, Stark effect modulation of CO_2 laser 8−17992
- iodomethane-d_3, ν_2 band, laser Stark saturation spectra 8−42125
- methanol, far IR laser transition, dynamic Stark effect obs. 8−22114
- methylene fluoride, ν_9 fundamental band, 9.4-μm CO_2 laser Stark spectroscopy 8−9191
- microwave-optical double resonance, off-reson. optical radiation theory 8−25579
- molecule, Rabi frequency transitions in AC Stark effect, dressed-molecule description 8−42124
- molecule, reson. modulation of light, dynamic electrooptical effects *(Russian)* 8−9192
- neutral line Stark broadening in plasma 8−46299
- pentacene, in p-terphenyl, polarisability calcs., from Stark meas., anisotropic Lorentz approx. breakdown 8−5276
- plasma, Stark effect and four-quantum transitions, very strong stochastic electric fields 8−9760
- plasma anisotropic noise, HF, in turbulent plasma, H Stark profiles 8−1896
- pyridine, in benzene single cryst., electronic spectrum Stark modulation, dipole moment 8−29814
- resonance fluorescence, in phase freq. modulated laser fields 8−37588
- resonance fluorescence in modulated laser field, stochastic model 8−5169
- resorufin, in PMMA, site selection spectra, hole burning and Stark effect 8−9159
- ruby, coherent transients obs. by Stark switching with narrow optical hole burning 8−37947
- ruby, optical pair spectrum, Stark effect with AC elec. field modulation 8−10911
- ruby, Stark induced optical transients, photon echo 8−33785
- Rydberg atoms, expts., metastable states, multiphoton ionisation, spectroscopy, Stark struct., collisions, polarisability *(Dutch)* 8−5160
- Rydberg atoms, Stark ang. momentum transfer, hydrogenic model 8−17606
- semirigid molecules, Stark effect, isometric groups, elec. dipole moments theory 8−29815
- solar flares, nonthermal plasma wave elec. fields meas. using Stark effect 8−12193
- subDoppler Stark spectroscopy in crossed elec. and mag. field 8−948
- N-sulphinylaniline, microwave rot. spectra, torsional freq., dipole moment and internal rot. barrier 8−973
- tetracene, in p-terphenyl, polarisability calcs., from Stark meas., anisotropic Lorentz approx. breakdown 8−5276
- three-level system, Doppler-broadened, Autler-Townes effect 8−41998
- three-level system in Gaussian noise field 8−41266
- Wannier-Stark ladders of finite crystal, level shifts 8−30895
- Al I line profiles, Stark broadening meas. 8−9115
- Al II line profiles, Stark broadening meas. 8−9115
- Al transitions, Stark broadening and oscillator strengths 8−29761
- α-Al_2O_3:V^{3+}(Cr^{3+})(Co^{3+}), optical absorption spectra, DC and AC field effects 8−10925
- Ba, Stark struct. of Rydberg states 8−25471
- Be IV, line broadening and self-absorpt. in laser prod. plasma 8−17615
- Br^-, nuclear quadrupole interaction , second-order Stark effect 8−21879
- CO, $d^3\Delta_i$ v=4 state dipole moment, laser-induced transition in mol. beam 8−25513
- Ca, Stark mixing of high-lying calcium levels by laser-produced charges 8−25469
- CaF_2:Eu^{2+}, second order perturbation in vibronic system 8−30893
- CaF_2+Yb^{3+}, Stark level Zeeman energies, mag. susceptibiltiy, Schottky specific heat, crystal field splitting 8−26831
- Cl III, Stark broadening of isolated lines by plasma 8−9116
- Cs, 16^2P states, reson., 3-photon ionisation, DC Stark effect 8−42026
- Cs, forbidden M1 transitions, parity nonconserving effects 8−21844
- D, electron impact, coherent excitation in longit. elec. field, Balmer-α flux 8−22035
- F II, Stark broadening of isolated lines by plasma 8−9116
- F spectral lines, neutral, in shock tube plasma, Stark widths and shifts 8−9117
- FCN, IR laser Stark spectra, C-F stretching mode, dipole moments, rot. consts. 8−1022
- GaSe, lamellar crystal, exciton translational mass from magneto-Stark effect *(Russian)* 8−48153
- H, 2p state alignment, influence of surface electric fields after beam foil excitation 8−29849
- H, electron impact, coherent excitation in longit. elec. field, Balmer-α flux 8−22035
- H, ion motion on profile, model microfields 8−13469
- H, line broadening for ionised gas in macroscopic field, direct meas. of current density *(French)* 8−9839
- H, line profile, Stark broadening, quantum theory, including short-range interactions 8−9114
- H lines in plasma, Stark broadening, review 8−42001
- H, model electronic microfields 8−13468
- H, resons. calc. from complex-rotation technique applied to variational principle 8−33549
- H, Stark-induced anticrossings, Lamb shift meas. 8−33467
- H, Stark-induced anticrossings, $^2P_{3/2}$-$^2D_{3/2}$ Lamb shift meas. 8−33468
- H^-, $^1P_0$-reson., DC Stark effect calcs. 8−42000
- H-like ions, radiative level widths in low electric fields 8−37589
- H-like ions, Stark ionisation threshold electric field and energy calc. 8−25470
- HCO, IR spectra of ν_2 fundamental, laser elec. reson. 8−5226
- HNCS, microwave transitions 8−9143

Stark effect continued
- He plasma, Stark effect in 3-D stochastic elec. fields and static mag. field 8−5855
- He, subDoppler lineshape obs., of IR mag. reson. Rydberg transitions, using motional Stark effect 8−947
- He, transition probabilities in constant electric field, general perturbation theory 8−13466
- $^4He^+$ II, H-like, fine struct. Stark effect *(French)* 8−943
- $K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8−2901
- KLu_3F_{10}:Eu^{3+}, crystal field and spin-orbit parameters 8−30892
- KY_3F_{10}:Eu^{3+}, crystal field and spin-orbit parameters 8−30892
- Kr I, Stark broadening in visible spectra 8−37590
- $Mo(CO)_6$, polarised absorption, field effects in condensed media 8−997
- $NaNO_2$, cryst., Stark shift of visible absorpt. of NO_2^- 8−19499
- Nd^{3+}:glass, inhomogeneously broadened spectra, struct., selective laser excitation obs. *(Russian)* 8−35181
- Ne, Autler-Townes effect 8−41998
- Si III, IV, Stark line broadening in pulsed arc, plasma diagnostics 8−944
- Si^+, Stark broadening, shock tube meas. 8−17614
- Tb^{3+} in rare earth ion cryst. field in YF_3 struct., spectra 8−19563
- YAG:Nd^{3+}, cryst. field parameters calc., exchange charge model 8−47747
- $Y_3Ga_5O_{12}$:Nd^{3+}, cryst. field parameters calc., exchange charge model 8−47747
- $Y_3Sc_2Al_3O_{12}$:Nd^{3+}, cryst. field parameters calc., exchange charge model 8−47747
- YbAG, cryst. field parameters calc., exchange charge model 8−47747

stars
- *see also stellar ......*
- *see also dwarf stars; giant stars; magnetic stars; multiple stars; neutron stars; novae; Sun; variable stars*
- A- and F-type main sequence stars, scanner obs. 8−36563
- A-type, near South Galactic Pole, UBV photometry of 51 stars 8−4216
- A-type, obs. and calc. spectra, 3600-4200 Å region 8−12217
- A-type stars, normal and metallic-line, models pulsational stability 8−16414
- A-type stars, predicted and observed spectral energy distribs. 8−4208
- A-type stars in Selected Areas, photoelectric uvbyβ photometry 8−16412
- absolute RA determ. precision rel. to geographic latitude *(Russian)* 8−28647
- AGK3R declinations improvement using Toepfer meridian circle obs. *(Russian)* 8−28645
- Ap stars, orientation of mag. and rot. axes, decentred mag. dipole theory 8−4241
- π Aquarii, gaseous rings apsidal motion and orbital elements slow drift 8−36572
- astrometry, accuracy of average star positions obtained from overlapping plates 8−20622
- astrometry, accuracy of star positions obtained by block adjustment 8−20623
- Astronomical Engelhardt Observatory, latitude obs. *(Russian)* 8−4080
- B-type, empirical calibration of uvby Hβ photometric system 8−32454
- B-type stars, radial vels. determined at Radcliffe Observatory 8−12225
- B-type stars in Norma dark cloud region, photometry rel. to cloud struct. 8−16494
- Basle catalogue of 1906 blue objects at high galactic latitudes 8−32360
- BD+40°4124, star form. in assoc. mol. clouds 8−32542
- Be stars, as optical counterparts of transient X-ray sources 8−12425
- Be stars, gaseous rings apsidal motion and orbital elements slow drift 8−36572
- blue horizontal branch stars search on Schmidt plates 8−4362
- bright zenith star obs., Poltava latit. differences interpretation 8−28488
- BV magnitudes and spectral classes, of stars in field centred at $\alpha=2^h17^m.9$, $\delta=+58°59'$ *(Russian)* 8−40841
- Carina Nebula stars, interstellar λ4430 band obs. 8−32555
- γ Cassiopeiae, circumstellar envelope model 8−40952
- γ Cassiopeiae, Hα linear polarisation in Be star 8−16425
- chemically peculiar (CP) stars formation, planetesimal impact hypothesis 8−20834
- colours, refr. corrections for atmospheric spectral transmission changes 8−28535
- 14 Comae, A-type shell star, spectroscopic obs. 8−7992
- cool C stars, $^{12}C/^{13}C$ ratio calc. 8−4205
- cool stars, TiO opacity effects on atm. struct. 8−40925
- CPD−56°8032, emission line object, red and IR spectrum 8−4249
- CTC right ascensions, synthetic catalogue for Chinese time service *(Chinese)* 8−28540
- Cygnus direction, stars and dust space distrib. *(Russian)* 8−20893
- Cygnus-Vulpecula direction, stars and dust cloud space distrib. *(Russian)* 8−20892
- distances, parallax and relative magnitude, laboratory model for students 8−16610
- distribution above galactic plane 8−12375
- double stars, rectilinear trajectories calc., appl. to L 5094, effects of erroneous positions *(French)* 8−20857
- early B-type stars atmospheres, LTE line blanketing by UV lines using accurate damping consts. 8−16419
- early generations in scale covariant cosmology, props. 8−36739
- early type, in core of irregular galaxy NGC 6822, correl. with H I column density 8−20889
- early type companions of X-ray sources, stellar parameters 8−36564
- early-type, Mg II lines near 2800 Å 8−12229
- early-type, Skylab UV obs., MK spectral types 8−40933
- early-type, spectral classification from TD1 satellite low dispersion UV spectra 8−16421
- early-type star assoc. with galactic nebular S206, wind rel. to nebula struct. 8−12326
- early-type stars, comoving-frame transfer eqn. soln. in spherically symmetric flows 8−28499
- early-type stars around l=140°, b=0°, photometry rel. to galactic struct. 8−24555
- early-type stars in open cluster M34, UBV photometry rel. to distance and age 8−12307

stars continued
early-type stars in southern hemisphere, four colour photometry and spectral types 8−40945
early-type stars with six degrees of galactic anticentre direction, radial vels. 8−7990
emission-line stars, IR Fe II lines and interpretation of IR excesses 8−32478
extremely metal-poor stars, theoretical evolution 8−28677
F-type stars in Selected Areas, photoelectric uvbyβ photometry 8−16412
faint blue stars, uvby photometry in northern hemisphere 8−16415
faint blue stars near galactic anticentre, UBV photometry 8−40932
FK4 stars general catalogue of astrolabe obs. (1958-75) *(French)* 8−36468
FKSZ stars, differential catalogue of RA in 20-90° zone, Pulkovo obs. *(Russian)* 8−28644
formation, in shock-compressed layers 8−40919
formation from hot matter with primordial chemical comp., role of H_2^+ mol. ion *(Russian)* 8−40924
formation in blue galaxies, theory 8−12356
galactic centre, tidal disruption of stars and massive black hole evolution *(Russian)* 8−12371
ε Geminorum, occultation by Mars, struct. and extinction of Martian upper atm. 8−7898
general catalogue of 1139 stars obs. with astrolabes, 1957-75 period, FK4 stars position corrections *(French)* 8−32359
in globular clusters M10, M12, M71, M92, radial vels. 8−41004
gravitational collapse of magnetized stars, whistler mode radiation 8−28509
Greenwich Obs. Time and Latitude Service, Time Report (July-September 1976) 8−20624
Greenwich Obs. Time and Latitude Service Time Report (October-December 1976) 8−24443
GX 17+2 (3U 1813−14) optical candidate, photometry 8−28849
GX 17+2 (3U 1813-14), optical identification with dwarf G-type star 8−45428
h 5094, optical double star, rectilinear trajectory calc., effects of erroneous positions *(French)* 8−20857
HD 101065, Przybylski's star, element identification 8−4233
HD 174209 (ADS 11719C), photoelectric radial vel. 8−32517
HD 183143, grating scanner meas., corrections for polarization 8−32355
HD 192273, blue subluminous star, possible identification with EUV source in Pavo region 8−28675
HD 193793, Wolf-Rayet binary, visible and near IR spectra 8−8023
HD 195592, obs. of interstellar K I 4044 Å line 8−24533
HD 215441, Ap star, line spectrum variations 8−4232
HD 216533, Ap star, spectral variation obs. 8−4244
HD 44179 (CRL 915), IR spectra in 2-8 μ range 8−41080
HD 44179 (Red Rectangle), bipolar nebula, IR polarimetry 8−36658
HD 50896 and 151932, WN stars, IR spectra 8−8024
Herbig Be/Ae stars, star form. in assoc. mol. clouds 8−32542
Herbig-Haro objects in Gum Nebula, spectrophotometry 8−36565
Herbig-Haro objects in southern dark clouds, objective prism survey 8−28536
τ Herculis, B-type subgiant star, abundance anal. 8−16416
hot stars, as source of emission lines in Tololo galaxies 8−49531
HR 9076 (ε Tucanae), Hα shell profile 8−36583
intenal structure, series soln. of Lane-Emden problem 8−36559
interstellar gas line accretion theory, gas press. effect 8−32525
IR sources in compact H II region G45.5+0.1, 1.25 to 10 μm photometry 8−4396
IR stars, role of dust in OH and H_2O masers pumping 8−36716
IR stars, search for 18 cm OH emission 8−8026
IR stars in galactic centre, IR spectrophotometry and props. 8−24551
IRC+10216, late type C star, circumstellar envelope 8−4189
late type stars, theoretical chromospheres and temp. minima heights 8−20818
late-type, ang. momentum loss rel. to mag., dynamo 8−45331
late-type, spectrophotometry, incident and emergent flux calc. 8−4200
late-type stars, intermediate band photometry in Geneva system 8−12231
late-type stars chromospheres, acoustic energy generation theory 8−7986
late-type stars intermediate-band photometry, calibration of indices 8−49424
LkHα 101, IR spectra of emission line object, preplanetary disc obs. 8−16423
LkHα 198, star form. in assoc. mol. clouds 8−32542
LP 182-44, faint blue star with large proper motion, discovery 8−49439
LS I +61°303, possible optical counterpart for GT 0236+610, variable radiosource 8−32473
LSI+61°303, possibly optical counterpart of GT 0236+610, absence of variability 8−49438
luminosity function of high-velocity stars and galactic halo mass 8−4368
luminous C stars in LMC, photometry 8−28670
lunar occultation, summary of obs. 8−7982
lunar occultations, new technique for photoelec. obs. of dark limb reappearances 8−4115
lunar occultations, photoelec. obs. 8−4079
α Lyrae, absolute energy distrib. from 3295 Å to 9040 Å 8−20828
M- and S-type, detect. of 7 mm SiO maser sources 8−4215
M-type, in Orion population, CaH and TiO band strengths 8−12227
Magellanic Clouds stars, five-channel photometric obs. 8−16398
main-sequence stars, comparison of four-colour photometric obs. with evolutionary models 8−8007
main-sequence stars, transformations between UBV and RGU multicolour photometric systems 8−28529
massive O-type stars, as source of carbonaceous material in Galaxy 8−24543
massive stars, evolution with mass loss by stellar wind 8−4197
Milky Way stars, five-channel photometric obs. 8−16398
Molonglo radiosource catalogues MC2 and MC3, optical identifications, 11^h28^m to 17^h00^m right ascensions 8−20900
β^1 Monocerotis, gaseous rings apsidal motion and orbital elements slow drift 8−36572
MWC 349, IR spectra of emission line object, preplanetary disc obs. 8−16423
names register *(Swedish)* 8−4188

stars continued
nebulae central stars, temps. determ. from forbidden O III lines 8−41015
NGC 253, spiral galaxy, nucleus, stellar population from gas outflow obs. 8−28776
NGC 3603 stars, interstellar λ4430 band obs. 8−32555
non-spherical stars, appl. of smoothed particle hydrodynamics theory 8−12203
nonradial oscillation mode splitting, effects of differential rotation 8−4211
O- and B-type, ionization conditions in expanding envelopes 8−28671
O- and B-type, UV P Cygni profiles long-term changes 8−12234
O-type, in galactic centre, dust grains heating, radiation model 8−36697
O-type planetary nuclei, atmospheric props. 8−4206
O-type planetary nuclei, spectral classification, magnitudes, distances 8−4203
O-type stars, vector space anal. of photometry rel. to atmospheric extension 8−49338
O-type stars, winds and coronae struct. from Hα line-profile anals. 8−40947
O-type stars in NGC 4594 (Sombrero Galaxy), evidence from H II regions 8−36685
OB star 0.5′ from SMC X-2 source position, possible candidate 8−4411
OB star optical candidate of 2S 0114+650, spectral var. 8−16578
OB stars, newly formed, obs. of assoc. H_2O maser sources 8−12390
OB stars Local complex, kinematics 8−16396
OB-type stars, colour excesses, rel. to interstellar reddening material distrib. in solar neighbourhood 8−49502
OB-type stars in vicinity of long period Cepheid VZ Puppis, UBV β photometry 8−45339
occultation data, effects of photon noise and initial conditions 8−28530
occultations, by Neptune, predictions for 1978-80 period 8−40868
occultations, by rings of Uranus during 1977-1980, predictions 8−16343
occultations by Uranus rings, 1977-1980, stellar colours and magnitudes 8−16277
occultations by Uranus rings, 1977-80 period, S/N ratios 8−32392
Of stars, raxial vel. meas. 8−4226
Of-type stars, H and He II spectra, theory 8−40950
ξ Ophiuchi, interstellar CO absorpt. bands and cloud density from Copernicus obs. 8−36656
ρ Ophiuchi, obs. of interstellar K I 4044 Å line 8−24533
70 Ophiuchi, occultation by Comet Kohler (1977m), prediction 8−7930
ξ Ophiuchi, search for interstellar NaH line 8−4325
optical candidates for SMC X-2 and SMC X-3, photometric and spectral obs. 8−8162
Orion OB1 association, spectral types and peculiar stars 8−32539
Orion region, survey of extremely red stars with Schmidt telescope *(Japanese)* 8−20833
χ^1 Orionis (SAO 077705), ang. dia. from occultation obs. 8−20825
partial ionisation zones, eqns. of state 8−28653
ζ Persei, time depend. radiation flux rel. to struct. of NGC 1499 ionisation front 8−24537
photographic limiting magnitudes, determ. method for large telescope *(Russian)* 8−28531
photon helicity detection for matter/antimatter star discrimination 8−12092
polarisation of stars within 25 pc of Sun, obs. 8−12202
positional catalogue for faint stars from AGK3 8−16311
positions on overlapping plates, block adjustment *(German)* 8−45237
pre-main sequence stars rel. to bipolar nebulae, optical, IR and radio studies 8−41026
pre-main-sequence A and F stars in NGC 2264, nature of IR excesses 8−32461
Pu 60, R.A. corrections for clock (equatorial) stars *(Russian)* 8−28643
ξ Puppis, radio emission obs. at 2 cm 8−40969
R-type C stars, origin, H mixing during He flicker 8−4223
radial pulsations excited by nonradial modes *(Russian)* 8−16399
radii of nearby stars, appl. of Barnes-Evans relation 8−7984
radio stars, positions for extragalactic reference frame 8−16278
reddened stars, search for diffuse interstellar bands at far UV wavelengths 8−32554
in reflection nebulae near Gum Nebula Herbig-Haro objects, UBVRI photometry 8−32449
right ascension determ. with Sukharev horizontal meridian circle *(Russian)* 8−28646
right ascensions, uniform whole-sky system *(Russian)* 8−4082
rotating stars, meridional circulation in surface layers 8−20820
runaway stars, as witnesses to supernova explosions 8−32448
S-type, FeH bands identification in spectra 8−7952
Santiago astrolabe, time, latit. and radius obs. (1968 to 1971) 8−12077
SAO 015338 (2A 1052+606), analysis of possible identification 8−32608
SAO 158687, occultation by Uranus, estimation of true external errors of Tokyo meridian circle obs. 8−28487
SAO 159250 by 16 Psyche on 1978 Feb. 25, details 8−16332
SAO 206553 by 704 Interamnia on 1978 April 28, details 8−16332
SAO 97745, occultation by 15 Eunomia, visibility track 8−12081
τ Scorpii, Copernicus UV spectral atlas 8−12220
τ Scorpii, photospheric vel. fields 8−28672
σ Scorpii, search for interstellar NaH line 8−4325
SMC X-2, colours, spectral type and position of optical candidate 8−12421
SMC X-3, colours, spectral type and position of optical candidate 8−12421
southern OB stars, MK spectral classifications 8−12221
spectral classification of early-type stars 8−16401
spectral classification using Copernicus UV data 8−12216
spectral classification using Fe III UV lines 8−16404
spectral classification using satellite UV photometric data 8−16402
spectral classification using Skylab UV objective-prism spectra 8−16403
spectral energy distributions, synthetic colours in UBV, RGU and uvby photometric systems 8−28528

stars continued
standard stars of intermediate brightness, spectral energy distribs. 8−28651
Star of Bethlehem, possible nova in 5 BC 8−32365
structure of the universe, book 8−32628
symbiotic stars, dwarf novae and related objects, IR photometry 8−8015
ξ Tauri, apparent wavelength depend. of v sin i 8−12240
ξ Tauri, high-resolution rocket spectra of λ1920 and λ1720 features 8−4236
time and latitude, astrolabe obs. at Merate Observatory for (1976) 8−12078
Tokyo Astronomical Obs., Time and Latitude Bulletins (April-June 1977) 8−45203
Tokyo Astronomical Obs., Time and Latitude Bulletins (January-March 1977) 8−45202
two-dimensional spectral classes, accuracy of derivation from DDO photometry 8−16395
4U 0115+63, transient X-ray source optical candidate, UBV photometry and spectrum 8−32605
4U 1626−67, X-ray pulsar optical candidate, UBV photometry 8−12418
4U 1636−53 (MXB 1636−53), X-ray burster optical candidate, UBV photometry 8−12418
4U 1735−44 (MXB 1735−44), X-ray burster optical candidate, UBV photometry 8−12418
UBVRGI photometric measurements of 1297 stars, catalogue on mag. tape 8−40839
α Ursae Minoris B (Polaris B), spectral type and interstellar reddening 8−8005
UV and X-ray sources, objective prism spectrophotometry 8−8150
UV spectra, atlas, line features use in spectral classification 8−12215
UV stellar astronomy, conference, Erice, Sicily, 1975, May *(Italian)* 8−32436
γ^2 Velorum, radio emission obs. at 2 cm 8−40969
VI Cygni (Cygnus OB2) association, interstellar λ4430 band obs. 8−32555
109 Virginis, absolute energy distrib. from 3295 Å to 9040 Å 8−20828
Walker No.67 in NGC 2264, candidate for strong interstellar circular polarisation 8−12223
Wolf-Rayer stars, UV obs. 8−40965
Wolf-Rayet stars, rotation rel. to ellipticity of surrounding nebulae *(Russian)* 8−12252
Yang-Mills gauge theory of gravity, gravit. field of spherically symm. matter distribs. 8−4773
[Fe/H] abundances, rel. to blanketing parameter Δm_2 8−36555
Ba stars, spectroscopic, radial vel. and photometric obs. 8−12226
C and S stars, mixing between burned core material and surface layers 8−12213
C star pairs, search of Westerlund's catalogue 8−12301
C stars, 3 μm absorpt. band obs. 8−28682
C stars, 3 μm band compared with interstellar 'water-ice' 3 μm absorpt. 8−49499
C stars, catalogue of 302 stars in LMC 8−20654
C stars, possible assoc. with LMC open clusters 8−49428
H_2O masers, detect. of new sources 8−32466
Hα emission stars in southern dark clouds, objective prism survey 8−28536
OH masers, obs. of new assoc. IR objects 8−12407

starters *see starting*

starting
see also actuators; ignition
BWR, Fukushima Daiichi power station, preoperational test, start-up test, operating experience *(Japanese)* 8−29635
FFTF startup plan 8−17411
fission reactor, zero-power control rod group reactivity worth, computerized determ. method 8−21702
HTGR, Fort St. Vrain, nonlinear subcritical multiplication 8−21701
HTGR, startup test techniques 8−21706
HTR, Fort St. Vrain startup experience 8−17407
LWR, initial fuel loading problems 8−21741
nuclear power station, modification during plant startup and operation 8−21758
nuclear station, with water-cooled water-moderated reactor cooling system faults, hybrid simulation *(Russian)* 8−5008
pulsed short arc lamps, characteristics of controllability 8−42400

startup *see starting*

state estimation
liver disease computer-aided diagnosis using nonlinear stochastic modelling technique 8−36024
oil exploration seismic data processing, white noise estimators 8−3973
water quality modelling, Kalman filter theory and practice 8−45058

state of the art studies *see reviews*

state-space methods
electrocardiogram baseline noise estimation and removal using cubic splines and state space computation techniques 8−11755
geophysical structure estimation from acoustic reflection meas. 8−7818

static (atmospherics) *see atmospherics*

static electricity *see electrostatics*

static electrification
see also triboelectricity
atmospheric electricity, or static electrification hazard, review 8−28283
contact charge density, true meas. using soft rubber 8−43462
dielectric solids, contact electrification, review 8−26934
electrification by plastic deform., mechanism 8−26935
material transfer in contact electrification 8−6432
metal, surface charge density 8−14797
polymer, amorphous, excess charges, band gap levels and elec. props. 8−23053
polymer, molecular charge states, contact charge exchange 8−14822
polystyrene-polymer, contact electrification model arising from eigenvalue spectra 8−47846
PVC, spontaneous current emission, various metal electrodes 8−43412
thermionic return currents in contact electrification 8−39189
LiF, cleaved cryst., electrification mechanism 8−19126

statics
see also hydrostatics
analogy to dynamics, related by variational techniques 8−28934
rod, perturbation methods for soln. of linear eigenvalue problem *(German)* 8−18175

stations, power *see power stations*

stations, radar *see radar stations*

statistical analysis
see also measurement errors; probability; random processes; statistical theory of nuclear reactions and scattering
Abell and Shane-Wirtanen catalogues, cross-correl. anal. 8−4118
acupuncture point location using elec. impedance meas., statistical anal. 8−44628
air pollution data, real-time meas. transformation and statistical processing 8−24365
astrometry, accuracy of star positions obtained by block adjustment 8−20623
atmosphere radiation attenuation depend. on surface layer turbidity, statistical characts. *(Russian)* 8−44997
atmosphere temperature field, spatial anal. from weather satellite meas. 8−20488
averaging, choice of mean 8−16604
binormal distribution, standardised, percentiles calc., FORTRAN subroutine 8−34
biological signal time averaging, digital Wiener filtering and detection statistical aspects 8−35979
borehole measurements in Miocene sediments, anal. of repeated meas. 8−49146
β-carotene, solubilised in lecithin liposomes, linear dichroism, absorption statistics 8−1014
chest radiograph texture anal. model 8−40323
climatology, statistical methods *(French)* 8−32252
collaborative tests, reference material certification procedures 8−28922
colloidal dispersion, particle size distrib. change kinetics, statistical approach 8−7241
composite exponential decay curve anal. 8−46241
composite shell, optimization model including statistical parameters 8−22271
concrete, compressive fatigue life, estimate of distrib., statistical method *(Japanese)* 8−11328
correlation functions of zero mean random process 8−5428
counting statistics with variable dead time, generalised expressions for distribs. *(French)* 8−21828
crack, semielliptical, in cast components, relation between axes 8−11326
cumulative sum charts, for background count rate monitoring 8−29718
disordered materials, bounds for effective elastic moduli 8−4486
disperse particles concentration and spacings between them in Poisson point field model 8−39963
ductile fracture surfaces, statistical characts. of microcracks *(Russian)* 8−23807
electrosensory afferent, dogfish, adaptation, neuron discharge regression anal. 8−35833
EM propagation in turbulent medium, joint Gaussian statistical props. 8−42265
EM waves in medium with ellipsoidal inhomogeneities and regular refr., ray statistics 8−25773
empirical standard deviation exactness *(German)* 8−28921
entropy characterisation by generalised probability distribution 8−6163
extreme wind speed probability, mixed wind climates 8−28295
first-order kinetic model, optimal design of experiments to estimate parameters 8−15650
galaxies, four-point correlation function for Lick and Zwicky catalogues 8−45413
generalized mean of two numbers, simple examples 8−16609
geophysical fluid dynamical systems, statistical anal. and prediction 8−11901
geophysical time series, Hurst range of independent normal summands, distribution 8−16081
geostationary satellite, station-keeping activator subsystem reliability 8−4074
glass, surface flaw density, statistical determ. 8−11310
gravitational detector, anal. of recorded data 8−21047
heart rate on-line statistical anal., using special-purpose computer 8−35984
hydrometeorological series stationary properties study, Oise river basin appl. *(French)* 8−36210
instrumentation experiments design methods *(Japanese)* 8−41299
ionosphere, VHF and L-band scintillation over Huancayo, signal statistics 8−36381
land-use map, remote sensing derived, accuracy test method 8−7805
LANDSAT multispectral images clustering scheme 8−32241
layered medium disturbed by internal waves, statistical props. 8−22359
least-squares adjustment with probabilistic constraints, astronomical appls. 8−32352
magnetosphere substorms, statistical mag. signature 8−49237
Mars, crater-associated wind streaks in north equatorial zone, statistical study 8−45256
megalithic sites, statistical significance of astronomical orientations 8−36475
meteorology, macroprocess classification, statistical methods 8−16132
meteorology, spatial variability of daily temps. and sunshine over uniform terrain 8−3887
multicomponent exponential decay data anal. by graphical method 8−41138
multiplicity measurements, statistical algorithm 8−29721
multivariate and conventional ECG analysis programs compared 8−7492
MWPC, missing data reconstruction in principal component anal. 8−17537
nonlinear autoregressive processes 8−24642
nonlinear detector effects on statistics of fluctuating signal 8−24735
nuclear counting equipment statistics, choosing goodness-of-fit test 8−46238
nuclear reactor behaviour unattended surveillance system 8−29621
nuclear reactor identification, test inputs review 8−41819
nuclear symmetry breaking in ground state region, statistical meas. 8−8737
ocean wave height and period characts. off Mangalore, India 8−36185

statistical analysis continued
photogrammetric system 'Zenit', scanning spot intensity distribution *(Russian)* 8−21104
pitting corrosion, stochastic theory 8−7077
plastic deformation at elevated temp. 8−27584
plastic slip concept, statistical approach *(Russian)* 8−18196
polyethylene melt, applicability of statistical rubber elasticity theory 8−42579
positron annihilation, pulsed distrib. from expt. data, parameter reconstruction 8−41290
psychoacoustics, signal detect. theory, statistical nature of response 8−3514
pulse sequence with correl. between shape and separation time, power spectrum 8−4556
PWR core support barrel motion monitoring using excore detectors 8−25320
QSO redshift data 8−32598
quasar red shifts, anal. for randomness 8−12400
quasars red shifts, anal. for randomness rel. to Earth-centred universe 8−16563
radiation attenuation in atmospheric surface layer, statistical characts. of spectral struct. *(Russian)* 8−24371
radio sources, statistical props. of compact features as function of flux density 8−41071
radio sources in directions of Zwicky clusters of galaxies, statistical investigation 8−4378
radioscopic inspection data of pore defects, statistical anal. 8−48606
radiosource clustering, statistical analysis of surveys 8−28818
rainfall network analysis, optimal estimation of total areal storm depth 8−49059
regional resource appraisal, statistical methods 8−28326
remote sensing of environment, automated digital data handling 8−3960
response surface, pointwise-unbiased models 8−4470
rubber-epoxy resins, heterogeneity analysis, light scatt. and statistical methods 8−2024
Shane-Wirtanen galaxies, two- and three-point correl. functions 8−8132
siesmic three-component registrations, interpretation via orthogonal regression *(German)* 8−32017
solar coronal line profiles above active regions, statistical anal. 8−7968
solar wind velocity, dispersion anal. 8−7852
space vehicle motion in vicinity of collinear libration point, statistical estimates in control problem 8−4067
speckle, statistical props. of sum of partially developed patterns 8−1162
spherical indentation mechanics, appl. to reversible and irreversible contact between rough surfaces 8−13976
standard deviation of obs. in meas., statistical estimation 8−16770
standard reference materials 8−41268
star positions obtained from overlapping plates, accuracy of average 8−20622
steel, austenitic, weld, with natural flaws, US test techniques *(German)* 8−27713
steel, carburised, alloying effect on props., mathematical-statistical determ. 8−19794
steels, low C S25C, medium C S45C, Cr-Mo SMC3, statistical fatigue props. eval., heat-to-heat variations 8−7048
stellar dynamics, escape of stars from isolated clusters *(Polish)* 8−16466
stellar spectrograms, relative Zeeman and Doppler shifts determ. via statistical approach 8−36467
striated rough surface, applicability of modified Reynolds eqn., math. verification 8−11347
structure reliability under random loading 8−38196
structure-factor residuals 8−1948
student physics laboratory courses, university level, mathematical statistics of measurement 8−24601
supernova rate in Sc galaxies, max. likelihood estimate 8−45402
surface profiles, reference line selection and fitting, based on random process analysis 8−45594
surface roughness meas., by amplitude density distribution and autocorrelation function of surface profile *(Hungarian)* 8−12668
testing procedure for optical fibres, for tensile strength determining, extrapolation of short length test results 8−9456
US Geological Survey RASS-STATPAC system for mangement and statistical reduction of geochemical data 8−20522
visual double stars, period-eccentricity relation *(French)* 8−28721
VLF/RLF atmospheric noise, amplitude-probability distribution model 8−32288
water surface, optical pulse refl., probability characts. *(Russian)* 8−22081
wave propagation in random stratified media *(Russian)* 8−1157
X-ray sources, weak, variability analysis, method of time histograms 8−20652
Fe, carbonyl powder, particle size distrib. anal. by microscopy with statistical anal. of results 8−19691
SiO_2, optical fibre, tensile strength distrib. and gauge length extrapolation 8−9434

statistical distributions *see statistical analysis*

statistical mechanics
see also lattice theory and statistics; Liouville equation; master equation; quantum statistical mechanics; renormalisation
adsorption, molecular dumbbells with distinguishable ends, 1-D neighbour pair degeneracies 8−34735
axioms and GL-spaces 8−29042
BBGKY hierarchy for hard spheres in one dimens., uniqueness 8−29041
bibliography, probabilistic ideas in field theory and statistical mechanics 8−8230
Bogoliubov hierarchy equations in classical statistical mechs., stationary solns. 8−8335
Boltzmann-Enskog equation, nonlinear, acoustical approx. for elastic sphere system 8−41252
canonical density matrix, gradient expansion, partial summation 8−16719
chemical master eqns., Poisson representation 8−35638
chemical reaction with spatial and temporal structures, stochastic analysis 8−35639
classical 1-D systems, exact statistical mechanics 8−36924

statistical mechanics continued
classical and quantum statistical mech., common Liouville space 8−32758
cluster expansion in statistical mechanics, S-matrix formulation *(German)* 8−41256
collisional systems, statistical mechanics of Keplerian orbits 8−20625
colloidal systems, ordering, statistical mech., theory 8−23968
combustion, turbulent, implications of probability eqns. 8−14098
constrained systems, statistical mechanics, generalized canonical approach 8−48743
Coulomb lattice, high-temp. expansion 8−143
Coulombic systems, restricted primitive model, Monte Carlo simulations, ergodic problems 8−36923
coupled nonlinear oscillators, Brownian motion, thermalised solitons and nonlinear response 8−29053
creep discharge at dielectric surface, statistical anal., independ. discharges model 8−1938
critical dynamics, classical systems, Fokker-Planck description 8−21057
crystallisation, chain folding, statistical mechanical calc. 8−2020
Debye screening in dilute classical Coulomb systems 8−41170
dense fluid, statistical mechanics of mol. motion 8−38603
deterministic eqn. of motion, master eqn. and steady-state probability distrib. 8−36925
dilute linear Heisenberg chain, partition function and irreducible representation of permutation groups by HLISP 8−34945
discrete process, one-dimens., invariant distribs. and stationary correlation functions 8−21059
discs and spheres with dipole, orientational autocorrel. functions 8−4557
distribution of zeros, eqn. of state, fundamental relations, Cauchy type integral 8−4577
electron in random pot., partition function 8−29040
electron transport eqn., with random impurities 8−33654
fluid, one phase, bulk distribution functions and fluctuation theorems for one phase fluid 8−8346
fluids, equations of motion, stochastic eqn. *(Russian)* 8−21054
Fokker-Planck dynamics, perturbative expansion of correlation and response functions 8−45566
Fokker-Planck dynamics, response and correlation in stationary state 8−45567
freezing, statistical mechanical theory, appl. to Lennard-Jones fluid 8−47499
generalised Langevin eqn. with Gaussian fluctuations 8−32760
Ginzburg-Landau model system, quenched, fluctuations growth 8−41260
hard heteronuclear dumb-bell fluid, thermodynamic props., eqn. of state 8−38599
hard oblate spherocylinders, Monte Carlo virial coeffs. 8−26400
hard sphere mixture, Ornstein-Zernike eqn. with Yukawa closure 8−18513
hard sphere relativistic gas transport coeffs. 8−30401
hard-sphere fluid/soft wall interface, nonuniform fluid in external field 8−34413
hierarchical model ε-expansion, numerical test of Borel summability 8−12650
hydrodynamic diffusion tensors, translation-rot. coupling effects 8−29038
infinite 1-D hard core system, selfadjointness of Liouville operator 8−29037
infinite classical system, stability, equilib. and KMS 8−21055
infinite particle systems, Markov processes existence *(French)* 8−16733
information theory role in physics 8−28933
information-theoretic, system in contact with heat reservoir, for teachers 8−36770
integral estimation w.r.t. density of states 8−41224
intermolecular energy transfer, ergodic collision theory 8−9224
ionic recombination in ambient gas, quasiequilibrium statistical method extended to nonlinearity 8−22027
ionic solution in molecular polar solvent 8−30527
Ising and Potts models with exponential one-dimens. interaction, comparison 8−21079
isolated diatomic molecules, in inert gas matrix, cage size anal. 8−47397
Kirkwood-Salsburg eqns. for bounded stable Kac pot., instability and phase transitions 8−4553
Kirkwood-Salsburg eqns. for bounded stable Kac pot. 8−4552
KMS condition for stable states of infinite classical systems 8−29039
Kolmogoroff's −5/3 power law, statistical approach 8−1644
Landau model with several order parameters 8−41244
large symmetric matrices, ensemble averaged eigenvalue spectrum 8−132
lattice gas model, press. by Monte Carlo computer simulation 8−4564
lattice model, analyticity and cluster props. of unbounded spin systems 8−45571
lattice system equilib. states, semi-quantum, AF algebra 8−45576
lattice systems, metric space of interactions, grand canonical pressure, thermodynamic limit 8−12652
limit relations for model system in case of degenerate state of statistical equilib. 8−8337
linear interacting processes in nonequilibrium statistical mechanics, thermodynamic Lagrangian formulation 8−21087
linear molecule liquids, computer simulation and theory, review 8−38604
Lorentzian shape, deduction from maximum entropy principle 8−21056
macromolecular liquids and solutions, statistical thermodynamics 8−18528
macromolecule, helical to coiled relax., statistical mech. approach, appl. to DNA denaturation by formaldehyde 8−3443
macroscopic non-Markovian systems, microdynamics, time evolution 8−41236
multidimensional wave radiation from source with Gaussian time variation and Gaussian approx. distrib. about spherical sheet 8−45487
negative specific heat paradox, astronomical and physical appls. 8−9557
nonequilibrium, continued fraction formalism 8−47475
nonequilibrium expressions for entropy, thermodynamic quantities, using density series expansion 8−8371
one-dimens. hard rods, linear Boltzmann eqn. exact soln., vel.- and Van Hove self-correl. function *(French)* 8−38441

statistical mechanics continued
one-dimensional self-gravitational system, equilib. statistical mechanics 8−36922
ordered nonsingular systems, topology appls. 8−10166
plane rotators, equilibrium state uniqueness 8−8369
polymer, crystallisation, chain folding, statistical mechanical calc. 8−2020
polymer, single ring, Lennard-Jones model, eqn. of state calcs. 8−5379
polymer and fibre systems, entanglement density, statistical theory 8−5381
polymer crystals, chain-folded, statistical mechs. in lattice model 8−47247
polymer melts, thermal conductivity, statistical mech. calcs. 8−34661
polymers, simulation by self-avoiding nonintersecting random chains, conc. effect 8−12639
polymolecular adsorption on heterogeneous surfaces, statistical thermodynamical eqns. *(German)* 8−30830
quantal master equation for any time scale, Brownian motion 8−24725
quark matter, one dimens., Abelian approx. 8−41491
radiant cavity, one dimens., nonlinear field mode interaction, statistical props. 8−16668
random chain of classical spins, statistical mechanics 8−10630
relativistic gas of interacting particles, phase vol. approx. 8−41225
rigid polyatomic molecules, classical statistical mechanics 8−16718
role of statistical mechanics in classical physics 8−8334
scalar quantum electrodynamics on lattice as classical statistical mechanics 8−16956
scattering and dynamics, classical and quantum statistical mechs., unified treatment 8−45522
scattering theory, continued fraction expansions and statistical nonequilib. mechanics 8−45523
separable many-particle interactions, free energy per particle, convex-envelope formulation 8−32781
spherical limit for n-vector correls., spin correl. functions 8−24726
spin systems, crit. behaviour at $n=-2$ 8−43600
stochastic Liouville equation, generalised, nonMarkovian and memoryless master eqns. 8−24737
stochastic systems, finite dimens., ergodic and quasideterministic props. 8−32762
stochastic systems, infinite dimens., ergodic props. 8−32770
synergetics approach 8−16717
temp. states, von Neumann algebras, asymptotic ratio set 8−12640
three particle bound states and contribution of three particle unitarity, dispersion method *(Russian)* 8−8336
Tolubinskij's stochastic theory of nonequil. processes and rel. to kinetic eqns. *(Russian)* 8−21053
turbulence problem, one dimens., equivalence to one dimens. Coulomb gas 8−5735
turbulent diffusion, nonlinear integrodifferential eqn., numerical soln. 8−38306
two-component ionic mixture, eqn. of state and phase separation in uniform background 8−21058
Van der Waalsian theory of freezing 8−22821
Vlasov dynamics and fluctuations in 1/N limit of interacting classical particles 8−130
volatile liquid, statistical thermodynamics of new phase form. *(Russian)* 8−18739
vortices, two dimensional, statistical mechanics 8−30304
Wigner representation, gauge invariant, electrodynamics of scalar particles 8−29251
zero-component classical field, electron localisation and statistical mechanics 8−30855

statistical methods *see statistical analysis*

statistical models
causal model of quark fragmentation, charge retention in hadronic jet 8−29313
chaotic isospin zero state of one mode isovector field 8−12883
cosmic ray nuclear event, ~42 TeV, high multiplicity, large transverse momenta, giant fireball 8−33105
cosmic ray showers, ang. distrib. and multiplicity 8−36412
direct photon emission from excited bosons and e^+e^- collisions, relativistic oscillator model 8−37208
discrete cluster mass spectrum, cosmic ray data anal. 8−33104
dual quark pattern for multiplicities, inclusive distribs., in hadron or lepton induced reactions, quark jet universality 8−41476
Feynman-gas model for semi-inclusive processes, πp appl., multiperipheral model predictions *(Russian)* 8−435
fireball decay in statistical-bootstrap theory 8−436
fireballs, quantum-statistical chain decay, pion clusters 8−430
fragmentation model and minimal rule 8−25019
hadron, fragmentation from heavy quark partons 8−8603
hadron dynamics, multiparticle prod., intermol. pot. in Feynman-Wilson gas 8−477
hadron plasma theory *(Russian)* 8−37148
hadronic bremsstrahlung, grand partition function determ. 8−33041
hadrons, extended, stochastic description 8−431
hadrons, parton distribs. calc. 8−421
Heisenberg's approach, modified, meam charged hadron multiplicity in πp and Kp collisions 8−45988
hydrodynamic model, nonlinear pion+pion chiral Lagrangian, e^++e^- and p+p collisions 8−32966
hydrodynamical model of multiparticle prod., scaling solns. 8−8616
hydrodynamical models anal. 8−8617
inclusive electroproduction of forward protons in fireball model 8−41554
jet struct. of hadronic final states, Bose-Einstein effect 8−16994
jet structure in high p_t events, importance of parton transverse momentum 8−432
jet-enhancement coeffs., diffr. scatt. *(Russian)* 8−29316
Landau hydrodynamical model of multiparticle prod. due to viscosity 8−4836
longitudinal phase space integral with leading particles 8−17058
meson+proton→3 mesons+proton, partial wave anal., Ascoli anal., fire-ball dimens. 8−17054
meson jets from quark fragmentation, flavour, power counting rules at $x\to1$ 8−37185
multihadron production processes, high energy, strong correls., RPA scheme 8−41506
multiparticle production, sequential decay model with cluster formation, cluster mass 8−16993

statistical models continued
multiparticle production description by Chapman-Kolmogorov eqns. 8−12882
multiparticle production processes, cluster formation model, math. formulation 8−478
multiparticle production processes, correls. due to energy-momentum conservation, uncorrel. jet model 8−41601
multiplicative processes, ρ^0 meson formation cross section, pion prod., multiperipheral cluster model *(Russian)* 8−17067
nucleus+hadron, cluster model of hadronic interactions, intermediate energy secondary nucleons prod. *(Russian)* 8−17062
pion-pion interactions, short range correlations, effect of cluster transverse momenta 8−37237
QCD calc. of three-jet processes in leptoprod. and hadronic μ-pair prod. 8−21338
quantum cluster decomposition of hadronic final state, stochastic theory of multiple hadron prod. 8−41507
quark fragmentation products parity-odd correls., longit. polarisation 8−433
quark jet fragmentation universality in lepton processes 8−434
relativistic four dimensional field theoretical model of strong interactions based on statistical bootstrap 8−29315
sequential decay model for hadron-hadron multiparticle prod., appl. to nuclear matter 8−46021
strings from field theory, statistical approach 8−25023
temperature origin in high energy strong interactions, large transverse accel. 8−37186
uncorrelated jet model, quantum statistical correls., Bose-Einstein statistics, pion prod. 8−16992
uncorrelated jet model at high energy, quantum statistics, soft pion prod. 8−16995
e^+e^- annihilation, jet struct., test of QCD and quark-confining string 8−33040
$e^+e^-\to$hadrons, jet struct. and statistical model 8−21440
$K^+p\to K^+p2\pi^+2\pi^-$, 16 GeV/c, azimuthal correls., Bose Einstein symmetrization effects 8−37239
$\bar{N}N$ annihilations, statistical bootstrap model anal. 8−37224
$\bar{N}N\to$pions, direct channel scheme based on statistical bootstrap, low-energy region 8−12924
pp, $\bar{p}p$, fireball mass and pion multiplicity 8−45974
pp, two component fireball model 8−45965
pp, unitary impact-parameter model for multicluster prod. 8−33091
pp collisions at ISR energies, charged particle correlations between forward/backward hemispheres 8−29366
π^-p inelastic interactions at 205 GeV/c, three-fireball model, computer simulation 8−474
$\Upsilon\to$photons+gluons, QCD perturbation theory 8−33028
φ^3, six-dimens., struct. of high-energy jets 8−29248
Sm(n,n), (n,n′), (n,n′γ), A+148,150,2, E=2.47 MeV collective excitations obs. 8−33187

statistical tests *see statistical analysis*

statistical theory *see statistical analysis*

statistical theory of nuclear reactions and scattering
actinide fission, statistical anal. of gamma emission 8−17255
actinides, fission through double-humped barrier excitation energy 10-35 MeV 8−583
analytic hydrodynamic model for expanding fireballs 8−41745
cascade evaporation model of high energy nucleus-nucleus reacts. *(Russian)* 8−46107
collision duration in presence of strong overlapping resonance levels 8−17169
compound cross sections, consistency relns. 8−41688
compound nuclei prod. in (HI, xn), lifetimes with account of fission process *(Russian)* 8−25233
compound nucleus reactions, consequences of isospin mixing 8−25168
Csikai-Peto effect, reevaluated by statistical model calc. method 8−25180
duration of reactions for strongly overlapped resonance levels *(Russian)* 8−46044
energy ave. and ensemble ave. equality 8−17170
exciton model of pre-equil. emission 8−13049
exciton model of pre-equilibrium theory for nuclear reactions, master eqn. soln. 8−13050
fireball model, pion and nucleon total differential cross-sections 8−17241
heavy ion collisions, continuous γ-ray spectra anal. 8−41747
heavy ion deep inelastic reactions, as probes of nuclear matter, review 8−46083
heavy ion interaction pot. calc. by Ericson statistical model and ^{252}Cf fission data *(Russian)* 8−41765
heavy ion reacts., coherent and statistical features 8−41771
heavy-ion high energy inelastic collisions, cascade evaporation model of shock waves *(Russian)* 8−41766
high energy heavy ion collisions, comparison of models, appl. to $U+Ne\to p+X$ 8−46088
high energy interactions of nuclei, single particle inclusive spectra 8−46087
hydrodynamic tube model for relativistic nucleon-nucleus collisions *(Russian)* 8−606
intranuclear cascade model, anal. of 39 MeV reacts with ^{209}Bi and ^{56}Fe 8−33185
isovector pairing vibrations, in two nucleon transfer ion-nucleus reactions 8−21487
linear response approach to heavy ion deep inelastic collisions, dissipation, quantal fluctuations 8−46043
many-boson absorption, nonreson. maximum 8−8343
neutron scatt., width fluctuation correction to reacts. involving continuum level excitations 8−46124
neutron scatt. from parity violating pot. 8−25167
neutron scattering theory, parity violating interaction 8−25166
nuclear fireballs, break-up densities 8−8790
photo-nucleon spectra, shell and pre-equilibrium decay model of giant reson. decay *(Russian)* 8−579
pre-equilibrium decay of nuclei of mass ≃90 in 10-100 MeV reactions 8−17171
pre-equilibrium particle decay in photonuclear reactions 8−25173
preequilibrium processes in atomic nuclei, statistical description 8−13048
radiation widths for $75<A<130$ 8−33161

statistical theory of nuclear reactions and scattering continued
  scalar and configuration traces of operators in large spectroscopic spaces 8−25165
  stainless steel, type 316, neutron induced charged particle spectra 8−5024
  α-preequilibrium decay, emission rate, α-preformation factor 8−41676
  β-decay of fictional nuclide, Pandemonium, statistical model 8−8779
  (n,α) resonance neutron reactions, α-widths from statistical relationships, deviations 8−33173
  (n,γ) capture cross section, statistical theory anal., radiative strength functions *(Russian)* 8−17212
  (n,n), elastic and inelastic scatt. on various isotopes, cross sections meas. and calcs. 8−13081
  Ag(n,n′), 14.1 MeV, precompound processes 8−13093
  ^{26}Al compound nucleus, isosopin impurity from fluctuations in mirror reactions ^{12}C(^{14}N,t)^{23}Mg, ^{12}C(^{14}N,^{3}He)^{23}Na 8−33157
  Ar+Th, 388 MeV, deep inelastic reactions, double differential cross section calc. 8−8856
  As(n,n′), 14.1 MeV, precompound processes 8−13093
  Ba, A=134-138, average neutron cross sections, statistical and optical model calcs. 8−29458
  ^{209}Bi+^{14}N, 85 and 95 MeV, preequilibrium α spectra, statistical treatment 8−41750
  ^{12}C to ^{22}Ne induced nucleon transfer reactions 8−41768
  ^{12}C(^{12}C,α)^{20}Ne, resonance anomaly anal. in fluctuation theory 8−25215
  ^{12}C(^{14}N, α), Hauser-Feshbach calcs. and ^{26}Al coherence widths 8−37360
  ^{12}C(^{15}N,α), 21-39 MeV, coherence widths in ^{27}Al 8−41619
  ^{59}Co+n, calc. using pre-equil. statistical model code GNASH 8−4946
  ^{59}Co(n,n′), exciton neutron inelastic scatt. model *(Russian)* 8−33189
  Cr(n,n), A=50, 52, 54, 1.5-3.0 MeV elast. and inelast. scatt., differential cross section *(Russian)* 8−25199
  ^{65}Cu(p,α$_{0}$)^{62}Ni, 1.1-3.6 MeV, Wigner cusps 8−41719
  ^{65}Cu(p,γ)^{66}Zn, 1.1-3.6 MeV, Wigner cusps 8−41719
  Cu(n,n′), 14.1 MeV, precompound processes 8−13093
  ^{54}Fe(α,γ)^{58}Ni, 7.6 to 12.8 MeV, giant electric resonances in ^{58}Ni 8−41739
  ^{158}Gd(p,n)^{158}Tb, 7.4 MeV, equilib. and nonequilib. contribs. 8−21565
  ^{70}Ge+^{32}S, 110, 132 MeV fusion evaporation residues, Monte Carlo simulation 8−41799
  ^{71}Ge, levels, studied via ^{68}Zn(α,nγ), 8 to 10 MeV, comparison with coupling model calcs. 8−8742
  ^{4}He+U, relativistic ions, product spectra, statistical models 8−638
  ^{4}He(p,p)^{4}He, 0-18 MeV, statistical anal., data fluctuations, error estimation 8−25196
  ^{24}Mg(α,α′)^{24}Mg, 16.7-20 MeV, quasimol. intermediate resons., statistical anal. 8−41741
  ^{24}Mg(d,p), 1.5-2.5 MeV, fluctuation anal., ^{25}Mg highly excited states 8−46071
  ^{25}Mg(^{3}He,p)^{27}Al, 13 MeV, statistical multistep compound emission, proton spectrum fluctuations 8−37357
  ^{55}Mn(p,p), (p,p′), cross section fluctuations anal. 8−21551
  ^{23}Na(n,n′γ), 0.52-4.23 MeV, cross-sections, ang. distribs., mag. substate populations meas. 8−13100
  ^{93}Nb(n,n′), exciton, neutron inelastic scatt. model *(Russian)* 8−33189
  Nb(n,n′), 14.1 MeV, precompound processes 8−13093
  ^{20}Ne+Al, relativistic ions, product spectra, statistical models 8−638
  ^{20}Ne+U, relativistic ions, product spectra, statisical models 8−638
  ^{58}Ni+^{32}S, 110, 132 MeV, fusion evaporation residues, Monte Carlo simulation 8−41799
  ^{60}Ni(α,nγ)^{63}Zn, 8-16 MeV, low-lying negative parity states of ^{63}Zn anal. 8−21521
  ^{60}Ni(e,α)e′X, alpha particle spectra, statistical model calc., direct reaction component 8−41704
  ^{31}P(d,p), (d,α), cross-section fluctuations at 150° 8−29476
  ^{208}Pb+Ar, 1.8 GeV/nucleon, fireball model calc. of π-multiplicity distribs. 8−37366
  ^{32}S(d,α)^{30}P, 2 to 2.5 MeV, fluctuation anal., ^{24}Cl compound nucleus 8−46070
  ^{28}Si(α,α), elastic and inelastic scatt., compound nucleus contrib. anal. 8−37356
  ^{47}Ti(α,α′), (α,p), level density parameters, α and p energy distribs. 8−13130
  U+^{20}Ne, nuclear fireballs, break-up densities 8−8790
  ^{235}U(n,f) up to 36 keV, statistical anal., cross sections, intermediate struct. 8−653
  ^{50}V(p,α), level density parameters, α energy distrib. 8−13130
  ^{176}Yb(^{12}C,8n)^{180}Os, 120 MeV, continuous γ-ray spectra anal. 8−41747
statistical thermodynamics *see statistical mechanics*
statistics
  see also error statistics; game theory; Monte Carlo methods; probability; queueing theory
  acoustic power flow, band-limited, into enclosures 8−9485
  balloon born cosmic ray electron detectors, curious random counting statistics, electric circuit 8−17540
  commutation superoperator of state, appl. to noncommutative statistics 8−28997
  convergence to stable distribution laws in limiting theorem *(Russian)* 8−28920
  differential signal channel pulse stream statistics for γ spectrometer *(Russian)* 8−17474
  exponential random variables sum, probability density function 8−12537
  hydrologic data set distribution functions, extremes and confidence intervals 8−24313
  ionosphere reflected radio signals, effect of travelling disturbances on statistical characts. 8−45092
  material test point, statistics of distant perturbs. 8−28494
stators
  turbogenerator, short circuits, stator end windings deformation *(Japanese)* 8−11465
steady-state theory *see cosmology*
steam
  annular flow condensation, of steam inside tubes, heat transfer 8−14003
  bubble, nonspherical, collapse in suddenly pressurised water *(French)* 8−33997
  BWR steam condensation pressure variations 8−46134
  condensation on bundle of tubes, heat transfer effects 8−30164
steam continued
  critical region, universality, revisions and corrections to scaling 8−38810
  mass-transfer measurements on steam-generating pipe containing porous defects 8−38398
  nuclear and coal heating, steam generation for industry 8−37455
  relative velocity in steam-water two-phase mixture, determ. of void fraction 8−5791
  steam-air mixture, condensation, transport and thermodynamic props. *(Japanese)* 8−34251
  viscosity calculation, applicability of effective spherically symmetric pots. 8−1779
  water/steam systems, thermodynamic data tables 8−26679
steam boilers *see boilers*
steam generators *see boilers*
steam plants
  see also boilers; condensers (steam plant)
  generator, Na heated, dynamic instabilities 8−17281
  main steam isolating valves, back pressure light, PWR appl. 8−29602
  nuclear plants, heat extraction from steam generators 8−37465
steam power stations
  boiler plate restriction two-phase flow hydraulic resistance calc. 8−1734
  coal, gamma-ray activity rel. to power station choice 8−11746
  environmental dispatch simulation and emission dispersion modelling 8−32221
  heat transfer with steam condensation, theory, problems of interest 8−30161
steam turbines
  see also turbogenerators
  corrosion protective coatings for reliable operation 8−11424
  nuclear power plants, district heating 8−37437
  nuclear steam turbines for power prod., district heating, desalination 8−37438
  Cr-Mo-V steel thermal fatigue tests 8−39912
steel
  see also alloy steel; austenitic steel; carbon steel; stainless steel
  acoustic emission and ductile crack growth 8−11320
  acoustic emission in deformation, at various strain rates and sign change 8−44188
  adhesive wear, heat treated load effect 8−11344
  AGR boilers, gas side corrosion, breakaway oxidisation treatment 8−48558
  annealing effect on texture, microstruct., and mech. props. 8−44138
  arc cathode craters, oxide film thickness effects, meas. using SEM *(German)* 8−38558
  Bauschinger effect minimization by dynamic strain ageing 8−48469
  bearing and frictional material, current state of prod. and development trends review 8−19902
  boride coatings, formed by B diffusion, pack cementation process, microstruct. and mech. props. 8−15592
  boride coatings, technology, props., book contrib. 8−48574
  boride diffusion coatings on steel, fractographic exam. of struct. 8−44270
  brittle fracture in ductile material, model and applic. to H embrittlement 8−23814
  brittle rupture, (n,α) radiography method with B doping *(Russian)* 8−48491
  cam-roller pair, wear resistance after strengthening treatment *(Russian)* 8−31542
  cantilever bend specimen, side grooving effect on compliance relationships 8−35472
  carbide cracking as source of acoustic emission 8−19872
  carbide particle size and pearlite grain size changes during deform. and hot working of ShKh15 *(Russian)* 8−6946
  carbide phases formation during annealing *(Russian)* 8−6930
  carbon steel water tubes in alkali loaded solvents, corrosion speed investigation *(Hungarian)* 8−48559
  carbonitrided, nature of dark component, metallographic exam. 8−19978
  carburised, alloying effect on props., mathematical-statistical determ. 8−19794
  carburized, fatigue, non-martensitic struct. effect, rel. to mean stress and residual stress *(Japanese)* 8−7024
  carburizing in fluidized bed 8−19951
  cast, mech. props., fatigue behaviour, influence of microdiscontinuities, review 8−35512
  cast, nonmetallic inclusion size frequency distrib. determ. 8−39989
  cast 20KhML, deform. resistance and low cycle fatigue in pure shear creep effect 8−3192
  casting defects, NDT 8−27690
  castings, type 27KhGSNL, exam. of cracks due to heat treatment 8−44205
  cementite migration in temp. gradient 8−44151
  chemical microinhomogeneity recovery during thermal working *(Russian)* 8−15442
  coating, Al, on steel by thermal decomposition of alkyls 8−15590
  coating by boronising, sliding and abrasive wear, corrosion resist. 8−11428
  coating with Ta by CVD 8−15594
  cold cracking resistance under continuous multipass welding 8−39911
  cold drawn prestressing tendon, rational test for stress corrosion cracking 8−44246
  column design, I-section, braced multi-storey, torsional buckling at limit state of collapse 8−1586
  components, safety anal. for loading conditions 8−39979
  composite, bronze surface, water lubricated bearing material, manufacture, friction, corrosion and erosion 8−11341
  cone, phase velocity of longit. impact wave *(Japanese)* 8−9600
  construction type, spectrochem. determ. of Ca 8−7275
  continuously cast, optimum conditions for annealing castings during dynamic working *(Russian)* 8−44134
  corroded, Mossbauer effect anal. of corrosion products 8−19943
  corrosion cracking susceptibility, C and Cr effects in 23Kh2G2T 8−19952
  corrosion fatigue kinetics of 45 and 10KhN4MDF, low cycle loading by pulse extension *(Russian)* 8−31578
  corrosion fatigue strength, 40KhNMA, effect of polishing and diamond smoothing *(Russian)* 8−31575

steel continued
- corrosion fatigue strength of St-3 and 45G17Yu3 effect of paint coatings on strength in seawater *(Russian)* 8-31572
- crack form. during continuous casting 8-7038
- crack movement rate during cyclic deform., internal microstress effects 8-3225
- crack opening displacement in deeply notched specimens 8-27617
- crack resistance, J-integral approach, crack line wedge loaded specimen 8-35513
- creep strength under high H_2 press. *(Russian)* 8-35423
- crystal growth from melt based on Czochralski method, for material with high phase transform. temp. 8-23599
- cutting and grinding, surface adsorption effects 8-39938
- cylindrical parts, hardness inspection by EM method with higher harmonics 8-23891
- defective zones in cold rolling, activation analysis method 8-7278
- deformation ageing of 40Kh, effect on impact resistance and tensile strength *(Russian)* 8-31427
- deformation anisotropy in yield point, precompression effects *(Russian)* 8-11268
- deoxidation effect on fatigue and endurance limit in wear tests varying P and S content *(Russian)* 8-35523
- detector designed to meas. retained austenite 8-35602
- diffusion and distribution of S in St3 and 12Kh18N9 8-2306
- diffusion coating for protection against H_2 effect on mech. props. 8-31589
- diffusion phenomena determ. between coated metal carbide and steel *(German)* 8-15623
- dislocation density, problems of X-ray determ. from one diffraction line *(German)* 8-2129
- dynamic testing by resonant flexion, energy consumption for degradation *(French)* 8-19961
- elastoplastic bending of beams of various cross section 8-3196
- elastoplastic props. in explosive loading 8-6999
- electrical steel strips, grain-oriented, effect on stress-relief annealing treatments on permeability and ageing 8-23832
- electrical steel strips, grain-oriented, effects of ageing on mag. AC permeability 8-23833
- electrode for electric discharge sintering, metal powder+punch electrode reactions 8-11148
- emulsion, magnetic and dielectric, prep., as rubbing sludge *(German)* 8-3376
- epoxy-steel system, friction and wear 8-44229
- erosion by high-press., high-temp., short gas pulse 8-7092
- eutectoid and hypoeutectoid, time-temp.-austenization diagram *(Japanese)* 8-6900
- explosive welding to $Ni_{40}Fe_{40}B_{20}$ glass alloy, rapidly quenched 8-39954
- failure assessment method and fracture mechanics 8-48488
- fast fracture and crack arrest, finite difference anal. 8-1607
- fatigue analysis, random, of structural bars subjected to plastic bending *(Japanese)* 8-27619
- fatigue crack growth delay in 4140 steel, yield strength, neg. stress ratio depend. 8-3210
- fatigue crack growth prediction, under variable amplitude loading history 8-18233
- fatigue crack init. at notch tip, early stage propag. *(Japanese)* 8-7021
- fatigue crack length determ. in fracture mechanics by electric potential technique of RSt 37-2 *(German)* 8-15486
- fatigue crack propag. rate and stress intensity factor at varying stress ratio 8-7049
- fatigue cracking under cyclic bending of 17KhG2SAFR, 45, and 40Kh *(Russian)* 8-31506
- fatigue endurance tests in moist H_2S *(Russian)* 8-31510
- fatigue in gaseous H_2 of Kh16N6 *(Russian)* 8-31509
- fatigue limit in inhibited H_2SO_4 soln., halide anion effects *(Russian)* 8-11399
- fatigue strength and residual stress distrib., machining method effects in ShKh15 8-31528
- fatigue strength of 30 KhGSNA, 12 KhN3A, effect of friction in abrasive medium, after hardening 8-35507
- fatigue strength under fretting corrosion, effect of plasma-sprayed coatings on 30KhGSA *(Russian)* 8-11394
- FIM atom probe microanalytical expts., review 8-35622
- finite life characteristics, temperature change effects, torsion cycle tests *(German)* 8-7004
- fission reactor, choice based on high energy neutron irradiation *(French)* 8-8902
- flocculation detectability factor in US inspection in quality control 8-3268
- fracture mechanics appl. to H_2 embrittlement under press. *(French)* 8-23821
- fracture toughness determ. from fatigue test results in circular bending 8-15526
- fretting on polycarbonate, influence of experimental conditions on wear 8-44228
- galvanic couple with Al alloys, velocity effect on corrosion 8-35566
- galvanising process, digital control system for Zn coating distrib. 8-19960
- glued overlapped sheets, strength tests with nonuniform epoxy adhesive layer *(German)* 8-15647
- grinding effect with Elbor wheel 8-48540
- hardened and casecarburized, fatigue crack initiation, propag. and termination, notch depth effects *(Japanese)* 8-7022
- hardening and cyaniding, by heating in electrolytic plasma *(Russian)* 8-11390
- hardening by focused laser beam *(Russian)* 8-27670
- heat resistant, explosive loading effects on struct. and mech. props. *(Russian)* 8-39787
- heat resistant charact. extrapolation by temp.-time methods, creep data 8-15477
- heat-exchanger alloys for use in nuclear steam coal gasification plant 8-15589
- high strength, crack propagation behaviour, stress, temp. and fracture toughness effects *(German)* 8-31494
- high strength, deformation, tension, torsion compression test exam. *(Russian)* 8-31455
- high strength, fatigue crack initiation and early growth 8-7009
- high strength, low cycle fractures, electron microscope exam. of 33Kh35NMVFA *(Russian)* 8-31512
- high strength, press. depend. yield and plastic vol. change 8-19810

steel continued
- high strength, shell, stress distrib. around notch, beyond fatigue limit 8-13928
- high temperature strength, corrosion-erosion effect of gas metal mixture stream *(Russian)* 8-35576
- high-speed, 30Kh2N2SMKt, deform. effects on physicomech. props. 8-23741
- high-speed, shiny nonfusion rings in friction welding, origin 8-23872
- high-strength 12KhN3A, anode and cathode processes in corrosive environment, fatigue *(Russian)* 8-35573
- high-tension, effect of side-grooving on K_{Ic} meas. by bending *(Japanese)* 8-35614
- holographic, nondestructive testing of brazed, and epoxy bonded honeycomb panels 8-40017
- HSLA control-rolled, surface residual stress meas., X-ray diffractometer 8-5716
- hydrogen embrittlement, SEM obs. *(German)* 8-19858
- hydrogen embrittlement of U8, diffusion coating protection *(Russian)* 8-31513
- impact specimen fractures, stress concentrator sharpness effect on size of tough component 8-7015
- impurity element determ. by spark sources mass spectrometry using powdered salt 8-7304
- inclusion behaviour investigations using SEM 8-23916
- inclusions, SiO_2, Al_2O_3, FeS, effect of high temp. heating on size, number and distrib. 8-44145
- induction hardened sheet, inhomogeneity and distrib. of residual stresses, effect on fatigue *(Japanese)* 8-31518
- interface with TiC RF sputtered film, chem. and microstruct. 8-39956
- internal cavities in objects, exam. by scanning with ionising radiation beams, from radioactive sources 8-40003
- irradiation by neutrons, damage function for mech. props. 8-13228
- isothermal and pearlitic transform. of XC80, mech. prop. meas. using dilatometer *(French)* 8-31598
- J_c data, indirect elec. determ., specimen config. effects 8-7011
- l *(Russian)* 8-18185
- laser erosion value depend. on metallic props. anisotropy during plastic deform. *(Russian)* 8-31452
- low alloy, bainite, transform. behaviour, struct., toughness 8-27513
- low alloy, hot deform. and modified ausforming *(Japanese)* 8-11244
- low alloy, ion microprobe anal., sampling error 8-7264
- low alloy, photometric anal. by time resolution of radiation *(Russian)* 8-23995
- low strength notched specimens, preloading effects on brittle fracture 8-27642
- magnetic fundamental and harmonic flux, sinusoidal applied mag. field, steel plate 8-2708
- magnetic method of mech. prop. determ. of thick sheet of 17G1S 8-48600
- magnetic stray fields, optical detection 8-31602
- martensitic transformation, lattice deform. 8-27511
- mass spectrometric analysis of S content by remote meas. technique 8-23994
- mechanical strength, effect of H_2 sorption and Al and N_2 surface treatment *(Russian)* 8-31570
- medium strength plate, quenched and tempered, fracture toughness in ductile-brittle range 8-7036
- mild, inhomogeneous yielding, slip plane intersection with stress free boundary 8-5667
- mild, S determ., flame chemiluminesc. method 8-48711
- model magnet, for reson. spectrometer, reproducibility of fields, field heights and magnetisation props. of materials *(German)* 8-24832
- molten, addition of VO_xC_y 8-40049
- NDT, magnetic inductive method appl. *(German)* 8-48581
- NDT with electromag. coercimeter, exam. of current amplitude effect 8-39997
- neutron irradiated 15KhMFA, H_2 induced delayed fracture *(Russian)* 8-35476
- nitride coated, brittleness eval. by AE *(Chinese)* 8-11453
- nitride form. by implantation, wear rate reduction 8-27149
- nitride inclusions, identification by differential thermal anal. and evolved gas anal. 8-48721
- non-alloy, work hardening due to shearing *(French)* 8-15423
- notch sensitivity under cyclic impact loads 8-3220
- oxidation-reduction processes on surface during heating in vacuum *(Russian)* 8-11403
- oxide inclusions 8-23648
- passivation by sulphochromic soln. *(French)* 8-23869
- pearlitic, P internal friction peak *(Russian)* 8-38774
- pearlitic, temp. relationship of failure charact. 8-3158
- perforated bent sections, microstruct. near holes 8-23725
- phase transform., α to γ, during rapid resistance heating, apparatus for investigation *(Slovak)* 8-19742
- Phosphate conversion coatings on steel 8-3251
- plastic deform. and fracture of pearlitic or spheroidal steel *(French)* 8-35448
- plastic flow area, determ. of relative elongation and rel. to yield point 8-23769
- plastically deformed or hardened, moment method anal. of X-ray diffr. data *(Czech)* 8-31593
- plasticity of grooved specimens at high temp., rel. to hot forming 8-23902
- plate, Pb-Sn soldered joint strength study *(Japanese)* 8-7166
- polyethylene, high density, adhesion strength to St. 3 steel 8-23920
- polyvinylbutyral, high density, adhesion strength to St. 3 steel 8-23920
- powder, rotary forging, porosity and deform. 8-23646
- powder forged for carburizing appl., core props., mech. props. 8-15339
- power plant pipelines under creep conditions, allowable thermal stresses *(Russian)* 8-13930
- precipitation of AlN *(French)* 8-23711
- precompression cracking method, for fracture toughness testing *(Japanese)* 8-15612
- pressure vessel, acoustic emission during loading by pulsating internal press. *(German)* 8-19973
- pressure vessel, notched, acoustic emission meas. during pressurisation 8-21638
- pressure vessel rupture tests, heavy section steel technology programme 8-44212

steel continued
- pressure vessels, internal pulsed loads, effect of scale, geometry and filler on strength 8−21659
- prestressed cast segments for HTR with 3000 MW thermal power, thermodynamic calc. and design *(German)* 8−4982
- protective coating on steel, US testing 8−23908
- protective coatings of Fe-Ni-Cr 8−48572
- quenched, tempered and austempered 4340 effect of plastic strain followed by ageing on elastic limit 8−31446
- quenched and tempered, localised corrosion sensitivity *(German)* 8−19949
- residual stress change in conc. zone in cyclic loading of 22K and 09G2S 8−3224
- residual stress influence on mech. props. *(German)* 8−27587
- rolled, low-cycle torsional and push-pull fatigue anisotropy 8−27589
- sheet, cold-rolled, US inspection for mech. prop. anisotropy 8−23750
- sheet, strain-induced changes in mech. props. and press formabilities 8−19781
- shock waves meas., dielectric and magnetic pickup signals comparison 8−5707
- silchrome, thermomech. hardening 8−23736
- silicide coatings, on steel, exam. of fracture processes 8−44206
- sintered bearing material, standardisation, wear and friction props. 8−19901
- soft, explosive deform. and destruction of tubes 8−6995
- solidification of castings in mould *(Russian)* 8−27502
- solidification of melting, fixed boundary condition modal, phase interface velocity *(Russian)* 8−15390
- sorbitic, yield point rel. to average carbide particle size *(Russian)* 8−6967
- spalling prod. by sheet charge explosion and collision of plate 8−44198
- spot welding process, acoustic emission signals, anal. *(German)* 8−44296
- steel, fracture ductility, determ. in bending tests and US emission 8−23899
- steel, impact strength, effect of surface decarburization and carburization of faces and core struct. 8−23811
- steel, static bend testing of cracked samples until failure, −60 to 20°C 8−23893
- steel tubing, cold rolled, nondestructive mag. method for determ. of mech. props. 8−23903
- strength, effect of H_2 8−3197
- strengthened by surface plastic deform., tempering effect on physicomech. props. *(Russian)* 8−35409
- stress corrosion cracking, in liquid NH_3, electrochemical exam. *(Japanese)* 8−39945
- stress corrosion cracking of 20, 17GS, 65C, and 40, simulated field trials of inhibitor KXO in H_2S cracking *(Russian)* 8−31573
- stress relaxation characts., reinforcing steel 23Kh2G2T 8−44159
- stress/deformation response meas. device *(German)* 8−3261
- structural, 35KhN1M2F, forgings, struct. inheritance during ht. treatment 8−23735
- structural, Bauschinger effect *(French)* 8−23787
- structural, classification according to ductile-brittle transition temp. 8−11298
- structural, naturally and artificially weathered, SEM characteris. 8−23882
- structural, nondestructive method of struct. damage investig. using cyclic loading effects and mag. characts. 8−3275
- structural, rate of damage detection by fatigue testing of instrumentation *(German)* 8−19972
- structural, resistance to low endurance fatigue fracture, in biaxial stress 8−15531
- structural heterogenities, detection by mag. aerosol method 8−44314
- substrate, plasma-sprayed Al coating, microstruct., TEM and SEM obs. 8−11426
- surface, in contact with polycarbonate, surface morphology changes in polymer induced by fretting 8−15538
- surface, saturation with Sb and As under glass fusion treatment *(Russian)* 8−35585
- surface decarburation, luminescent discharge spectrometry exam. *(French)* 8−31585
- surface defect detection by magnetographic method 8−44332
- surface HF inductive pulse hardening *(German)* 8−27687
- tearing rate determ. by elec. resist. meas. method *(German)* 8−15619
- temper embrittlement, fracture mech. of grain boundary segregated phases 8−48531
- tempered, kinetics of solution of Mn in precipitated cementite *(Russian)* 8−6891
- tensile prestrained strength of anisotropy rolled steel, rot.-bending fatigue tests, slip bands 8−27590
- testing in moist H_2S 8−23901
- thermal fatigue resistance, nuclear power plant materials, relation with strain and time for various steels, at temp. 350-900°C 8−31534
- thermally strengthened rolled, 35GS and 20GS, H_2 embrittlement and cracking resistance *(Russian)* 8−35479
- thin sheets, C and N contents determ. by internal friction *(German)* 8−27715
- transformer, anisotropy of temp. depend. of mag. props. *(Russian)* 8−39362
- transformer, EM losses, influence of charact. of substruct. distrib. *(Russian)* 8−7058
- transformer, inhibitory phase *(Russian)* 8−3139
- tubes, 12 Kh1MF, cross-section shape change, during creep of bent tubes loaded with internal pressure 8−31485
- tubes, helical welded, computerised US quality control 8−35601
- tubing, NDT method comparison, optimum combination determ. 8−44308
- tubing, viscoplastic bending 8−35464
- tufftrided, S15CK smooth specimens, fatigue strength, strengthening mechanisms *(Japanese)* 8−27609
- ultrahigh strength, near-threshold fatigue crack propagation, load cycle and cyclic strength effects 8−11331
- ultrasonic testing, sensitivity adjustment for focusing probes, testing of planar and curves surfaces *(German)* 8−7152
- unalloyed, brittle fracture, effect of prestrain and ageing *(German)* 8−19857
- unalloyed, electric metallisation, corrosion resistance tests *(Russian)* 8−19935

steel continued
- undirectionally solidifying melt, horizontal macrosegregation during solidification with heterogeneous layer *(German)* 8−19733
- unhardened, grinding by $Si-_3N_4$-based abrasive material 8−35529
- upper bainite, relation between cementite and ferrite lattice orientations in steel U15 and 130 Gz *(Russian)* 8−23663
- US attenuation, defect effects in US inspection *(Italian)* 8−48609
- US characts., change with stress appl., exam. 8−48579
- US grain size determ. 8−40015
- US testing, possibilities and limitations 8−19979
- wear at high sliding speed of AISI 1020 8−3237
- wear mechanism during fretting corrosion on polymers 8−35522
- wear of single abrasive grains, using pin on disc wear test *(Japanese)* 8−44230
- welded joints of tube 10G2SD, corrosion fatigue *(Russian)* 8−35574
- welded specimen AE testing by external static loading of cold cracking susceptibility 8−40013
- wire, brass coated, surface composition, oxidation, sulphidation, study by XPS 8−11423
- wire, reinforced prestressed concrete, strain-tempering conditions and mech. props. *(Japanese)* 8−39816
- wire reinforced Al-Zn-Mg, tensile strength depend. on angle of reinforcement *(Russian)* 8−15452
- work hardening of 40Kh specimens, plastic-strain mechanism 8−42530
- X-ray and microhardness meas. at high strain rates *(German)* 8−3184
- yield, H_2 effect 8−15474
- Al-steel profiled composite, pulling from melt, mech. props. 8−3075
- B coating on steel 45, effect of abrasive particle size on wear 8−44225
- B-Cu(Al) coating on steel 45, effect of abrasive particle size on wear 8−44225
- Cd, protective coating, on 30KhGSA steel, in Black Sea 8−19956
- Cr deposited cylinder X-ray meas. of internal stresses in electrodeposition stress 8−27693
- H_2 absorption, effect of organic inhibitors *(Russian)* 8−35570
- H_2 assisted cracking equilibrium and kinetic studies 8−3201
- W-Mo-Co high-speed cutting steels, Co determ. 8−3416
- Zn coating *(Dutch)* 8−48571

steel industry
- plasma melting furnace, development in GDR *(German)* 8−22522

steel manufacture
- rolling mill forces meas., using semiconductor strain gauge based extensometer 8−41296

stellar atmospheres
- *see also solar atmosphere*
- A-type stars, mag. field generation by Coriolis EMF 8−8027
- accretion discs, fluid, orbiting Kerr black hole, analytic theory 8−36631
- accretion discs, turbulent energy transport 8−28661
- accretion discs in close binary systems, tidal torques 8−12296
- accretion flows, in binary X-ray systems 8−12432
- AFGL/CRL IR sources, spectroscopic obs. rel. to circumstellar extinction 8−32599
- Ap stars, heavy element abundances from Copernicus UV data, reference stars α Lyrae and α Canis Majoris A 8−28688
- Ariel 0620−00, transient X-ray source, spherical model 8−12415
- α Aurigae (Capella), model chromosphere 8−40931
- axisymmetric accretion discs and flows, thickening 8−40989
- black holes, relativistic accreting discs hydrodynamic struct. 8−36632
- A Bootis (Arcturus), atmospheric parameters determ. 8−20826
- α Bootis (Arcturus), CO fundamental bands, inhomogeneous chromosphere 8−36561
- α Bootis (Arcturus), far UV spectrum, coronal temp. determ. 8−16407
- boundary conditions with mass conditions with mass loss 8−12209
- α Camelopardalis, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
- VY Canis Majoris, circumstellar disc struct. from OH masers very long baseline interferometry 8−36712
- VY Canis Majoris, circumstellar shell heterodyne interferometry 8−8000
- UW Canis Majoris, eclipsing binary, UV photometry and primary component shape and atmospheric struct. 8−40992
- α Canis Majoris (Sirius B), EUV obs., evidence against photospheric origin of 0.25 keV flux 8−49481
- η Carinae, Fe II dielectronic recomb. rel. to IR excess 8−32478
- η Carinae, spherical circumstellar dust shell model, radiative transfer 8−36577
- γ Cassiopeiae, circumstellar envelope model 8−40952
- U Cephei, mass transfer from light vars. outside primary eclipse, obs. and anal. 8−36636
- 19 Cephei, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
- VV Cephei, spectroscopic obs. during eclipse rel. to rot. ring-shaped envelope 8−45359
- Cepheids, model atmospheres rel. to intrinsic colours and physical props. 8−28696
- o Ceti (Mira), TiO-related dia. vars. rel. to atmosphere optical thickness 8−16429
- chemical composition peculiarities rel. to stellar evolution 8−12207
- chromospheres, semi-empirical models *(Italian)* 8−32447
- chromospheres of late type stars, temp. minima heights 8−20818
- chromospheres of late-type stars, acoustic energy generation 8−7986
- chromospheres of late-type stars, empirical estimates of radiative losses 8−40915
- circumstellar dust clouds, IR astronomy appls., review *(French)* 8−12352
- circumstellar shells, constraints on props. from thermal CO and SiO millimetre line emission obs. 8−49423
- classical novae, photospheric props. of optically thick winds 8−24516
- collapsed stars, accretion magnetosphere stability, polar cap dripping motion 8−4194
- contact binaries, transport processes in envelopes 8−4279
- convective energy flux in atm. with gravit. field changes *(Russian)* 8−49422
- cool C stars, $^{12}C/^{13}C$ ratio calc. 8−4205
- cool C stars, distances and radii rel. to mass ejection 8−49434
- cool DA white dwarf and subdwarf discrimination by spectroscopy and photometry 8−7999
- cool stars, model atmospheres rel. to neutron-ion spectral anomaly 8−7985

stellar atmospheres continued
cool stars, narrow-band polarisation obs. rel. to extended atmospheres characts. 8−16427
cool stars, TiO opacity effects on atm. struct. 8−40925
cool supergiant stars, near IR excesses 8−16406
S Coronae Austrinae, T Tauri star, red-displaced absorpt. features rel. to atmospheric motions 8−4221
Crab pulsar magnetosphere, relativistic particles injection into Crab Nebula 8−36678
V1057 Cygni, hydromag. model of peculiar activity *(Russian)* 8−49442
CH Cygni, red giant, mag. field interpretation for outburst 8−4250
V1500 Cygni (Nova 1975), shell radius and mass from wide-band IR photometry 8−36615
V1500 Cygni (Nova 1975), spatial and kinematic envelope model 8−36600
Cygnus X-1, accretion disc corona 8−16569
Cygnus X-3, cocooned X-ray binary pulsar model 8−36723
degenerate dwarf stars, props. of low temp. pure He surface layers 8−7994
HR Delphini (Nova 1967), physical props. and element abundances in nebular state 8−36573
HR Delphini (Nova 1967), premax. envelope conditions 8−24518
dust shell contracting around expanding supermassive star, Einstein's theory of gravit., black hole formation 8−12088
early B-type stars atmospheres, LTE line blanketing by UV lines using accurate damping consts. 8−16419
early Be stars, macroscopic radial atmospheric motions, UV obs. 8−8009
eclipsing binaries, linearised limb-darkening coeffs. for light curves anal. 8−49480
envelopes, competition between diffusion processes and hydrodynamical instabilities 8−12212
envelopes, light element decay 8−12214
expanding envelopes, form. and nature of carbonaceous material 8−24543
expanding envelopes, radiative forces 8−28659
finite extent, effect on colour indices 8−32450
flare stars, chromosphere theory, fast electrons hypothesis 8−24514
flare stars, theory of flare mechanism *(Russian)* 8−49444
β Geminorum (Pollux), chromosphere model 8−40931
HBV 475 (V1329 Cygni), electron densities from high-excitation emission lines 8−40955
HD 122563, metal-deficient giant, atm. ^{12}C/^{13}C ratio, mixing 8−4201
HD 153919 (3U 1700−37), forbidden Fe XIV emission rel. to extended atmosphere struct. 8−16571
HD 153919 (3U 1700-37), binary X-ray source, stellar wind effects on radial vels. meas. 8−49556
τ Herculis, B-type subgiant star, abundance anal. 8−16416
hydromagnetic flow, near oscillating porous limiting surface 8−12200
IRC+10216, late type C star, circumstellar envelope 8−4189
EV Lacertae, flare star, hot-plasma model of strongest flares 8−20838
late B horizontal branch stars, effects of CNO abundances on Balmer jump 8−4192
late type giants, departures from LTE ionization equilib. 8−4204
late-type chromospheres, shock heating theory observational tests 8−28663
late-type giant model atmospheres, limb darkening coeffs. 8−20821
late-type stars, FeH column densities 8−24507
late-type stars, sensitivity of internal struct. to surface boundary condition 8−12208
R Leonis, circumstellar shell heterodyne interferometry 8−8000
R Leonis, Mira variable, atmospheric struct. from CO and OH IR vibr.-rot. overtone bands 8−36574
R Leonis, TiO-related dia. vars. rel. to atmosphere optical thickness 8−16429
line photons, equality of mean escape probability and mean net radiative bracket 8−40815
long-period variables, H emission line form., models 8−28709
β Lyrae, nature of disc around secondary component 8−16458
M- and S-type stars, detect. of 7 mm SiO maser sources 8−4215
M-type dwarfs, radii from Barnes-Evans relation, effects of atmospheric opacity sources 8−7984
M-type giant stars, atm. physical conditions 8−24512
magnetic neutron stars, accretion flow, magnetospheric struct. and stability 8−4269
magnetospheric explosions, role of gravitational instabilities 8−28655
main-sequence stars, comparison of four-colour photometric obs. with evolutionary models 8−8007
massive stars, mass loss by stellar wind rel. to evolution 8−4197
microturbulence, spectral line broadening 8−45321
microturbulence behaviour with evolution 8−12206
models application to determ. of effective temp., bolometric corrections, Balmer discontinuity and distrib. functions *(Rumanian)* 8−36557
neutron star, rotating, with strong mag. field, electron cap shape 8−12265
neutron star magnetospheres, struct. rel. to fate of matter and ang. momentum in disc accretion 8−28715
neutron stars, radiative effects in supersonic accretion 8−40978
neutron stars, rotating, magnetic, accretion flow inside magnetosphere rel. to rot. rate 8−8037
neutron stars, X-ray refl. from surfaces 8−28716
non-LTE radiative transfer, asymptotic expansion for small ε 8−16287
non-LTE radiative transfer, rapidly convergent iterative method for Wiener-Hopf integral eqns. 8−12089
Nova Cephei 1971, chemical comp. and mass of ejected shell 8−12244
O- and B-type stars, ionization conditions in expanding envelopes 8−28671
O-type planetary nuclei, atmospheric props. 8−4206
O-type stars, vector space anal. of photometry rel. to atmospheric extension 8−49338
O-type stars, winds and coronae struct. from Hα line-profile anals. 8−40947
OB stars, newly formed, H_2O emission from circumstellar shells 8−12390
observational evidence relevant to stellar evolution 8−12205
Of stars, raxial vel. meas. 8−4226
Of-type stars, expanding envelope models rel. to H and He II spectra 8−40950
α Orionis, circumstellar shell heterodyne interferometry 8−8000
α Orionis (Betelgeuse), circumstellar gas shell spatial extent 8−28673

stellar atmospheres continued
partial ionisation zones, eqns. of state 8−28653
γ Pegasi, β Cephei star, dynamics of photosphere and shells 8−49447
SX Phoenicis, simultaneous photometric and polarimetric obs. rel. to shock wave 8−49451
planetary nebulae central stars, model atmospheres from UV radiation meas. 8−28679
pre-main-sequence A and F stars in NGC 2264, circumstellar dust rel. to IR excesses 8−32461
pulsar, radio emission mechanism model, by electron/positron-magnetosphere EM interaction 8−8036
pulsar atmospheres, beam-plasma interaction mechanism for radio emission 8−20847
pulsar magnetosphere, behaviour of mag. lines of rot. system 8−20848
pulsar magnetospheres, axisymmetric, finite inertia and resistivity effects 8−24521
pulsar magnetospheres, cosmic ray acceleration mechanisms *(Russian)* 8−16448
pulsar magnetospheres, plasma co-rotation 8−12258
pulsars, charge-separated magnetospheres props. 8−40981
pulsars, pulse width and period relations for various models 8−28714
pulsars, stellar wind rel. to radiation model 8−40979
pulsars, ultrarelativistic electron-positron beams rel. to radio emission 8−12257
pulsars force-free wind zone, stability 8−49468
ξ Puppis, 2 cm radio emission obs. rel. to stellar wind and mass loss rate 8−40969
radiative equilibrium mediumcool non-LTE models, effective temp. 10000-15000K, gravity 10^4 8−40921
radiative shock dynamics, H continua 8−40918
radiative transfer, coherent scattering 8−28667
radiative transfer, in lines of reson. multiplet 8−24460
radiative transfer, non-LTE line form. in presence of mag. field 8−7871
radiative transfer, Sobolev method generalisation for flows with nonlocal radiative coupling 8−28500
radiative transfer, Voigt function, partial differential equations 8−28507
radiative transfer in atmospheres with spherical symmetry, conservative Milne problem 8−49312
radiative transfer in spherically symmetric flows, comoving-frame eqn. soln. for multilevel atoms 8−28499
radio pulsars, rot. magnetised neutron star model with H or He envelope *(Russian)* 8−40982
red giants, absolute mass loss scale determ. from obs. of α Herculis 8−7997
red giants, mass loss from dynamically unstable envelopes 8−20824
HM Sagittae, eruptive BQ emission-line star, emitting nebula props. 8−20835
V356 Sagittarii, eclipsing binary, opaque circumstellar ring model 8−49477
α Scorpii, circumstellar shell heterodyne interferometry 8−8000
τ Scorpii, photospheric vel. fields 8−28672
Scorpius X-1, linear X-ray polarisation upper limit rel. to accretion-disc model 8−49557
self-gravitating rotating plasma, gyroviscosity effects 8−5860
FH Serpentis (Nova 1970), thick inhomogeneous shell model for radio emission 8−12236
stratification of elements in quiet atmosphere, diffusion process 8−12211
supernova expanding envelope, grain condensation 8−24520
supernovae, expanding gas shell external excitation rel. to outburst light 8−40976
supernovae envelopes, Thomson scattering and emission line profiles *(Russian)* 8−16445
ξ Tauri, apparent wavelength depend. of v sin i 8−12240
DL Tauri, Hα profile in T Tauri type star *(French)* 8−8003
ξ Tauri, high-resolution spectra of λ1920 and λ1720 features rel. to extended atmosphere 8−4236
α Tauri, semiempirical model photosphere from Fe I lines obs. 8−4202
α Tauri (Aldebaran), chromosphere model 8−40931
BU=28 Tauri (Pleione), envelope during shell phase, 1972-75 period 8−28707
T Tauri stars in Orion Nebula (M42), possible coronal X-ray emission obs. 8−28852
T Tauri type stars, hydromag. model of peculiar activity *(Russian)* 8−49442
temperatures and gravities, calibration of uvbyβ photometric system 8−4198
thermal-convective instability, finite Larmor radius effect 8−32438
two-dimensional radiative transfer, planar geometry theory 8−40810
W Ursae Majoris stars, role of photospheric convection 8−49478
γ^2 Velorum, 2 cm radio emission rel. to stellar wind and mass loss rate 8−40969
NQ Vulpeculae (1976), Hα emission line profiles rel. to primary envelope expansion vel. *(Russian)* 8−40971
white dwarfs, mixing processes and elements separation in envelopes 8−12222
white dwarfs, southern, model atmospheres calcs. rel. to Stromgren photometry 8−32456
wind driven circumstellar shells, struct. and evolution 8−16400
wind from early-type star, rel. to struct. in galactic nebula (206) 8−12326
X-ray binary stars, primary stars stellar winds rel. to evolution 8−12431
C stars, low-energy spallation rel. to ^{6}Li/^{7}Li ratio 8−40927
C^-, free-free transitions, continuous absorpt. estimation 8−9098
HgMn stars, diffusion and line asymmetries 8−40948
OH 26.5+0.6, late-type variable star, 2 to 40 micron spectrophotometry rel. to dust shell 8−24568
OH/IR stars, OH main lines masers inversion 8−28664
SiO circumstellar maser 8−16511
SiO, nonmaser emission lines from expanding envelopes around evolved stars 8−28650

stellar binaries *see binary stars*

stellar clusters and associations
see also globular star clusters
absolute magnitudes of stars in the same seven colour photometric box 8−28662

stellar clusters and associations continued
AFGL 437, optical and IR obs., young star cluster embedded in nebulosity 8−4394
ages of open clusters from comparison of four-colour photometry with evolutionary models 8−8007
Ara OB1, NGC 6193 and Ara R1, young southern complex, UBVRI obs. 8−16473
Canis Major OB1, luminous C star obs. 8−12312
Canis Major R1 association, supernova induced star formation 8−8063
Cepheus OB3 association, star form. in mol. cloud complex 8−28750
Cepheus OB3 association, supernova-induced star form. 8−12306
cluster membership probabilities, problems in interpretation 8−28736
Collinder 132a, b, UBVβ photometry of two sparse open clusters 8−32540
Collinder 140, photoelectric UBV photometry, age and distance 8−49489
core collapse of spherical cluster, approx. theory 8−49486
Cygnus OB2 association, interstellar C_2 detect. in spectrum of star (No.12) 8−12332
dynamical evolution, effects of time-varying gravity 8−24459
dynamics, purely discontinuous random processes in field of irregular forces *(Polish)* 8−16465
dynamics of cluster binaries 8−12295
ESO/Uppsala survey of ESO(B) Atlas of southern sky, fifth list containing 2395 objects 8−20653
Fokker-Planck eqn. numerical integration, stellar dynamics in fixed inhomogeneous gravit. background 8−32526
galactic centre, IR obs. of compact clusters 8−24551
galactic density wave, molecular clouds and star formation 8−8088
Gurzadyan UV stellar group in Auriga, UBV and uvby photometry 8−45373
Hyades, BVRI photometry of new possible cluster members 8−32533
Hyades, distance rel. to extragalactic distance scale 8−8121
isolated clusters, star escape, Fokker-Planck eqn. generalization *(Polish)* 8−36645
isolated star clusters statistical theory of stellar escapes *(Polish)* 8−16466
late-type stars in stellar groups, intermediate band photometry 8−4300
M25, He abundance rel. to stellar pulsation 8−28690
M25 (IC 4725), open cluster, stars four colour and Hβ photometry 8−8067
M34, open cluster, spectral types of brightest stars 8−12311
M34, open cluster, UBV photoelectric photometry 8−12307
M67, gap in Hertzsprung-Russell diagram, comparison with evolutionary models 8−24530
M67, open cluster, upper limit to mass and vel. dispersion 8−28735
M6, open cluster, supergiants in field and interstellar matter towards galactic centre 8−16405
massive star formation in open clusters 8−28660
material test point, statistics of distant perturbs. 8−28494
Melotte 66, very old open cluster, BV photometry rel. to broad giant branch 8−32538
moving groups, calibration of intermediate band photometric indices for late-type stars 8−49424
N-body calculations, statistical results validity 8−12084
NGC 129, He abundance rel. to stellar pulsation 8−28690
NGC 188, open cluster, anomalous giant branch 8−41001
NGC 1960, radial vels. of early type stars 8−7990
NGC 2169, open cluster, spectral types of brightest stars 8−12310
NGC 2169, photometric and spectroscopic study of open cluster 8−45371
NGC 2175, galactic cluster, obs. of dense H II condensation 8−20883
NGC 2244, young open cluster, uvby Hβ photometry, colour excess, distance, age 8−32532
NGC 2264, nature of IR excesses in pre-main-sequence A and F stars 8−32461
NGC 2264, nature of member star W92, possible gravit. contracting binary system 8−32462
NGC 2264, open cluster, CH radio obs. 8−28751
NGC 2264, Walker No.67 as candidate for strong interstellar circular polarisation 8−12223
NGC 2362, very young open star cluster, photographic star counts *(German)* 8−16472
NGC 2439 association, photometric and spectroscopic study 8−16470
NGC 2516, spectroscopic binaries, radial vels. from objective prism plates *(German)* 8−45360
NGC 2527, galactic cluster, UBV photometry 8−16479
NGC 3293, galactic cluster, photometry of β Canis Majoris stars 8−12243
NGC 3603, luminous young cluster, UBV photometry 8−36643
NGC 4833, southern globular cluster, BV photometry of variable stars 8−4304
NGC 6235, globular cluster, obs. of variable stars 8−4305
NGC 6250, young southern cluster, extinction law and high R-values in dust clouds 8−16490
NGC 6383, young open cluster, central core stars obs. 8−41003
NGC 6649, UBV photometry of double-mode Cepheid V367 Scuti in open cluster 8−49460
NGC 7654 (M52), open cluster, stars four colour and Hβ photometry 8−8067
OB association in direction of long period Cepheid VZ Puppis, UBV β photometry 8−45339
old open clusters, theoretical isochrones with decreasing gravit. const., Dirac's multiplicative cosmology 8−16586
open, places of form 8−8064
open cluster distrib. in Galactic plane *(Russian)* 8−32541
open clusters, binary stars frequency and mass ratios, stellar rot. effects 8−36639
open clusters, late evolutionary stages *(Russian)* 8−49485
open clusters, spectroscopic differences between solar-type stars and Sun 8−36560
open clusters, spectroscopic obs., search for Ap stars 8−45367
open clusters in LMC, possibly assoc. C stars 8−49428
open clusters membership determ., maximum-likelihood method for proper motions 8−16471
open clusters with circular orbits, galactic rot. calc. 8−8068
ρ Ophiuchi dark cloud complex, embedded cluster, anisotropic scatt. and formaldehyde lifetimes 8−8080
Orion, contraction of star cluster-molecular cloud complex 8−12313
Orion association stars, five-channel photometric obs. 8−16398
Orion OB1 association, stellar spectral types 8−32539

stellar clusters and associations continued
Orion region, radiocontinuum struct. of associations 8−49549
λ Orionis association, photometric props. of young cluster 8−16478
h and χ Persei, B2 to G0 supergiant stars small amplitude light vars. 8−32469
Perseus II complex, Persei direction, Copernicus obs. 8−4301
Pleiades, interstellar dust and gas obs. near 20 Tauri (Maia) 8−28734
Pleiades, possible cyclic recurrence of flare activity in flare stars *(Russian)* 8−49443
Pleiades reflection nebulosity, model for filamentary struct. 8−8082
Pleiades stars, lunar occultation obs. 8−7982
Population I stars He abundance rel. to stellar pulsation 8−28690
relativistic star clusters, unphysical distrib. functions 8−8066
ξ Sculptoris (Blanco 1) open cluster, multicolour photometry 8−45372
spherical stellar systems, analytical models 8−12302
spherical stellar systems, marginal mode to second order *(French)* 8−32527
stochastic tidal disruption 8−12303
Stock 16, Basel 18, 19, Cr 272 and NGC 5168, open clusters, RGU photometry 8−16474
Tr 18, open cluster, location of supernova remnant G291.0−0.1 8−20875
Trumpler 27, obs. of possible long-period Cepheid Tr 27-102 (HD 159378) 8−45336
velocity dispersions, Doppler broadening parameters meas. technique without spectrograph 8−20646
VI Cygni (Cygnus OB2) association, interstellar λ4430 band obs. 8−32555

stellar composition
see also element origin; solar composition
Ap stars, heavy element abundances from Copernicus UV data, reference stars α Lyrae and α Canis Majoris A 8−28688
Ap stars, review of obs. and possible nucl. reactions *(Russian)* 8−20843
atmospheric chemical composition peculiarities rel. to stellar evolution 8−12207
α Bootis (Arcturus), comp. and atmospheric parameters 8−20826
α Bootis (Arcturus), O and C abundances *(Russian)* 8−16420
α Camelopardalis, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
α Canis Majoris (Sirius), rot. vel. and Ba abundance 8−12218
T Cephei, Me variable, Tc discovery 8−32483
19 Cephei, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
T Ceti, semiregular variable, Tc I absorpt. line obs. 8−28689
chemically peculiar (CP) stars formation, planetesimal impact hypothesis 8−20834
CoD−38°10980, white dwarf, gravit. redshift mass-radius relation and interior comp. 8−24511
cool C stars, $^{12}C/^{13}C$ ratio calc. 8−4205
cool giant stars, obs. and anal. of CO at 5 μm 8−36569
R Cygni, pure S star, new molecules identification 8−28700
Delphini 1967 (HR Delphini), physical conditions in envelope at max. light 8−24519
HR Delphini (Nova 1967), physical props. and element abundances in nebular state 8−36573
HR Delphini (Nova 1967), premax. envelope conditions 8−24518
eclipsing binaries, late-type, mass-luminosity and radius relations, chem. composition 8−28728
element abundance, atomic and mol. f-values 8−20792
F- and G-type dwarf stars, Mn/Fe abundance ratios 8−45325
giant stars, G- and K-type, CNO abundances 8−7993
globular clusters in Galaxy, Fornax and M31, integrated colours and metallicity 8−16469
HD 101065, Przybylski's star, element identification 8−4233
HD 122563, metal-deficient giant, atm. $^{12}C/^{13}C$ ratio, mixing 8−4201
HD 192913, Si Ap-star, lanthanide abundances, spectral identifications 8−45345
HD 215038, Ap star, line identification list 8−32484
HD 91805, spectrum anal. rel. to nature of Bidelman-MacConnell weak G-band stars 8−49432
HD 94028, subdwarf, Mn abundance and Mn/Fe ratio 8−45328
Henize 2-38, symbiotic star, steam and CO absorpt. obs. 8−40970
τ Herculis, B-type subgiant star, abundance anal. 8−16416
OP Herculis, irregular variable, Tc I absorpt. lines obs. 8−28689
high-luminosity thermally pulsing stars, surface comp. rel. to interstellar medium element enrichment 8−40917
AR Lacertae, double-subgiant eclipsing binary, spectra, abundances 8−8044
late-type stars, H_2 abundance rel. to acoustic energy generation and chromospheres 8−7986
late-type supergiants, C, N and O abundances for G and K Ib stars 8−24509
LDS 678B (EG 131), white dwarf, spectrum and He/H ratio 8−40946
LP 701-29, heavily blanketed white dwarf, spectrum synthesis and metal abundance 8−32455
M22, globular cluster, membership, spectra and comps. 8−32537
M31, M32 nuclei, luminosity-sensitive spectral features rel. to metallicities 8−49431
M-type dwarfs and S-type stars, FeH bands identification in spectra 8−7952
marginal metallic line (Am) stars, metallicism and pulsation 8−49448
NGC 188, open cluster, He and CNO abundances rel. to anomalous giant branch 8−41001
NGC 2209, LMC cluster, metal abundance 8−8122
Nova Cephei 1971, chemical comp. of ejecta 8−12244
planetary nebulae, spectrophotometry and chemical abundances 8−36663
rotating stars, chemical mixing and ang. momentum redistrib. rel. to evolution 8−36553
FG Sagittae, Fe-peak and s-process elements abundance *(Russian)* 8−12253
slow nova, envelope CNO abundance rel. to hydrodynamics 8−40954
SN 1972e in NGC 5253, Type I, spectrum after 365 and 435 days 8−4255
solar neighbourhood crossing times effect on observed stellar age and metallicity distribs. 8−12362
solar-type stars, metal abundances, microturbulence, spectroscopic data 8−40943

stellar composition continued
- southern peculiar A-type stars, spectra and atmospheric anals. 8−24517
- subdwarfs, old disc population, comp. from CaH and TiO band strengths 8−40930
- ξ Tauri, high-resolution spectra and identification of λ1920 and λ1720 features 8−4236
- RR Telescopii, symbiotic star, steam and CO absorpt. obs. 8−40970
- UV5, in globular cluster NGC 1851, He abundance determ. 8−49441
- Wolf-Rayet stars, He, C and N abundances from UV obs. 8−40965
- young stars, metallicity rel. to extragalactic distance scale determ. 8−8121
- [Fe/H] abundances, rel. to blanketing parameter Δm_2 8−36555
- Ba stars, spectroscopic, radial vel. and photometric obs. 8−12226
- C and S stars, mixing between burned core material and surface layers 8−12213
- C stars, absorption by SiC and IR excess 8−16413
- Fe/H abundances of extreme Population II stars in globular and dwarf galaxies 8−40939
- Fe-O 2 $M_\odot$ rotating star, gravitational collapse *(Russian)* 8−4199
- FeH in stellar atmospheres, column density calcs. 8−24507
- He abundance rel. to pulsation 8−28690
- Li abundances for G- and K-type supergiants 8−28676
- ^{6}Li/^{7}Li ratio in C stars, low-energy spallation model 8−40927
- Mg index in old galaxy populations 8−41033
- Tc stars, search for TcO spectral bands 8−40935
- U stars and related objects, spectroscopic study 8−49465

stellar dimensions
- atmospheres, effect of finite extent on colour indices and temp. and radius determ. 8−32450
- LY Aurigae, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
- α Aurigae (Capella) AB, angular diams. by two telescope interferometry 8−8055
- binary systems, stars distortion rel. to gravit. radiation effect on evolution and spins 8−12292
- UW Canis Majoris, eclipsing binary, UV photometry and primary component shape and atmospheric struct. 8−40992
- Cepheids, classical, radii and temps. 8−49446
- o Ceti (Mira), strong TiO-related dia. vars. 8−16429
- classical Cepheids, check on light and radial vel. curves phase shift for distance determ. 8−16439
- close binary systems, mass-radius relation 8−12290
- CoD−38°10980, white dwarf, gravit. redshift rel. to mass-radius relation 8−24511
- cool C stars, nearby, distances, luminosities and radii 8−49434
- diameters from photoelec. obs. of lunar occultations 8−7866
- CM Draconis, spotted dM4e eclipsing binary flare star, absolute dimensions and masses 8−12289
- early type companions of X-ray sources, stellar parameters 8−36564
- eclipsing variable stars, distortion and light curves photometric perturbations, Fourier anal. 8−12291
- AS Eridani, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
- flare stars, physical characts. 8−12242
- HD 87892B, nucleus of NGC 3132, luminosity and radius 8−20859
- Jeans spheroids with toroidal mag. fields, equilib. and st bility 8−45319
- R Leonis, strong TiO-related dia. vars. 8−16429
- υ Leonis (SAO 138298), angular diameter from lunar occultation obs. 8−45332
- neutron stars, radius from superdense neutron matter theory 8−45349
- α Orionis, ang. diameter, speckle interferometry *(Russian)* 8−40922
- AW Pegasi, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
- planetary nebulae central stars, temps., luminosities and radii from UV radiation meas. 8−28679
- rigidly rotating star, influence of nonsphericity and radiation press. on moment of inertia 8−28658
- FG Sagittae, photometric radius and pulsation mass 8−36576
- semi-detached eclipsing binaries, revised photometric masses, radii and luminosities 8−20858
- speckle interferometry for stellar diameter meas. *(Russian)* 8−40922
- λ Tauri, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
- 3U 1538−52, binary X-ray pulsar, mass and radius of companion 8−16573
- white dwarfs, virial theorem, energy content and mass-radius relation 8−45327
- OH/IR Type II sources, radial diameters from 1612 MHz OH line obs. 8−36713

stellar evolution
- advanced evolution of massive stars, Si burning 8−28652
- atmospheric chemical composition peculiarities rel. to stellar evolution 8−12207
- atmospheric physical characts., observational evidence relevant to stellar evolution 8−12205
- binary systems, effect of gravit. radiation on evolution and spins 8−12292
- bipolar nebulae, photometry and spectra rel. to evolutionary status 8−41026
- Brookhaven experiment sensitivity to solar neutrinos, collapsing stars and cosmic neutrinos, ^{37}Cl neutrino absorpt. cross-sections 8−4929
- Canis Major R1 association, supernova induced star formation 8−8063
- VY Canis Majoris, mass, luminosity and evolutionary state from relation to mol. cloud complex 8−24536
- Cassiopeia A supernova, progenitor, consistent evolutionary picture involving supergiant mass loss 8−36623
- α Centauri triple system 8−45356
- Cepheids, freq.-period distribs. in Local Group galaxies 8−28694
- close binaries formation, fission hypothesis 8−32334
- CoD −35°C 10525, bright YY Orionis star, spectrum and evolutionary age 8−36566
- collapse and transport supernovae with neutrino degeneracy 8−40977
- collapsed stars, mass loss during form. rel. to slow rot. 8−49426
- collapsing core, shock struct. and neutrino radiation, rel. to supernova explosions 8−49427
- compact far IR source in W31 region assoc. with G10.6−0.4, early stage of stellar evolution 8−49504
- contact binaries, transport processes in envelopes 8−4279

stellar evolution continued
- cool C stars, nearby, distances and evolutionary status 8−49434
- cool giant stars, nuclear processes and mixing from obs. and anal. of CO at 5 μm 8−36569
- core He flash and C and CH star origins 8−4190
- CRL 3099, highly evolved C star, IR photometry and spectrum 8−49436
- CH Cygni, red giant, He shell flash rel. to mag. field interpretation for outburst 8−4250
- dark nebulae and globules, star form. regions 8−12347
- degenerate C core, thermonuclear explosion problem 8−28669
- degenerate stars, photometry and spectra rel. to evolution 8−12224
- double shell source stars, evolution through second loop in Hertzsprung-Russell diagram 8−36556
- dust-embedded protostar in Sharpless 140, compact source, strong far IR emission obs. 8−36649
- envelopes, light element decay 8−12214
- explosions, Rayleigh-Taylor instability 8−36551
- extremely metal-poor stars, theoretical evolution 8−28677
- flare stars in Pleiades, possible cyclic recurrence of flare activity *(Russian)* 8−49443
- formation, brightening of star associated with variable cometary nebula 8−4333
- formation, collapse dynamics and models 8−32566
- formation, early stages 8−32452
- formation, IAU Symposium 75 (Geneva, 1976 September 6-10) 8−32561
- formation, in shock-compressed layers 8−40919
- formation, IR obs., review 8−7988
- formation, radio obs. 8−32565
- formation, theoretical processes 8−32453
- formation and evolution, role of UV obs. *(Italian)* 8−32446
- formation and large-scale phenomena in Galaxy 8−32583
- formation by spherical gravit. collapse of interstellar clouds, unsteady hydrodynamics 8−45212
- formation from hot matter with primordial chemical comp., role of H_2^+ mol. ion *(Russian)* 8−40924
- formation from rotating gas clouds, gravit. axisymm. adiabatic collapse 8−7875
- formation in blue galaxies, theory 8−12356
- formation in Cepheus OB3 association induced by supernova 8−12306
- formation in Cepheus OB3 mol. cloud complex 8−28750
- formation in mol. clouds assoc. with Herbig Be/Ae stars, LkHα 198, BD+40°4124, NGC 7129 8−32542
- formation rate in case of irregular galaxy NGC 6822, correl. with surface density 8−20889
- formation rate in galaxies and extragalactic background light 8−36687
- formation rates and IR radiation in galaxies 8−49526
- formation regions, IR obs. 8−32564
- galactic density wave, molecular clouds and star formation 8−8088
- giants of late-type, molecular envelopes and planetary nebula origin 8−40940
- gravitational collapse, ellipsoidal models and gravit. radiation 8−45317
- gravitational collapse, hydrodynamics 8−45318
- gravitational collapse of core of massive star, neutrino trapping 8−32437
- gravitational radiation detection from stellar collapse 8−24707
- gravitationally unstable isothermal spheres, collapse, star form. appl. 8−32332
- HD 49798, strange composite sdO star, evolution and nature of companion 8−49435
- Herbig-Haro objects, shock wave interpretation of individual condensations 8−45324
- Herbig-Haro objects in Gum Nebula, spectrophotometry 8−36565
- α¹ Herculis, absolute magnitude, evolutionary state and mass loss 8−7997
- Hertzsprung-Russell diagram, discovery, meaning, development appl. 8−45322
- hot neutron star formation, neutrino radiation rel. to envelope outburst problem. 8−45350
- interstellar cold gas clouds with mag. field gravit. contraction, star form. 8−8102
- late-type supergiants, evolution rel. to CNO abundances 8−24509
- δ Librae, Algol-type eclipsing binary, main-sequence primary and evolved secondary 8−49475
- long-period variables, mass loss and circumnebular shells form. 8−8014
- M67, open cluster, gap in Hertzsprung-Russell diagram, comparison with evolutionary models 8−24530
- magnetic white dwarf in binary system, collapse, mass ejection, nova mechanism 8−32485
- main-sequence stars, comparison of four-colour photometric obs. with evolutionary models 8−8007
- mass loss in stars of moderate mass by stellar wind 8−12210
- massive close binaries evolution, final considerations for conservative case 8−49479
- massive star formation in open clusters 8−28660
- massive stars, bulk yields of nucleosynthesis 8−36552
- massive stars, evolution with mass loss by stellar wind 8−4197
- massive stars (20-100 $M_\odot$) with mass loss 8−36554
- metallic line (Am) stars, evolution and pulsation rel. to metallicism 8−49448
- microturbulence behaviour with evolution 8−12206
- Mira variables rel. to Wood-Cahn model of late stellar evolution 8−45333
- neutron stars, neutrino cooling in pion-condensed phase 8−45351
- neutron stars, role of neutrinos and antineutrinos in formation and cooling 8−8038
- neutron stars formation, neutrinos and gravit. waves emission 8−12266
- neutron stars formation rate in Galaxy, upper limit 8−49471
- NGC 188, open cluster, stellar evolution and mass loss rel. to anomalous giant branch 8−41001
- NGC 2209, LMC cluster, colour-magnitude diagram rel. to metal abundance 8−8122
- NGC 6752, blue horizontal branch stars evolutionary state 8−49488
- nuclear reactions during late evolutionary phases, possible non-thermal processes 8−20816
- nucleosynthesis, heavy elements origin and evolution 8−32619
- OB stars formation, obs. of assoc. H_2O maser sources 8−12390
- old clusters, theoretical isochrones with decreasing gravit. const., Dirac's multiplicative cosmology 8−16586

stellar evolution continued
open, places of form 8–8064
open clusters, late evolutionary stages *(Russian)* 8–49485
Orion H_2O masers, matter outflow in star formation last stages 8–8091
FU Orionis type stars, eruptive phenomena in early stellar evolution 8–12233
planetary nebulae 8–32560
planetary nebulae central stars, evolution 8–12325
planetary nebulae ejection by He shell flashes, appl. to planetary distance scale 8–24540
planetary nebulae in M31, form. rate rel. to interstellar matter distrib. 8–28737
Population I 15 $M_\odot$ star, effect of mass loss and semiconvection 8–45320
pulsars, space velocities rel. to evolution 8–4264
pulsars galactic distribution and evolution 8–4260
R-type C stars, origin, H mixing during He flicker 8–4223
radio emission from immediate postoutburst supernovae, origin and evolution 8–40973
red giant stellar wind/circumstellar nebula interaction model of planetary nebula origin 8–36674
red giants, mass loss from dynamically unstable envelopes 8–20824
rotating $2M_\odot$ Fe-O star, gravitational collapse *(Russian)* 8–4199
rotating stars, 7 and 10 $M_\odot$ stars evolution with time-depend. redistrib. of ang. momentum 8–36553
runaway stars, as witnesses to supernova explosions 8–32448
HM Sagittae, eruptive BQ forbidden line star, evolution to planetary nebula 8–20835
V356 Sagittarii, eclipsing binary, model and evolutionary stage 8–49477
V 701 Scorpii, early type eclipsing binary, contact props. 8–8051
solar neighbourhood crossing times effect on observed stellar age and metallicity distribs. 8–12362
star formation in H II region NGC 281, evidence from CO and H_2O obs. 8–28740
star formation rates, in normal and peculiar galaxies 8–24550
stars in thermal imbalance, vibrational stability 8–40916
Sun, evolutionary luminosity increase rel. to Earth climate and biosphere 8–32435
Sun, implications for Earth's early atmosphere 8–36285
supermassive star, expanding, and contracting dust shell, Einstein's theory of gravit.; black hole formation 8–12088
DR Tauri, highly variable young star, spectrum, photometry and evolutionary stage 8–20829
T Tauri stars and Herbig Ae-Be stars, broad-band IR photometry 8–4217
thermal pulse and interpulse props. of intermediate-mass models with C-O cores 8–12199
thermal pulses in high-luminosity stars, effects on surface comp. and interstellar medium enrichment 8–40917
thermonuclear explosion of degenerate C core, numerical calcs. 8–36558
W92, possible gravit. contracting binary system in NGC 2264 young cluster 8–32462
weak G-band stras, nature and evolution from spectrum anal. of (HD 91805) 8–49432
white dwarfs, birth rate rel. to planetary nebulae distance scale 8–20867
white dwarfs, H burning shells, thermal stability 8–4212
white dwarfs, mixing processes and elements separation in envelopes 8–12222
white dwarfs formation rate in stellar systems 8–28674
white holes, nonexistence, anal. of star bursting Schwarzschild barrier 8–32506
Wolf-Rayet stars, UV obs. rel. to evolutionary status 8–40965
X-ray binaries, evolutionary history 8–12431
X-ray binaries, Roche lobe overflow and evolution 8–32601
Ba stars, Ba line strengths rel. to ages and luminosities 8–12226
CNO burning and zero age horizontal branch stars location 8–12201
Fe-O stars with masses of $2M_\odot$ and 10 $M_\odot$, gravit. collapse 8–20815
He stars, evolution using Carson's radiative opacities 8–4191

stellar interiors *see stellar internal processes*

stellar internal processes
see also solar interior; stellar evolution
close binaries, angular vel. distrib. in one component with fast rotating core *(Russian)* 8–28648
collapsing core, shock struct. and neutrino radiation, rel. to supernova explosions 8–49427
contact binaries, objection to model of Shu, Lubow and Anderson 8–28720
cool giant stars, nuclear processes and mixing from obs. and anal. of CO at 5 μm 8–36569
core He burning in extremely metal-poor stars, theory 8–28677
core He flash and C and CH star origins 8–4190
CH Cygni, red giant, mag. field generation rel. to symbiotic outburst 8–4250
degenerate C core, thermonuclear explosion problem 8–28669
double shell source stars, evolution through second loop in Hertzsprung-Russell diagram 8–36556
BC Draconis, radial pulsation period indicating Population II Cepheid 8–32491
explosions in radiating stars, similarity solns. 8–32443
explosive C burning, ^{26}Al production 8–20814
g- and p-modes of non-adiabatic self-gravitating fluid, perturbational-variational expansion 8–32337
galactic ^{4}He and heavy elements enrichment by stellar nucleosynthesis 8–28657
gravitational collapse, hydrodynamics 8–45318
gravitational collapse of core of massive star, neutrino trapping 8–32437
hot degenerate stars in steady-state accretion, H burning shells thermal stability 8–40929
late-type stars, ang. momentum loss rel. to mag. dynamo 8–45331
late-type stars, sensitivity of internal struct. to surface boundary condition 8–12208
RR Lyrae stars, convective steady-state models, theoretical red edge of instability strip 8–4229
magnetic stars, perpendicular rotator model with meridional circulation 8–16438

stellar internal processes continued
massive stars, bulk yields of nucleosynthesis 8–36552
meridional circulation, in surface layers of rot. stars 8–20820
mixing between burned core material and surface layers 8–12213
neutrino processes, reaction rates 8–45215
neutron capture nucleosynthesis in He burning cores of massive stars 8–4195
neutron star interiors, presence of force-free mag. fields 8–40983
neutron star matter, abnormal phase 8–20849
neutron stars, β-decay of π condensates as cooling mechanism 8–4271
neutron stars, accreting, nuclear burning and X-ray bursts 8–36724
neutron stars, eqn. of state for dense hadronic matter, asymptotic freedom 8–36627
neutron stars, luminosity enhancement following X-ray bursts 8–32502
neutron stars, thermonuclear flahses model for X-ray bursts 8–12417
neutron stars ν transport in π condensed matter 8–4270
normal modes of self-gravitating fluids in perturbed configurations, perturbational-variation procedure 8–32336
Nova Cephei 1971, CNO thermonuclear runaway rel. to ejecta chemical comp. 8–12244
nuclear reactions, possible non-thermal processes 8–20816
nucleosynthesis, element abundances evaluation in long neutron capture chains 8–45216
nucleosynthesis, heavy elements origin and evolution 8–32619
nucleosynthesis, review of recent exptl. research 8–4100
planetary nebulae central stars, CNO processing rel. to nebulae chemical abundances 8–36663
pycnonuclear reactions, and pair correl. function in dense plasma 8–32445
R-type C stars, origin, H mixing during He flicker 8–4223
red giants, mass loss from dynamically unstable envelopes 8–20824
rotating stars, 7 and 10 $M_\odot$ stars evolution with time-depend. redistrib. of ang. momentum 8–36553
s-process, pulsed neutron flux effects 8–20812
s-process isotopes, nonthermal isomeric branching, importance of long-lived states 8–7983
s-process neutron capture by ^{208}Pb at stellar temps. 8–4196
s-process nucleosynthesis, thermally pulsing stars 8–4193
s-process nucleosynthesis during thermal pulses of He shell burning 8–28668
s-process studies, exact soln. for unbranched network 8–28649
self-gravitating gas, self-similar adiabatic movements *(Russian)* 8–32451
slow nova, evolution of model with $Z=0.03$ envelope from pre-explosion to extinction 8–32468
slow nova, hydrodynamic study of outburst 8–40954
superdense matter, hydrodynamic model, nonlinear pion+pion chiral Lagrangian, e^++e^- and p+p collisions 8–32966
superdense matter eqn. of state, nuclear size correction to relativistic Thomas-Fermi model 8–29413
supernovae, neutrino transport in collapsing stellar core model 8–8029
supernovae, Type I, radioactive excitation source rel. to interpretation of spectra 8–49467
thermal pulse and interpulse props. of intermediate-mass models with C-O cores 8–12199
thermal pulses in high-luminosity stars, effects on surface comp. and interstellar medium enrichment 8–40917
thermonuclear explosion of degenerate C core, numerical calcs. 8–36558
thermonuclear reaction rate enhancement due to strong screening 8–13186
turbulent transport coefficient for rot. fluid 8–36452
weak G-band stars, origin through CN process and meridional mixing 8–49432
white dwarfs, H burning shells, thermal stability 8–4212
white dwarfs, thermonuclear runaways 8–40937
white dwarfs, virial theorem, energy content and mass-radius relation 8–45327
C-O cores of intermediate mass stars, Urca neutrino loss rates 8–20813
CNO burning and zero age horizontal branch stars location 8–12201
CNO tri-cycle, nucleosynthesis rel. to galactic obs. of CNO isotopes 8–4356
Fe-O stars with masses of $2M_\odot$ and 10 $M_\odot$, gravit. collapse 8–20815
H burning, intermediate nuclei behaviour 8–45218
He shell flashes, rel. to planetary nebulae ejection and planetary distance scale 8–24540
He star evolution using Carson's radiative opacities 8–4191
^{6}Li(d,n)^{7}Be, low energy cross section, 100-180 keV 8–4949
^{20}Ne, form. in ^{19}F(p,γ) reaction, 668 keV, γ-ray transitions to ground state, rel. to stellar nucleosynthesis 8–17191
^{22}Ne neutron source effects on Mg and Ne abundances in red giants 8–49430
Si burning, during advanced evolution of massive stars 8–28652

stellar light curves *see stellar photometry*

stellar magnetism
see also solar magnetism
A-type stars, mag. field generation by Coriolis EMF 8–8027
Ap stars, orientation of mag. and rot. axes, decentred mag. dipole theory 8–4241
Ap stars, review of obs. and possible nucl. reactions *(Russian)* 8–20843
Ap-stars, magnetic intensification of spectral lines *(Russian)* 8–4254
atmospheres, non-LTE line form. in presence of mag. field 8–7871
53 Camelopardalis, mag. field meas. using circular polarization analyzer *(Russian)* 8–40923
α^2 Canum Venaticorum, mag. Ap star high-resolution polarisation obs. inside spectral line 8–40951
α^2 Canum Venaticorum, mag. field meas. using circular polarization analyzer *(Russian)* 8–40923
collapsed stars, accretion magnetosphere stability, polar cap dripping motion 8–4194
collapsed stars, mag. braking rel. to slow rot. 8–49426
conducting sphere rotating in time independ. homogeneous mag. field, unipolar induction *(German)* 8–17836
corona, open mag. structures 8–4158
β Coronae Borealis, Ap star, high resolution polarization obs. 8–8011
β Coronae Borealis, mag. field meas. using circular polarization analyzer *(Russian)* 8–40923

stellar magnetism continued
Crab pulsar magnetosphere, relativistic particles injection into Crab Nebula 8−36678
CH Cygni, red giant, mag. field interpretation for outburst 8−4250
degenerate stars, force-free mag. fields stability 8−49425
BY Draconis syndrome among dMe stars, rotating spotted star model 8−16428
dwarf nova brightening, magnetic fields and outburst phenomena *(Afrikaans)* 8−32481
electric field, around rot. mag. dipole 8−45141
electrically conducting rot. sphere behaviour in time-independ. homogeneous external mag. field 8−49309
GD 90, magnetic white dwarf, circular polarisation obs. 8−16409
Hercules X-1, struct. and higher harmonics of cyclotron lines in strong mag. field 8−20912
Hercules X-1, X-ray lines and magnetic field 8−24574
AM Herculis objects, accreting mag. white dwarf model for linear polarisation 8−16460
Jeans spheroids with toroidal mag. fields, equilib. and stability 8−45319
EV Lacertae, flare star, mag. fields in flares hot-plasma model 8−20838
late-type stars, ang. momentum loss rel. to mag. dynamo 8−45331
magnetic white dwarfs, line and continuum spectra 8−4207
model for magnetic stars, equatorially symmetric rotator 8−8020
neutron star, rotating, with strong mag. field, electron cap shape 8−12265
neutron star interiors, presence of force-free mag. fields 8−40983
neutron stars, accretion flow, magnetospheric struct. and stability 8−4269
neutron stars, mag. fields rel. to X-ray refl. from surface 8−28716
neutron stars, magnetospheres rel. to fate of matter and ang. momentum in disc accretion 8−28715
neutron stars, rotating, magnetic, accretion flow inside magnetosphere rel. to rot. rate 8−8037
neutron stars, X-ray emission lines Zeeman splitting by mag. field 8−4275
non-spherical magnetic polytropes struct., appl. of smoothed particle hydrodynamics theory 8−12203
nonlinear magnetic dynamos, bifurcation of steady dynamos from oscillating dynamos 8−49306
perpendicular rotator model with meridional circulation, surface and internal mag. fluxes 8−16438
polytrope n=3, poloidal mag. field effect on linear and adiabatic oscills. 8−24505
pulsar magnetosphere, behaviour of mag. lines of rot. system 8−20848
pulsar magnetospheres, plasma co-rotation 8−12258
pulsars, charge-separated magnetospheres props. 8−40981
pulsars, mag. fields rel. to radio emission mechanism 8−20847
pulsars, single mag. pole model for main pulse and interpulse emission 8−16449
pulsars force-free wind zone, stability 8−49468
pulsating star, hydromagnetic flow near oscillating porous limiting surface with transverse mag. field 8−12200
radio pulsars, rot. magnetised neutron star model with H or He envelope *(Russian)* 8−40982
W Sagittarii, magnetic field from Zeeman meas. 8−4240
AN Ursae Majoris, nova-like variable, circular polarisation rel. to white dwarf mag. field 8−8018
white dwarf in binary system, collapse, mass ejection, nova mechanism 8−32485
white dwarfs, equilib. configs. with frozen-in mag. field 8−8008
white dwarfs, rotating magnetic, equilib. struct. 8−49433
X-ray binaries and pulsars, effect of vacuum birefringence on polarisation 8−4408
Zeeman and Doppler shifts in spectrograms, statistical determ. technique 8−36467
H_b line profiles for white dwarfs with dipole and quadrupole magnetic fields 8−8004

stellar mass
LY Aurigae, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
binary stars in open clusters, rot. effects on determ. of freq. and mass ratio 8−36639
α Bootis (Arcturus), atmospheric parameters and mass 8−20826
VY Canis Majoris, mass, luminosity and evolutionary state from relation to mol. cloud complex 8−24536
AZ Cassiopeiae, interacting eclipsing binary, mass loss of cool supergiant component 8−32522
Cepheids, mass calc. methods, anomalies 8−49466
Ci 182354 unseen companion, astrometric anal. from 61 cm Sproul refractor plates 8−16459
close binary stars, masses and mass ratios rel. to evolution 8−49479
close binary systems, mass-radius relation 8−12290
CoD−38°10980, white dwarf, gravit. redshift rel. to mass-radius relation 8−24511
P Cygni, mass loss, Balmer line profiles 8−45334
CM Draconis, spotted dM4e eclipsing binary flare star, absolute dimensions and masses 8−12289
early type companions of X-ray sources, stellar parameters 8−36564
AS Eridani, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
evolution of massive stars (20-100 $M_{\odot}$) with mass loss 8−36554
hot main-sequence, eclipsing binaries 8−32514
LDS 720BC (CD−32° 16135), visual binary, orbit and mass 8−32515
δ Librae, Algol-type eclipsing binary, masses derived from vel. curves 8−49475
magnetic variables, intrinsic rot. rels. correl. with colour index and masses 8−40967
Mira variables, mass from observational data 8−45333
multimode Cepheid variables, masses and radii from period ratio diagrams 8−28698
neutron stars, max. mass and moment of inertia from superdense neutron matter theory 8−45349
NGC 2362, very young open star cluster star counts and cluster mass *(German)* 8−16472
AW Pegasi, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
planetary nebulae central stars mass rel. to evolution 8−12325

stellar mass continued
planetary nebulae nuclei, core masses rel. to He shell flashes, nebula ejection and distance scale 8−24540
Population I 15 $M_{\odot}$ star, effect of mass loss and semiconvection 8−45320
red giant mean initial mass from visual binary data 8−49429
runaway stars, masses rel. to supernovae, duplicity and binary star mass loss 8−32448
FG Sagittae, photometric radius and pulsation mass 8−36576
semi-detached eclipsing binaries, revised photometric masses, radii and luminosities 8−20858
λ Tauri, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
3U 1538−52, binary X-ray pulsar, mass and radius of companion 8−16573
unresolved visual binaries, reexamination and companion stars masses 8−40993
white dwarfs, rotating magnetic, equilib. struct. and critical mass 8−49433
white dwarfs, virial theorem, energy content and mass-radius relation 8−45327
Wolf 1062 unseen companion, astrometric anal. from 61 cm Sproul refractor plates 8−16459

stellar models
10-day Cepheids, theoretical models 8−49449
A-type stars, normal and metallic-line, models pulsational stability 8−16414
Aquila X-1, binary and triple star models for X-ray outbursts 8−20909
Ariel 0620−00, transient X-ray source, spherical model 8−12415
atmosphere models application to determ. of effective temp., bolometric corrections, Balmer discontinuity and distrib. functions *(Rumanian)* 8−36557
atmospheres, microturbulent broadening of spectral lines 8−45321
α Aurigae (Capella), model chromosphere 8−40931
Be stars in binary systems, apsidal motion of gaseous rings 8−32521
γ Cassiopeiae, circumstellar envelope model 8−40952
U Cephei, mass transfer models rel. to light vars. outside primary eclipse 8−36636
Cepheids, double-mode, period ratios from linear and nonlinear theory 8−40953
Cepheids, freq.-period distribs. in Local Group galaxies 8−28694
chromospheres of late type stars, theoretical models and temp. minima heights 8−20818
close binary stars, accretion disc model 8−4282
contact binaries, objection to model of Shu, Lubow and Anderson 8−28720
contact binaries, structure, zero-age models 8−8045
coronal-type ionisation model rel. to galactic cosmic ray sources 8−49240
P Cygni, envelope model and mass loss 8−45334
V1057 Cygni, hydromag. model of peculiar activity *(Russian)* 8−49442
V1500 Cygni (Nova 1975), spatial and kinematic envelope model 8−36600
Cygnus X-1, black hole candidate, accretion disc models 8−16577
Cygnus X-3, cocooned X-ray binary pulsar model 8−36723
Cygnus X-3, observational constraints, on models 8−16567
degenerate dwarf models, thermodynamic inconsistency of modified Saha eqn. at high press. 8−36450
degenerate dwarf stars, props. of low temp. pure He surface layers 8−7994
double shell source models, s-process enhancements 8−49430
double shell source stars, evolution through second loop in Hertzsprung-Russell diagram 8−36556
early B-type stars atmospheres, influence of LTE line blanketing by UV lines 8−16419
eclipsing binaries, late-type, mass-luminosity and radius relations, chem. composition 8−28728
flare stars, physical characts. 8−12242
β Geminorum (Pollux), chromosphere model 8−40931
gravitational collapse, ellipsoidal models and gravit. radiation 8−45317
gravitational radiation detection from stellar collapse 8−24707
Hercules X-1 (HZ Herculis), 35 day cycle investigation 8−32509
AM Herculis (3U 1809+50), multicolour linear and circular polarisation obs. and geometrical model 8−8053
AM Herculis objects, accreting mag. white dwarf model for linear polarisation 8−16460
interior Kerr metrics, tests 8−28666
interstellar He abundance, rel to stellar models and cosmological models 8−16518
EV Lacertae, flare star, hot-plasma model of strongest flares 8−20838
R Leonis, Mira variable, pulsation-shock model from CO and OH IR bands obs. 8−36574
RR Lyrae stars, convective steady-state models, theoretical red edge of instability strip 8−4229
magnetic neutron stars, accretion flow, magnetospheric struct. and stability 8−4269
magnetic stars, equatorially symmetric rotator model 8−8020
magnetic stars, perpendicular rotator model with meridional circulation 8−16438
massive stars (20-100 $M_{\odot}$) with mass loss, evolution 8−36554
Mira variables rel. to Wood-Cahn model of late stellar evolution 8−45333
MXB 1730−335, rapid X-ray burster, long-term behaviour rel. to burster models 8−32602
Newtonian stars with stratified flows, mirror planes 8−32444
non-spherical stars, appl. of smoothed particle hydrodynamics theory 8−12203
nonevolutionary sequences of models in thermal equilib., appl. to mass loss from close binary systems 8−24508
nonlinear running density waves in homogeneous model *(Russian)* 8−49421
novae, white dwarfs, accretion belts model 8−36582
Of-type stars, expanding envelope models rel. to H and He II spectra 8−40950
partial ionisation zones, eqns. of state 8−28653
polytrope n=3, poloidal mag. field effect on linear and adiabatic oscills. 8−24505
polytrope of index 5, proof of its finiteness 8−40920

stellar models continued
polytropes, uniformly rotating, equilib. struct. investig. using iterative method 8−32441
PSR 0809+74, pulsar, subpulse pattern phase stability rel. to emission models 8−40980
pulsar interpulses, two-pole and one-pole models 8−16449
pulsars, model of radio emission mechanism 8−12257
pulsars, phenomenological model 8−40979
pulsars, pulse width and period relations for various models 8−28714
pulsars charge-separated magnetospheres, aligned rotator model 8−40981
V Puppis, eclipsing binary, as main sequence contact binary 8−4293
radial pulsations excited by nonradial modes *(Russian)* 8−16399
radiative equilibrium mediumcool non-LTE models, effective temp. 10000-15000K, gravity 10^4 8−40921
radio pulsars, model *(Russian)* 8−40982
WZ Sagittae, recurrent nova, photometric study and mass transfer model 8−24513
V356 Sagittarii, unusual eclipsing binary, model 8−49477
Scorpius X-1, linear X-ray polarisation upper limit rel. to accretion-disc model 8−49557
FH Serpentis (Nova 1970), thick inhomogeneous shell model for radio emission 8−12236
slow nova, evolution of model with Z=0.03 envelope from pre-explosion to extinction 8−32468
static spherically symmetric stellar models, admissible coord. system 8−28665
Sun, simple model for educational purposes 8−36756
supernovae, neutrino transport in collapsing stellar core model 8−8029
supernovae and black holes analytic models, Einstein eqn. solns. 8−4258
α Tauri, semiempirical model photosphere from Fe I lines obs. 8−4202
α Tauri (Aldebaran), chromosphere model 8−40931
T Tauri type stars, hydromag. model of peculiar activity *(Russian)* 8−49442
thermal pulse and interpulse props. of intermediate-mass models with C-O cores 8−12199
vibrational stability of stars in thermal imbalance 8−24506
white dwarfs, thermonuclear runaways models 8−40937
X-ray binary stars, Roche-lobe overflow model 8−32601
X-ray burst sources, models 8−49566
X-ray burst sources and convective accretion discs 8−16568
X-ray sources in globular clusters, binary star and black hole models 8−12428

stellar motion
see also celestial mechanics
ADS 1538=Σ 168=BDS 1015, orbit of visual double *(French)* 8−8056
ADS 7251, photographic obs. in 1962-73 period, orbital motion *(Russian)* 8−28726
B-type stars, radial vels. determined at Radcliffe Observatory 8−12225
binaries, orbital inclination, polarimetric determ. for five systems 8−45358
binary systems, effect of gravit. radiation on evolution and spins 8−12292
BV 845, contact binary, improved photometric soln. 8−45365
DO Cassiopeiae, eclipsing binary, stellar structure 8−16462
DO Cassiopeiae, eclipsing star, as contact binary, three-colour photoelectric investigation 8−16462
μ Cassiopeiae, subdwarf binary, spectroscopic orbit 8−8046
Ci 182354, astrometric anal. of unseen companion from 61 cm Sproul refractor plates 8−16459
cluster binaries, dynamics 8−12295
cluster stars, proper motions rel. to cluster membership probabilities 8−28736
cool C stars, nearby, distances rel. to space vels. and proper motions 8−49434
disc galaxies, stellar and gas responses to oval distortions, effects of dissipation 8−12355
double stars, rectilinear trajectories calc., appl. to h 5094, effects of erroneous positions *(French)* 8−20857
dynamical systems, evolution with time-varying gravity 8−24459
early-type stars with six degrees of galactic anticentre direction, radial vels. 8−7990
δ Equulei, improved orbit for visual binary 8−45364
FK4/FK4 Sup stars, three-dim. kinetics anal. 8−8060
flat spiral galaxies, scattering of trapped star orbits, bananas 8−16464
Fokker-Planck eqn. numerical integration, stellar dynamics in fixed inhomogeneous gravit. background 8−32526
Freeman's elliptical stellar cylinder model, stability 8−28731
G77-61, dwarf C star, proper motion 8−4209
galactic density wave, molecular clouds and star formation 8−8088
galactic globular clusters, orbital evolution due to dynamical friction 8−24529
galactic models with variable spiral structure, computer simulations 8−32574
galactic spiral structure persistence and stellar orbits 8−41046
galaxies inner Lindblad resonance, nonlinear theory including bars 8−20863
galaxy dynamics, appl. of problem of four fixed centres 8−28493
globular clusters, stellar dynamics rel. to present and past death rates 8−28733
globular clusters near galactic centre, dynamics rel. to expected number density 8−32535
globular clusters with massive black holes, dynamical evolution 8−4302
gravitational instability, non-linear effect for adiabatically deformed case 8−20864
GX 304−1 (3U 1258−61), 272 second periodic var. rel. to orbital motion 8−8152
h 4866 B, vars. in spectral type and radial vel. 8−32518
HD 102567 (4U 1145−61), X-ray periodicity and orbital motion 8−8160
HD 13738, spectroscopic orbit from photoelec. radial vels. 8−12297
HD 153919 (3U 1700-37), binary X-ray source, radial vels. in blue spectral region 8−49556
HD 174209 (ADS 11719C), photoelectric radial vel. 8−32517
HDE 226868 (Cygnus X-1), orbital period and inclination 8−16579

stellar motion continued
AM Herculis, X-ray binary, vel. curves for emission lines broad and sharp components 8−32513
HR 6684, β Cephei-type variable, radial vel. var. 8−45344
HR 6940, spectroscopic binary orbit from photoelectric radial vels. 8−4294
HR 7083, spectroscopic binary, orbit from photoelectric radial vels. 8−32517
isolated clusters, star escape, Fokker-Planck eqn. generalization *(Polish)* 8−36645
isolated star clusters statistical theory of stellar escapes *(Polish)* 8−16466
LDS 720BC (CD−32° 16135), visual binary, orbit 8−32515
R Leonis, Mira variable, radial vel. from CO and OH IR vibr.-rot. overtone bands 8−36574
δ Librae, Algol-type eclipsing binary, masses derived from vel. curves 8−49475
LP 182-44, faint blue star with large proper motion, discovery 8−49439
luminous C stars in LMC, radial vels., photometry and spectra 8−28670
β Lyrae, UV spectrum and radial vels. 8−8048
M15, globular cluster, dynamical models without black hole 8−32536
M22, globular cluster, stellar radial vels. rel. to membership 8−32537
M67, open cluster, upper limit to mass and vel. dispersion 8−28735
material test point, statistics of distant perturbs. 8−28494
N-body systems, existence of families of periodic orbits 8−24449
NGC 2362, very young open star cluster star counts rel. to cluster struct. and dynamics *(German)* 8−16472
NGC 6397, globular cluster, vel. dispersion meas. using TV detector and cross-correl. techniques 8−16305
Nova Vulpeculae 1976 (NQ Vulpeculae), light, colour and vel. curves 8−28708
OB stars Local complex, kinematics 8−16396
OH/IR sources, microwave spectra, galactic distrib., radial velocity 8−16432
open clusters, orbits in Galaxy and places of form. 8−8064
orbit segregation in nonhomologously changing nonlinear gravitational field 8−4351
orbits in region of inner Lindblad resonance, numerical studies for spiral galaxies 8−45396
periodic orbits near particle reson. in galaxies, theory 8−49484
Population I objects in vicinity of long period Cepheid VZ Puppis, evidence for kinematic groups 8−45339
post Newtonian relativistic stellar dynamics, tensor-virial eqns. 8−4298
proper motion, role in luminosity and density function determ. 8−12204
proper motion errors rel. to nonpolar latitude vars. *(Russian)* 8−20637
proper motion programmes, importance of star coords. determ. *(Russian)* 8−12079
proper motions, formal values for solar motion and galactic rot. consts. 8−32440
proper motions, maximum-likelihood method for open clusters membership determ. 8−16471
proper motions, meas. by space astrometry project 8−12082
proper motions catalogue, via celestial photography with wide-angle astrographs *(Russian)* 8−40800
PSR 1913+16, binary pulsar, orbital period vars. in bimetric gravit. theory 8−45347
pulsars, space velocities rel. to evolution 8−4264
V Puppis, main sequence contact binary, photometric orbital elements 8−4293
radial velocities, determ. of relative Zeeman and Doppler shifts in spectrograms 8−36467
radial velocities, Doppler shifts meas. technique without spectrograph 8−20646
radial velocities of long-period variables from SiO line obs. 8−40956
red dwarf stars near north galactic pole, vel. dispersion 8−7989
red stars at north galactic pole, proper motions 8−4214
relativistic stellar dynamics, energy integral 8−4299
resonant orbits in spiral galaxies, disc equilib. for Lindblad resonances 8−49524
runaway stars, as witnesses to supernova explosions 8−32448
HM Sagittae, eruptive BQ forbidden line star, spectrum and radial vel. 8−20835
solar neighbourhood crossing times effect on observed stellar age and metallicity distribs. 8−12362
southern peculiar A-type stars, radial vels. and atmospheric anals. 8−24517
spherical stellar systems, marginal mode to second order *(French)* 8−32527
spiral galaxies, density wave theory in finite spiral arm inclination regime 8−49534
star systems, purely discontinuous random processes in field of irregular forces *(Polish)* 8−16465
stars in fields of globular clusters M10, M12, M71, M92, radial vels. 8−41004
Sun, absolute motion and discrete redshift 8−49530
Sun, motion rel. to centroid of Local Group 8−12376
Sun, motion relative to neighbouring galaxies *(Russian)* 8−24553
thin disc galaxies, stellar dynamics, hydrodynamic and orbit theories 8−8059
triple systems, non-rotating, exact mean time of decay *(Russian)* 8−32523
3U 0900-40 (HD 77581), binary X-ray source, spectroscopic orbit and masses of components 8−16461
3U 1538−52, binary X-ray pulsar, orbital elements 8−16573
visual double stars, period-eccentricity relation *(French)* 8−28721
Wolf 1062, astrometric anal. of unseen companion from 61 cm Sproul refractor plates 8−16459
X-ray sources, optical and X-ray vel. curves rel. to masses 8−12430
Ba stars, absolute magnitudes determ. from Yale proper motions 8−8006
Ba stars, spectroscopic, radial vel. and photometric obs. 8−12226
OH/IR unidentified Type II stars, galactic distrib. and kinematics from 1612 MHz survey 8−49450

stellar multicolour photometry *see stellar photometry*

stellar origin *see stellar evolution*

stellar photometry
see also stellar radiation; stellar spectra
A0535+26, transient slow X-ray pulsar, spectrophotometric survey 8−4263
A0620−00, transient X-ray source, spectrophotometry 8−4400
A- and F-type main sequence stars, scanner obs. 8−36563
A- and F-type stars in Selected Areas, photoelectric uvbyβ photometry 8−16412
absolute magnitudes of stars in the same seven colour photometric box 8−28662
AFCRL IR sources, optical, IR and radio studies 8−4393
SW Andromedae, RR Lyrae variable, uvbyβ photometry 8−12249
λ Andromedae, V photometric obs. during 1976-77 period 8−40994
Ap and Hg-Mn stars, spectrophotometric scans, search for broad continuum features 8−12247
Ap stars, photoelec. obs. of light vars. *(German)* 8−20841
Ap stars, UBV photometry, light curves, periods 8−32472
Aquila X-1, photometry and spectroscopy of optical counterpart, model 8−32614
TW V586 and V1079 Aquilae, photometry, photographic obs. *(Russian)* 8−20842
Ara OB1, NGC 6193 and Ara R1, young southern complex, UBVRI obs. 8−16473
SX Arietis, He spectrum variable, UV photometry with ANS 8−36585
UX Arietis, RS Canum Venaticorum type star, UV excess, spectrophotometric obs. 8−8043
UX Arietis, V photometric obs. during 1976-77 period 8−40994
astrometric and photometric system appl., automatic *(Russian)* 8−24467
atlas of stellar spectra 8−20657
NW Aurigae, eclipsing binary, photoelectric photometry 8−8052
LY Aurigae, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
KR Aurigae, optical spectrum, variability *(Russian)* 8−36597
automatic image processing, 'Zenit' photogrammetric system *(Russian)* 8−24466
Basle catalogue of 1906 blue objects at high galactic latitudes 8−32360
BD−7°3007, nova-like variable, simultaneous spectroscopy and photometry 8−12250
blanketing parameter Δm_2, rel. to [Fe/H] abundances 8−36555
AC Bootis, eclipsing binary, detailed photometric study 8−36637
XY Bootis, photometric obs. of contact binary, light curves, mass ratio 8−4286
BVRI photometry, with photometer using Si diodes as light detectors 8−20651
UW Canis Majoris, eclipsing binary, UV photometry and primary component shape and atmospheric struct. 8−40992
α Canis Majoris B, photoelectric obs. 8−4220
β Canis Majoris stars in southern hemisphere, photometric search 8−12243
RS Canum Venaticorum, UV excess, spectrophotometric obs. 8−8043
TV Cassiopeiae, eclipsing binary, period and UBV light curves 8−4287
DO Cassiopeiae, eclipsing binary, three-colour photoelectric investigation 8−16462
TU Cassiopeiae, third period in beat Cepheid 8−16424
CD −33°12119, 3U 1727−33 candidate, UBV photometry 8−12251
ω Centauri, JHK photometry of globular cluster, giant branch spread 8−16476
ω Centauri, near IR photometry anomalous giant branch 8−16477
UW Centauri, visual magnitude estimates, UBV photometry 8−40962
U Cephei, mass transfer from light vars. outside primary eclipse, obs. and anal. 8−36636
VV Cephei, narrow band photometry during 1976-78 eclipse ingress 8−4296
VV Cephei, UBV photometry during ingress phase of 1976-78 eclipse 8−20862
Cepheids in Dunsink LMC II region, BV photographic photometry 8−45340
CoD−38°10980, white dwarf, photometry and spectroscopy rel. to gravit. redshift 8−24511
CoD −35° 10525, bright YY Orionis star, spectrum and UBV photometry 8−36566
Collinder 132a, b, UBVβ photometry of two sparse open clusters 8−32540
Collinder 140, photoelectric UBV photometry, age and distance of open cluster 8−49489
cool stars in E and S0 galaxies, H_2O absorption at 2 μ 8−41034
cool supergiant stars, near IR excesses 8−16406
CRL 3099, highly evolved C star, IR photometry and spectrum 8−49436
MR Cygni, eclipsing binary, photoelec. photometry and computer soln. *(Chinese)* 8−28724
V1515 Cygni, FU Orionis type, UBVR photometry 8−12230
V645 Cygni (CRL 2789), bipolar nebula, O-type exciting star 8−4392
V1500 Cygni (Nova 1975), BV photometric obs. 8−36613
V1500 Cygni (Nova 1975), BV photometry 8−36619
V1500 Cygni (Nova 1975), linear polarization obs. 8−36601
V1500 Cygni (Nova 1975), photoelectric obs. 8−36620
V1500 Cygni (Nova 1975), photometric and spectroscopic obs. 8−36604
V1500 Cygni (Nova 1975), photometric obs. 8−36616
V1500 Cygni (Nova 1975), photometry rel. to 3.3 hour var. and flickering 8−36591
V1500 Cygni (Nova 1975), polarimetric and photometric obs. 8−36612
V1500 Cygni (Nova 1975), short-term light vars. 8−36609
V1500 Cygni (Nova 1975), small amplitude light var. 8−36608
V1500 Cygni (Nova 1975), TV photometry 8−36602
V1500 Cygni (Nova 1975), UBVR Hα photometry and polarimetry 8−36611
V1500 Cygni (Nova 1975), UBVRI photometry and polarimetry 8−36614
V1500 Cygni (Nova 1975), visible and near UV photoelec. photometry 8−36610
V1500 Cygni (Nova 1975), visible and near UV spectrophotometric obs. 8−32492

stellar photometry continued
V1500 Cygni (Nova 1975), visible and near UV spectrophotometry 8−32494
V1500 Cygni (Nova 1975), wide-band IR photometry 8−36615
V1500 Cygni (Nova 1975) photometric obs. at Skalnate Pleso Observatory 8−36617
V1500 Cygni (Nova Cygni 1975), interstellar reddening and distance 8−4230
Cygnus X-1 (HDE 226868), optical photometry, (1972-1976) 8−32609
David Dunlap Observatory photometry, derivation of two-dimensional spectral classes 8−16395
degenerate stars, multichannel spectrophotometry 8−12224
TW Draconis, photometric study of Algol-type system 8−45361
BY Draconis type variables, flare activity and quiescent variability 8−45338
dwarf novae and possibly related objects, IR photometry 8−8015
dwarf stars, late-type, broad-band IR colours, CO and H_2O absorpt. indices 8−4218
early-type stars in southern hemisphere, four colour photometry and spectral types 8−40945
AS Eridani, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
66 Eridani, spectroscopic binary, search for light var. 8−32524
faint blue stars, uvby photometry in northern hemisphere 8−16415
faint blue stars near galactic anticentre, UBV photometry 8−40932
faint red stars at intermediate galactic latit., UBVR photometric obs. 8−32457
fast irregular variables, UBV and JHKL photometry *(Russian)* 8−28684
Feige 24, EUV star, spectrophotometry in 3800-8200 Å region 8−4280
galactic globular clusters colour excess ratio, rel. to interstellar absorpt. law 8−28797
Gurzadyan UV stellar group in Auriga, UBV and uvby photometry 8−45373
GX 17+2 (3U 1813−14), photometry of optical candidate 8−28849
HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
HD 5980, eclipsing W-R binary in SMC, photoelectric light curve 8−45366
HD 65750, photometric vars. of red giant, obs. of surrounding refl. nebula IC 2220 8−36567
HD 72968, low amplitude photometric double wave Ap star, light curve 8−28697
HD 87892, central star of NGC 3132, obs. of visual companion 8−20859
HD 88230, dM0 star, high-dispersion photometric atlas from 3900 to 6000 Å 8−7996
HDE 226868 (Cygnus X-1), orbital period and inclination 8−16579
HDE 245770 (Ariel 0535+26), photoelectric UBV photometry 8−36592
HDE 245770 (Ariel 0535+26), UBV photometry during X-ray flare-up 8−28705
Herbig-Haro objects in Gum Nebula, spectrophotometry 8−36565
AK Herculis, atypical W Ursae Majoris type, BV light curves 8−28719
AM Herculis, light curves and Fourier analysis 8−49483
AM Herculis, multicolour photometry, slow optical pulsar 8−28693
TU Horologii, ellipsoidal variable, UBV photometry 8−4292
HR 1099, optical ephemeris and photometric wave minimum phase 8−36641
HR 1099, photometric and spectroscopic obs. 1978 Feb. 8−40998
HR 1099, V photometric obs. during 1976-77 period 8−40994
HR 2557, light vars., luminous δ Scuti-type star 8−32490
HR 3413, Ap star, photometric vars. and period *(French)* 8−32471
HR 5999, variable shell star, VBLUW photometry 8−28701
HR 6388, spectroscopic binary, orbit determ. from photoelec. radial vels. 8−49482
HR 6940, spectroscopic binary orbit from photoelectric radial vels. 8−4294
Hyades, BVRI photometry of new possible cluster members 8−32533
χ^2 Hydrae, uvby light curves of double-lined eclipsing binary 8−40996
instrumentation, voltage-frequency convertor for photomultipliers 8−45233
IR sources in compact H II region G45.5+0.1, 1.25 to 10 μm photometry 8−4396
IR stars in galactic centre, IR spectrophotometry and props. 8−24551
K-type giant stars, David Dunlap Observatory (DDO) photometry rel. to interstellar reddening determ. 8−4222
L19-2, low-amplitude ZZ Ceti type variable, UBV colours, period determ. 8−4242
AR Lacertae, RS Canum Venaticorum type star, UV excess, spectrophotometric obs. 8−8043
late-type giant and supergiant stars, 1.25-3.25 μ airborne photometric obs. 8−40934
late-type giant model atmospheres, limb darkening coeffs. 8−20821
late-type stars, intermediate band photometry in Geneva system 8−12231
late-type stars, spectrophotometry, incident and emergent flux calc. 8−4200
late-type stars in stellar groups, intermediate band photometry 8−4300
late-type stars intermediate-band photometry, calibration of indices 8−49424
20 Leonis, possible eclipse obs. in triple system 8−12298
LMC, main sequence luminosity function 8−8111
long-period variables, pulsation from near IR photometry 8−4248
LP 701-29, lowest luminosity degenerate star with heavily blanketed spectrum 8−36562
LSI+61°303, possibly optical counterpart of GT 0236+610, absence of variability 8−49438
luminous C stars in LMC, photometry 8−28670
luminous variable stars in M31 and M33, spectra and photometry 8−28686
lunar occultation, summary of obs. 8−7982
α Lupi, UV light curve of β Cephei-type star 8−36570
β Lyrae, optical and IR photometry, gaseous disc electron density distrib. 8−28722
β Lyrae, photoelectric photometry (in 1971) 8−12294
M17, dusty H II region, stellar UBVRI photometry and optical polarisation meas. 8−45379

stellar photometry continued
- M22, globular cluster, BVI$_k$ photometry rel. to membership and other problems 8−32537
- M25 (IC 4725), open cluster, stars four colour and Hβ photometry 8−8067
- M31, globular clusters colour indices, rel. to interstellar absorpt. law 8−28796
- M34, open cluster, UBV photoelectric photometry 8−12307
- M6 field, supergiant IR photometry and interstellar matter towards galactic centre 8−16405
- M-type variable stars, obs. in DDO photoelec. system, spectral classification 8−32463
- Magellanic Clouds stars, five-channel photometric obs. 8−16398
- dMe stars, survey of BY Draconis syndrome 8−16428
- Melotte 66, very old open cluster, BV photometry rel. to broad giant branch 8−32538
- Milky Way stars, five-channel photometric obs. 8−16398
- Mira variables, airborne IR spectrophotometry, H_2O and CO absorpt. bands 8−32465
- 1 Monocerotis, δ Scuti star, photometry and anal. 8−32495
- V616 Monocerotis (Nova 1975), photographic photometric obs. 8−36587
- multicolour stellar photometric systems, investigation of UBV, RGU and uvby systems 8−28528
- multicolour stellar photometric systems, transforms. between UBV and RGU systems 8−28529
- NGC 1904 (M79), UBV photometry, colour-magnitude diagram of halo globular clusters 8−32528
- NGC 2169, photometric and spectroscopic study of open cluster 8−45371
- NGC 2175, photometry and spectral types of stars in H II condensation 8−20883
- NGC 2244, young open cluster, uvby Hβ photometry, colour excess, distance, age 8−32532
- NGC 2439 association, photometric and spectroscopic study 8−16470
- NGC 2527, galactic cluster, UBV photometry 8−16479
- NGC 2808, anomalous globular cluster, photoelectric UBV and DDO photometry 8−45369
- NGC 3603, luminous young cluster, UBV photometry 8−36643
- NGC 4833, southern globular cluster, BV photometry of variable stars 8−4304
- NGC 6250, young southern cluster, UBVRI photometry and spectra rel. to high R-values 8−16490
- NGC 6356, photometric obs. of Mira variables in globular cluster 8−32530
- NGC 6383, young open cluster, central core stars UBV photometry 8−41003
- NGC 6535, photometric study of variable stars in globular cluster 8−32529
- NGC 6752, globular cluster, blue horizontal-branch stars photometry 8−49488
- NGC 7654 (M52), open cluster, stars four colour and Hβ photometry 8−8067
- Norma dark cloud stars, UBVβ photometry rel. to cloud struct. 8−16494
- Nova Delphini 1967, spectrophotometry in 3400 to 6500 A range 8−16430
- Nova Delphini (1967), photoelectric and spectrographic obs. 8−20844
- nova in LMC, discovery confirmation, magnitude, photometric obs., pre-max. spectra 8−49456
- Nova LMC 1977b, photometry, light curves, distance modulus 8−8019
- Nova Sagittae 1977, visual magnitude estimates (1977 November 6 to 1978 January 7) 8−36593
- Nova Serpentis 1978, UBV photometry, visual magnitude estimates, spectrographic obs. 8−40963
- Nova Serpentis 1978, UBV photometry and magnitude estimates 8−40959
- Nova V3888 Sagittarii (1974), UBV and uvby photometry during decline stage 8−20836
- Nova Vulpeculae 1976 (NQ Vulpeculae), light, colour and vel. curves 8−28708
- OB-type stars in vicinity of long period Cepheid VZ Puppis, UBV β photometry 8−45339
- old novae, search for rapid photometric oscills. 8−4251
- Orion region, survey of extremely red stars with Schmidt telescope *(Japanese)* 8−20833
- λ Orionis association, photometric props. of young cluster 8−16478
- σ Orionis E, period and luminosity stability from uvby β photometry 8−8017
- AW Pegasi, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
- X Persei, 580 day and other periodicities 8−16435
- 1 Persei, photometric variability, possible eclipsing binary 8−32489
- X Persei (2U 0352+30), photoelec. obs., light vars. 8−40999
- X Persei (3U 0352+30), photometry, search for optical 13.9 minute period 8−16426
- X Persei (3U 0352+30), UBVRI photometry 8−8049
- X Persei (4U 0352+30), light vars., tidal distortion by massive unseen companion 8−36640
- β Persei (Algol), anal. of red and IR wide-band photometry 8−20853
- V400 Persei (Nova Persei 1974), photoelectric obs. 8−4252
- photographic photometry around l=140°, b=0°, rel. to galactic struct. 8−24555
- planetary nebulae central stars, intermediate band UV photometry 8−28679
- planetary nebulae central stars, variability from UV obs. 8−36668
- polarisation of stars within 25 pc of Sun, obs. 8−12202
- pre-main-sequence A and F stars in NGC 2264, nature of IR excesses 8−32461
- T Pyxidis, recurrent nova, photoelectric obs. 8−4252
- R548, pulsating white dwarf, photometric obs., light curve anal. 8−32488
- red dwarf stars near north galactic pole, vel. dispersion 8−7989
- red giants in M5 (NGC 5094), intermediate band electronography 8−49490
- HM Sagittae, eruptive BQ forbidden line star, BVE photometry 8−20835
- V Sagittae, light curve coherent oscills. 8−8022
- HM Sagittae, near emission-line object, optical and IR obs. 8−36575
- FG Sagittae, nonstable star, spectrophotometric obs. 8−28683

stellar photometry continued
- WZ Sagittae, recurrent nova, photometric study at minimum light 8−24513
- ξ Sculptoris (Blanco 1) open cluster, multicolour photometry 8−45372
- V367 Scuti in open cluster NGC 6649, double-mode Cepheid nature 8−49460
- SMC X-1, VBLUW photometry, evidence for accretion disc 8−12409
- solar-type stars, photoelec. scanner obs., search for solar spectral analogues 8−40938
- southern B-type stars, radial vels., spectral types and H β indices 8−12225
- southern peculiar A-type stars, photometry and atmospheric anals. 8−24517
- speckle interferometry, fringe visibility recovery from recorded images quantised to two levels 8−12104
- spectral classification using satellite UV photometric data 8−16402
- spectrophotometric atlas 8−20657
- spectrophotometric survey of stars along Milky Way in Perseus 8−45403
- spectrum variables, He weak and He strong stars 8−4243
- stars in field centred at $\alpha=2^h17^m.9$, $\delta=+58°59'$, BV magnitudes and spectral classes *(Russian)* 8−40841
- stars in reflection nebulae near Gum Nebula Herbig-Haro objects, UBVRI photometry 8−32449
- stars near South Galactic Pole, UBV photometry of 51 stars 8−4216
- stars occulted by rings of Uranus, 1977-1980, colours and magnitudes 8−16277
- Stock 16, Basel 18, 19, Cr 272 and NGC 5168, open clusters, RGU photometry 8−16474
- supergiant stars, B2 to G0, small amplitude light vars. 8−32469
- supergiant stars, in LMC, long-term light vars. 8−45326
- supergiant stars in LMC, spectral types and magnitudes, catalogue of 1882 objects 8−32361
- supergiant stars in the SMC 8−16411
- supernovae, photometric classification *(Russian)* 8−12255
- supernovae in NGC 7723, NGC 1325, NGC 4402, UBV photometric obs. 8−16444
- λ Tauri, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
- DR Tauri, highly variable young star, spectrometric and photometric obs. 8−20829
- T Tauri like stars, far UV photometry 8−20827
- T Tauri stars and Herbig Ae-Be stars, broad-band IR photometry 8−4217
- RW Trianguli, short-period close binary, circumstellar material size and brightness vars. 8−32512
- 4U 0115+63, transient X-ray source optical candidate, UBV photometry and spectrum 8−32605
- 3U 1538-52 field, photometric search for optical candidates 8−12412
- 4U 1626−67, X-ray pulsar optical candidate, UBV photometry 8−12418
- 4U 1636−53 (MXB 1636−53), X-ray burster optical candidate, UBV photometry 8−12418
- 4U 1735−44 (MXB 1735−44), X-ray burster optical candidate, UBV photometry 8−12418
- 3U 1956+11 optical counterpart, photometry and spectrum 8−49554
- UBVRGI photometric measurements of 1297 stars, catalogue on mag. tape 8−40839
- CQ Ursae Majoris, Ap star, UBV photometry, light curves, colour indices 8−49454
- AN Ursae Majoris, nova-like variable, light curve and circular polarisation obs. 8−8018
- UV and X-ray sources, objective prism spectrophotometry 8−8150
- uvby Hβ system, empirical calibration for B-type stars 8−32454
- variable stars in globular cluster NGC 5286, B photometry, cluster membership 8−32534
- vector space methods of photometric anal., appls. to O stars and interstellar reddening 8−49338
- DL Virginis, eclipsing binary in triple system, UBV photometry 8−8050
- CU Virginis, He spectrum variable, UV photometry with ANS 8−36585
- BW Vulpeculae, UV light curve of β Cephei-type star 8−36570
- NQ Vulpeculae (Nova 1976), isothermal dust condensation phase, broad-band photometry 8−36586
- NQ Vulpeculae (Nova Vulpeculae 1976), photoelectric obs. 8−4252
- W3, dusty H II region, stellar UBVRI photometry and optical polarisation meas. 8−45379
- W92, possible gravit. contracting binary system in NGC 2264 young cluster 8−32462
- weak G-band stars, photometry rel. to nature and evolution 8−49432
- weak-G-band stars, CO 2.3 μ band strength 8−12228
- white dwarfs, southern, Stromgren photometry 8−32456
- X-ray binary stars, optical photometry and spectra 8−12429
- Ba stars, spectroscopic, radial vel. and photometric obs. 8−12226
- C and M-type giant stars distrib. in galactic nucleus and Magellanic Clouds 8−32460
- C stars, 3 μm absorpt. band obs. 8−28682
- C stars, catalogue of 302 stars in LMC 8−20654
- Hα emission line star near Gum nebula, UBVRI photometry and variability 8−32449
- OH 26.5+0.6, late-type variable star, spectrophotometry from 2 to 40 microns 8−24568
- OH/IR stars, IR search and photometry 8−24510

stellar positions *see astrometry*

stellar radiation
- *see also solar radiation; stellar photometry*
- 10-day Cepheids, theoretical models and light curves, comparison with obs. 8−49449
- absolute magnitudes of stars in the same seven colour photometric box 8−28662
- BX Andromedae, period increase *(Chinese)* 8−36642
- Ap stars, photoelec. obs. of light vars. *(German)* 8−20841
- Aquila X-1, nature of X-ray outbursts 8−20909
- Ariel 1540−53, eclipsing X-ray binary pulsator 8−8151
- atmospheric extinction, allowance for IR absorpt. by H_2O mols. *(Russian)* 8−40832
- Barnes-Evans brightness/colour relation, appl. to radii determ. for nearby stars 8−7984
- black hole radiance, Planck spectrum, local calc. 8−45354

stellar radiation continued
black holes, accreting, gamma rays emission spectrum 8−32504
RS Cancri, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
YZ Canis Majoris, flare star, coordinated X-ray, optical and radio obs. 8−8012
W Canis Majoris, luminous C star in Canis Major OB1 8−12312
VY Canis Majoris, mass, luminosity and evolutionary state from relation to mol. cloud complex 8−24536
α Canis Majoris (Sirius B), EUV obs., evidence against photospheric origin of 0.25 keV flux 8−49481
α^2 Canum Venaticorum, mag. Ap star high-resolution polarisation obs. inside spectral line 8−40951
RS Canum Venaticorum-type binaries, light curve distortions rel. to emission line vars. 8−24527
η Carinae, ionising photons emission rel. to spectral obs. at 4 microns 8−4237
η Carinae, soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
TV Cassiopeiae, eclipsing binary, period and UBV light curves 8−4287
γ Cassiopeiae, Hα linear polarisation in Be star 8−16425
γ Cassiopeiae, polarisation obs. rel. to circumstellar envelope model 8−40952
cataclysmic variables, short-period light oscills. rel. to non-radial oscills. of rot. stars 8−32477
UW Centauri, visual magnitude estimates, UBV photometry 8−40962
V645=Proxima Centauri optical flares during 1977 May, S.African obs. 8−32480
VV Cephei, complex close binary, linear polarisation during 1977 elcipse 8−40995
λ Cephei, linear polarization variability in emission line O star 8−36571
Cepheids, intrinsic colours and physical props. from Walraven VBLUW photometry 8−28696
o Ceti (Mira), effects of luminosity vars. on CO 2.6 mm emission 8−12241
chromospheric radiative losses of late-type stars, empirical estimates 8−40915
Circinus X-1, continuation of anomalous X-ray behaviour 8−32606
classical Cepheids, check on light and radial vel. curves phase shift for distance determ. 8−16439
classical novae, optical vars. rel. to props. of optically thick winds 8−24516
colour excesses, rel. to interstellar reddening material distrib. in solar neighbourhood 8−49502
colour indices, effect of stellar atmospheres finite extent 8−32450
contact binaries, synthetic light curves 8−24528
cool C stars, nearby, distances, luminosities and radii 8−49434
cool stars, narrow-band polarisation effects 8−16427
SS Cygni, dwarf nova, ANS detection of both soft and hard X-ray emission 8−36579
χ Cygni, Mira variable, effects of luminosity vars. on CO 2.6 mm emission 8−12241
γ Cygni, radio emission upper limits rel. to nature of Cygnus X radio source 8−28809
V1500 Cygni (Nova 1975), brightness meas., (1917 to 1976) 8−36618
V1500 Cygni (Nova 1975), linear polarization obs. 8−36601
V1500 Cygni (Nova 1975), optical polarisation obs. 8−36622
V1500 Cygni (Nova 1975), polarimetric and photometric obs. 8−36612
V1500 Cygni (Nova 1975), short-term light vars. 8−36609
V1500 Cygni (Nova 1975), small amplitude light var. 8−36608
V1500 Cygni (Nova 1975), spectral energy distrib. 8−36605
V1500 Cygni (Nova 1975), UBVR Hα photometry and polarimetry 8−36611
V1500 Cygni (Nova 1975), UBVRI photometry and polarimetry 8−36614
V1500 Cygni (Nova 1975), visible-band linear polarimetry 8−36621
Cygnus X-1, black hole candidate, X-ray and optical radiation 8−16577
Cygnus X-1, discovery of synchronous binary polarization 8−41087
Cygnus X-1, physical reality of millisecond bursts questioned, shot noise effects 8−45429
Cygnus X-3, X-ray and gamma-ray emission rel. to cocooned X-ray binary pulsar model 8−36723
diffuse galactic light interpretation, models 8−8118
dwarf nova brightening, magnetic fields and outburst phenomena *(Afrikaans)* 8−32481
dwarf novae, rapid brightness oscills. obs. 8−40968
dwarf novae, search for light oscills. during outbursts 8−40966
early type companions of X-ray sources, luminosities, rot. and other parameters 8−36564
eclipsing binaries, light curves, Fourier analysis, integral evaluation 8−45236
eclipsing binary light curves anal., linearised limb-darkening coefficients 8−49480
eclipsing binary stars, Fourier anal. of light curves, reduction of integrals 8−20856
eclipsing binary stars, Fourier anal. of light curves 8−24525
eclipsing variable stars, Fourier anal. of light curves, photometric perturbations for total and transit eclipses 8−12291
eclipsing variables, Fourier anal. of light curves 8−20854
eclipsing variables, photometric perturbations for partial eclipses, Fourier anal. 8−28717
eclipsing variables in Magellanic Clouds, tabulated light curves 8−16536
eruptive blue variables at high galactic latit., spectrophotometry 8−32482
expanding envelopes, radiative forces 8−28659
Feige 24, EUV obs. of hot white dwarf, temp. determ., interstellar H I density calc. 8−16422
flare stars as candidates for new class of transient soft X-ray sources 8−45337
flare stars in Pleiades, possible cyclic recurrence of flare activity *(Russian)* 8−49443
G127.1+0.5, very compact radio source as supernova stellar remnant 8−16555
galactic centre region, 2.2 μm spectroscopy rel. to giant stars IR flux 8−36686
galaxies, E and S0 types, CO and JHK photometry rel. to stellar populations 8−36684

stellar radiation continued
GD 154, new pulsating white dwarf, obs. 8−40928
U Geminorum, 1978 February magnitude estimates 8−36589
globular clusters, UBV photometry 8−16468
globular clusters in Galaxy, Fornax and M31, integrated colours and metallicity 8−16469
grating scanner meas. of stellar energy distrib., polarization effects 8−32355
gravitational radiation from Crab and Vela pulsars, revised estimate 8−32501
gravitational radiation from stellar collapse, ellipsoidal models 8−45317
GX 304−1 (3U 1258−61), discovery of 272 second period var. 8−8152
HBV 475 (V1329 Cygni), exciting star temp. increase from high-excitation emission lines 8−40955
HD 102567 (4U 1145−61), X-ray periodicity and orbital motion 8−8160
HD 142373 (χ Herculis), var. intrinsic polarisation obs. 8−12202
HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
HD 196517, new δ Scuti type variable star 8−49462
HD 5980, eclipsing W-R binary in SMC, photoelectric light curve 8−45366
HD 77581 (Vela X-1), optical pulsations discovery 8−20911
HDE 226868 (Cygnus X-1), anomalous light curve during X-ray increase of 1975 April-May 8−28850
Herbig Ae/Be stars, multicolour polarimetry 8−49445
Herbig-Haro objects in southern dark clouds, objective prism survey 8−28536
Hercules X-1, mag. neutron star, cyclotron emission and beaming mechanisms 8−36726
Hercules X-1, X-ray spectrum of pulse 8−8154
Hercules X-1 (HZ Herculis), hard X-ray obs. 8−36728
Hercules X-1 (HZ Herculis), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
α^1 Herculis, absolute magnitude, evolutionary state and mass loss 8−7997
OP Herculis, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
AM Herculis (3U 1809+50), IR light curves 8−28727
AM Herculis (3U 1809+50), multicolour linear and circular polarisation obs. and geometrical model 8−8053
AM Herculis (3U 1809+50), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
HZ Herculis (Hercules X-1), hard X-ray spectrum, strong cyclotron line emission 8−41085
HZ Herculis (Hercules X-1), optical behaviour in (1976) 8−32603
AM Herculis objects, linear polarisation model 8−16460
Hertzsprung-Russell diagram, discovery, meaning, development appl. 8−45322
hot plasma, X-ray emission and radiative transfer effect 8−36451
HR 1099, flare activity observed at 2.8 cm wavelength 8−36590
HR 1099, radio flux vars. obs. and optical ephemeris 8−36641
HR 2557, light vars., luminous δ Scuti-type star 8−32490
HR 3413, Ap star, photometric vars. and period *(French)* 8−32471
HR 4594, pulsating marginal metallic line (Am) star, obs. 8−49448
HR 8210, pulsating marginal metallic line (Am) star, obs. 8−49448
VW Hydri, dwarf nova, short period light oscills. 8−20837
VW Hydri, light curves of dwarf nova 8−12245
HZ 43, EUV obs. of hot white dwarf. temp. determ., interstellar H I density calc. 8−16422
interstellar dark clouds, anisotropic scatt. and formaldehyde lifetimes 8−8080
interstellar reddening, vector space methods of photometric anal. 8−49338
IR sources in compact H II region G45.5+0.1, IR photometry rel. to extinction 8−4396
IR stars, search for OH 18 cm emission 8−40949
K-type giant stars, reddening determ. from David Dunlap Observatory (DDO) photometry 8−4222
RT Lacertae, eclipsing double-lined spectroscopic binary, light curve soln. 8−32511
EV Lacertae, flare star, hot-plasma model rel. to flare radiation 8−20838
AR Lacertae, Fourier anal. of light curves, gas stream effects 8−20855
AR Lacertae, RS Canum Venaticorum type variable, soft X-rays detect. 8−45362
late-type stars, spectrophotometry, incident and emergent flux calc. 8−4200
line photons, equality of mean escape probability and mean net radiative bracket 8−40815
long-term luminosity variations and flares, evidence and appl. to Sun 8−32435
LP 182-44, faint blue star with large proper motion, discovery 8−49439
LP 701-29, lowest luminosity degenerate star with heavily blanketed spectrum 8−36562
luminous blue variable stars in M31 and M33, IR detect. 8−49437
α Lupi, UV light curve of β Cephei-type star 8−36570
α Lyrae, absolute energy distrib. from 3295 Å to 9040 Å 8−20828
XY Lyrae, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
β Lyrae, nature of disc around secondary component 8−16458
β Lyrae, UV spectrum and light curves 8−8048
M31, M32 nuclei, luminosity-sensitive spectral features rel. to stellar luminosity function 8−49431
M-type giant stars, spectral energy distribs. and effective temp. scale 8−28678
magnetic variables, intrinsic rot. rels. correl. with colour index and masses 8−40967
main-sequence stars, comparison of four-colour photometric obs. with evolutionary models 8−8007
maser emission, role of dust in pumping 8−36716
mass loss in stars of moderate mass by stellar wind 8−12210
massive black holes, X-ray spectrum from disc accretion 8−40985
massive close binaries, conservative evolution rel. to optical and X-ray luminosities 8−49479
massive stars, evolution with mass loss by stellar wind, tracks in HR-diagram 8−4197
Mira variables, intrinsic amplitude and TiO absorption 8−36580

stellar radiation continued
Mira variables, luminosity from observational data 8−45333
nearby supernova, climatic and biological impact on Earth 8−28297
nebulae central stars, temps. determ. from forbidden O III lines 8−41015
neutrino radiation for hot neutron star form., rel. to envelope outburst problem 8−45350
neutron star progenitors, galactic luminosity and neutron stars form. rate upper limit 8−49471
neutron stars, accreting, nuclear burning and X-ray bursts 8−36724
neutron stars, luminosity enhancement following X-ray bursts 8−32502
neutron stars, radiative effects in supersonic accretion 8−40978
neutron stars, X-ray bursts prod. by thermonuclear flashes 8−12417
neutron stars formation, neutrinos and gravit. waves emission 8−12266
NGC 188, open cluster, anomalous giant branch 8−41001
NGC 4565, spiral galaxy, late-type stars in optical halo 8−12364
NGC 6752, globular cluster, blue horizontal-branch stars photometry and temps. 8−49488
NGC 7822 (W 1), supernova remnant, exciting stars radiation rel. to 2.8 and 6 cm obs. 8−4383
non-LTE radiative transfer, asymptotic expansion for small ε 8−16287
non-LTE transfer, rapidly convergent iterative method for Wiener-Hopf integral eqns. 8−12089
Nova Ophiuchi 1977 (H1705−25), X-ray light curve 8−49453
Nova Ophiuchi 1977 (H1705−25), X-ray nova, HEAO 1 obs. 8−49452
Nova Sagittae 1977, visual magnitude estimates (1977 Aug.-Oct.) 8−8021
Nova Sagittarii 1977, early spectrum and spectrophotometry 8−32496
Nova Sagittarii 1977, visual magnitude estimates (1977, Aug.-Oct.) 8−4246
Nova Sagittarii 1978, identified with IRC *7a C−→C −20494=V3876 Sagittarii, IR obs. 8−49459
Nova Sagittarii 1978, precise position, visual magnitude estimates 1978 Apr. 8−49458
Nova Serpentis 1978, precise position, spectra, visual magnitude estimates 8−36596
Nova Serpentis 1978, UBV photometry and magnitude estimates 8−40959
Nova Serpentis 1978, visual magnitude estimates 1978 Mar.-Apr. 8−49457
NP 0532, Crab pulsar, model, X-ray, optical and radio emission 8−4265
O-type stars, vector space anal. of photometry rel. to atmospheric extension 8−49338
OB stars, newly formed, H_2O emission from circumstellar shells 8−12390
χ^1 Orionis (SAO 077705), ang. dia. and visual surface brightness meas. 8−20825
σ Orionis E, peculiar eclipsing binary, linear polarization obs. 8−32508
AX Persei, 1978 Jan.-Feb. outburst of Z Andromedae-type object 8−36588
X Persei, energy distrib., light vars. 1972-76 period 8−16437
S Persei, supergiant 22 GHz H_2O maser emission temporal var. 8−49461
ζ Persei, time depend. radiation flux rel. to struct. of NGC 1499 ionisation front 8−24537
X Persei, V-band polarization variability 8−49455
SX Phoenicis, simultaneous photometric and polarimetric obs. 8−49451
photon helicity detection for matter/antimatter star discrimination 8−12092
planetary nebulae central stars, UV radiation meas. 8−28679
planetary nebulae nuclei, luminosity rel. to He shell flashes, nebula ejection and distance scale 8−24540
Pleiades, radiation press. rel. to filamentary struct. of refl. nebulosity 8−8082
PSR 0809+74, pulsar, phase stability in drifting subpulse pattern 8−40980
PSR 1133+16, high time resolution obs. of high freq. radio emission microstruct. 8−45348
PSR 1133+16, pulse microstruct. direct. obs. at timescales down to 6 μs 8−28711
PSR 1919+21, interpulse radio emission at freqs. 16.7-38 MHz 8−16447
pulsar gamma-ray emission, production and beaming 8−4266
pulsar interpulses, two-pole and one-pole models 8−16449
pulsars, force-free wind zone stability rel. to coherent radiation spectrum 8−49468
pulsars, high-energy pulsed gamma rays obs. 8−45346
pulsars, model of radio emission mechanism 8−12257
pulsars, pulse width and period relations for various models 8−28714
pulsars in compact supernova remnants, possible γ-ray emission 8−45435
pulsars radio emission, phenomenological model 8−40979
pulsars radio emission, possible mechanism 8−20847
pulsars scintillation, mathematical anal. of physically thin screen 8−28501
VV Puppis, brightening of magnetic variable (1978 March) 8−36595
ξ Puppis, radio emission obs. at 2 cm 8−40969
QSOs 1548+056, 1721+343, 1722+33, historical light curves 8−32594
radiative transfer, Sobolev method generalisation for flows with nonlocal radiative coupling 8−28500
radio emission from immediate postoutburst supernovae, origin and evolution 8−40973
recurrent novae, magnitude-frequency relation 8−28699
rigidly rotating star, influence of nonsphericity and radiation press. on moment of inertia 8−28658
rotating stars, surface layers meridional circulation rel. to gravity darkening law 8−20820
FG Sagittae, light vars. rel. to photometric radius and pulsation mass 8−36576
RY Sagittarii, visual obs. of 1977 Sept.-Oct. minimum 8−49463
Scorpius X-1, linear X-ray polarisation upper limit 8−49557
Scorpius X-1, review of X-ray, optical and radio emission 8−16576
Scorpius X-1, X-rays effect on equatorial lower mesosphere ionisation 8−36233
semi-detached eclipsing binaries, revised photometric masses, radii and luminosities 8−20858

stellar radiation continued
slow nova, hydrodynamic study of outburst rel. to light vars. and mass ejection 8−40954
spectral energy distributions, synthetic colours in UBV, RGU and uvby photometric systems 8−28528
spectroscopic and eclipsing binaries, survey for intrinsic linear polarization 8−4288
strong shock with radiation near stellar surface 8−32442
supergiant stars, B2 to G0, small amplitude light vars. 8−32469
supergiant stars, in LMC, long-term light vars. 8−45326
supernova light curves, pulsar theory, dynamical effect and thermalisation of strong waves 8−8028
supernova light curves rel. to existence of central pulsar 8−4256
supernova outburst light, expanding gas shell external excitation 8−40976
supernova radio pulses, searches and possible sensitivity improvements 8−40975
supernovae, photometric classification *(Russian)* 8−12255
supernovae, Type I, interpretation of spectra 8−49467
supernovae, Type I, light curve postmax. stages, model *(Russian)* 8−36624
supernovae in Coma cluster of galaxies, light curves anal. 8−32497
T Tauri stars and related objects, IR meas. 8−8002
T Tauri stars in Orion Nebula (M42), possible coronal X-ray emission obs. 8−28852
Tr 27-102 (HD 159378), possible long-period Cepheid, light vars. obs. 8−45336
Tycho supernova, He II Lyman α radiation rel. to search for fossil Stromgren sphere 8−36661
3U 0614+09, case for X-ray burst 8−32610
AN Ursae Majoris, nova-like variable, extremely high circular polarisation obs. 8−8018
W Ursae Majoris stars, effects of photospheric convection on limb darkening 8−49478
α Ursae Minoris B (Polaris B), spectral type and interstellar reddening 8−8005
uvbyβ photometric indices, cluster anal. for spectral classification errors detect. 8−20819
uvbyβ photometric system, calibration in terms of temp. and gravity 8−4198
variable stars, short-period, max. entropy spectral anal. appl. 8−16436
Vela X-1, X-ray spectrum obs. by OSO 8 8−49555
γ^2 Velorum, radio emission obs. at 2 cm 8−40969
109 Virginis, absolute energy distrib. from 3295 Å to 9040 Å 8−20828
ψ Virginis (SAO 139033), ang. dia. and visual surface brightness meas. 8−20825
BW Vulpeculae, UV light curve of β Cephei-type star 8−36570
NQ Vulpeculae (Nova Vulpeculae 1976), visual magnitudes (1977 Aug.-Nov) 8−16434
Walker No.67 in NGC 2264, candidate for strong interstellar circular polarisation 8−12223
white dwarf binary systems, hard X-ray obs. 8−36732
white dwarfs, multiperiodic light curves, g-mode rotation 8−4210
Wolf-Rayet stars, UV obs. and temps. 8−40965
WRA 977, high-speed UV photometry of periodic modulation 8−16442
X-ray binaries, X-ray refl. from neutron star surfaces 8−28716
X-ray binaries and pulsars, effect of vacuum birefringence on polarisation 8−4408
X-ray sources, evidence for Population I distrib. in Milky Way 8−28851
X-ray sources, light and X-ray vars. rel. to masses 8−12430
X-ray stars in globular clusters 8−20916
$\nu(\bar{\nu})$ emission from supernovae, form. and cooling of neutron stars 8−8038
Ba stars, absolute magnitudes redeterm. 8−8006
C stars, absorption by SiC and IR excess 8−16413
Fe-O stars with masses of 2 $M_\odot$ and 10 $M_\odot$, neutrino radiation during gravit. collapse 8−20815
H continua from radiative shock, theory 8−40918
H II regions in Perseus Arm, exciting stars radiation rel. to nebulae dynamics 8−32549
Hα emission stars in southern dark clouds, objective prism survey 8−28536
OH/IR stars, OH main lines masers inversion 8−28664

stellar rotation
see also solar rotation
Ap stars, surface heterogeneities 8−12254
binary stars in open clusters, rot. effects on determ. of freq. and mass ratio 8−36639
binary systems, effect of gravit. radiation on evolution and spins 8−12292
α Canis Majoris (Sirius), rot. vel. and Ba abundance 8−12218
cataclysmic variables, short-period light oscills. rel. to non-radial oscills. of rot. stars 8−32477
VV Cephei, spectroscopic obs. during eclipse rel. to rot. ring-shaped envelope 8−45359
close binaries, angular vel. distrib. in one component with fast rotating core *(Russian)* 8−28648
collapsed stars, reason for slow rot. 8−49426
Crab pulsar, rot. axis alignment rel. to gravit. radiation 8−32501
Doppler broadening parameters, meas. technique without spectrograph 8−20646
BY Draconis syndrome among dMe stars, rotating spotted star model 8−16428
early type companions of X-ray sources, luminosities, rot. and other parameters 8−36564
early-type rotating stars, meridional circulation in surface layers 8−20820
electrically conducting rot. sphere behaviour in time-independ. homogeneous external mag. field 8−49309
evolution, of 7 and 10 $M_\odot$ rot. stars with time-depend. redistrib. of ang. momentum 8−36553
HD 124224, He Si variable, spectroscopic obs., starspots, oblique rotator model 8−12239
AM Herculis, multicolour photometry, slow optical pulsar 8−28693
AM Herculis, X-ray binary, obs., slow rotator model 8−12408
interior Kerr metrics, tests 8−28666
JP 1953+29, timing data anal., spinup/spindown 8−24522

stellar rotation continued
AR Lacertae-type stars, starspots 8−16443
late-type stars, ang. momentum loss rel. to mag. dynamo 8−45331
magnetic stars, elec. field around rot. mag. dipole 8−45141
magnetic stars, perpendicular rotator model with meridional circulation 8−16438
magnetic variables, intrinsic rot. vels. 8−40967
magnetic white dwarfs, rotating, equilib. struct. 8−49433
metallic line (Am) stars, temp., age, rot. and pulsation rel. to metallicism 8−49448
moment of inertia of rigidly rotating star, influence of nonsphericity and radiation press. force 8−28658
neutron star spin down rel. to X-ray sources in binary stars *(Chinese)* 8−28857
neutron star with strong mag. field, electron cap shape 8−12265
neutron stars, lab. expts. of superfluid dynamics 8−49469
neutron stars, magnetised, fate of matter and ang. momentum in disc accretion 8−28715
neutron stars, rotating, magnetic, accretion flow inside magnetosphere rel. to rot. rate 8−8037
Newtonian stars with stratified flows, mirror planes 8−32444
non-spherical rotating polytropes struct., appl. of smoothed particle hydrodynamics theory 8−12203
pulsar magnetosphere, behaviour of mag. lines of rot. system 8−20848
pulsar magnetospheres, plasma co-rotation 8−12258
pulsars, long-period, absence rel. to force-free mag. fields instabilities 8−49425
pulsars, period derivatives rel. to existence of solar companion star 8−12198
pulsars charge-separated magnetospheres, aligned rotator model 8−40981
pulsating X-ray binaries, spindown by EM friction with stellar wind 8−12431
radio pulsars, rot. magnetised neutron star model with H or He envelope *(Russian)* 8−40982
rapidly rotating stars, criterion for secular instability 8−7987
secular stability of rotating stars, Lagrangian perturbation theory of nonrelativistic fluids 8−49305
SMC X-1, spin-up rate meas. 8−41083
ξ Tauri, apparent wavelength depend. of v sin i 8−12240
Vela pulsar, rot. axis alignment rel. to gravit. radiation 8−32501
Vela X-1, pulse period vars. from OSO-8 obs. 8−49555
very compact rotating stars, existence of ergoregions 8−24523
visual binaries, correl. between rot. vels. of components 8−20861
white dwarfs, mixing processes and elements separation in envelopes 8−12222
white dwarfs, multiperiodic light curves, g-mode rotation 8−4210
Wolf-Rayet stars, rotation rel. to ellipticity of surrounding nebulae *(Russian)* 8−12252
ν angular momentum loss in rotating stars 8−20822

stellar size *see stellar dimensions*

stellar spectra
see also stellar photometry
A- and F-type main sequence stars, scanner obs. 8−36563
A-type stars, Ca II K line obs. 8−20830
A-type stars, obs. and calc. spectra, 3600-4200 Å region 8−12217
A-type stars, predicted and observed spectral energy distribs. 8−4208
AFCRL IR sources, optical, IR and radio studies 8−4393
AFGL/CRL IR sources, spectroscopic obs. 8−32599
AGK2+81°266, hot subdwarf, spectral type 8−45323
o Andromedae, Be-star shell spectrum changes, spectrograms 8−4245
Ap and Hg-Mn stars, spectrophotometric scans, search for broad continuum features 8−12247
Ap stars, heavy element abundances from Copernicus UV data, reference stars α Lyrae and α Canis Majoris A 8−28688
Ap stars, summary of physical and chemical props. from UV obs. *(Italian)* 8−32479
Ap-stars, magnetic intensification of spectral lines *(Russian)* 8−4254
Ap-stars, UV spectra in 1350-2550 Å range, TD1 satellite obs. 8−36581
Aquila X-1, photometry and spectroscopy of optical counterpart, model 8−32614
Aquila X-1, X-ray spectra during outbursts 8−20909
Ariel 0620−00, transient X-ray source, continuum spectrum rel. to spherical model 8−12415
Ariel 0620−00, transient X-ray source, obs. using OSO-8 Bragg cryst. spectrometer 8−12426
atmosphere models application to determ. of effective temp., bolometric corrections, Balmer discontinuity and distrib. functions *(Rumanian)* 8−36557
atom, laboratory hyperfine struct. for astrophysical interest 8−17818
ε Aurigae, ^{7}Li I 6708 Å line and Li interstellar abundance 8−49494
KR Aurigae, optical spectrum, variability *(Russian)* 8−36597
α Aurigae (Capella), Ca II and Mg II lines rel. to chromosphere model 8−40931
B-type stars, nonradial pulsations, line profile variations 8−4228
BD+39°3226, BD+34°1543, hot subdwarfs, spectral types 8−45323
BD−7°3007, nova-like variable, simultaneous spectroscopy and photometry 8−12250
Be stars, evidence for mass loss in mid-UV spectra 8−8010
α Bootis (Arcturus), CO fundamental bands, inhomogeneous chromosphere 8−36561
α Bootis (Arcturus), far UV spectrum, coronal temp. determ. 8−16407
α Bootis (Arcturus), O and C abundances *(Russian)* 8−16420
α Bootis (Arcturus), spectrum and atmospheric parameters 8−20826
bright IR star monitoring at 2.7 μm 8−16433
α Camelopardalis, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
RS Cancri, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
29 Canis Majoris, massive hot binary star, spectrograms, mass loss 8−12299
VY Canis Majoris, OH masers very long baseline interferometric obs. 8−36712
α^2 Canum Venaticorum, mag. Ap star high-resolution polarisation obs. inside spectral line 8−40951
RS Canum Venaticorum-type binaries, emission line vars. 8−24527
Carina Nebula stars, interstellar λ4430 band obs. 8−32555
η Carinae, IR Fe II lines and interpretation of IR excesses 8−32478

stellar spectra continued
η Carinae, spectral obs. at 4 microns 8−4237
ρ Cassiopeiae, absolute energy distrib. in 3400-7100 Å range 8−49440
γ Cassiopeiae, Balmer lines obs. rel. to circumstellar envelope model 8−40952
R Cassiopeiae, Mira variable, vel. struct. in SiO maser spectrum 8−12248
T Cephei, Me variable, Tc discovery 8−32483
19 Cephei, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
VV Cephei, spectroscopic obs. during 1976/77 eclipse ingress phase 8−45359
δ Ceti, period changes of β Cephei type star 8−32487
T Ceti, semiregular variable, Tc I absorpt. line obs. 8−28689
o Ceti (Mira), spectrum of companion star 8−4253
o Ceti (Mira), strong TiO-related dia. vars. 8−16429
o Ceti (Mira), variable 2.6 mm CO emission obs. 8−12241
Circinus X-1, H I radio absorpt. obs. and distance 8−12413
Circinus X-1 (3U 1516−56), spectra of optical and radio counterpart 8−12414
classification errors, detect. by cluster anal. 8−20819
classification of early-type stars 8−16401
classification using Copernicus UV data 8−12216
classification using Fe III UV lines 8−16404
classification using satellite UV photometric data 8−16402
classification using Skylab UV objective-prism spectra 8−16403
CoD−38°10980, white dwarf, gravit. redshift meas. 8−24511
CoD −35° 10525, bright YY Orionis star, spectrum and UBV photometry 8−36566
14 Comae, A-type shell star, spectroscopic obs. 8−7992
CC Comae, W Ursae Majoris type, spectroscopic orbit 8−12300
cool C stars, ^{12}C/^{13}C ratio calc. 8−4205
cool giant stars, obs. and anal. of CO at 5 μm 8−36569
cool stars, neutral-ion anomaly 8−7985
cool stars, prediction of EUV H_2 lines 8−12184
cool supergiant stars, near IR excesses 8−16406
S Coronae Austrinae, T Tauri star, red-displaced absorpt. features obs. 8−4221
CPD−56°8032, emission line object, red and IR spectrum 8−4249
CRL 2688 (Egg Nebula), IR polarimetry and central source spectrum 8−36658
CRL 3099, highly evolved C star, IR photometry and spectrum 8−49436
CRL 618 and 915 (HD 44179), IR spectra in 2-8 μ range 8−41080
P Cygni, mass loss, Balmer line profiles 8−45334
χ Cygni, Mira variable star, variable 2.6 mm CO emission obs. 8−12241
R Cygni, pure S star, new molecules identification 8−28700
V1500 Cygni, spectral development, visible and near IR obs. 8−4231
CI Cygni, spectroscopic obs. using multichannel analogue detector system 8−36461
α Cygni, supergiant, near UV spectrum 8−7991
V645 Cygni (CRL 2789), bipolar nebula, O-type exciting star 8−4392
α Cygni (Deneb), Ca II K line high-resolution obs. 8−16408
α Cygni (Deneb), Copernicus obs. of UV spectrum 8−45330
V1500 Cygni (Nova 1975), He abundance of ejecta 8−28691
V1500 Cygni (Nova 1975), IR spectra and photometry 8−36615
V1500 Cygni (Nova 1975), line spectrum evolution 8−32493
V1500 Cygni (Nova 1975), near IR spectroscopy 8−36599
V1500 Cygni (Nova 1975), near IR spectrum 8−36606
V1500 Cygni (Nova 1975), nebular stage spectrum rel. to linear polarisation 8−36621
V1500 Cygni (Nova 1975), photometric and spectroscopic obs. 8−36604
V1500 Cygni (Nova 1975), spectral energy distrib. 8−36605
V1500 Cygni (nova 1975), spectroscopic obs., three hour periodicity, nebular model 8−12235
V1500 Cygni (Nova 1975), spectrum variations 8−36607
V1500 Cygni (Nova 1975), visible and near UV spectrophotometric obs. 8−32492
V1500 Cygni (Nova 1975), visible and near UV spectrophotometry 8−32494
V1500 Cygni (Nova 1975), visible spectroscopy 8−36598
Cygnus OB2 No.12 (VI Cygni No.12), C_2 detect. in interstellar spectrum 8−12332
Cygnus X-3, evidence for X-ray Fe line emission obtained with cryst. spectrometer 8−8153
degenerate stars, H lines meas. 8−12224
HR Delphini (Nova 1967), physical props. and element abundances in nebular state 8−36573
Hr Delphini (Nova 1967), spectral evolution during decline period 8−40957
diffuse interstellar bands at far UV wavelengths, obs. 8−32554
early B-type stars atmospheres, LTE line blanketing by UV lines using accurate damping consts. 8−16419
early type stars, Mg II lines near 2800 Å 8−12229
early-type stars, near UV obs. of line blocking factors 8−45329
early-type stars, Skylab UV obs., MK spectral types 8−40933
early-type stars, spectral classification from TD1 satellite low dispersion UV spectra 8−16421
early-type stars in galactic anticentre direction, spectral types and radial vels. 8−7990
early-type stars in southern hemisphere, four colour photometry and spectral types 8−40945
early-type supergiants, spectrum variability, UV obs. *(Italian)* 8−32458
element abundance, atomic and mol. f-values 8−20792
eruptive blue variables at high galactic latit., spectrophotometry 8−32482
F- and G-type dwarf stars, Mn/Fe abundance ratios 8−45325
β Geminorum (Pollux), CA II and Mg II lines rel. to chromosphere model 8−40931
giant branch of M5, spectroscopic survey 8−16467
giants in distant satellites of Galaxy 8−40926
h 4866 B, vars. in spectral type and radial vel. 8−32518
HBV 475 (V1329 Cygni), high-excitation emission lines obs. 8−40955
HD 122563, metal-deficient giant, atm. ^{12}C/^{13}C ratio, mixing 8−4201
HD 124224, He Si variable, spectroscopic obs., starspots, oblique rotator model 8−12239
HD 13738, spectroscopic orbit from photoelec. radial vels. 8−12297

stellar spectra continued
HD 153919 (3U 1700−37), forbidden Fe XIV emission detect. 8−16571
HD 153919 (3U 1700−37), X-ray binary, spectrum variations 8−8158
HD 153919 (3U 1700-37), binary X-ray source, radial vels. in blue spectral region 8−49556
HD 165590, visual binary with spectroscopic binary component 8−32519
HD 192913, Si Ap-star, lanthanide abundances, spectral identifications 8−45345
HD 193793, Wolf-Rayet binary, visible and near IR spectra 8−8023
HD 195592, obs. of interstellar K I 4044 Å line 8−24533
HD 215038, Ap star, line identification list 8−32484
HD 215441, Ap star, line spectrum variations 8−4232
HD 216533, Ap star, spectral variation obs. 8−4244
HD 50896 and 151932, WN stars, IR spectra 8−8024
HD 64740, He variable star, X-ray source 4U 0750−49 optical candidate 8−36584
HD 77581 (3U 0900-40), X-ray binary, spectroscopic orbit and masses of components 8−16461
HD 88230, dM0 star, high-dispersion photometric atlas from 3900 to 6000 Å 8−7996
HD 91805, spectrum anal. rel. to nature of Bidelman-MacConnell weak G-band stars 8−49432
HD 94028, subdwarf, Mn abundance and Mn/Fe ratio 8−45328
HDE 226868 (Cygnus X-1), temporal and spectral var., X-ray rocket obs. 8−8163
HDE 228766, evolved Of system, spectroscopic obs. 8−12237
HDE 245770 (A0535+26), Hβ var., general props., spectral obs. 8−4247
HDE 245770 (Ariel 0535+26), optical spectrum of Be star 8−4227
HDE 283048, hot subluminous star, spectrum 8−20823
Henize 2-38, symbiotic star, steam and CO absorpt. obs. 8−40970
Herbig Ae/Be stars, Hα profiles 8−16410
Herbig-Haro objects in Gum Nebula, spectrophotometry 8−36565
Herbig-Haro objects in southern dark clouds, objective prism survey 8−28536
Hercules X-1, hard X-ray spectrum, strong cyclotron line emission 8−41085
Hercules X-1, struct. and higher harmonics of cyclotron lines 8−20912
Hercules X-1, X-ray lines and magnetic field 8−24574
Hercules X-1, X-ray spectrum of pulse 8−8154
α^2 Herculis, circumstellar absorpt. lines rel. to absolute mass loss scale for red giants 8−7997
52 Herculis, instrumental profile for spectra *(Russian)* 8−28704
OP Herculis, irregular variable, Tc I absorpt. lines obs. 8−28689
OP Herculis, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
AM Herculis, white dwarf binary system, hard X-ray spectrum 8−36732
AM Herculis, X-ray binary, obs., slow rotator model 8−12408
AM Herculis, X-ray binary, vel. curves for emission lines broad and sharp components 8−32513
HR 1099, photometric and spectroscopic obs. 1978 Feb. 8−40998
HR 7083, photoelectric radial vels., spectroscopic binary orbit and improved spectral type 8−32517
HR 9076 (ε Tucanae), Hα shell profile 8−36583
interstellar absorption feature at 2200 Å, identification 8−12346
interstellar Na I lines hyperfine struct. in α Cygni direction 8−24542
interstellar O VI absorption lines, statistical anal. rel. to coronal gas in Galaxy 8−36653
interstellar UV absorption lines, intermediate-vel. gas obs. 8−36655
interstellar UV and optical absorpt. lines, comparison with H I 21 cm obs. 8−24532
IRC+10420, IR emission lines from F-type supergiant star 8−4395
IRC +10216, detection of vibrationally excited CO at 114 GHz from C star 8−40941
AR Lacertae, double-subgiant eclipsing binary, spectra, abundances 8−8044
late-type stars, Mg II reson. line fluxes rel. to chromospheric radiative losses 8−40915
late-type supergiants, spectra and CNO abundances in G and K Ib stars 8−24509
LDS 678B (EG 131), white dwarf, spectrum 8−40946
ρ Leonis, expanding envelope OAO-3 spectra *(Russian)* 8−4224
R Leonis, Mira variable, CO and OH IR vibr.-rot. overtone bands 8−36574
α Leonis, nearby star, Mg II interstellar resonance doublet absorption 8−45391
ρ Leonis, non-anomalous diffuse interstellar absorpt. features 8−16418
R Leonis, strong TiO-related dia. vars. 8−16429
δ Librae, Algol-type eclipsing binary, detection of secondary 8−49475
β Librae, nearby star, Mg II interstellar resonance doublet absorption 8−45391
line photons, equality of mean escape probability and mean net radiative bracket 8−40815
long-period variables, CO and SiO millimetre line emission obs. rel. to circumstellar shell props. 8−49423
long-period variables, H emission line form., models 8−28709
LP 701-29, heavily blanketed white dwarf, spectrum synthesis 8−32455
LP 701-29, lowest luminosity degenerate star with heavily blanketed spectrum 8−36562
LS I +61°303 as optical counterpart for GT 0236+610 source 8−36568
luminous C stars in LMC, photometry 8−28670
luminous variable stars in M31 and M33, spectra and photometry 8−28686
XY Lyrae, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
β Lyrae, secondary component spectral type from radio emission 8−36638
β Lyrae, UV spectrum 8−8048
β Lyrae primary and secondary, catalogue of absorption lines *(Russian)* 8−28725
M22, globular cluster, stellar spectra rel. to membership and other problems 8−32537
M34, open cluster, spectral types of brightest stars 8−12311
M-type dwarfs and giants, near IR luminosity-sensitive features rel. to M31 and (M32) 8−49431

stellar spectra continued
M-type dwarfs and S-type stars, FeH bands identification in spectra 8−7952
M-type giant stars, atm. physical conditions 8−24512
M-type giant stars, spectral energy distribs. and effective temp. scale 8−28678
M-type giants, temp. sequence based on TiO spectra *(Russian)* 8−20831
M-type stars, in Orion population, CaH and TiO band strengths 8−12227
magnetic white dwarfs, line and continuum spectra 8−4207
microturbulent broadening of spectral lines in late-type atms. 8−45321
Mira variables, airborne IR spectrophotometry, H_2O and CO absorpt. bands 8−32465
Mira variables, intrinsic amplitude and TiO absorption 8−36580
MK classification, rel. to temp. and gravity calibration of uvbyβ photometric system 8−4198
MS-stars, near-IR spectrophotometry *(Russian)* 8−20832
multilevel atoms spectra, comoving-frame transfer eqn. soln. in spherically symmetric flows 8−28499
nearby stars, Mg II interstellar resonance doublet absorption 8−45391
neutron stars, X-ray emission lines Zeeman splitting by mag. field 8−4275
NGC 2169, open cluster, spectral types of brightest stars 8−12310
NGC 2169, photometric and spectroscopic study of open cluster 8−45371
NGC 2175, photometry and spectral types of stars in H II condensation 8−20883
NGC 2439 association, photometric and spectroscopic study 8−16470
NGC 3603 stars, interstellar λ4430 band obs. 8−32555
NGC 6250, young southern cluster, UBVRI photometry and spectra rel. to high R-values 8−16490
NGC 6383, young open cluster, central core stars spectral types 8−41003
non-LTE transfer in lines, asymptotic expansion for small ε 8−16287
Nova Cephei 1971, emission lines rel. to ejecta chemical comp. 8−12244
Nova Delphini 1967, emission line spectrum *(Russian)* 8−16440
nova in LMC, discovery confirmation, magnitude, photometric obs., premax. spectra 8−49456
Nova Sagittarii 1977, early spectrum 8−32496
Nova Sagittarii 1978, discovery on 1978 April 7, position, Balmer emission lines 8−45342
Nova Scuti 1975, spectrum, line identifications 8−45335
Nova Serpentis 1978, image tube spectrograms, emission lines 8−40964
Nova Serpentis 1978, precise position, spectra, visual magnitude estimates 8−36596
Nova Serpentis 1978, UBV photometry, visual magnitude estimates, spectrographic obs. 8−40963
Nova V3888 Sagittarii (1974), spectrum and photometry during decline stage 8−20836
Nova Vulpeculae 1976, IR spectrum *(Russian)* 8−16441
Nova Vulpeculae 1976 (NQ Vulpeculae), light, colour and vel. curves 8−28708
novae, envelope collisions model, dynamics of transition from premax. to principal spectrum 8−8025
O-type planetary nuclei, spectral classification, magnitudes, distances 8−4203
O-type stars, Hα line-profile anals. rel. to winds and coronae struct. 8−40947
OB star optical candidate of 2S 0114+650, spectral var. 8−16578
OB stars, UV P Cygni profiles long-term changes 8−12234
OB supergiant X-ray binaries, line distortion effects 8−7995
Of stars, raxial vel. meas. 8−4226
Of-type stars, H and He II spectra, theory 8−40950
OH/IR sources, microwave spectra, galactic distrib., radial velocity 8−16432
open clusters, spectroscopic obs., search for Ap stars 8−45367
ξ Ophiuchi, interstellar CO absorpt. bands and cloud density from Copernicus obs. 8−36656
ξ Ophiuchi, obs. of interstellar K I 4044 Å line 8−24533
ξ Ophiuchi, search for interstellar NaH line 8−4325
ξ Ophiuchi cloud, Copernicus UV obs. of interstellar C_2 8−41022
Orion OB1 association, stellar spectral types 8−32539
α Orionis, CO and SiO millimetre line emission search rel. to circumstellar shell props. 8−49423
κ Orionis, expanding envelope OAO-3 spectra *(Russian)* 8−4224
γ Pegasi, β Cephei star, dynamics of photosphere and shells 8−49447
κ Pegasi, radial vel. meas., visual binary with spectroscopic binary component 8−32520
X Persei, 580 day and other periodicities 8−16435
ξ Persei, ^{7}Li I 6708 Å line and Li interstellar abundance 8−49494
β Persei (Algol), gas stream producing absorpt. features in red wings of Mg II reson. lines 8−24524
planetary nebulae central stars, UV spectral lines intensities vars. 8−36668
protostar in sharpless 140, compact source, strong far IR emission obs. 8−36649
PSR 0531+21 (Crab pulsar), pulsed Γ-ray emission, energy spectrum COS-B obs. 8−8033
PSR 0833-45 (Vela pulsar), pulsed γ-ray emission energy spectrum, COS-B obs. 8−8033
pulsars, phenomenological model for spectra 8−40979
pulsars, radio emission mechanism rel. to spectra 8−12257
VV Puppis, brightening, emission line spectrum 8−40960
rel. to props. of optically thick winds 8−24516
relative Zeeman and Doppler shifts, determ. via statistical approach 8−36467
resonance multiplet lines, radiative transfer theory 8−24460
HM Sagittae, eruptive BQ forbidden line star, spectrum and radial vel. 8−20835
HM Sagittae, near emission-line object, optical and IR obs. 8−36575
SAO 015338 (2A 1052+606), Hα emission and analysis of possible identification 8−32608
τ Scorpii, Copernicus UV spectral atlas 8−12220
σ Scorpii, search for interstellar NaH line 8−4325
Scorpius X-1, review of X-ray, optical and radio emission 8−16576
SMC X-2, colours, spectral type and position of optical candidate 8−12421

stellar spectra continued
- SMC X-3, colours, spectral type and position of optical candidate 8−12421
- SN 1970g, in M101, spectra of type II supernova 8−8030
- SN 1972e in NGC 5253, Type I, spectrum after 365 and 435 days 8−4255
- solar-type stars, in open clusters, spectroscopic differences from Sun 8−36560
- solar-type stars, metal abundances, microturbulence, spectroscopic data 8−40943
- southern B-type stars, radial vels., spectral types and H β indices 8−12225
- southern OB stars, MK spectral classifications 8−12221
- southern peculiar A-type stars, spectra and atmospheric anals. 8−24517
- spectrum variables, He weak and He strong stars 8−4243
- standard stars of intermediate brightness, spectral energy distribs. 8−28651
- star associated with variable cometary nebula, spectrum and brightening 8−4333
- stars in field centred at $\alpha=2^h17^m.9$, $\delta=+58°59'$, BV magnitudes and spectral classes *(Russian)* 8−40841
- subdwarfs, old disc population, CaH and TiO band strengths 8−40930
- supergiant stars in LMC, spectral types and magnitudes, catalogue of 1882 objects 8−32361
- supergiant stars in the SMC 8−16411
- supernovae, expanding gas shell external excitation rel. to spectral lines evolution 8−40976
- supernovae, Type I, interpretation of spectra 8−49467
- supernovae, Type II, spectral analysis from 8 to 15 months after explosion 8−40974
- ξ Tauri, apparent wavelength depend. of v sin i 8−12240
- T Tauri, Hα line profile vars. 8−40944
- DL Tauri, Hα profile in T Tauri type star *(French)* 8−8003
- ξ Tauri, high-resolution rocket spectra of λ1920 and λ1720 features 8−4236
- DR Tauri, highly variable young star, spectrometric and photometric obs. 8−20829
- DF Tauri, T Tauri star, He I triplet-to-singlet ratio 8−28680
- α Tauri (Aldebaran), Ca II and Mg II lines rel. to chromosphere model 8−40931
- α Tauri (Aldebaran), Ca II K line high-resolution obs. 8−16408
- BU=28 Tauri (Pleione), envelope during shell phase, 1972-75 period 8−28707
- BU=28 Tauri (Pleione), spectrum vars., 1938-75 period 8−36578
- RR Telescopii, symbiotic star, steam and CO absorpt. obs. 8−40970
- two-dimensional spectral classes, accuracy of derivation from DDO photometry 8−16395
- 4U 0115+63, transient X-ray source optical candidate, UBV photometry and spectrum 8−32605
- 3U 0614+09, X-ray burst spectrum 8−32610
- 4U 1538−52, spectrograms of optical candidate, confirmation of identification 8−41094
- 4U 1538-52 optical counterpart, discovery of reddened Be-type star 8−36727
- 3U 1956+11 optical counterpart, photometry and spectrum 8−49554
- α Ursae Minoris B (Polaris B), spectral type and interstellar reddening 8−8005
- UV5, in globular cluster NGC 1851, He abundance determ. 8−49441
- UV, atlas, line features use in spectral classification 8−12215
- UV high-resolution obs. by balloon-borne echelle spectrograph 8−49318
- UV obs. of Cl lines towards 10 stars, interstellar Cl and P abundances 8−36646
- variables with long periods, radial and expansion vels. from SiO line 8−40956
- VI Cygni (Cygnus OB2) association, interstellar λ4430 band obs. 8−32555
- NQ Vulpeculae (Nova 1976), Hα emission line profiles in 1976 November to December *(Russian)* 8−40971
- weak-G-band stars, CO 2.3 μ band strength 8−12228
- white dwarfs, classification of 47 southern stars 8−16417
- white dwarfs, spectroscopic survey using Luyten catalogues 8−7998
- Wolf-Rayer stars, UV obs. 8−40965
- X-ray binaries, spectra of X-rays refl. from neutron star surfaces 8−28716
- X-ray binary stars, optical photometry and spectra 8−12429
- X-ray burst sources, spectrum vars. during bursts 8−12427
- young emission line objects in S Hemisphere, image tube spectrograms 8−8016
- Ba stars, spectroscopic, radial vel. and photometric obs. 8−12226
- C III, photoionization cross sections calc. 8−17625
- C stars, 3 μm absorpt. band obs. 8−28682
- C stars, 3 μm band compared with interstellar 'water-ice' 3 μm absorpt. 8−49499
- CH star in M22 globular cluster, CH and CN anomalies 8−8001
- FeH in stellar atmospheres, Wing-Ford band strengths calc. 8−24507
- H_b line profiles for white dwarfs with dipole and quadrupole magnetic fields 8−8004
- H_2O absorption and coolest stellar component of E and S0 galaxies at 2 μ 8−41034
- Hα emission stars in southern dark clouds, objective prism survey 8−28536
- HgMn stars, line asymmetries rel. to diffusion 8−40948
- Li abundances for G- and K-type supergiants 8−28676
- Mg I 2852A line obs. towards moderately reddened stars 8−20874
- Mg I b2 5175 Å index in old galaxy populations 8−41033
- Mg II, interstellar column density towards nearby stars 8−41023
- O VI interstellar survey, UV spectra of OB stars 8−36679
- OH/IR stars, OH main lines masers inversion 8−28664
- SiO, nonmaser emission lines from expanding envelopes around evolved stars 8−28650
- Tc stars, search for TcO spectral bands 8−40935
- TiO band strengths in metal-rich globular clusters 8−49487
- U stars and related objects, spectroscopic study 8−49465

stellar spectrophotometry *see stellar photometry*

stellar structure
- *see also solar interior*
- 10-day Cepheids, theoretical models of internal struct. 8−49449

stellar structure continued
- εXY(dY/dX)=X−Y(Y+1), exact perturbation soln., stellar struct. theory 8−32439
- accretion disc stability, viscosity and cooling mechanism effects 8−49476
- Ap stars, orientation of mag. and rot. axes, decentred mag. dipole theory 8−4241
- blast waves, isothermal self-similar, one-dimensional flow and its stability 8−45214
- blast waves, isothermal self-similar, two-dimensional flow and its stability 8−49307
- AC Bootis, eclipsing binary, photometric study rel. to struct. 8−36637
- boundary conditions with mass conditions with mass loss 8−12209
- UW Canis Majoris, eclipsing binary, UV photometry and primary component shape and atmospheric struct. 8−40992
- Cepheids, double-mode, period ratios from linear and nonlinear theory 8−40953
- Cepheids, mass calc. methods, anomalies 8−49466
- CoD−38°10980, white dwarf, gravit. redshift rel. to mass-radius relation 8−24511
- cold matter in Einstein-Cartan gravitation theory, static spherical configurations 8−49308
- collapse and transport supernovae with neutrino degeneracy 8−40977
- contact binaries, objection to model of Shu, Lubow and Anderson 8−28720
- contact binaries, structure, zero-age models 8−8045
- V444 Cygni, IR eclipse obs. and Wolf-Rayet wind structure 8−45357
- CH Cygni, red giant, core convection rel. to mag. field interpretation for outburst 8−4250
- degenerate C core, struct. during thermonuclear explosion 8−36558
- degenerate stars, force-free mag. fields stability 8−49425
- BY Draconis syndrome among dMe stars, rotating spotted star model 8−16428
- extremely metal-poor stars, theoretical evolution and radial mode pulsational stability 8−28677
- GD 154, variable white dwarf, pulsation modes 8−40928
- gravitational collapse, hydrodynamics 8−45318
- HD 153919 (3U 1700−37), forbidden Fe XIV emission rel. to extended atmosphere struct. 8−16571
- hot degenerate stars in steady-state accretion, thermal stability 8−40929
- hot neutron star, form. and neutrino radiation rel. to envelope outburst 8−45350
- instability, broadened definitions for stars in thermal imbalance 8−16397
- Lane-Emden problem, series soln. 8−36559
- local stellar stability, general nonradial adiabatic case 8−28654
- massive stars advanced evolution, struct. during Si burning 8−28652
- metallic line (Am) stars, temp., age, rot. and pulsation rel. to metallicism 8−49448
- moment of inertia of rigidly rotating star, influence of nonsphericity and radiation press. force 8−28658
- neutron star interiors, presence of force-free mag. fields 8−40983
- neutron star matter, abnormal phase 8−20849
- neutron stars, eqn. of state for dense hadronic matter, asymptotic freedom 8−36627
- neutron stars, max. mass and moment of inertia from superdense neutron matter theory 8−45349
- non-spherical stars, appl. of smoothed particle hydrodynamics theory 8−12203
- nonlinear running density waves in homogeneous model *(Russian)* 8−49421
- O-type stars, winds and coronae struct. from Hα line-profile anals. 8−40947
- partial ionisation zones, eqns. of state 8−28653
- β Persei (Algol), red and IR wide-band photometry rel. to struct. 8−20853
- planetary nebulae central stars, struct. and evolution 8−12325
- planetary nebulae nuclei, core masses rel. to He shell flashes, nebula ejection and distance scale 8−24540
- polytrope of index 5, proof of its finiteness 8−40920
- polytropes, uniformly rotating, equilib. struct. investig. using iterative method 8−32441
- Population I 15 $M_\odot$ star, effect of mass loss and semiconvection 8−45320
- pulsating variables, statistical theory of turbulent convection *(Chinese)* 8−28703
- pulsational stabilities of star in thermal imbalance, comparison between methods 8−45316
- rotating stars, 7 and 10 $M_\odot$ stars evolution with time-depend. redistrib. of ang. momentum 8−36553
- rotating stars, meridional circulation in surface layers 8−20820
- rotating stars, non-radial oscills. rel. to cataclysic variables short-period light oscills. 8−32477
- rotating stars secular stability, Lagrangian perturbation theory of nonrelativistic fluids 8−49305
- self-gravitating fluids in perturbed configurations, perturbational-variation procedure for normal modes 8−32336
- self-gravitating fluids normal modes, expansion of g- and p-modes of non-adiabatic fluid 8−32337
- slow nova, hydrodynamic study of outburst 8−40954
- stars in thermal imbalance, vibrational stability 8−40916
- stationary accretion disk surrounding black hole, structure assuming vertical distribution given by polytrope 8−20851
- superdense matter eqn. of state, nuclear size correction to relativistic Thomas-Fermi model 8−29413
- supermassive star, expanding, and contracting dust shell, Einstein's theory of gravit., black hole formation 8−12088
- unstable gravity modes, asymptotic representation 8−28656
- very compact rotating stars, existence of ergoregions 8−24523
- weak G-band stras, nature and evolution from spectrum anal. of (HD 91805) 8−49432
- white dwarfs, equilib. configs. with frozen-in mag. field 8−8008
- white dwarfs, rotating magnetic, equilib. struct. 8−49433
- white dwarfs, virial theorem, energy content and mass-radius relation 8−45327
- Yang-Mills gauge theory of gravity, gravit. field of spherically symm. matter distribs. 8−4773

stellar variables *see variable stars*

stellarators
- magnetic surfaces, destruction near separatrix, attributed to perturbations of mag. fields 8−38554
- review 8−30467

STEM *see scanning-transmission electron microscopy*

step motors *see stepping motors*

step-recovery diodes *see charge storage diodes*

step response
- *see also transient response*
- saccadic and vergence eye movements, reciprocal innervation model 8−31811

stepped motors *see stepping motors*

stepping motors
- observatory scanning spectrophotometer *(French)* 8−20638
- presettable digital control for neurophysiological microelectrode drive 8−36079
- 'shutter' drive, using monostables 8−35860

stereoisomerism *see isomerism*

stereoscopy *see vision*

stiffness constants *see elastic constants*

stimulated Brillouin scattering
- anisotropic medium, stress induced, stimulated backscatt. 8−1304
- expanding laser plasma, stimulated Mandelstam-Brillouin scattering *(Russian)* 8−38502
- kinematics and dispersion relation for Brillouin scatt. process, wave vector surfaces representation *(German)* 8−19492
- laser-plasma interaction, stimulated Brillouin to stimulated ion Compton scatt. evolution 8−42762
- lattice vibration nonlinear interaction with powerful light beam 8−46711
- optical cavity plasma, stimulated Raman and Brillouin scatt., electrostatic and EM waves 8−34324
- phase aberration correction via stimulated Brillouin scatt. 8−37944
- plasma, dense, nonlinear intense CO_2 laser beam interaction 8−22562
- plasma, laesr beam self-focusing 8−30447
- plasma, laser light stimulated Brillouin scatt. 8−47129
- plasma, magnetised, relativistically strong circ. polarised pump wave scatt. 8−34330
- plasma, self-focusing effect on parametric back-scatt. 8−22510
- PMMA, threshold energy, stress effect 8−1304
- CS_2, liq., wavefront restoration during stimulated Brillouin scatt. 8−18013
- H_2 gas target, stimulated Brillouin scatt., press. depend. 8−42764

stimulated dielectric relaxation currents *see thermally stimulated currents*

stimulated emission
- *see also laser theory; lasers; population inversion*
- anthracene crystal, stimulated emission and Raman scatt. 8−1303
- atoms, transitions between highly excited levels, rel. to anomalous Balmer decrement 8−5176
- complex molecule solutions, stimulated emission, light quenching *(Russian)* 8−33735
- complex molecules, solns., stimulated emission by simultaneous 2-freq. excitation *(Russian)* 8−13701
- cryogenic active media as Raman lasers, stray transverse stimulated emission 8−25927
- dye solns., alcoholic, stimulated emission in blue and violet regions *(Russian)* 8−25874
- dye solution, polarisation of stimulated emission *(Russian)* 8−25872
- dye solutions, light-induced quenching of spontaneous and stimulated emission *(Russian)* 8−27290
- extragalactic radio sources, stimulated emission origin of radio recomb. lines 8−45418
- impure molecular crystals, ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
- Mossbauer coherent γ-radiation generation, collective and stimulated processes *(Russian)* 8−9356
- naphthalene:ββ′-dinaphthylethylene, stimulated emission suppression in phonon wing 8−2881
- naphthalene:β-naphthyl-n-biphenylylethylene, cryst., ground electron state, vibr. levels, relax. time determ. *(Russian)* 8−15195
- radio recombination lines from galactic centre direction, evidence for stimulated emission 8−32589
- recombination lasers using elemental vap., metal ion transitions 8−17923
- recombination lasers using elemental vap., stimulated emission conditions 8−17922
- spectrally inhomogeneous active medium, giant external pulse 8−17897
- two-(three-)level systems, steady and transient behaviour 8−1200
- γ-rays from pair recombination in travelling wave struct., stimulated emission 8−37863
- Bi atom, pulse stimulated emission of 472.2 nm line 8−17920
- CO electron beam controlled laser, stimulated emission characts. 8−1221
- CO in o Ceti, evidence for 2.6 mm stimulated emission 8−12241
- Ca, Stark mixing of high-lying calcium levels by laser-produced charges 8−25469
- CdS(Se), ps. spectra, high density exciton system 8−19553
- CuCl, luminesc. spectra, excitonic mol. reson. two phonon excitation 8−19514
- CuCl, ps. luminesc. spectra, resonantly excited excitonic mols. 8−19555
- DF laser, refr. index changes during stimulated emission 8−17929
- $F+H_2(Cl_2)(HCl)$(methane), delay and decay times of stimulated emission 8−3317
- GaN, stimulated emission under high one and two quantum excitation 8−35171
- H I radio recombination lines, in interstellar H II regions, quasiclassical anal. 8−28511
- HF, vibr.-rot. emission, from highly rot. excited states, in ClF_x-H_2 chem. laser 8−17926
- $K_5Bi_{1-x}Nd_x(MoO_4)_4$ solid soln., growth, spectroscopic and laser props. 8−2901
- $KGd(WO_4)_2$:R^{3+} 8−23496
- $KY(WO_4)_2$:R^{3+} 8−23496
- Nd^{3+} in $Nd(NO_3)_3$(tributylphosphate-d_{27})$_3$, soln. luminesc., stimulated emission *(Russian)* 8−33734
- P_2O_5 glasses for laser amplifiers and optical isolators 8−25885

stimulated emission continued
- $Y_{1-x-c}Gd_xNd_cScO_3$, crystal, absorption, luminescence, stimulated emission spectra 8−15220
- $Y_{1-x-y}R_xEr_yAlO_3$, $Y_{1-x-y}R_xEr_yScO_3$, stimulated emission of Er^{3+} ions 8−6705
- YVO_4:Nd, stimulated emission cross-sections at 1064 and 1342 nm 8−39575

stimulated Raman scattering
- *see also coherent antiStokes Raman scattering*
- angular structure of anti-Stokes and second Stokes components 8−18014
- anthracene crystal, stimulated emission and Raman scatt. 8−1303
- anti-Stokes radiation by Gaussian noise pump *(Russian)* 8−30015
- atomic vapours, stimulated electronic Raman scatt., saturation of tunable IR lasers 8−37941
- benzene, liq., spectroscopy using low power CW lasers 8−29172
- benzene-nitrobenzene, liq., stimulated Raman scatt., intensity changes, selective excitation 8−13753
- coherent antiStokes Raman scattering, reson. excitation, lineshape 8−9415
- coherent polarisation spectroscopy of Raman scatt. 8−13758
- coherent Raman gain spectroscopy using CW laser sources 8−37076
- density operator, diagrammatic evaluation 8−5523
- enhanced SRS, theory, alleged nonexistence 8−46722
- ethylene glycol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
- intracavity polariton parametric oscill., stimulated Raman emission 8−30026
- lineshape, coherent resonant Raman scatt. 3rd order nonlinear optical susceptibility 8−42378
- liquid core hollow quartz fibre, stimulated Raman scatt. 8−30087
- liquids and binary liquid mixtures, stimulated Raman scatt., intensity changes 8−13753
- MBBA, dye activated, isotropic phase, induced Raman emission *(Russian)* 8−13766
- methanol, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
- molecular, vibrational dephasing time of subgroup, transient stimulated Raman scatt. 8−37718
- multimegawatt tunable IR source up to 7.7 μm, using dye laser and H_2 8−1301
- multimode pumping, theoretical study *(Russian)* 8−13768
- nonstationary Raman scattering, by polaritons, correlation spectroscopy *(Russian)* 8−23450
- nonstationary Raman scattering, of light, by vibration and polariton excitations *(Russian)* 8−23449
- optical cavity plasma, stimulated Raman and Brillouin scatt., electrostatic and EM waves 8−34324
- optical fibre, pulse delay meas. in zero material dispersion region 8−33822
- parametric and Raman processes in second axial Stokes component generation 8−30025
- parametric excitation of Stokes waves, spatially inhomogeneous pumping *(Russian)* 8−18012
- plasma, EM wave parametric decay 8−34323
- plasma, laesr beam self-focusing 8−30447
- plasma, self-focusing effect on parametric back-scatt. 8−22510
- random structure of lines 8−18019
- reconstruction of wavefront and real volume image 8−30018
- reflection symmetry violation for crysts. and mols. 8−48184
- relaxation oscills. in gases with focused laser pulse, time depend. 8−18011
- spontaneous anti-Stokes scatt., ultra-short pulse biharmonic vibr. excitation 8−33715
- Stokes and anti-Stokes components correl. 8−18017
- Stokes component amplification, influence of field polarisations 8−13761
- Stokes signal spectral width and statistics, influence on scatt. efficiency of pump radiation 8−18018
- surface polaritons, excitation by stimulated Raman scatt., theory 8−9413
- transient regime theory in scattering with saturation *(Russian)* 8−22174
- triethylenediamine, aq. soln., stimulated Raman scatt., struct. enhancing solute 8−27222
- tunable Raman freq. generation from dye laser 8−33772
- wavefront reproduction, laser action 8−1305
- wavefront reproduction and reversal phenomena 8−13760
- p-xylene, stimulated Raman scatt., intensity changes 8−13753
- CO_2, optical pumping in stimulated Raman scatt., tunable laser emitting at 14,16 μm, theory 8−46568
- $CaCO_3$, calcite, random structure of lines 8−18019
- Cs, vap., stimulated electronic Raman scatt., 2.7-3.5 μm 8−1300
- p-H_2 cooled gas, 16 μm source using four-wave mixing and stimulated Raman scatt. 8−1298
- H_2, solid, stimulated Raman scatt. and CARS 8−13752
- HCl, tunable far IR Raman generation 8−5525
- He II rotating, geostrophic and Tkachenko wave threshold intensity *(Russian)* 8−43192
- InSb, spin flip Raman scattering, gain, linewidth, effective g-value 8−22167
- $LiIO_3$, parametric oscillator, stimulated Raman scatt. competition 8−18016
- $LiIO_3$, Raman induced Kerr effect with elliptical polarisation 8−42392
- $LiIO_3$ Raman oscillator, high-average-power, employing shared resonator config. 8−30013
- N_2, liq., tunable anti-Stokes Raman scatt. by light mixing 8−18007
- N_2, liq., wavefront restoration during stimulated Raman scatt. 8−18013
- N_2, solid, stimulated Raman scatt. and CARS 8−13752
- Na vapour, two-photon reson. four-wave mixing 8−46716
- SF_6, Stokes signal amplification, effect of pump radiation incoherence 8−18015
- SiO_2 multimode fibre stimulated Raman scatt. obs. 8−1396
- Sr vapour, generation of tunable 16 μm radiation by stimulated hyper-Raman effect 8−46715
- TeO_2, paratellurite cryst., polariton Raman scatt. 8−25928
- Tl+Ar, stimulated collision-induced fluoresc. and stimulated Raman scatt., simultaneous obs. 8−13463

stimulated scattering
see also stimulated Brillouin scattering; stimulated Raman scattering
Compton laser, scatt. stimulation by decelerated EM waves, semiclassical theory 8−29926
laser-plasma interaction, stimulated Brillouin to stimulated ion Compton scatt. evolution 8−42762
plasma, magnetised, relativistically strong circ. polarised pump wave scatt. 8−34330
Rayleigh wing stimulated scatt. line, anomalous shift in external transverse resonator containing CS_2, CS_2-ethanol, o-xylene 8−13763
wavefront reproduction, laser action 8−1305

STO calculations
$3d^n$ ions, free and in crystals, Slater parameters, 3d-4s excitation energy 8−33433
alkanes, tritiated, fragmentation by β-decay, dissoc. of daughter species 8−31669
alkyl chlorides, proton affinity correl., ab initio SCF calc., MINDO/3, STO and G basis sets 8−33421
allene, transition state for internal rot., HF/STO-3G calcs. with correlation energy corrections 8−25430
atomic basis sets, orbital exponents for $3<Z<18$ 8−29738
atomic orbital translation in j-j coupling scheme *(French)* 8−41922
atoms, first row, real STOS, parameter optimisation method 8−41929
Coulomb integrals, one and two-centre, anal. evaluation 8−13432
diazomethane, electronic struct., least energy dissoc. path to CH_2 and N_2 products 8−5131
electric-field-variant orbitals, at. and mol. elec. props. 8−37543
fluoromethane, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566
generator coordinate method 8−29731
guanidinium ion, rot. barriers, ab initio calcs. 8−41923
HF frozen core calc., Lagrangian multipliers in terms of Slater integrals 8−17554
hybrid integrals, two-centre, anal. evaluation 8−13432
interconversion pot. energy surfaces, geometries, electronic structs. 8−35660
inverse Gaussian transforms, general props., Slater type orbitals appl., coord. and momentum representation 8−37549
lone pair orbital explicit representation, augmented contracted Gaussian basis set 8−25423
methanol, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
methyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
methylamine, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
methylene, singlet-triplet separation, configuration interaction study 8−13438
methylsilylene, closed shell states, isomerisation, config. calcs. 8−35652
molecules, optimum minimal basis of exponential atomic orbitals, STO basis 8−41921
particle energy loss, individual atomic orbital contrib., Hartree-Fock-Slater orbital 8−43060
population optimised basis function in semiempirical atomic state energy calcs. 8−914
rare earth compound, crystal field and Slater parameters and coordination 8−6771
trifluoromethyl cyanides and isocyanides, isomerisation, ab initio (STO-3G) geometry optimised calc. 8−46265
AsH_3, inversion barrier calc. 8−9271
B_2H_6, APSG method as a localised process 8−33415
B_4H_4, B_4H_{10}, APSG method as a localised process 8−33415
B_5H_9, B_5H_{11}, APSG method as a localised process 8−33415
B_6H_{10}, APSG method as a localised process 8−33415
Be compounds, electronic structure, configs., energy, bonding, of small mols. and complexes 8−13420
ClF, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
H_2, nonempirical calc. for molecules in electric field 8−25459
HCl, electric field gradient at Cl, two- and one-centre wavefunction expsn. 8−17561
HF chain, ab initio cryst. orbital calcs., basis set depend. 8−34746
HNO_2, isomers, protonation mechanism, electrostatic pot. prediction limits 8−11506
H_2O, minimal Slater basis set VB calcs. 8−46272
He_2^{2+}, autoionising states, adiabatic pot. energy curves calcs. 8−42140
Li compounds, electronic structure, configs., energy, bonding, of small mols. and complexes 8−13420
Li_2, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
LiH, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
LiH^-, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8−25436
Mg_2, Mg_2^+, electronic struct., pot. energy curves, multiconfig. SCo calcs. 8−5124
N_2, mol. struct. 2-electron integral evaluation by Multipole Expansion of Diatomic Overlap 8−908
$NaCl^-$, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8−25436
NaH^-, mol. orbital calcs., diffuse functions for basis sets, electron affinity 8−25436
P, excited config., Hulthen and Slater type 2d functions 8−41972
PH_2F, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
S, excited config., Hulthen and Slater type 2d functions 8−41972
SHF, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
S_2N_2, $(SN)_x$, ($x=2$ or 3), minimal STO-3G basis HF ab initio LCAO SCF MOC, geometry 8−903
SeH_3^+, inversion barrier calc. 8−9271
Si, lattice energy, pseudopotential calc. 8−23002
SiH_3F, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
SiH_3NH_2, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074
SiH_3OH, total energy, MOs nonempirical minimum STO-4LGF calcs. 8−9074

stochastic processes
see also random processes
Abraham-Lorentz eqn. 8−20985
asymmetric top, rotational Brownian motion 8−8349
atom+diatom, stochastic one-dimens. model 8−42159
biological compartmental models, parameter estimation 8−40109
Brownian motion and NMR spin relax., book 8−15054
chemical master eqns., Poisson representation 8−35638
chemical reaction with complex form., stochastic reduction for dynamics 8−3315
chemical reaction with spatial and temporal structures, stochastic analysis 8−35639
classical dynamics systems, stochastic props., numerical methods reliability, time averages 8−41151
climate models, appl. to zonally averaged energy models 8−20502
complex molecular systems, collision phenomena by stochastic model, observables distribs. and information entropy 8−25640
correlation functions, finite-time averaging, statistical error 8−20946
deterministic eqn. of motion, master eqn. and steady-state probability distrib. 8−36925
diffusion processes, stochastic description 8−41253
discrete process, one-dimens., invariant distribs. and stationary correlation functions 8−21059
earthquake occurrence as stochastic event, theoretical models 8−40491
eigenvalues of stochastic differential operator, approx. soln. of mean problem *(German)* 8−12540
electrodynamics, derivation of quantum mechanics 8−36801
EM wave multiple scatt. effects from stochastic medium 8−44941
entropy production in stochastic model of open system 8−4574
Fatigue lives of metals up to crack initiation 8−7050
finite dimensional stochastic systems, ergodic and quasideterministic props. 8−32762
fluctuation-dissipation theorem derivation for linear anelasticity 8−43066
fluids, equations of motion, stochastic eqn. *(Russian)* 8−21054
Fokker-Planck dynamics, perturbative expansion of correlation and response functions 8−45566
Gaussian random fields 8−36934
Gaussian stochastic processes, unified treatment of fluctuation theories 8−32761
general stochastic differential eqn., existence, unicity of soln. *(French)* 8−36800
generalised Langevin eqn. with Gaussian fluctuations 8−32760
hadrons, extended, stochastic description 8−431
hyperfine spectra in presence of relax. 8−43743
induced consecutive transitions, stochastic models 8−46429
infinite dimensional stochastic systems, ergodic props. 8−32770
kinetic theory of gases, stochastic approach 8−9744
Lennard-Jones chain, stochastic transition in classical nonlinear dynamical system 8−142
linear stochastic diffusion equations, two-dimens. system, asymptotic behaviour of functional for distribs. from argument of soln. *(Russian)* 8−21083
Liouville equation, generalised, nonMarkovian and memoryless master eqns. 8−24737
LMFBR, probabilistic accident anal. with deterministic codes 8−37420
macroscopic non-Markovian systems, microdynamics, time evolution 8−41236
mathematical theory survey, book 8−21072
molecular collisions, stochastic theory in perturbation limit 8−1042
multivariate master eqn. diffusion operator, reaction diffusion system eigenfunctions 8−29077
muslce mass potential, stochastic model, NMV activity *(Japanese)* 8−24056
neurone susceptibility to changes in synaptic inflow, evaluation using stochastic model 8−24059
nonequilibrium phase transition, exact results, stochastic anal. 8−29076
nuclear reactor system, parameter identification applying stochastic approx. 8−17279
optical phase tracking, Fourier series and estimation appl. 8−25812
orthoses for lower extremities, adaptive control principle study 8−48932
papillary muscle in rat, dynamic behaviour stochastic model 8−35821
particle transport, stochastic theory, appl. to radiation damage cascades 8−153
phase transition probability, system size depend., consequences for stochastic eqns. 8−41258
piston engines, elastically suspended, nonlinear vibr. under kinematic stochastic excitations *(Polish)* 8−18221
quantum-mechanical scatt. for particle in field of variable scatterers, soln. of stochastic Liouville eqn. 8−140
rocks modal analysis, error assoc. with point-counting 8−32232
rotational Brownian motion of nonspherical top, Smoluchowski equation 8−24738
Rydberg angular momentum transfer, stochastic model for induced consecutive transitions 8−46429
Schrodinger equation, quantum mechs. as generalised stochastic theory in phase space 8−45505
sea ice deformation, viscous law as stochastic average of plasticity 8−16028
semiclassical stochastic radiation theory 8−21010
short-time stochastic electron, modified Brownian particle, Schrodinger eqn. 8−36853
solar radiation data, stochastic modelling and forecasting appl. 8−36243
stochastic electrodynamics, alternative to quantum mechs., path integrals 8−9307
suspension, random behaviour simulation, interval of quiescence method 8−31708
Tolubinskij's stochastic theory of nonequil. processes and rel. to kinetic eqns. *(Russian)* 8−21053
wave propagation in random media, temporal moments 8−20979

stochastic systems
see also random processes
betatron cooling, slot type pick-up and kicker 8−33332
deformable solids with rough surface, stochastic problem of heat conduction and thermoelasticity *(Russian)* 8−38169
Dyson eqn., exact soln. for mean value of Green's function 8−4559
eight-vertex model, universality in critical dynamics, Ising model appl. 8−41246

stochastic systems continued
- evolution eqns. with general white noise disturbance 8−16734
- Fokker-Planck dynamics, response and correlation in stationary state 8−45567
- linear, moment and cumulant functions *(Russian)* 8−32759
- linear dynamics, field quantum theory, using Green's functions *(Russian)* 8−16722
- liver disease computer-aided diagnosis using nonlinear stochastic modelling technique 8−36024
- measurement data processing system error expressions 8−41287
- n-vector model below T_c, critical dynamics 8−36959
- neutron adjoint Boltzmann eqn., stochastic models for Monte Carlo integration 8−21618
- non-Gaussian, operators method of anal. *(Russian)* 8−16627
- nonlinear, stochastic differential eqn., perturbation theory, projection operator method, statistical linearisation 8−41229
- radiant cavity, one dimens., nonlinear field mode interaction, statistical props. 8−16668
- soliton gas, turbulence due to weak dispersion, stochastisation of soliton motion 8−41169
- surface roughness analyser, using amplitude density distribution and autocorrelation function of surface profile *(Hungarian)* 8−12668
- van der Pol oscillator, functionals over discontinuous sample paths 8−29052

stock control
- on-line nuclear materials accounting and control 8−29629

Stockbarger method *see crystal growth from melt*

Stokes flow *see flow*

Stokes law (fluid mechanics) *see flow*

Stokes law (optical) *see luminescence*

Stokes lines *see spectra*

Stokes optical law *see luminescence*

stopping of particles *see energy loss of particles*

storage, analogue *see analogue storage*

storage, digital *see digital storage*

storage devices
- *see also energy storage devices; optical storage devices; semiconductor storage devices*
- No entries

storage organisation *see file organisation*

storage rings
- DORIS current supplies, equipment design and performance *(German)* 8−21797
- electron, syncyrotron orbital radiation appl., vacuum ultraviolet and soft X-ray radiation sources *(Japanese)* 8−25941
- electron synchrotron storage ring RF power supply *(German)* 8−17453
- ISABELLE ISR, computer based control and monitoring system 8−46191
- ISR performance for pedestrians 8−29676
- N-100 storage ring, vacuum ultraviolet-radiation extraction channels 8−5071
- NAP-M proton storage ring, equilib. beam orbit meas. 8−831
- neutrons, torroidal superconducting magnet ring 8−21795
- PETRA electron-positron storage ring, vacuum system techniques and problems 8−17452
- radiative polarisation, review 8−33335
- secondary electron amplification in high energy accelerators 8−46193
- synchrotron radiation, appls., review 8−9010
- synchrotron radiation filtering for Mossbauer source production 8−25374
- synchrotron radiation sources and utilisation, review 8−41390

storage tubes
- *see also image storage tubes*
- No entries

stores (computer) *see digital storage*

storms
- *see also magnetic storms; thunderstorms*
- SE.Baltic storm surge peculiarities of water level *(Russian)* 8−36189
- Bay of Bengal and Arabian Sea, cyclones and depressions during 1975 8−32148
- cyclone formation, kinetic energy budget 8−16127
- cyclones, in Antarctica, effect on O isotopic comp. of fallen snow 8−36237
- cyclones evolution, study by astronauts *(Russian)* 8−40795
- cyclonic storm, 1974 Aug. 14-16, Calcutta, rainfall estimate using S-band radar 8−32157
- easterly waves and tropical storm formation, development 8−7703
- exceptional weather in 1976 over Europe 8−36251
- flood freq., analysis of storm prediction techniques 8−11976
- hailstorms, numerical simulation using cloud model 8−28269
- hailstorms, Switzerland, time-resolved hailstone size distrib. and radar struct. 8−49109
- hailstorms in Transvaal, 1972 November 29, radar obs. 8−20482
- hurricane, barotropic ocean response 8−36191
- hurricane Camille, wind speed and direction, ocean wave height and barometric press. meas. 8−36254
- hurricane Debbie, 1969 August 13-19, cloud distrib. and development 8−20493
- Hurricane Gloria, ocean wave patterns, obs. with airborne synthetic-aperture radar 8−44873
- hurricanes, inertia-buoyancy waves 8−7705
- Lake Ontario, north shore coastal boundary layer response to storm 8−24322
- mesoscale intense convective storm, Oklahoma, objective anal. 8−32168
- ocean storm surge simulation expts. 8−16052
- NW Pacific, wind-wave tropical cyclone model, parametrisation characts. 8−24301
- Port of Leba, Poland, reconstructed entrance, storm tides prediction, math. modelling *(Polish)* 8−40568
- rainfall network analysis, optimal estimation of total areal storm depth 8−49059
- rainfall prediction for attenuation prediction in Earth-space paths *(French)* 8−49062
- strong gales in E.Atlantic region, jet stream effects in subtropical latits. *(Spanish)* 8−44966
- swell waves at St. Helena related to distant storms 8−20432

storms continued
- Switzerland, 1975 August rainfall at Vitznau on Lake Lucerne 8−7743
- tornado and models of atmospheric random vortices 8−28265
- tornado vortex model, appl. to nuclear plant design 8−17444
- tornado vortex simulation at Purdue University 8−40677
- tornadoes probing with pulse Doppler radar 8−20558
- tornadogenesis, numerical model of vortex growth 8−49114
- tropical cyclone, nested grid for 3-dimens. 3-level model 8−28342
- tropical cyclone model vortex motion with and without current 8−28266
- tropical cyclone nested grid model, noise control 8−11957
- tropical cyclone statistical prediction models, Monte Carlo significance testing 8−44943
- tropical cyclones, convective fluxes 8−28267
- tropical cyclones, photometric method for estimating cloud cover from satellite data 8−4007
- tropical hurricane, main ocean waves calcs. *(Russian)* 8−16021
- tropical storm Delia, prod. of ocean currents on continental shelf 8−7655
- typhoons transformation, effects of extratropical circulation 8−3908
- upper atmosphere disturbances, seasonal vars. in latit. struct. 8−32264
- warm core cyclone over North Sea, conditional instability *(German)* 8−16118
- wave and swell forecasting for North Sea 8−7658
- zone location methods using radiothermal remote meas. of ocean *(Russian)* 8−16189
- AgI particles in seeded storms, detection 8−3884

strain ageing
- steel, Bauschinger effect minimization by dynamic strain ageing 8−48469
- steel, C, strain ageing contribution to fatigue hardening 8−23817
- steel, C-Mn, pressure vessel usage, elevated temp. mech. beahviour 8−35462
- steel, CC Cr-Mo (2.25, 1 wt.%) effect of heat treatment on tensile props. 8−23745
- steel, Cr-Mo (2.25, 1.00 wt.%), bainitic, strain rate effects on elevated temp. tensile behaviour 8−35461
- steel, Cr-Mo (2.25, 1 wt.%), annealed, heat treatment effect on tensile props. 8−11243
- steel, H_2 effect on yield 8−15474
- steel, low C, fatigue strength under rotating bending and torsion, understressing effects *(Japanese)* 8−44201
- steel, Mg effect on precipitation of C and or N, and mech. props., during strain ageing *(German)* 8−35387
- Fe, H_2 effect on yield 8−15474
- Fe-C-N, annealing in dry H_2, below 1180K, to purify to low C and N concs. 8−3072
- Nb-O, cyclic creep, effect of O_2 conc. and temp. 8−48466
- Nb-Zr-C alloy, strengthening phase, struct. and morphology after stress ageing *(Russian)* 8−31454
- α-Ti, solid soln., strain ageing *(Japanese)* 8−6953
- V-Nb, mech. props., −196-1000°C, comp. depend. 8−39847

strain gauges
- *see also strain measurement*
- blood pressure transducer, chopper preamplifier cct. 8−3659
- capacitance type, design 8−4609
- diffused Si pressure transducer, stress conc. at transverse gauges 8−12711
- electromechanical, for testpiece deform. meas. during low-temp. tensile testing 8−7118
- embedment strain gauges for prestressed concrete pressure vessels 8−41873
- fracture mechanics specimens monitoring during environmental testing, strain gauging technique 8−31606
- gamma-ray thermometer and strain gauge for remote meas. 8−12694
- internal strain meas. by built-in gauges *(French)* 8−32806
- miniature drag force anemometer 8−14117
- nuclear fuel cladding strain meas., microprocessor-controlled microwave extensometer 8−33240
- protection, sealants suitability determ. 8−4610
- resistance strain gauges bonded to bone surface in vivo, post-mortem calibration 8−28135
- resistance type, developments and appls. *(French)* 8−12686
- semiconductor, rolling mill forces meas. appl. 8−41296
- semiconductor sensors, props. and appls. *(German)* 8−36991
- shrinkage measurement during hot pressing strain gauge device 8−11146
- Si, for cryostatic temp. 8−24782
- Statham strain gauge, fission reactor safety-related sensor, comparison with pressure transducer 8−13253
- stress/strain distrib. meas. inside plastic zone of notched sheet, fatigue crack propag. *(Japanese)* 8−6981
- transducer compensation linearisation by shunt resistors 8−12688
- transducer with one-piece strain sensitive element design 8−1617
- vacuum deposited constantan alloy-film/ceramic steel system, electromech. behaviour 8−6634
- vulcanized-rubber protection and waterproofing in seawater environment 8−16787
- Fe-Cr-Co, heat treatment effect on strain gauge factor *(Japanese)* 8−6954
- Si strain-gauge device, two-component, for aerodynamic tests on thin assemblies 8−3263

strain hardening *see work hardening*

strain measurement
- *see also strain gauges*
- bone strain in-vivo telemetry in monkeys, method 8−3697
- fibre reinforced composites, intralaminar-shear charact., 10 deg off axis test 8−35422
- fracture mechanics specimens monitoring during environmental testing, strain gauging technique 8−31606
- gas gun expts. for two-dim. strain meas. 8−5709
- hip joint prosthesis, internal meas. by built-in gauge, calibration and error sources *(French)* 8−44705
- holographic interferometry for quantitative strain meas. 8−32794
- internal strain meas. by built-in gauges *(French)* 8−32806
- irradiation-induced creep strain measurement, design and construction of apparatus 8−15634
- laser speckle photographic technique *(German)* 8−1616
- lumbar vertebra cortical surface strain distribution tests 8−11692

strain measurement continued
- metal, torsional creep under accelerator irradiation, meas. instrument 8-3262
- Moire method effects modelling using finite element method 8-38259
- Moire Rosette method for determ. of principal strain and direction 8-27695
- photoelastic coating method of meas. stress and strain 8-1614
- photoelasticity, monograph 8-19988
- pneumatic measuring/calibration system, for meas. at up to 300°C 8-45610
- polymer, volume stress/strain state 8-23896
- polymers, between −60 and +50°C 8-19974
- pressure transducer, operating temperature range extension using semicond. tensoresistors 8-4608
- prosthetic deformation measurements using holographic interferometry *(German)* 8-35911
- rocks, finite strain anal. using lines with initial random orientation 8-20568
- rocks, polygonal strain markers adaption 8-20567
- steel, stainless 304, stress corrosion cracking in high temp. water, constant strain rate meas. 8-31565
- structural deformation meas. by holographic speckle interferometry *(French)* 8-30249
- tensile specimen, normal mech. anisotropy meas. by Moire technique 8-16788
- tensile testing, low-temp. strain gauge for testpiece deform. meas. 8-7118
- three dimensional deformation measurement, Moire and light slicing methods 8-8382
- transparent materials, low-modulus, mech. props. determ. method 8-5704
- viscoelastic plastic components, using Moire method *(German)* 8-22309
- X-ray diffraction non-destructive testing method *(French)* 8-15626

strange particles
- *see also hyperons; kaons*
- inclusive strangeness changing neutral current interactions 8-8652
- nonleptonic decays of ordinary and charmed hadrons, vector-like model 8-41545
- $\nu,\bar{\nu}$ experiments at Gargamelle, strange particle production by neutral currents 8-37200
- $\nu,\bar{\nu}$ reactions at Gargamelle, strange particle prod. by neutral currents 8-37201
- $\bar{p}p \to K^0X$ or ΛX or $\bar{\Lambda}X$ at 12 GeV/c 8-4885
- $\pi^{\pm}p$ reactions, 16 GeV/c, strange particle prod. in 3 and 4 body final states 8-475

strangeness *see strange particles*

stratified flow
- atmosphere, flow of stratified fluid over obstacle *(Russian)* 8-24291
- atmosphere and oceans, wave disturbances 8-32209
- baroclinic instability in three-layer fluid 8-16099
- Boussinesq equation for infinite wall in stratified fluid 8-30336
- chemically reactive flow characts., simultaneous heat-mass transfer *(Japanese)* 8-22431
- cocurrent or countercurrent, of two fluids between vertical planes, interface stability *(French)* 8-38382
- convection, free, from sphere in slightly thermally stratified fluid, streamlines 8-5781
- gas bubble plumes in stratified environments, vertical fluid transport, double plume model 8-47019
- gas-liquid moving interface diffusion 8-22404
- gravity waves, shape and breaking in stratified shear flow 8-34147
- holographic interferometry obs. of stratified flow, isopycnic contours 8-1713
- internal linearized waves propagating in a stably stratified system, props. 8-34149
- layered medium disturbed by internal waves, statistical props. 8-22359
- mixed layer, deepening rate model *(Russian)* 8-24292
- mixed layer growth, penetrative convection in stratified fluid 8-44908
- moving surface layer, flow structure in front *(German)* 8-1712
- natural convection in vertical fluid layer, anal. by linear stability theory 8-34180
- Newtonian stars with stratified flows, mirror planes 8-32444
- ocean bottom, flow of stratified fluid over obstacle *(Russian)* 8-24291
- penetrative convection model, appls. to atmosphere, ocean and laboratory expts. *(Russian)* 8-24335
- planetary boundary layer flow with neutral stratification over gentle topography 8-3851
- reservoir, stratified layer config. *(Japanese)* 8-20454
- reservoir, stratified layer turbidity *(Japanese)* 8-20455
- rotating superposed fluids, MHD instability, flow through porous medium 8-14089
- shear flow, weakly nonlinear stability theory 8-18331
- slug formation, horizontal and inclined pipes, gas-liq. flow model 8-14083
- stability of aligned, stratified, compressible magnetoatmospheric shear flow 8-26197
- Taylor columns on β-phase 8-42639
- topographic planetary waves, resonant interactions, continuously stratified fluid 8-36186
- turbulence, mixing 8-22400
- turbulent spot in stably stratified fluid, dynamics *(Russian)* 8-40558
- two-layer, entrainment at interface *(Japanese)* 8-9671
- two-phase stratified flow through fractures in porous media 8-5792
- viscosity distribution effect on flow stream parameters along bottom surface, model *(Russian)* 8-22401
- vortex ring evolution in stratified and shearing environment 8-30303

stratosphere
- acidic Cl vapour, midlatit. seasonal meas. 8-32142
- aerosol collected at 34°S, change in nature 8-28286
- aerosol conc. using iterative method from twilight polarization meas. 8-20464
- aerosol particles, microphysical processes 8-7709
- aerosols, physical state and nature of undissolved granules 8-28275
- Antarctica, winter, Nimbus-5 atmospheric temp. fields deviation from radiosonde data 8-32138
- anthropogenic effects on UV radiation and climate 8-28289
- balloon two-dimensional sounding method for stratospheric shallow layer 8-3985

stratosphere continued
- chlorofluoromethanes in lower stratosphere, latitudinal profiles 8-44989
- clouds, thin persistent very high, in stratosphere over Antarctica, nature determ. 8-36247
- fluorocarbons, world production and release, 1975, rel. to stratospheric O_3 8-3919
- free radicals, meas. by matrix isolation EPR 8-46374
- general circulation, anal. of rocket soundings on Kerguelen Island (February-May, 1973) 8-20489
- general circulation, radiative transfer, transport processes, review 8-49105
- halocarbons, identification and meas. 8-32186
- laser photochemistry of O_3 and distant spectroscopy *(Russian)* 8-28314
- lower, power spectral anal. of meteorological data 8-40616
- mass spectrometer beam system, stratospheric comp. meas. appls. 8-7808
- model, temp. feedback effect on O_3 conc. 8-28277
- northern hemisphere, temp., contour height and wind at 30 mbar level 8-24350
- photochemical-radiative damping and instability in the stratosphere 8-28259
- pollution, review of Climatic Impact Assessment Programme (CIAP) 8-16153
- positive ion composition, balloon-borne mass spectrometric meas. 8-32194
- rotational electric field of auroral origin 8-45102
- satellite-borne IR scanning radiometer obs. of stratosphere, optimum field view and spacing 8-16201
- solar radiation absorption by water vapour, thermotidal exciting function 8-28310
- stationary planetary waves and zonal wind, southern hemisphere 8-28276
- trace gases, temporal and latitudinal vars. 8-40619
- tropical O_3 spatial variations, influence of meridional transport and planetary waves 8-20463
- two-layer atmosphere, orographic perturbations *(Russian)* 8-16136
- VHF coherent radar sounding, wind and refractivity turbulence struct. 8-28281
- waves in lower stratosphere, radar meas. 8-44917
- wind measurements by radar in Arctic region 8-49172
- winds in troposphere and stratosphere, connections with dynamical processes in lower thermosphere *(Russian)* 8-24401
- winter processes, rel. to wind regime of lower thermosphere 8-4019
- CO_2 conc. meas., comparability 8-20495
- Cl and ClO radical in situ obs., rel. to O_3 depletion 8-36241
- $Cl+C_2H_2$, reaction kinetics, stratospheric implication 8-31618
- $ClONO_2$, mechanism of UV photolysis at 302.5 nm 8-20031
- ClOO, stratospheric chem., formation and loss reactions 8-16138
- ^{38}Cl and ^{39}Cl radioisotopes, chemical form 8-44913
- H_2 mixing ratio vertical profiles 8-32181
- HCl, vertical distrib. in stratosphere 8-20470
- HCl+O(OH), reaction rate const. temp. depend., stratospheric implications 8-31616
- HF/HCl, ratio in 14-38 km region of stratosphere 8-20469
- HNO_2+O_3 reaction kinetics under stratospheric conditions 8-11499
- H_2O vapour latit. distrib. in lower stratosphere, aircraft meas. 8-32173
- H_2O vapour mixing ratio, Australia, 1973-76 period 8-49116
- HOCl, ab initio MRD CI calc., electronic spectrum, dissoc., heat of reaction, formation 8-21857
- HOCl, HOOCl, stratospheric chem., formation and loss reactions 8-16138
- HO_2NO, unimol. dissoc., rate consts., temp. depend., atmospheric implications 8-7175
- NH_4^+, mutual neutralisation, with simple and clustered positive (negative) ions 8-44372
- NO and O_3 meas., mixing ratio 8-44915
- NO_2 and HNO_3 concentration, simultaneous meas. *(French)* 8-16107
- NO_2, tangent ray meas. technique, effect of NO_2 conc. vars. at twilight 8-32141
- NO_x chemistry, significance of HO_2NO_2 8-11971
- N_2O, distrib., mixing ratio 8-32175
- N_2O in lower stratosphere, latitudinal profiles 8-44989
- N_2O, trichlorofluoromethane and dichlorodifluoromethane conc. meas. 8-32171
- N_2O UV absorpt. spectrum at stratospheric temps. 8-28260
- N_2O_5+O, rate const., 220K, 300K, discharge-flow method 8-44352
- O_2-O_2 and O_2-N_2 dimers from O_2+N_2 collisions, solar radiation absorpt. 8-9167
- O_3, 9.6 μm band radiance calc., excitation processes 8-36350
- O_3 affecting ground-level oxidant concs. at Santa Rosa 8-16112
- O_3 and mass transport, stratosphere to troposphere, Project Dustorm, tropopause folding 8-32177
- O_3 and NO meas., mixing ratio 8-44915
- O_3 and tracer particles creation and destruction, probability distribs. 8-20496
- O_3 column, increase rel. to NO_x emission from SST and subsonic aircraft 8-11979
- O_3 conc., effects of NO_x emissions of high-altitude aircraft 8-32176
- O_3 content, influence of 1972 August 4 solar proton event 8-7732
- O_3 depletion by chlorofluoromethanes, two-dimens. time-depend. model 8-24341
- O_3 depletion by chlorofluoromethanes, contradiction of theory 8-49099
- O_3 diurnal var. and scattering rel. to Cl concs. 8-7710
- O_3, effect of increased N fixation 8-28288
- O_3, effects of agriculture 8-16123
- O_3 layer, depletion by nearby supernova explosion 8-32499
- O_3 monitoring with IR heterodyne radiometer 8-16216
- O_3 profiles and chemical loss rates in tropics, BUV meas. 8-49091
- O_3 total content vars. correl. with ionospheric f_0F_2 vars. 8-45098
- O_3 transport from stratosphere to troposphere 8-7687
- O_3, two dimens. behaviour model *(French)* 8-49104
- O_3 vertical distrib. in upper stratosphere, satellite and surface-based obs. 8-40620
- O_3 vertical distrib. over Aspendale, Australia, climatology 8-20475
- O_3, vertical profile determ. by lidar sounding from ground 8-11972
- Pu distribution in Ohio soils, local and stratospheric sources 8-16015
- S content, contrib. from OCS transported from troposphere 8-20466

stratosphere continued
SO$_2$, oxidation role for HSO$_3$ layer, reaction rate consts. 8−32202
SO$_4^{2-}$, concs. at high altitudes 8−20468
strays (atmospherics) *see atmospherics*
streak photography
camera, direct readout devices 8−38037
camera for subpicosecond chronoscopy 8−38030
compressed laser fusion targets, time resolved X-ray pinhole photography 8−38548
dye laser, actively mode-locked, flashlamp pumped, streak camera obs. of pulses 8−22158
electro-optical deflector streak camera system, for picosecond laser pulse diagnostics 8−33909
filament velocity measurement, during spinning, streak photography 8−41367
high energy CO$_2$-laser pulse, interaction with liquid and solid targets, optical investigations 8−42829
holographic interferometry, high-speed, real-time 8−37839
image convertor camera, for laser and laser-plasma diagnostics 8−38550
image convertor camera, with microchannel intensifier, modular design 8−42427
image convertor tubes, high speed, for laser pulse recording 8−33903
image convertor tubes for nanosecond, subnanosecond photography, dynamic range 8−38034
image convertor tubes for streak cameras, operating characts. comparison 8−38031
image-convertor camera, high-speed, computer treatment of images 8−42295
laser fusion, image convertor camera optical measurement 8−38549
laser picosecond pulse meas. using streak camera 8−33902
nanosecond hydrodynamic diagnostics, streaking camera, fibre optic probes 8−37096
Photochron picosecond streak cameras, intensity dependent time resolution and dynamic range 8−45745
photoelectronic streak camera tube, magnetically focused 8−33907
picosecond chronoscopy of repetitive weak light sources 8−38033
picosecond exposure scanning camera, and associated recording system *(French)* 8−42429
picosecond image convertor streak cameras, dynamic range 8−38032
picosecond streak camera, dynamic range and spatial resolution 8−42428
picosecond X-ray chronoscopy 8−38546
picosecond X-ray spectral studies 8−38547
plastic plate velocity measurement, as continuum, by streak camera technique 8−37095
subnanosecond X-ray framing camera, fibre array technique 8−41394
subpicosecond X-ray streak camera, for laser-fusion diagnostics 8−42822
synchro-streak technique *(German)* 8−41368
ultrafast scintillators, response 8−41393
velocity-time history recording, by laser interferometer system 8−45602
X-ray streak camera, high time resolution, with X-ray microscope *(French)* 8−42823
streamer chambers
C-CD camera for streamer chamber appl. 8−37513
C-CDs for recording streamer chamber tracks 8−37515
cryogenic targets for streamer chambers and cryofluid target supply *(Russian)* 8−13381
filling by scavenging technique 8−9026
flash tube discharge mechanism determ. from digitisation pulse output 8−17504
photography, rapid-cycling cameras, stereo images 8−37484
pulse transformer-based HV system 8−5095
sensitivity comparison of Kodak SO-143 film and CCD for streamer chamber appl. 8−21820
streamers *see discharges (electric)*
streaming, acoustic *see acoustic streaming*
strength (mechanical) *see mechanical strength*
stress *see internal stresses; stress effects; stress/strain relations; yield stress*
stress analysis
see also bending; crack-edge stress field analysis; photoelasticity; photoplasticity; strain gauges; thermal stresses; torsion; yield strength; yield stress
adhesive bonded tubular lap jont, stress anal. 8−18253
central Aleutians lithosphere, unbending stresses rel. to double Benioff zone 8−32047
angle-ply laminate, edge effects 8−19803
anisotropic axisymmetric solids, asymmetric stress anal. 8−26033
annular elastic membranes, large deflections, theoretical and expt. exam. 8−30186
asymptotic techniques for stress conc. regions in plane problems 8−28953
automotive struct. analysis using hybrid stress finite elements 8−30176
bending wave propag. in transversely struck plate, birefringence obs. *(German)* 8−48582
bonded composite hollow circular cylinder, asymmetrical transient thermoelastic problems 8−30181
bone, osteonic lamellae, evidence for state of initial stress 8−3536
bone stress wave detection using piezoelec. effect, non-invasive technique 8−31948
boundary integral eqn. methods, advanced appl. 8−42531
Boussinesq-Papkovich displacement functions, generalisation to anisotropic medium 8−12570
cohesive strength of constructional components with crack-type defects, stress intensity coeff. *(Russian)* 8−30234
cold rolling of laminated composite sheet, finite element anal. 8−39797
compact tension specimen, J-integral eval. *(Japanese)* 8−9607
composite beams, exam. of contact problem, using boundary value problem soln. 8−42532
composite cylinder, mechanical loading, photoelastic stress anal. 8−26031
concrete, unreinforced pavement slabs, environmentally induced stresses, computer experiments 8−35435
connector choice in finite element anal. 8−45
contact problem, circular cylindrical shell and open circular rod 8−38195
stress analysis continued
contact stress anal. involving fretting fatigue loadings, computer soln. 8−34096
continuous stress and displacement fields, algorithm, finite element anal. 8−30178
Cosserat strip under tension, effect of couple-stresses on stress conc. around rigid circular inclusion 8−13898
creep fracture, Dugdale model for crack opening and growth 8−5699
creep of spherical thick walled vessels under internal press. 8−30190
cubic crystal, application of integrated photoelasticity *(Russian)* 8−47465
cubic crystals, dislocation theory, soln. of eqns. *(German)* 8−38701
cubic crystals, elastic strip, moving stress sources, boundary-value problem soln. *(German)* 8−38702
curved plate assemblies under biaxial loading, finite strip buckling anal. 8−18203
cyclic strain hysteresis loop, width and area determ. 8−26056
cyclic stress amplitude meas. by time-averaged photoelasticity 8−18261
cylinder, dynamic thermal stresses due to heating *(Polish)* 8−18183
cylinder elastic orthotropic brittle, under axisymmetric thermal and press. loading failure probability anal. 8−34078
cylinders and plates, dynamic deform. at high frequencies *(Russian)* 8−18223
cylindrical shell, design for minimum wt. 8−9560
cylindrical shell, pressurized, containing long part-through notch plane strain general yielding 8−18199
cylindrical shell, three layer, with strap reinforcement under internal pressure, stress-strain state calc. 8−30184
cylindrical shells, dynamic response to concentrated impulse loads 8−22259
cylindrical testpieces, axial residual stresses determ. problem 8−7115
damping, internal, in 2 and 3 dimens. continua 8−13970
deflection of cables, cylindrical suspended roofs with complex loading, incremental algorithm 8−9558
diffusion coating of plate, residual stresses, with allowance for phase transform. *(Russian)* 8−11357
dilute suspension of spheres in power model fluid, apparent stress deform. behaviour 8−42578
disc with variable thickness, cross-section warping and corres. stress quantities *(German)* 8−18206
double cantilever beam, dynamic stress intensity factors computation and crack arrest stress intensity factors 8−34088
double torsion specimen, stress analysis 8−9567
duralumin, elastic-plastic stress anal. by photoelasto-plastic method and X-ray method *(Japanese)* 8−13978
elastic body, slip plane intersection with stress free boundary, inhomogeneous yielding 8−5667
elastic body containing fine inclusion system in single plane *(Russian)* 8−34017
elastic elbow, in-plane bending behaviour, finite element anal., pipeline design 8−18166
elastic infinite thick plate, axially symmetric loading, numerical method *(Japanese)* 8−9568
elastic plate, infinite, concentrated load, stress. anal., numerical method *(Japanese)* 8−22273
elastic porous media, acoustic phenomena 8−25997
elastic structures, computer automated synthesis for minimum struct. weight 8−34015
elastically nonlinear medium, field of dislocation shifts, integral eqn. *(Russian)* 8−47374
elasto-plastic buckling of curved webs, Gauss-Seidel iterative procedure 8−34043
elasto-plastic problems, error anal. 8−1578
elastoplastic shell constitutive eqns. 8−18188
energy methods, book 8−1571
fast burst reactor, WSMR, thermal shock stress anal. for enlarged irradiation cavity 8−33242
fatigue crack growth, Paris eqn., C and m parameters 8−18243
fatigue cracks, dislocation model, threshold stress intensity 8−18244
fatigue strength, notched plates 8−9601
femur, human, with implanted Charnley prosthesis, stress anal. 8−20314
femur with proximal prosthesis, 3-dimens. anisotropic stress anal. and failure prediction 8−40424
fibre reinforced composites, bond stresses of isotropic body with elastic inclusions 8−30180
field emitter, field-induced stresses, numerical analysis 8−35274
finite antiplane shear field near crack tip in elastic solid 8−18245
finite elastic cylinders, Ritz solns. for axisymm. temp. and stress fields 8−38190
flat ring subject to internal pressure, elastic-plastic anal. 8−13913
frame corner plane stress distrib. and local buckling *(German)* 8−13940
fusion reactor blanket first wall time-depend. thermal stress model 8−787
glass fibre reinforced, thin walled cylinder, tangential stress charact. during twisting 8−13911
graphite reinforced epoxy laminate, edge effects 8−19803
hemitropic micropolar thermoelastic continuum, static and dynamic problems 8−22293
heterogeneous materials, linear analysis 8−5664
hip bone stress analysis using finite element model 8−44518
hollow shaft with longitudinal slots, torsional stress state 8−30183
human femur, three-dimensional finite element analysis 8−7379
hybrid composite material beams, exam. of shear stress correction factors 8−46899
hyperboloid, elastic parted, mixed axisymmetrical problem *(Russian)* 8−36831
hypercircle method in the problem of a case-bonded cylinder in the gravity field 8−45484
incompatible quadrilateral basis functions 8−41146
indentation of elastic half-space by rigid rectangular punch 8−18167
inelastic material stress-strain stiffness matrix calc. 8−34032
infinite cylindrical shell containing filler, reinforced by ring, influence of arbitrary load 8−42533
infinite linearly-elastic circular cylinder, wrinkling induced by surface stress 8−26070
infinite plate, axisymmetric interaction with elastic halfspace, influence of Mindlin force 8−38193
isoparametric nine-noded finite elements, accuracy 8−26039
isoparametric shell elements study *(Japanese)* 8−34016

stress analysis continued
- isotropic material, modified stress deviator for plastic compressibility *(German)* 8−13914
- Lamb's problem, generalisation to class of inhomogeneous elastic half-spaces 8−32023
- laminate, multilayer, stress-strain state 8−18177
- laminate, simple shear charact., comparison of test methods 8−44283
- laminated anisotropic shells, transverse shear stiffness calc. 8−42526
- laminates, piecewise continuous eigenfunction solns. 8−18178
- linear elastic fracture mechanics, stress singularities interfaces 8−34079
- materials and structures testing 8−3298
- mean stress calc., equivalence of stress and energy 8−1565
- metal, porous, stresses in deform. region during cold rolling 8−11241
- metal creep, deform. struct. modeling, compatibility conditions *(Russian)* 8−13924
- metal/glass fibre reinforced plastic vessel, with damaged reinforcing layer, carrying capacity 8−39876
- metallic composite materials, stress redistrib. upon breakage of brittle fibres 8−48527
- micropolar elasticity, stress concentration around elliptic hole 8−5658
- microscopic for sintered carbide tips 8−5663
- mode I crack, non-steady growth 8−18241
- modified crack closure integral, finite element calc. of stress intensity factors 8−18235
- multilayered composite soft interlayer, limiting stressed state and carrying capacity 8−30201
- multiply connected orthotropic body, plane thermoelastic problem 8−38199
- nonlinear elastic half-space, dynamic contact stresses due to axisymmetrical projectile impact 8−42573
- nonlinear finite element anal. ADINA program for stress anal. 8−41148
- nonlinear stress wave propagation, in perfectly flexible string 8−5670
- nonlinear theory of hereditary media, functional relationship between stress, strain and temp. 8−26054
- notched bars, elastic plastic stress and strain conc. factor *(Japanese)* 8−26052
- notched rectangular bars, stresses at plastic deflection *(German)* 8−34025
- nozzle-to-cylinder structures subjected to internal pressure, finite plate method 8−34007
- numerical stability of complex finite elements 8−32659
- numerical-experimental hybrid technique for 3-D stress anal. 8−22265
- optimum safety factors 8−38197
- orthotropic bridge decks with closed stiffeners, anal., behaviour 8−18164
- orthotropic laminate composite, broken layer 8−38254
- orthotropic plate, plastic flow, effect of shear stress and geometrical changes *(Russian)* 8−13925
- orthotropic shell of revolution, plastic flow, effect of shear stress and geometrical changes *(Russian)* 8−13925
- photoelastic isodynes, new type of stress modulated light intensity distrib. 8−26092
- photoelasticity for stress analysis under hydrostatic press. up to 700 MPa 8−18260
- piezoceramic benders, circular, bond stresses 8−21124
- piezoelectric thin plate, electroelastic equilib. anal. *(Russian)* 8−19417
- pipe, curved, in creep, flexibility 8−34039
- pipeline, axially compensated, buckling load determ. *(German)* 8−31456
- plastic, stress-deformation diagram for materials without significant elastic section *(Russian)* 8−13923
- plastic slip concept, statistical approach *(Russian)* 8−18196
- plasticity, rate-independ. theory for multimode plastic straining, unifying concepts 8−42545
- plasticity with hardening, mixed finite element method appl. 8−9577
- plastics, using pseudo-elastic method 8−39868
- plate, anisotropic, transcritical strength optimisation 8−30175
- plate, containing infinite row of holes, effect of couple-stresses on stress concentration 8−41159
- plate, increase of first natural freq. and buckling load by optimal fields of initial stresses 8−13945
- plate, infinite, with doubly periodic elliptical hole array, two-dimens. stress anal. 8−46892
- plate, infinite row of holes, effect of couple-stresses on stress concentration 8−38192
- plate, laminated composite, under tension, interlaminar stresses around circ. cutout 8−34010
- plate, medium thickness, stepped holes, stress conc. 8−13912
- plate, notched, plane strain general yield due to combined axial force and bending 8−18197
- plate, rectangular with two opposite edges supported and partially loaded *(Japanese)* 8−34004
- plate, symmetrically notched, plane-strain general yield due to combined axial force and bending 8−18198
- plate, thin, unlimited, with noncircular hole, stability problem soln. *(Russian)* 8−18201
- plate, three-layered, weakened with cylindrical cavities, stressed state determ. for bending problem *(Russian)* 8−22263
- plate and shell theory, generalised two-dimens. theories generation 8−12569
- plate with circular hole, stress distrib. under simple tension in electrostriction 8−10845
- plate with sharp angled holes, bending *(Russian)* 8−34045
- plates, simply supported, under uniform loading, caustics 8−22277
- polyester, stress-optic law, photoplasticity, RPE transition temp. 8−10120
- polyurethane, stress plate in contact zone with solid indentor 8−1624
- pressure vessel, reinforced concrete, stress anal. of cracked shell 8−44213
- pressure vessel intersections, review of lower-bound limit anal. 8−34008
- pressure vessels, shearing stress minimisation by automated design optimisation 8−17289
- prestressed pressure vessel, calc. of principal stresses 8−13206
- prismatic body for nonstationary thermal action, stress-state algorithm *(Russian)* 8−13905
- prosthesis, hinged knee, influence of dynamic loading on mech. loosening 8−48938
- prosthetic aortic valve, Reul-Ghista optimal tri-leaflet Avcothane design performance 8−44736

stress analysis continued
- prosthetic aortic valve stress analysis using finite element compute program 8−48930
- recrystallisation, induced, in thin metal plates *(German)* 8−19783
- rectangular orthotropic plates with nonlinear stress-strain relns., large deflections 8−26040
- rectangular plate resting on Pasternak-type elastic foundation, large deflection 8−38215
- reinforced concrete, lower bound anal. for torsion 8−35436
- reinforced plastic, elastic orthotropic cylindrical shell, axisymmetric contact problems, shell interaction with tires 8−1569
- reinforced viscoelastic disc, equilibrium 8−9576
- residual stresses in welded joints of double-wall piping *(Russian)* 8−27541
- retaining walls, conoid, cylindrical shells, numerical methods 8−5655
- rod, slightly curved, residual stress determ. 8−30185
- shell, cylindrical, effect of material orthotropy on stress state around circular hole 8−34023
- shell of revolution with internal press. subject to temp. field, optimum shape 8−22272
- shell structure analysis, new stress finite element 8−18165
- shell structures, hood-shaped, membrane solution *(German)* 8−46891
- shells, cylindrical, imperfect, closely-spaced, dynamics and failure criterion for axial impact 8−30207
- shells, finite cylindrical, of various wall thicknesses, flexural vibrs. 8−1588
- simulated diffusion bonded lap joints, finite element stress analysis 8−18254
- sliding contact, stress conc. on rough surfaces determ. by polarisation-optical method *(Russian)* 8−30244
- spatial structure stress analysis, continuum treatment method *(Japanese)* 8−22260
- spherical thick-walled shell with filler thermal stresses 8−13909
- steel, C, elastoplastic stress anal. by photoelasto-plastic method and X-ray method *(Japanese)* 8−13978
- steel, high strength, shell, stress distrib. around notch, beyond fatigue limit 8−13928
- steel, SA540, fracture toughness props. for nuclear bolting appl. 8−35514
- structure reliability under random loading 8−38196
- surface loads, reciprocating dynamic stresses produced in elastic half space 8−9562
- thermal stresses due to moving heat sources *(Polish)* 8−18184
- thick plate flexure by arbitrary load *(Russian)* 8−22287
- thick rectangular plate bending under own weight *(Japanese)* 8−22284
- thick walled composite tube manufactured by polymerisation of inner cylinder 8−46916
- thick-walled cylinder subject to internal press. and bending, full plastic anal. at collapse stage 8−22275
- thick-walled vessel, of brittle material, strength under external press. 8−30182
- tibial shaft internal fixation, biomech. study 8−20313
- truncated cone, subject to axisymmetric loading, stress-strain state 8−1570
- tubular joints stress anal., finite element anal., computer programs 8−41808
- twisted bar, elliptic, stress and deform. states produced by axisymmetric elastic torsion *(Italian)* 8−22262
- two-axis tensile test machine, for static and dynamic tests *(French)* 8−15627
- two-layer transversely isotropic elastic plate, energy-asymptotic method *(Russian)* 8−13906
- wedge under surface press., elastodynamic response 8−18169
- Winkler layer, axisymmetric deform. by internally loaded elastic half-spaces 8−26044
- Al, single cryst., latent hardening *(Japanese)* 8−44135
- B fibre reinforced Al, stress redistrib. anal., upon brittle fibre breakage 8−48527
- WC-Co sintered carbide tips, microscopic stress anal. 8−5663

stress birefringence *see mechanical birefringence*

stress corrosion cracking
- AK4-1 alloy, sheet mat., fatigue and corrosion fatigue strengths, coatings effects *(Russian)* 8−11397
- alloy 01420 fine structure effect on stress corrosion cracking *(Russian)* 8−35571
- brass, admiralty, in nonammoniacal sulphate solns. 8−27592
- brass, intergranular stress corrosion cracking mechanism 8−15597
- brass, stress corrosion cracking constitution of Pourbaix diagrams for ternary systems by digital computer 8−35595
- bubble form. in Al-Zn-Mg at grain boundaries after water vapour embrittlement 8−15564
- cantilever beam method to investigate J_{Ic} and J_{Iscc} *(Chinese)* 8−15488
- cell construction for metal SCC obs. in boiling $MgCl_2$ 8−39962
- ceramic, toughened, stress corrosion characts. 8−19912
- D16 alloy, sheet mat., fatigue and corrosion fatigue strengths, coatings effects *(Russian)* 8−11397
- energy measurement and significance in acoustic emission testing 8−31594
- glass, toughened, stress corrosion characts. 8−19912
- glass reinforced plastics, static and fatigue failure, fracture mechanics 8−19898
- glass-ceramic, strength, effects of moisture-assisted slow crack growth 8−27593
- metal, hydrogenating under continuous static loading, accurate electrolytic method 8−23854
- metal, surface layer dissolution, effect of rate on softening during plastic strain 8−39957
- nylon, stress cracking induced by $ZnCl_2$ solns. 8−27594
- optical fibre fatigue strength, environmental and temp. effects 8−46835
- optical fibre high-temperature fatigue strength and OH^- stress-induced corrosion 8−1387
- steel, 20, 17GS, 65g and 40, H_2S cracking, KXO inhibitor simulated field trials *(Russian)* 8−31573
- steel, 30KhGSA, fatigue strength under fretting corrosion, effect of plasma-sprayed coatings *(Russian)* 8−11394
- steel, 40KhNMA, corrosion fatigue strength, effect of polishing and diamond smoothing *(Russian)* 8−31575
- steel, 45 and 10KhN4MDF, corrosion fatigue under low cycle loading *(Russian)* 8−31578

stress corrosion cracking continued
steel, AISI 1020, stress corrosion cracking susceptibility and anodic behaviour in phosphate solns. at 100°C 8−7096
steel, austenitic stainless, alloying and environmental variation effects on SCC susceptibility 8−31563
steel, austenitic stainless, Kh17N13M3T, corrosion fatigue fracture in carbamide prod. *(Russian)* 8−31574
steel, austenitic stainless, stress corrosion cracking, effect of Cl^- content, pH, test soln. temp. 8−11388
steel, austenitic stainless *(German)* 8−19953
steel, boiler plate, comp. effects on SCC resist. *(Russian)* 8−11400
steel, C, fatigue cracks, in NaCl, oil and water vapour *(Japanese)* 8−11414
steel, cold drawn prestressing tendon, rational test for stress corrosion cracking 8−44246
steel, commercial C, stress corrosion cracking susceptibility in liquid NH_3 *(Japanese)* 8−11411
steel, Cr (13 wt.%), tempered, quenched, fatigue resistance in corrosive medium *(French)* 8−23870
steel, Cr-Mo-V, cyclic oxidation and crack growth during high strain fatigue 8731586
steel, fatigue limit in inhibited H_2SO_4 soln., halide anion effects *(Russian)* 8−11399
steel, high temperature strength, corrosion-erosion effect of gas metal mixtures stream *(Russian)* 8−35576
steel, high-strength 12KhN3A, anode and cathode processes in corrosive environment, fatigue *(Russian)* 8−35573
steel, low alloy, 18KhMVTCh, corrosion cracking resistance in sulphide environments *(Russian)* 8−31571
steel, low C, hot rolling effects on struct. *(Russian)* 8−19793
steel, low-alloy pipe, low-cycle fatigue in H_2-evolving media, S content and sulphide inclusion effects *(Russian)* 8−11398
steel, maraging, Ni, stress corrosion cracking 8−35563
steel, Ni (5 wt.%), corrosion fatigue 8−27683
steel, NiCrMoV, stress corrosion cracking, cold work effects 8−11383
steel, St-3, and 45G17Yu3, effect of paint coatings on corrosion fatigue strength, for corrosion in seawater *(Russian)* 8−31572
steel, stainless, 1Kh18N10T, solution annealed effect of cyclic stresses on corrosion rate in acid environments *(Russian)* 8−31577
steel, stainless, BWR cooling system pipes 8−23880
steel, stainless, cold worked, pitting corrosion in NaCl soln. 8−44257
steel, stainless, Kh18N10T, quinoline salt inhibitors for corrosion in $MgCl_2$ soln. *(Russian)* 8−31579
steel, stainless, stress corrosion cracking inhibition in chloride soln. 8−35558
steel, stainless, sulphide stress corrosion cracking resistance, improvement by heat treatment 8−7076
steel, stainless 304, corrosion crack initiation at growing pits under pulsating level *(Japanese)* 8−11409
steel, stainless 304, corrosion crack initiation in active potential range under pulsating loads *(Japanese)* 8−11408
steel, stainless 304, intergranular stress corrosion cracking mechanism 8−15597
steel, stainless 304, stress corrosion cracking, chloride effect, constant strain rate testing in high temp. water 8−35568
steel, stainless 304, stress corrosion cracking in high temp. water, constant strain rate meas. 8−31565
steel, stainless 304L, stress corrosion cracking in 5 mol/l H_2SO_4/0.1 mol/l NaCl soln., temp., strain effects 8−31590
steel, stainless 304L, stress corrosion morphology in H_2SO_4/NaCl soln. at room temp., electrochemical potential effect 8−15596
steel, stress corrosion cracking, in liquid NH_3, electrochemical exam. *(Japanese)* 8−39945
steel, structural, naturally and artificially weathered, SEM characteris. 8−23882
steel, testing in moist H_2S 8−23901
steel, U8, diffusion coating protection for H_2 embrittlement, SCC and tensile tests *(Russian)* 8−31513
steel, ultrahigh strength, Si addition and retain austenite effect on SCC, quenched and tempered 8−48567
steel, welded joints of tube 10G2SD, corrosion fatigue *(Russian)* 8−35574
steel, white layers effects on stress-corrosion resistance rel. to C content *(Russian)* 8−11393
steel 23K2G2T, corrosion cracking susceptibility, C and Cr effects 8−19952
strain gauging techique for monitoring fracture mech. specimens during environmental testing 8−31606
thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
Zircaloy-2 cladding, fracture in iodine environment 8−31581
Zircaloy-2 cladding, in iodine vapour, 250-450°C 8−17313
Al alloy, D16ATV, clad, effect of surface corrosion on fatigue testing *(Russian)* 8−31576
Al alloy 7075, cyclically deformed, high strength, hydrogen embrittlement 8−31584
Al alloys, stress corrosion crack growth 8−19930
Al, sliding wear in NaCl of varying pH 8−3240
Al-Cu (4 wt.%), fatigue crack propag. role of adsorption in H_2S, Hg and moist air *(French)* 8−15580
Al-Cu-Mn-Mg alloy D16, sheet, corrosion fatigue strength, with anodised and painted surfaces *(Russian)* 8−35575
Al-Mn-Zn, fatigue cracks, in NaCl, oil and water vapour *(Japanese)* 8−11414
Al-Zn-Mg (4.5, 2.5 wt.%), composition effect on stress corrosion and mech. behaviour 8−27684
Al-Zn-Mg alloy 1915, stress corrosion cracking, protective anodic film *(Russian)* 8−35572
Al-Zn-Mg alloys, H_2 bubbles in embrittlement 8−19868
Al_2O_3, sintered, strength, effects of moisture-assisted slow crack growth 8−27593
Cu and Cu-Al (8 wt.%) single crystal, surface dissolution effect on fatigue damage and crack nucleation 8−39936
Cu, creep rate, effect of surface anodic dissolution in acetate buffer soln. 8−3249
Cu, stress reduction of straining single crystal due to anodic dissolution *(Japanese)* 8−15579
Fe-Cr-Ni (25, 20 wt.%), single crystal, stress corrosion cracking 8−35553
Fe-Cu pseudoalloy, contact corrosion in tropical marine environment 8−11422

stress corrosion cracking continued
LiF, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
SiF_4, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
Ti alloys, corrosion resistance in H_2S and NaCl, cracking tendency, strength *(Russian)* 8−31568
Ti alloys, hot salt stress corrosion cracking, electrochemical model 8−7078
Ti alloys, pseudo-α, salt-corrosion effects on long-term strength, vacuum annealing and stress concentrators effects *(Russian)* 8−11392
Ti-Al-Mo-V (8, 1, 1 wt. %), stress corrosion cracking and slow strain rate H_2 embrittlement 8−48569
Ti-O, stress corrosion crack propag. in aqueous and methanolic soln. 8−19919
U-Mo(Ti)(Q^4)(Q^5), Q^4-quad, Q^5-quint, stress corrosion cracking in moist air, salt water, salted moist air 8−35562
Zr base alloy, fatigue crack propag., role of adsorption in H_2S, Hg and moist air *(French)* 8−15580

stress effects
see also cavitation; deformation; elastic waves; heat treatment; high-pressure phenomena and effects; magnetomechanical effects; materials testing; mechanical properties of substances; mechanical testing; piezo-optical effects; piezoelectricity; piezoresistance; shock wave effects; stress analysis; stress measurement; stress/strain relations; tribology
couple stresses effect on crack tip 8−18240
perspex spheres, internal fractures due to stress wave focusing 8−18239
steel, stainless, wire, effect of stress on phase transformations 8−44119
steel US characts., change with stress appl., exam. 8−48579
Al alloy, US characts., change with stress appl., exam. 8−48579
CaO, $^3T_{1u}$ of F-centre, EPR, unaxial stress effects 8−48040
Fe-Si, influence of stress on rotational loss, lamination appl. 8−35384

stress field analysis at cracks *see crack-edge stress field analysis*

stress measurement
acoustic, stress determ. improvement of accuracy 8−15631
cyclic stress amplitude meas. by time-averaged photoelasticity 8−18261
electroplating method for high-temp. stress meas., fundamentals *(Japanese)* 8−15616
energy measurement and significance in acoustic emission testing 8−31594
films deposited on semicond. substrates, X-ray topographic meas. method 8−5710
magnetic core multivibrator, tensile stress transducer appl. 8−9615
myocardial activity determ. at surgery using shrinking stress meas. 8−31966
photoelastic coating method of meas. stress and strain 8−1614
photoelastic isodynes, new type of stress modulated light intensity distrib. 8−26092
photoelasticity, monograph 8−19988
photoelasticity for stress analysis under hydrostatic press. up to 700 MPa 8−18260
polychromatic X-ray stress meas. *(Japanese)* 8−7143
polymer, volume stress/strain state 8−23896
polymeric materials, stress meas., X-ray diffr. technique, review 8−5713
residual stresses determination in rod specimens with stresses varying along rod length 8−38260
residual stresses in thin specimens, layer-by-layer X-ray diffr. analysis, additional strains and corrections 8−39964
steel, C, X-ray diffraction correlation between cyclic loading and residual stress *(German)* 8−48583
steel deformation response meas. device *(German)* 8−3261
transmission holographic bench, for qualitative and quantitative analysis *(Rumanian)* 8−46545
viscoelastic plastic components, using Moire method *(German)* 8−22309
X-ray diffr. method calibration, elastic const. meas. technique 8−7164
X-ray diffr. residual strain meas., elastic const. meas., material errors 8−5714
X-ray diffr. residual stress meas. method using parallel beam optics 8−5717
X-ray diffractometer for stress meas. in different ψ-directions 8−5715
X-ray dual detector diffractometer for residual stress meas. 8−5716
X-ray meas. of internal stresses in electrodeposition stress in cylinder 8−27693
X-ray residual stress anal., computer controlled, software, precision 8−5712
X-ray stress anal., diffractometer line profile location, computation techniques 8−5711
X-ray stress meas. by counter method, statistical anal. 8−27694
X-ray technique by side inclination method without $-\eta$ inclining incident angle *(Chinese)* 8−15608
Ni *(Japanese)* 8−15617

stress-optical effects *see piezo-optical effects*

stress relaxation
see also anelastic relaxation; creep; viscoelasticity
amorphous solids, time-temperature-pressure superposition phenomena, free volume theory 8−26059
brittle fracture kinetics, one-dimensional stress fields and spherical wave reflection 8−9608
burn-scarred human skin rheological props. in vivo meas. 8−31935
butadienepstyrene, surface phenomena in struct. rearrangement after deform. *(German)* 8−19913
clamped skewed plates, elastic deformations by dynamic relaxation 8−34049
concrete, creep, time dependent behaviour under high tensile stress *(Japanese)* 8−31465
corundum single crystals, stress relax., cracking during growth 8−47263
creep const. determ. from stress-relaxation meas. in bending and torsion 8−9572
endopelvic fascia, human, stress/strain history relations in simple elongation 8−44539
equation of state for class of viscoelastic deforms. 8−26060
fibrous structures, mech. relax. theory 8−13916
fracture, plasticity model, dislocation based, geometrically consistent 8−30242
glass, thermal stresses, temporary and residual, monitoring by semiautomatic heating polariscope-polarimeter 8−16833

stress relaxation continued
glass, toughened, 200 to 600°C 8−19800
Inconel X750 springs, in-reactor stress relaxation 8−11256
linear one-dimensional viscoelastic solid, flow and relaxation distribution 8−36833
metals and alloys relaxation resistance testing using constantly loaded sample 8−39965
neointimas developing on flocked surfaces of left ventricular assist device, mech. anal. 8−40431
optimal heating of solid body and stress relax. role *(Russian)* 8−22258
phenolic resin filled and unfilled, mech. relaxation behaviour, effects of temp. and time *(German)* 8−6963
polyethylene, high-density, lamellar sep. during deform. 8−23775
polyethylene, linear, cold-deformed, texture and molecular chain mobility 8−19805
polyethylene rod, high oriented, mech. behaviour 8−15446
polymer, amorphous, molecular origin of relaxations 8−26058
polymer, physically nonlinear, stress relaxation during stretching 8−23754
polymer, plane materials stress relax. and creep under biaxial loading, test procedure 8−3279
polymer, relaxation properties investigation method and instrument 8−39967
polymer strength, kinetic nature 8−15524
polymeric materials, stress meas., X-ray diffr. technique, review 8−5713
polymers, construction of single relaxation time spectrum 8−44160
polypropylene drawn film, rheo-optical studies 8−15440
polystyrene melt, normal and shear stress relax., Rheometrics mech. spectrometer transient response 8−42577
power plant pipelines under creep conditions, aspects *(Russian)* 8−13930
PVC, kinetic nature of strength 8−15524
rubber-like polymer, molecular relaxation process effect on strength *(German)* 8−31440
skin, living, human, constant strain rate, hysteresis and stress relax. behaviour 8−40237
smectic-A liquid crystal, layer rigidity, stress relax. 8−18545
steel, 23Kh2G2T, exam. of stress relaxation characts. 8−44159
steel, austenitic, approx. method for high-temp. cracking resistance estimation 8−23914
steel, eutectoid and hypoeutectoid stress relaxation during rapid heating transform. *(Japanese)* 8−11258
steel, martensitic, low C wire, strain tempering by rapid heating *(Japanese)* 8−31428
steel, Ni-Mn (16, 2 wt.%), 40N16G2, single crystal, stabilisation and destabilisation mechanisms *(Russian)* 8−23732
steel, wire, reinforced prestressed concrete, strain-tempering conductions and mech. props. *(Japanese)* 8−39816
styrene-butadiene copolymer, birefringence and stress relaxation 8−44158
thermodynamics of internal variables, rel. to absolute reaction rate theory 8−18696
viscoelastic properties dynamic evaluation for use in cardiac prosthetics 8−40405
Ag single crystal, dislocation dynamics during stress rate changes 8−19813
Al alloy, residual stress relax. rel. to temp., load cycling, aircraft struct. appl. 8−7053
Al, load relaxation, plastic deform. theory and plastic eqn. of state 8−27554
Al-Zn (11 wt.%), stress depend. of strain rate at elev. temps. 8−23757
Be, brittle-ductile transition, intergranular embrittlement *(Russian)* 8−3208
Be-Cu mill-hardened strip stress relaxation obs. 8−48485
Cu, activation vol. and dislocation density determ. from relaxation tests 8−3264
Fe, BCC surface ledge simulation, dislocation-like relaxation 8−30620
Fe, high purity, mag. viscosity mechanism 8−19282
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous alloy, structural relaxation kinetics, X-ray diffr. exam. 8−38627
LiF, plastic deform. and dielec. losses 8−19410
NaCl, internal stresses and dislocation mobility 8−48440
NaCl, plastic deform. and dielec. losses 8−19410
NaCl single crystal, plasticity, effect of alternating electric field 8−15481
NaCl, strained in one glide system at 450°C, dislocation struct. 8−22728
NaCl type crystal, dislocations due to high temp. stress relax. 8−2126
Ni, magnetised mono- and polycryst., activation vol. var. during low temp. deform. *(Russian)* 8−3178
Pb, film, deposited on Si substrate, residual strains 8−18915
Pb-Sn eutectic, superplastic, anelasticity effect on stress relaxation 8−31443
WC, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-Co, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-Co-Ta (Ta-Ti-Nb), cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
Zn, deforming stress under basal slip, contrib. of forest and primary dislocations 8−3186

stress/strain curves *see stress/strain relations*

stress/strain diagrams *see stress/strain relations*

stress/strain relations
see also elastic constants; elastic limit; serrated yielding; yield point; yield stress
alloys of two ductile phases of unequal strength, deform. *(Japanese)* 8−11284
anisotropic elastic half-space, plane indentation by moving punch 8−18181
aortic wall stress-strain characts. after sequential enzymolysis 8−3530
arterial segments, canine, nonlinear anisotropic viscoelastic props. 8−20205
articular cartilage controlled impact test instrum. and procedure 8−28130
Boussinesq-Papkovich displacement functions, generalisation to anisotropic medium 8−12570
burn-scarred human skin rheological props. in vivo meas. 8−31935

stress/strain relations continued
composite ribbed cylindrical casings, stressed-deformed condition under external hydrostatic press. 8−6996
compression struts, of nonlinear viscoelastic materal time dependent load bearing capability *(German)* 8−48474
compression test, determ. of accurate flow props. 8−27718
concrete, creep, time dependent behaviour under high tensile stress *(Japanese)* 8−31465
connector choice in finite element anal. 8−45
cylinder elastic orthotropic brittle, under axisymmetric thermal and press. loading failure probability anal. 8−34078
cylindrical envelope, stability under effect of axial contractive power and cross pressure *(Russian)* 8−42550
cylindrical shell, three layer, with strap reinforcement under internal pressure, stress-strain state calc. 8−30184
diagram, automatic plotting during mech. testing 8−27724
diamond, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
diamond anvil high-press. X-ray camera, effect of uniaxial stress component on lattice strains 8−38584
distribution measurement, inside plastic zone of notched sheet, fatigue crack propag. *(Japanese)* 8−6981
double cantilever beam, dynamic stress intensity factors computation and crack arrest stress intensity factors 8−34088
elastic/viscoelastic bar interface, impact wave behaviour 8−26075
elastomeric block copolymer properties obs. 8−27560
elliptic inclusion in anisotropic medium, antiplane strain problems 8−38200
endopelvic fascia, human, stress/strain history relations in simple elongation 8−44539
epoxy resins, crack propag. stability, effects of water, temp., specimen geometry, hardener 8−11324
fatigue crack, macroscopic residual stress at tip, X-ray obs. and finite element anal. *(Slovak)* 8−19885
FCC crystal, transient effects during tensile tests in model of correlated dislocation motion 8−38715
fibre reinforced composite, nonlinear stress-strain behaviour 8−26035
fibre reinforced composites, intralaminar-shear charact., 10 deg off axis test 8−35422
fibre reinforced concrete beam, load-deflection curves in flexure 8−35437
finite centre crack specimen, biaxial and nonlinear effects on energy release rate, J-integral 8−18232
fracture initiation site prediction, idealized polycrystalline materials, stress and strain fields 8−34092
free surface, wrinkling 8−5676
gels, non-linear behaviour under strong deform. 8−7240
glass fibre reinforced cement, review of reinforcing theory, ageing, stress/strain relations 8−44165
glass fibre reinforced composite, fatigue failure, role of shear deform. 8−15494
glass fibre reinforced polyamide thermoplastic, stiffness and strength 8−27600
glass fibre reinforced polyester filament wound pipe, failure 8−44192
glass reinforced plastic orthotropic shell and filler system, compactile performance 8−5659
graphite, ATJ-S, strain response to mixed tension and compression loading 8−26032
inelastic deformation, hardness law 8−46896
infinite cylindrical shell containing filler, reinforced by ring, influence of arbitrary load 8−42533
Kevlav fibre reinforced cement composites, cement boards, exam. of mech. props. 8−48499
laminate, multilayer, stress-strain state 8−18177
laminate, simple shear charact., comparison of test methods 8−44283
linear one-dimensional viscoelastic solid, flow and relaxation distribution 8−36833
lung translation, rot. and strain calc. from roentgen-videographically recorded marker displacements 8−31843
metal, nonlinear mech. response, Swift effect 8−35433
metal, plastic deform. effects from X-ray diffr. data, moment method *(Czech)* 8−31593
metals and alloys, stress-strain time dependence based on nonlinear heredity, delayed yielding 8−48452
muscle, human skeletal, mech. simulation 8−35878
nonisothermal elastic-plastic and elastic-viscoplastic deforms., stress/strain relations 8−22276
nonlinear elasticity, continuous dependence of solution on given data 8−18182
nonlinear multimodulus orthotropic material, nonsymmetric compliance matrix theory 8−26032
nonlinear stress wave propagation, in perfectly flexible string 8−5670
nonlinear theory of hereditary media, functional relationship between stress, strain and temp. 8−26054
orthotropic laminate composite containing layer with crack, stress intensity factors 8−5694
plastic anisotropy theory based on yield function of fourth order 8−31457
plastic deformation, steady-state straining 8−5669
plastic deformation analysis, metalworking process appl. 8−27586
PMMA, solid, stress-strain behaviour, strain rate and temp. effects, cryogenic temps. *(Japanese)* 8−11315
polyamide, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
polycrystals, large elastic-plastic deform. anal. with finite element method 8−26049
polyester model material, optical response and yield behaviour 8−31453
polyethylene, linear, strain rate effects on ratio of recoverable to nonrecoverable strain 8−27566
polyethylene, linear role of recovery forces in deformation 8−48459
polyethylene spherulites, high density, microstruct. and mech. props. 8−42921
polymers, apparatus for determ. of volume stress/strain state 8−23896
polymers, multicomponent, props. and struct., review 8−44076
polypropylene monofilaments, tensile props., orientation degree depend., IR dichroism obs. 8−3163
polystyrene, oriented amorphous, supermol. structures rel. to mech. behaviour 8−22673
polystyrol, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453

stress/strain relations continued
PTFE, struct. effects in stress-strain relations at elev. temps. 8−31484
PVC, solid, stress-strain behaviour, strain rate and temp. effects, cryogenic temps. *(Japanese)* 8−11315
PVC, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
PVC, volume stress/strain state using new apparatus 8−23896
sea ice deformation, viscous law as stochastic average of plasticity 8−16028
shaped charge jet stability 8−13919
sheet metals, strain-induced changes in mech. props. and press formabilities 8−19781
shell of rotation, existence and uniqueness of soln. for stress-strain state *(Russian)* 8−36830
simulation appl. to materials, conf., Gaithersburg, USA (April 1976) 8−27387
spherical cavity surrounded by infinite elasto-plastic medium, upper bound on asymptotic pressure 8−38214
steel, AISI 1010, low-cycle fatigue at temps. up to 1200°F 8−35516
steel, Al-killed rolled sheet, plastic anisotropy theory based on yield function of fourth order 8−31458
steel, austenitic stainless, 304, solution annealed, tensile flow behaviour after exposure to flowing Na, in temp. range 550 to 700°C 8−35463
steel, austenitic stainless, electron beam welding effect, on mech. props. of steels 310L, 316, 21-6-9 8−48498
steel, H_2 effect on yield 8−15474
steel, low alloy, cladded with monolayer austenitic stainless steel, heavy section, residual stresses *(German)* 8−35420
steel, low C, cyclic stress-strain response under spectrum loading *(Slovak)* 8−19886
steel, low C, lower yield stress, grain size effects, Petch slope, temp. depend. *(Japanese)* 8−39852
steel, medium strength plate, quenched and tempered, fracture toughness in ductile-brittle range 8−7036
steel, Mn-C (1, 0.1 wt.%) strip, hot rolled, P effect on mech. props. 8−27532
steel, stainless, ferritic, 18%Cr, stress/strain curve, H_2 charging influence, room temp. *(Japanese)* 8−39884
steel, stainless 22 CND 17-13, mechanical description between 20 to 1000°C, thermoplastic calc., stress strain relations *(French)* 8−35449
steel, stainless 304, stress corrosion cracking in high temp. water, constant strain rate meas. 8−31565
strain and failure relationship of stressed solids 8−9574
tension test with neck triaxiality reduction 8−7159
thermochemical equilibrium of solid under stress, nonlinear theory 8−18701
tissue properties, skin and other soft connective tissues 8−44521
truncated cone, subject to axisymmetric loading, stress-strain state 8−1570
valve tissue, glutaraldehyde preserved, stress/strain and fatigue behaviour 8−40217
viscoelastic isotropic linear material characteristics, finite element method *(German)* 8−32681
viscoelastic plastic components meas., using Moire method stress calc. from measured strain *(German)* 8−22309
viscoelastic properties dynamic evaluation for use in cardiac prosthetics 8−40405
yield surface motion and loading surface 8−15449
Zircaloy, micrograin superplasticity at 850°C 8−23758
Zircaloy-2 cladding, fracture in iodine environment 8−31581
Ag, FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
AgCl:Li$^+$(Na$^+$)(K$^+$)(Rb$^+$), impurities effect on plasticity, brittleness 8−14398
Al alloy, US testing of cold worked surface, quality evaluation 8−48602
Al, isoaxial bicrystal, deformation behaviour, study by photoelastic coating and moire methods *(Japanese)* 8−11294
Al, prestrained, isotropic hardening rule, rel. to stress/strain curve 8−23772
Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
Al-Cu, flow stress, origin of high strain rate sensitivity 8−44186
Al-Cu (4 wt.%) alloy, precipitation hardened, single crystal, directional plastic behaviour, exam. 8−39788
Al-Mg-Si solid solution under stress, solute atom clustering during ageing 8−31430
B fibres of various diameters, tensile strength, elasticity, elongation 8−3189
C adsorbent, granules and artifacts, strength, mech. characts. 8−23771
C fibre reinforced plastic, laminate, non Hookean behaviour in fibre direction, effect of fibre waviness on tensile props. 8−19804
C fibre reinforced polyamide thermoplastic, stiffness and strength 8−27600
Cd single crystal, low-temp. work hardening 8−3138
Cu, ⟨100⟩ oriented single crystal plastic deform. and prominent cross slip 8−19852
Cu, dislocation mean free path at 77K under elastic deform. 8−44162
Cu FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Cu, stress strain anal. of single crystal induced by absorbed H_2 *(Japanese)* 8−11276
Cu-Al (9 wt.%), deformed, fatigue crack propag. 8−27621
Cu-Al-Si-C (95, 2.8, 1.8, 0.4 wt.%) fracture characts. of superplastic single phase, exam. 8−48500
Cu-Ge (1 at.%), FCC crystal, stress-strain curve, stage I to stage II transition *(Japanese)* 8−19834
Cu-Ti(0.7 at.%), plastic deform. and precip. hardened, annealing time 8−48446
Fe, H_2 effect on yield 8−15474
Fe, stress strain anal. of single crystal induced by absorbed H_2 *(Japanese)* 8−11276
Ge, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
^{4}He, HCP, free standing cryst., shear deform. 8−2333
^{4}He, solid BCC, plastic deform., stress-strain relations and US attenuation 8−38909
KCl, press. induced low-temp. polymorphic transition, hysteresis 8−14467
Mo, strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797

stress/strain relations continued
Nb-T alloy, effect of T on low temp. yield stress of Nb, comparison with Nb-H alloy behaviour 8−39863
Pb single crystal, normal-superconducting transition and plastic flow 8−3166
(SN)$_x$, tensile and piezoresist. expts. 8−15447
Si, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
Si, process stress analysis by IR photoelastic meas. 8−11488
Ta, slip between 0.7 and 40K 8−19808
V-H, H effect on tensile props. at moderate temps. *(Japanese)* 8−19831
V-Nb, mech. props., −196-1000°C, comp. depend. 8−39847
W, strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
Zn, incompatible bicrystals, effect of grain boundaries on mech. props. *(Japanese)* 8−39798
Zn, thermal recovery and stress-strain relations 8−11266

stresses, internal *see internal stresses*

striations *see discharges (electric)*

striking *see impact (mechanical)*

strip lines
multimode optical waveguide propagation and interference effects *(Japanese)* 8−46764

stripping reactions
form factors anal. 8−21538
light nuclei, backward scatt. of d, ^{3}He and α-particles, heavy-particle stripping 8−13107
model-independent spectroscopic information, use of spectroscopic factor and vertex constants 8−17168
(d,p), Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
(t,p), two-nucleon stripping reactions with Tabakin pot. 8−21570
^{36}Ar(d,p), Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
^{12}C(^{6}Li,α)^{14}N, 33 MeV, multiple reaction mech., exact finite range DWBA calcs. 8−25231
^{12}C(p,^{6}Li)^{7}Be, 51.9 MeV, heavy particle stripping process 8−46058
^{40}Ca(t,p)^{42}Ca, two-nucleon stripping process with effective interactions 8−610
Ca(d,p), A=40, 48, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
^{40}Cd(d,p)^{41}Ca, 11 MeV, effect of Skyrme type density depend. effective pots. 8−46069
^{116}Cd(d,n)^{117m,g}In, excitation functions 8−13105
^{59}Co(d,p), ^{60}Co low lying states, DWBA anal. 8−29478
Cr (d,p), A=50, 52, 54, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
^{2}H(d,p)^{3}H, ^{2}H(d,n)^{3}H, analysing power meas. 8−25204
^{98}Mo(^{3}He,d), ^{99}Tc level struct., spin-parity assignments 8−8743
^{45}Sc(d,p), absolute normalisations from spin depend. sum rule anal. 8−8828
S(d,p), A=32, 34, Tabakin pot. calcs., differential cross sections, ang. distribs. 8−611
^{28}Si(d,p), Tabakin pot. calcs., differential cross sections, ang, distribs. 8−611
^{148}Sm(^{18}O,^{16}O)^{150}Sm, 2_1^+ ang. distributions, shape difference between pickup and stripping reaction 8−33209
^{96}Zr(t,p), 20 MeV, short range correlations with Tabakin pot. 8−13115

stroboscopes
see also velocity measurement
magneto-optical stroboscope for thin magnetic film pulsed magnetic reversal studies 8−4667
meter for photosensors time characts., using programmed strobing of anal. zone 8−283
picosecond diagnostics of rapid processes 8−47159
pointer instrument freq. response determ. appl. *(Polish)* 8−29102
stroboscopic TV study, interaction of two high-velocity gas jets 8−42695

strong-coupling superconductors
Eliashberg eqn. soln. for transition temp. *(Chinese)* 8−26985
Eliashberg equation solution and series expression for T_c 8−31013
Eliashberg equations at zero and crit. temps. 8−34919
high T_c superconductivity, theory 8−14870
LF EM response function 8−10605
metal, exchange enhancement of electron-phonon coupling 8−47968
transition metal alloy, binary, conc., superconductivity and electron-phonon interactions, theory 8−14868
transition temp., Eliashberg theory 8−2614
transition temperature, local field effects, theory 8−14848
transition temperature, strong coupling theory, appl. to ^{3}He 8−47629
Nb, strong-coupling microscopic parameters, electron tunnelling obs. 8−14888

strong interactions, elementary particle *see elementary particle strong interactions*

strontium
see also nuclei with ......
atom, 4607.3 Å resonance, collision broadened, due to laser beam interaction, anal. 8−42006
atom, autoionisation reson. states elec. field depend., three-photon ionisation 8−33478
atom, autoionising Rydberg states, doubly excited, by tunable dye lasers 8−33479
atom, electron impact excitation, from metastable states 8−1084
atom, quadratic Zeeman effect, diamagnetic shift, Rydberg series, strong field mixing 8−946
atom, Zeeman effect of J=2 states, g-factor, interacting Rydberg series 8−17609
atoms and ions in discharge, temp. and conc. determ. by spectral line shapes *(Russian)* 8−14214
ion recombination laser 8−17923
isotope evidence for petrogenesis in Mexican andesites 8−28203
isotope excretion in man, comparison of stable Sr, ^{85}Sr and ^{90}Sr 8−24153
liquid, density meas. at intermediate temps., method employs Archimedes' Principle 8−22784
nepheline syenite, dating, Rb-Sr internal isochron, ^{39}Ar-^{40}Ar plateau age methods *(French)* 8−32031

strontium continued
  plasmon excitation by oblique incidence of primary electron beam of medium energy 8−18987
  radioactive waste solidification, leaching behaviour of ^{90}Sr 8−37416
  radionuclide migration from low-level waste burial site 8−21671
  separation from potash salts, ion exchange methods *(German)* 8−23940
  skin transport, role of diffusion 8−20158
  specific heat and thermodynamic props. 5-350K 8−47534
  transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
  vapour, generation of tunable 16 μm radiation by stimulated hyper-Raman effect 8−46715
  $AgCl:Sr^{2+}$, plasticity, impurity hardening effect 8−47466
  Al_2O_3-P_2O_5-Mg(Ca)(Sr)O glasses, Na^+, Sr^{2+} diffusion coeffs. rel. to temp. 8−30787
  Ca, electrical resistivity and thermoelectric power 8−26846
  $CaF_2:Sr^{2+}$, localised vibrs. due to substitutional impurities 8−22803
  KCl:Sr, thermoluminescence and colour centre thermal stability in irradiated sample 8−43941
  $KCl:Sr^{2+}$, polarisation-plastic effect 8−2794
  $NaCl:Sr^+$, ionic thermocurrent exam. 8−10833
  Sr II, resonance level lifetime meas. by pulsed laser excitation of ion beam 8−25480
  Sr III (IV), UV spectra, 40-100 nm, crossed electron and atomic beams *(Russian)* 8−37580
  Sr^{2+} effect on neuromuscular junction transmitter release during repetitive stimulation 8−3469
  $Sr+D(D^+)$, 2.7 to 31 keV, D^- equilib. charge-state fractions 8−17750
  Sr+He, nonstatistical excitation of mag. substates of $^1P_1$ level 8−42194
  Sr_2, matrix isolated, vis. and near IR spectra 8−5214
  ^{87}Sr, $^3P_2$ metastable state, hyperfine struct. at. beam mag. reson. obs. 8−17590
  $^{87}Sr/^{86}Sr$, ratios in Recent andesites in Ecuador and N.Chile 8−32042
  $^{87}Sr/^{86}Sr$ ratios of calc-alkaline volcanism rel. to Peru-Chile Trench granulitic basement 8−28204
  ^{89}Sr behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
  ^{89}Sr distribution between bound and free forms, in vitro meas. of rat soft tissue 8−28095
  ^{90}Sr, balance in man, effect of P intake 8−15911
  ^{90}Sr diffusion in feldspars, laboratory study 8−7621
  ^{90}Sr removal from ocean waters, adsorpt. on hydrated MnO 8−3822
  $Sr^*+Cl_2 \rightarrow SrCl^*+Cl$, chemiluminesc. studies 8−40030

strontium compounds
  halides, absorpt. spectra in air-acetylene flame, using AAS with data processing 8−20102
  perovskite, Sr_2XReO_6, (X=Li, Mg, Ca, Mn, Fe, Co, Ni), new seignettomagnets and ferroelectrics 8−19425
  rare earth orthocobaltites, $R_{1-x}Sr_xCoO_3$, electronic and mag. props., itinerant ferromagnetism obs. 8−10660
  strontium acetate hemihydrate:Cu^{2+}, EPR of cryst. 8−19312
  strontium uranyl tetraformate hydrate, struct. determ., orthorhombic unit cell, UR spectrum *(French)* 8−22705
  Al_2O_3, sintering with $SrTiO_3$ admixture *(Polish)* 8−19699
  Al_2O_3-P_2O_5-Mg(Ca)(Sr)O glasses, Na^+, Sr^{2+} diffusion coeffs. rel. to temp. 8−30787
  (Ba, Sr)TiO_3 ferroelectric film, phys. props. in weak elec. fields 8−35098
  (Ba,Sr)TiO_3 polycrystalline solid soln., electrostriction constants, reson.-antireson. meas. *(Russian)* 8−10849
  (BaSrCa)O, cathodes, thermionic emission characts., X-ray struct. obs. 8−48270
  $Ba_{0.25}Sr_{0.75}Nb_2O_6$, photovoltaic current, temp. and spectral depend. 8−47828
  $Ba_{0.25}Sr_{0.75}Nb_2O_6$, spontaneous electroopticabsorption effect 8−19443
  $Ba_xSr_{1-x}Nb_2O_6$, growth defects 8−38640
  $Ba_xSr_{1-x}Nb_2O_6$, nonequilibrium processes 8−48124
  $Ba_xSr_{1-x}Nb_2O_6$, struct. and dielec. props., isomorphic substitution effect 8−27165
  (BaSr)TiO_3 film, ferroelec., dielec. props. in strong elec. fields 8−27163
  $BaSrTiO_3$, semiconducting, excess noise characts. exam. 8−19110
  $Ba_{1-x}Sr_xTiO_3$ ceramic pyroelec. responsivity, −140° to +160°C obs. 8−23405
  $Ba_xSr_{1-x}TiO_3$, disordered ferroelec., dielec. const. and spontaneous polarisation meas. 8−48130
  $(Ca_{1-x}Sr_x)RuO_3$, mag. props. 8−27027
  $Cd(PO_3)_2$-$Sr(PO_3)_2$, physicochemical investigation 8−44102
  $CsSrCl_3:Mn^{2+}(Gd^{3+})$, structural transitions, EPR meas. 8−34619
  $Eu_xSr_{1-x}S$, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
  $Eu_xSr_{1-x}SO_4$, mag. ordering temp. conc. depend., Eu mag. hyperfine field temp. depend. 8−14971
  KCl:RbCl, $SrCl_2$, IR window material, cryst. growth and props. 8−31333
  $KCl:SrCl_2$, H_{na} annealing, X-ray irrad., H centre capture by IV dipoles 8−10927
  KNO_3-$Sr(NO_3)_2$ molten mixtures, electrical conductance 8−43159
  $La_{1-x}Sr_xCrO_3$, x=0-0.2, AC and DC cond., 77-1300K, hopping of polarons 8−2477
  $La_{2-x}Sr_xNiO_4$, $(0 \leq x \leq 1)$, cryst. struct. and elec. props. 8−2088
  $LiSrPO_4$, vibrational spectra and cryst. struct. 8−39536
  $NaVO_3$-BaV_2O_6-SrV_2O_6, phase diagrams, simple eutectic system 8−48379
  $Pb_{0.95}Sr_{0.05}(Ti_xZr_{1-x})O_3$, solid solns., parameters of Curie Weiss law, permittivity meas. 8−15129
  $Rb_2O.SrO.4B_2O_3.12H_2O$, real Patterson function determ., method of rhombs. 8−5986
  Sr ferrite crystals, etch pitting, of hard magnetic ferrite crystals *(German)* 8−26568
  $(Sr/Ba)(Fe/Al/Ga)_{12}O_{19}$ solid soln. crystal for hexaferrite layer substrate *(German)* 8−23672
  $SrAl_2O_4:Eu^{2+}$, activated phosphors, luminesc. efficiency, temp. and high-press. 8−23508
  $SrAl_2SiO_8$, micro-crystal, appl. of method for indexing *(German)* 8−22608
  $SrBPO_5:Eu^{2+}$, activated phosphors, luminesc. efficiency, temp. and high-press. 8−23508

strontium compounds continued
  $Sr_{0.75}Ba_{0.25}Nb_2O_6$, SBN, hologram storage, book contrib. 8−25834
  $Sr_{0.75}Ba_{0.25}O_6$, photorefractive effect, spectral characts. 8−43829
  $SrBi_2Ta_2O_9$, SHG, temp. depend. ferroelec.-ferroelec. transition 8−15121
  $SrBr_2$-H_2O, ^{79}Br NQR, cryst. struct. 8−27110
  $SrCO_3$, $NiCO_3$ impurity effect on dissoc. 8−27425
  $(SrCaR)_2(Cr_xGa_{1-x})O_4$, R=La or Sm, mag. 2-D oxide, phys. props. 8−47974
  $SrCl_2$, elastic constants and acoustic wave velocity, temp. variation 8−6118
  $SrCl_2$, high temp. powder neutron diffr., transition to highly conducting phase 8−47586
  $SrCl_2$, photoelectron spectra, geometry 8−29816
  $SrCl_2$:Cm(Bk), fluorite-struct., self-luminesc. 8−27309
  $SrCl_2:Gd^{3+}$-m^+ complex, cryst. field parameters 8−10768
  $SrCl_2$:KCl, polycryst., ionic cond. 8−2292
  $SrCoO_{2.70}$, growth and props. 8−48310
  $SrEu_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
  SrF, $B^2\Sigma^+$-$X^2\Sigma^+$ system, rot. anal. using a cw tunable dye laser 8−9165
  SrF radical, rot. spectrum of $X^2\Sigma^+$ state, MODR 8−9176
  SrF_2, addition to $SrTiO_3$, effect on sintering kinetics 8−44037
  SrF_2, electronic polarizability and dielectric const., strain derivatives 8−19406
  SrF_2, force consts., mean amplitudes of vibr. 8−17647
  SrF_2, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911
  SrF_2, laser window material, surface and bulk absorpt., photoacoustic meas. 8−25912
  SrF_2, linear thermal expansion coeff., capacitance method meas. 8−16772
  SrF_2, optical props. of cation colloidal particles 8−23503
  SrF_2, width of upper valence band, tight-binding calc. 8−26814
  $SrF_2:Ce^{3+}$, dipole reorientation, Ce^{3+} conc. effect 8−10841
  SrF_2:Cm, fluorite-struct., self-luminesc. 8−27309
  $SrF_2:Eu^{2+}$, circular polarisation in luminesc. and optical orientation 8−6740
  $SrF_2:Eu^{2+}$, phonon spectroscopy, phonon pulse spatial, spectral and temporal evolution 8−34580
  $SrF_2:Gd^{3+}$, high-order EPR transitions of Gd^{3+} centre 8−23335
  $SrF_2:Gd^{3+}$ film, Gd^{3+} luminesc. spectrum and kinetics 8−6763
  $SrF_2:Tm^{2+}(Yb^{3+})$, trigonal centres, point-charge approx. 8−39072
  SrF_2:Yb, superhyperfine interaction of trigonal Yb^{3+} centres 8−27117
  SrF_2-ZnS, dielec. films, transparent, microscopic inhomogeneities and optical breakdown 8−10844
  $SrF_2(Cl_2)$, polarised Raman scatt. in fluorite crysts., anharmonicity, high-temp. disorder 8−35132
  $SrFHF_2$, ^1H and ^{19}F NMR 8−2753
  $SrGa_2$, layered, dispersion of acoustic phonons, inelastic neutron scatt. 8−47484
  $SrGa_2Si_2O_8$, ordered synthetic feldspar, cryst. struct. 8−34469
  $SrGeO_3$, second modification, cryst. struct. 8−22702
  $SrHAsO_4$, weilite, cryst. struct. 8−38671
  SrI_2, photoelectron spectra, geometry 8−29816
  $Sr_{1+x}La_{1-x}MnO_4$, cryst. struct. determ. *(French)* 8−6042
  $SrMoO_4$, precipitation from neutral equivalent solns., cryst. numbers, final morphology and sizes 8−23597
  $Sr(NH_3)_6$, PMR linewidth, proton tunnelling and NH_3 rot., rapid NH_3 diffusion 8−35045
  $Sr(NO_3)_2$, Raman and infrared spectra, structure of nitrate ion from space groups 8−43002
  $Sr_2Nb_2O_7$-$Eu_2Nb_2O_7$, new system preparation 8−42994
  $SrNd_2S_4$, specular IR reflectance 8−2844
  SrO, electronic struct. of F-centre 8−30887
  SrO epitaxial layer, on Mo (110), secondary electron emission and struct., LEED and AES expts. 8−2958
  SrO, mm wave spectrum, spectroscopic consts. 8−37629
  SrO, NaCl struct., elastic props., US meas. 8−18697
  SrO, proton, neutron irradiated, fluorescence from anion vacancies, F^+ centre model 8−48221
  $SrO:Co^{2+}$, EPR, optical, MCD absorpt. spectra 8−43692
  SrO:D, γ-irrad., V_{od} defects, EPR and ENDOR 8−27116
  SrO:Ni, EPR of Ni^+, two-stage increase in symmetry, reorientation of cryst. field axes 8−27085
  SrO-B_2O_3, ^{11}B NMR lineshape, BO_3^{-3} triangle, perfect trigonal symm. *(Korean)* 8−19367
  SrO-$MMoO_4$, M=Cd,Pb, phase diag. cross sections and reactions 8−27487
  SrO(100) surface, rumpling calc. 8−14559
  $SrO.HfO_2(ZrO_2)$, US comminution of refractory compound powders 8−23656
  $SrO.3B_2O_3.5H_2O$, thermal dehydration 8−43132
  α-$Sr_2P_2O_7$, Raman, IR spectra, factor group anal. and band assignment 8−35126
  $Sr_{10}(PO_4)_6(OH)_2$, IR spectra, stretching and librational bands of OH 8−2841
  $SrRMnO_4$, (R=La,Nd,Sm,Gd), cryst. struct. determ. *(French)* 8−6042
  SrR_2S_4, R=rare earth, ternary sulphide with Th_3P_4 struct., vib. spectra 8−2844
  $SrRuO_3$, mag. props., mag. torque meas. 8−23295
  $SrSi_2$, dimorphic, transform. of three-dimens. three-connected Si nets 8−42944
  $Sr_2Ta_2O_7$-$Eu_2Ta_2O_7$, new system preparation 8−42994
  $SrTb_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
  $Sr_nTi_{n-4}Nb_4O_{3n+2}$ layer ferroelectrics, physical props. 8−10854
  $SrTiO_3$ 8−6678
  $SrTiO_3$, absolute cross sections of second order Raman scatt. 8−39548
  $SrTiO_3$, apparatus for biaxial stress production at low temp., appl. to ferroelectric 8−45609
  $SrTiO_3$, central peak in spectrum of ferroelec. mode fluctuations and dielec. losses, 4.2K 8−19432
  $SrTiO_3$, chemisorbed phases of water, UPS meas. 8−10285
  $SrTiO_3$ crystals, O ion diffusion, in single and polycrystalline structures 8−22892
  $SrTiO_3$, EPR meas., Hamiltonians with quartic anharmonicities 8−27083
  $SrTiO_3$ electrodes, photoelectrolytic, defect surface states obs. 8−14815

strontium compounds continued
  $SrTiO_3$, flame fusion growth of optical quality crysts. 8−11099
  $SrTiO_3$, H_2 reduced, neutron scatt. study of structural phase transition, central-peak enhancement 8−30755
  $SrTiO_3$, heat capacity crit. behaviour 8−10857
  $SrTiO_3$, non-orthogonal orbitals and recursion method 8−43284
  $SrTiO_3$, photoanode water photoelectrolysis at high current density 8−15679
  $SrTiO_3$, pure and Nb doped, heat treated, Hall effect, electrical cond., optical absorpt., defect states 8−47812
  $SrTiO_3$, semicond., free carrier optical absorption and scatt. *(Korean)* 8−23489
  $SrTiO_3$, sintering kinetics rel. to added SrF_2, ZrO_2 8−44037
  $SrTiO_3$, soft phonon and central peak coexistence, theory 8−14443
  $SrTiO_3$, surface EM wave propag., IR refl. expts. 8−39553
  $SrTiO_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
  $SrTiO_3:Cr^{3+}$ crystal, radiationless relax., photoacoustic spectra 8−27264
  $SrTiO_3:Mn^{n+}$, reduced, EPR of Mn centres 8−35029
  $SrTiO_{3-x}$, anion deficiency studies 8−22708
  $SrTiO_{3-x}$, single cryst. and film, Auger spectra, surface comp. 8−27353
  $SrUO_4$, α to β transition, anomalous behaviour 8−10182
  $Sr_{1.1}V_{12}O_{29.9}$, phase transitions, elec. cond., susceptibility and sp. ht. meas. 8−14776
  $Sr_3VTa_2O_9$, prep., characterisation and mag. props. 8−26535
  $SrZrO_3$ coatings, plasma-sprayed, spectral emittance *(French)* 8−26709
  $SrZrO_3$, high temp. phases, struct. determ., soft mode transitions 8−42942
  $SrZrO_3$, $NiTO_3$, sintering additive 8−23638
  ZnS-SrF_2 dielectric film, laser irrad. and microscopic inhomogeneities 8−2157
structure (chemical) *see chemical structure*
structure factors (crystals) *see crystal atomic structure*
structure functions
  bag model, spin-depend. struct. functions in deep inelastic scatt. 8−8589
  broken SU(6) parton model, spin depend struct. functions, deep inelastic lepton+nucleon appl. 8−428
  deep inelastic, reconstruction from moments 8−41548
  deep inelastic lepton-nucleon scattering, quark cascade model, struct. functions 8−25051
  electroproduction, spin-dependent, sum rules, test of relativistic constituent quarks 8−25050
  electroproduction structure functions in asymptotically free theories, Regge behaviour 8−25025
  fibre bundles almost complex manifold approach, curvature form 8−12915
  gluon distrib. function, tests of QCD 8−45796
  light cone singularities and struct. function moment asymptotic behaviour 8−4804
  neutron, scaling behaviour in parton model 8−16988
  parton model, mass scale effects 8−21389
  precocious scaling in field theories 8−8525
  proton, scaling behaviour in parton model 8−16988
  quark cascade model, appl. to meson spectra in e^+e^- annihilation 8−41482
  quark structure functions for hadrons, Drell-Yan model anal. of $pN \to l\bar{l}X$, $\pi N \to l\bar{l}X$, $eN \to eX$ 8−21476
  quark-parton distributions model, large transverse momentum hadrons, logarithmic scale breaking 8−16989
  shape in parton model, mass scale effects 8−25017
  virtual Compton amplitude, high-energy deep-inelastic scatt. 8−41550
  50-250 GeV EM corrections, *(Russian)* 8−25048
  d, parton model anal. of scaling in lepton 8−8642
  d, six-quark model, form factors and struct. functions 8−45871
  e(μ)p, polarised deep inelastic scatt., scaling props. of struct. functions 8−45926
  e^+e^- inclusive annihilation, many-hadron final states 8−29339
  $e^+e^- \to VX$, polarization states of produced vector meson *(Russian)* 8−25058
  ep, deep inelastic scattering on π-pole Regge *(Russian)* 8−12918
  K, extended vector meson dominance model 8−25046
  μN deep inelast. scatt., inclusive ρ^0 prod. 8−37216
  n, parton model anal. of scaling in lepton scatt. 8−8642
  ν deep inelastic scatt., four flavour quark model, struct. functions 8−45905
  $\nu_\mu(\bar{\nu}_\mu)N$ charged current total cross sections, (V-A) interactions, nucleon struct. function scaling 8−25033
  νN, $\bar{\nu}N$, y-distributions, nonscaling and longitudinal struct. function effects 8−33053
  p, parton model anal. of scaling is lepton scatt. 8−8642
  p electroprod. struct. function and constituent-particle scatt. 8−45931
  p-nucleus collisions, $\bar{p}$ and K subthreshold prod., struct. function 8−21564
  $\pi^-p \to \Lambda+X$, 4.9-40 GeV/c inclusive and semi-inclusive distribs. *(Russian)* 8−41610
  Fe+p inclusive react., structure function of conserved hadrons, 100-1600 GeV *(Russian)* 8−41611
structure of alloys, crystal *see crystal atomic structure of alloys*
structure of elements, crystal *see crystal atomic structure of elements*
student experiments *see demonstrations*
student laboratory apparatus
  biomedical equipment instruction using modularised signal processor 8−41131
  blind students, phys. apparatus 8−8189
  blood pressure transducer for student use, using hybrid IC 8−8186
  chart recorder, pen-holder design 8−16611
  chart recorders, for school use 8−12503
  counter-timer cct. 8−28900
  counter-timer-frequency meter, evaluation 8−28901
  DC amplifiers for high impedance voltmeter, expts. 8−12505
  electron rest-mass, Compton collisions with γ-ray spectrometer 8−16607
  electroscope, oscillating type, construction details 8−41123
  experiment design, course for high school teachers 8−36752
  field mill, electrostatic field meas. 8−16613
  freezing by boiling, using low capacity pump without acid 8−8192
student laboratory apparatus continued
  frequency analyzing equipment, device for scientific education in oscillatory phenomena 8−41126
  galvanometer, reflecting, as harmonic oscillator with recording facilities, for teachers 8−16606
  harmonic force acting on free mass, simple analogue computer for soln. of motion 8−28893
  holographic images, 360°, a simple procedure 8−28892
  instrumentation in undergraduate engineering curriculum 8−8206
  Kelvin-Thomson atom, theory for teachers, expt. simulation 8−4439
  laser beam alignment, reticle method 8−12495
  laser communication of sound, positional modulation 8−12498
  laser source, He-Ne, using cold-cathode plasma tube, optical and communication expts. appl. 8−45448
  lensless real-image camera 8−8456
  liquid N_2 level detector for storage Dewar 8−41125
  magnetic liquid, surface vibr. mode obs., steady state 8−41111
  magnetic wheel unipolar machine 8−12499
  multifunctional digital instruments 8−12504
  optometry, dark adaptometer for student use and optometric practice 8−48912
  oscillator, 0.25-2.5 Hz sine waves, for student lab. demonstrations 8−24624
  parallax experiment 8−24615
  Planck's constant determ., photoelectric experiment and apparatus design 8−41109
  plasma experiments on elec. cond. and similarity laws 8−24605
  pulse counter, four-function pocket calculator adaption 8−12497
  quantum mechanics, particle trapped in rectangular pot., simple computing system 8−28891
  Raman spectroscopy, pure rot., dry-lab expt. for H_2, CO_2 8−32634
  random events, circuit for recording temporal distrib. 8−41124
  sinusoidal signal source with variable phase shift 8−36782
  stellar distances, parallax and relative magnitude, laboratory model for students 8−16610
  time measurement experiment in phys. education, mass and charge meas. using electronic time counter *(Japanese)* 8−41127
  timer, phototransistor adaptor for timing systems, circuit diagram 8−8
  valve oscillator, VHF, construction and transmissions line expts. 8−28894
  water droplet interactions, expts. 8−4441
  wattmeter, static, for use in educational establishments 8−45656
  wind tunnel, smoke tracing 8−16614
  $^7Be \to {}^7Li$, total electron capture decay energy from inner bremsstrahlung spectrum, student experiment 8−24611
  ^{232}Th, α-decay half-life, liq. scintillator expt. for students 8−12496

SU_3 theory
  27-plet mesons masses, existence of low-mass long lived exotics in quark model 8−33032
  ΔS=0 weak hadron neutral current, quark parton model, νN and e^+e^- interactions 8−12859
  σ SU(3) model, quark-loop contrib., low-energy meson dynamics 8−12869
  angular momentum content of irreducible representations 8−32702
  axial-vector-current divergences in constituent-quark basis 8−8557
  baryon resonances, hadronic decay, broken SU_3 and total reduced width 8−17017
  baryonium and dibaryon, quark shell model 8−41479
  baryons, spin $1/2^+$, mag. moment sum rule, in SU_3 for u-, d- and c-quark sector 8−21428
  broken SU_3 symmetry, particle correlations in multiperipheral resonance prod. model 8−45891
  charm-strange spin in SU_3 symm. for c-, s-, d-quark sector 8−37172
  chiral invariance for asymptotic momenta, elastic scatt. of hadrons, helicity amplitudes 8−4800
  classical quark matter, one dimens., Abelian approx. 8−41491
  classification of SU(3) mag. monopole 8−364
  coloured SU(3) scheme of three quarks binding in baryons, mass formulae 8−12876
  coupling strength of meson-baryon interactions in u-, d- and c-quark sector 8−25011
  dynamical SU_3 symmetry breaking 8−21346
  Gell-Mann-Okubo formula, total widths of unstable hadrons 8−45805
  geometrodynamics for quarks and hadrons, currents and SU_3 theory 8−45809
  hadron total cross sections, semiempirical formulae, three component model with SU(3) components 8−41600
  instantons, topological props., non-Abelian group, SU(3) group *(Russian)* 8−45801
  Kemmer-Duffin eqn., additional symmetry 8−89
  leptons, EM characts. and CP disturbance in SU(3)×U(1) model *(Russian)* 8−29327
  meson radiative decays 8−21419
  mesons, charmed and strange, SU(3) rules for non- and semi-leptonic weak decays 8−45916
  Nilsson model, group theoretical treatment, deformation, pot-energy surface, oscillator shell coupling 8−33129
  nuclear interacting boson model, rot. limit 8−46016
  octet baryons in SU_3, EM mass difference, u, d and c quark sectors 8−29334
  Oxford Rutherford type model, semianalytic treatment, dual unitarisation scheme, trajectory parameters 8−16996
  path-depend. approach to coloured mag. monopoles 8−37127
  Penrose theory in particle physics 8−29321
  QCD, modified, exact global colour SU(3) symm., asymptotic freedom 8−41493
  QCD, new quarks and hadrons 8−8591
  quark sea, percentage in hadron bags under constraint of quark-line rule 8−24998
  self-conjugate tensor operators, struct. props. 8−8217
  soliton solns. of chiral SU(3)×SU(3) models 8−4761
  SU(3)×SU(3) chiral algebra, crossing matrix elements, Clebsch Gordan coeffs. 8−32998
  SU(3)×SU(3) chiral renormalisable gauge model, nonleptonic decays 8−24938
  SU(3)×U(1), neutral currents, vectorlike model, parity violation 8−4823
  SU(3)×U(1)×U(1) model, suppression of flavour changing neutral currents 8−21350

SU_3 theory continued

- SU(3)×U(1)×U(1) symmetry, gauge model of weak and electromag. interactions *(Russian)* 8−45838
- SU(3)×U(1) gauge model, polarised lepton scatt. 8−45901
- SU(3)×U(1) gauge models, exam. of weak currents and associated features 8−16975
- SU(3)×U(1) model, heavy lepton prod. and decay signature 8−45900
- SU(6) unified gauge model, based on SU(3)×U(1) and colour SU(3) subgroups 8−12847
- two-electron atoms, channel invariants and SU(3) classification 8−41906
- U gauge in Abelian and non-Abelian gauge theory, Gribov ambiguities 8−45788
- vector meson mass predictions, SU(3) formalism of S quark model 8−37177
- Yang-Mills gauge theory, classical soln. in colour meson model 8−45780
- e^-e^- annihilation, parton model, finite energy results 8−419
- $\gamma p \to hX$, SU(3)×SU(3) invariant interaction of quarks, large p_t, gluon bremsstrahlung 8−33072
- K^0_{e3} and $K^0_{\mu 3}$ decays, form factor parameters anal., SU(3) symm. violation *(Russian)* 8−450
- KN reaction below 1.9 GeV, dispersion theoretic discrepancy anal., SU(3), hadron coupling 8−21457
- KN scatt., Z_0^* resonance generalisation in SU(3) symmetry 8−37230
- μp deep inelastic scatt., charm effects, field theory anal. 8−21435
- φ meson, two-body hadronic decay, quark model 8−25040
- ψ meson, two-body hadronic decay, quark model 8−25040
- Q, axial vector mesons, dynamical mixing model 8−24973
- Q mesons, SU(3) anal. of mass, widths 8−4802
- Y* states from K^-p reactions, SU_3 classification 8−25077

SU_n theory

- *see also elementary particle symmetry; SU_3 theory*
- ξ-function regularisation of fluctuations around Yang-Mills pseudoparticle 8−16919
- 't Hooft's mag. monopole unicity 8−16908
- asymptotically free SU(2)×SU(2)×SU(4) model of unified interactions 8−16968
- bag model, multibaryon states, SU(6) mass formulae 8−45848
- baryon nonleptonic weak decay, SU(4)-20″-dominance 8−45917
- baryon resonance decay, l-broken $SU(6)_w$ model equivalence to relativistic harmonic oscillator quark model 8−41546
- baryon weak radiative decay, SU(3), SU(4) anal. 8−33069
- baryons and baryonium, SU_6 symmetry, duality and unitarity 8−8622
- branching rule for restriction from SO(7) to G_2 8−16624
- broken SU(6) parton model, spin depend struct. functions, deep inelastic lepton+nucleon appl. 8−428
- broken $SU(8)_w$ symmetry, mass formulae for 0^- and 1^- mesons 8−37191
- Cabibbo angle, CP violation quark masses 8−33016
- Cabibbo angle calc., SU(2)×SU(2)×U(1) gauge theory 8−4776
- canonical pseudoscalar-meson matrices, chiral SU(n)×SU(n) symm. of strong interactions 8−29266
- canonical $SU_4 \times SU_4$ pseudoscalar meson matrix, nonlinear chiral Lagrangian 8−397
- charmed baryons, dynamical group selection, SU(1.4) 8−37178
- charmed mesons and charmoniums, masses and mixing, OZI rule breaking 8−12889
- chiral invariance for asymptotic momenta, elastic scatt. of hadrons, helicity amplitudes 8−4800
- chiral properties of fermionic determinant in two-colour QCD, symm. breaking 8−25015
- chiral SU(4)×SU(4) model, scalar meson decays 8−4801
- chiral $SU(4)\otimes SU(4)$, broken model, based on $SU(4)\supset SU(2)\otimes SU(2)$, Glashow-Weinberg model extension 8−12836
- chiral $SU(4)\otimes SU(4)$ symmetry breaking parameter, meson mass 8−12838
- classical Yang-Mills eqn., multiple meron solns. 8−32987
- colour-flavour symm., renormalisation effects in guage theories 8−33018
- confinement in colour SU(N) gauge theory 8−8592
- Dashen-Frishman model free-field-like behaviour and singularity of Callan-Symanzik function 8−16928
- Dirac's monopole, generalisation to SU(2) gauge field theory 8−32975
- dual charged solution in curved space time, Dirac quantisation, SU(2)×U(1) gauge theory 8−12827
- Euclidean Higgs fields, topology 8−4759
- Euclidean Yang Mills theory, pseudoparticle parameters for arbitrary gauge groups 8−24955
- Fermi-Bose and internal symmetries with universal Clifford algebras 8−24970
- flavour conservation, natural, in neutral weak currents, symm. $SU_2\times U_1\times U_1'$ model 8−12858
- four-quark model, $SU_{2l}\times SU_{2r}\times U_1$ gauge group, Cabibbo angle and quark masses 8−25002
- gauge field in stability subgroup of vacuum in nonlinear realization 8−390
- gauge models, symm . of Higgs pot. 8−32980
- geometrodynamics for quarks and hadrons, currents and SU_4 theory 8−45809
- global SU(2) conformally invariant theory, pseudoparticle-antipseudoparticle config. 8−24975
- group representation theory, quasistandard bases of permutation group, Gelfand bases of unitary group *(Chinese)* 8−12832
- hadron bags, interactions under strict quark-line rule 8−41495
- hadron classification, quark model, SU(4) symmetry 8−12861
- hadron electromag. and weak form factors. SU(6) scheme of relativistic quark model 8−41500
- Higgs meson prod., muon-number violation 8−41422
- hydrodynamic model, nonlinear pion+pion chiral Lagrangian, e^++e^- and p+p collisions 8−32966
- invariant operators of unitary groups U(n) and SU(n) 8−8555
- l-broken U(6,6), generalised $^3P_0$ model and reln. to Melosh transform. 8−12885
- left-right symmetric $SU(2)_l\times SU(2)_r\times U(1)$ theory, atomic parity, e^+e^- collisions asymm. at PETRA, PEP energies 8−12820
- left-right-symm. unified theory of quarks and leptons 8−41466
- left-right-symmetric theory of weak interactions in unified gauge theory, constraints on phenomenology 8−21369

SU_n theory continued

- local QFT, higher symm. interpretation, spontaneous symm. breaking, quarks and flavours 8−16942
- locally flat space-time, quantised metric, spontaneous dilatation asymm. 8−16713
- mass formula for SU_4 charmed-hadron multiplets 8−37192
- Maxwell's eqns. in expanding universe 8−4493
- meson states, representation mixing, SU(4), mass formula, EM mas shifts 8−12890
- method of generating invariants 8−16945
- mixing angle between ordinary and heavy leptons in a (V-A) model, constraints 8−4846
- multi-instanton solution, new compact form 8−24971
- multidimensional unified theory of gravit., EM and weak interactions 8−41462
- N resonance electroproduction, helicity structure and quark motion effect 8−398
- natural flavour conservation in neutral weak interactions, SU(5) and SO(10) unified models 8−4817
- neutral current couplings in neutrino-hadron interactions 8−24993
- neutral current expts., left-right symmetry for $SU_l(2)\times SU_r(2)\times U(1)$ gauge group 8−21375
- neutral currents and quark charge origin 8−21373
- neutral currents in generalised SU(2)×U(1) gauge models 8−45832
- neutral transitions, vector-like weak currents, parity violation *(Russian)* 8−24995
- Neveu-Schwarz dual model, vac. transitions *(Russian)* 8−33046
- noncompact Lie groups and SU(1,1), continuous spectra, coherent states 8−8548
- nonleptonic decays of ordinary and charmed hadrons, vector-like model 8−41545
- parity violation in atoms, SU(2)×U(1) models, higher-order corrections 8−45807
- Pati-Salam $SU(2)_l\times SU(2)_r\times SU(4)$, gauge-c 8−12851
- Polyakov-'t Hooft monopole and dyon, quantum theory *(Russian)* 8−392
- pseudoparticle solns., classification in gauge theories 8−4789
- pseudoscalar meson decay, symm. breaking in chiral SU(4)×SU(4) model 8−21424
- pseudoscalar mesons, sum rule, symm. breaking of chiral SU(4)×SU(4), decay const., masses 8−33000
- QCD, E_7 model, quark and lepton assignments 8−8590
- QCD, massless two-dimens. model, operator soln., local colour SU(n) symm. 8−41480
- QCD, two dimens., renormalisation group functions 8−29242
- QCD, two dimens., with SU(N) gauge symm., $N\to\infty$ limit 8−41489
- quadratic Hamiltonians, quadratic invariants and SU(n) symmetry group 8−36873
- quantum chemistry, Clebsch-Gordan coeffs., chain $SU(2)\supset D_\infty'\supset D_4'\supset D_2'$, mol. aggregates 8−17552
- quark confinement criteria, QED_2 model with SU(n) flavour 8−45840
- quark models, noninvariance groups, internal symms. and ghost symms. 8−25007
- quark-diquark model with broken colour symmetry, hadron spectrum 8−12874
- recoupling coeff. and isoscalar factors, for chain of compact topological groups 8−20939
- self-dual SU(2) gauge fields, Backlund transform. and Atiyah-Ward ansatze 8−21339
- spherically symm. monopole soln. 8−8539
- spontaneous symmetry breaking in chiral quantum field theory, covariant formulation 8−21347
- straton model theory, extension to SU_5 *(Chinese)* 8−24996
- string, relativistic, $SU_{3,1}$ in orthornormal gauge 8−437
- $SU_2\times U_1$ heavy lepton model of rare μ and K decay modes 8−45898
- $SU_4\otimes SU_3'$ structural model of straton with integral charges *(Chinese)* 8−12860
- $SU_6\times Su_3^c$ scalars in E_7 irreps 8−36794
- $SU_l(2)\times SU_r(2)\times U_{l+r}(1)$ theory of neutral current effects in $pp\to\mu^+\mu^-X$, and $\bar{p}p\to\mu^+\mu^-X$ 8−17060
- SU(10) symmetry, charmed vector bosons mag. moments 8−17018
- SU(2,2) homogeneous symplectic manifolds, conformal Lie algebra 8−45808
- $SU(2)_l\times SU(2)_r\times U(1)$ gauge model for weak/EM interactions, u-d quarks mass difference 8−12850
- $SU(2)_l\times SU(2)_r\times U(1)$ gauge theory, left-right symm., neutral current struct. 8−41420
- SU(2)×SU(2) sigma model, $\pi^+\to e^+\nu_e\gamma$ decay rate. calc. 8−8659
- SU(2)×U(1), gauge theory of weak interactions 8−21328
- SU(2)×U(1)×U(1) gauge theory of weak and EM interactions in unified SU(6) scheme 8−41465
- SU(2)×U(1) gauge group in (V-A) model, mixing between ordinary and heavy leptons 8−41472
- SU(2)×U(1) gauge model, eigenvalue condition for Weinberg mixing angle, new leptons and quarks 8−41463
- SU(2)×U(1) gauge model, polarised lepton scatt. 8−45901
- SU(2)×U(1) gauge model, right-handed charm current, CP violation 8−45795
- SU(2)×U(1) gauge model and parity violation in atoms 8−4775
- SU(2)×U(1) gauge theory, charged heavy lepton and neutrino 8−45794
- SU(2)×U(1) gauge theory, natural suppression of CP violation 8−41421
- SU(2)×U(1) model, ν interactions, trimuon prod., heavy lepton cascade decay 8−25038
- $SU(2)\otimes U(1)$ gauge group theory tests from neutral current phenomena 8−24992
- SU(2) chain, appl. to asymm. top and spectra of solids *(French)* 8−28912
- SU(2) classical gauge field eqn., self-dual static solns. 8−45792
- SU(2) gauge theory, self-dual solns. 8−41402
- SU(2) gauge theory, sypersymm. breaking by pseudoparticles, supergravity implications 8−24959
- SU(2) multi-instanton solutions, conformal transformation props. of one-loop tunnelling amplitudes 8−12822
- SU(2) nonlinear σ model, kink solns., form factor interpretation 8−24964
- SU(2) pseudoparticle field, scalar propagator calc. 8−29253
- SU(2) Yang-Mills fields, coupled to (2s+1) dimens. Higgs field, classical soln. 8−41430

- **SU_n theory** continued
  - SU(2) Yang-Mills quantum field theory, meron pairs and quark confinement 8−37174
  - SU(2) Yang-Mills theory, deformations of instantons 8−45786
  - SU(2) Yang-Mills theory, self duality of solns. 8−37143
  - SU(2)-flavour Schwinger model on the lattice, Hamiltonian lattice perturbation exam. 8−16747
  - SU(3)×U(1) gauge models, generalised mixing and CP violation in hadron decays 8−41473
  - $SU(4)^4$, determ. of unifying mass scale 8−45830
  - SU(4), charmed meson decays and right handed currents 8−8662
  - SU(4), Clebsch-Gordan coeffs., matrix, elements and symm. props. 8−45803
  - SU(4), Clebsch-Gordan series 8−16940
  - SU(4)×SU(4) current two point functions, meson decay consts. and bare quark masses from duality 8−8598
  - $SU(4)\supset SU(2)\otimes SU(2)$ chain, matrices of generators 8−37152
  - SU(4) algebraic realisation, meson mass formula *(Russian)* 8−45895
  - SU(4) gauge theories, magnetic monopoles 8−24918
  - SU(4) meson mass formula from generalisation of SU(3) Schwinger mass formulae 8−37190
  - SU(4) quark model, non-leptonic hyperon decay anal. 8−12910
  - SU(4) spin-isospin quark model, explanation of nucleon-nucleon repulsive core 8−12984
  - SU(4) symm., appl. to meson decays 8−12835
  - SU(4) symm. breaking, e.m. props. of D mesons calc. 8−8668
  - SU(4) symmetry, meson-quark interactions, mag. moments *(Russian)* 8−45804
  - $[SU(4)]^4$ unifying symmetry for light neutral Z^0 boson, PETRA and PEP expts., $e^+e^-\rightarrow\mu^+\mu^-$ 8−37154
  - SU(6)×O(3) baryon multiplet, linear string model 8−8624
  - SU(6)×O(3) multiplet masses, relativistic quark model 8−8552
  - SU(6) boson model for two-nucleon transfer intensities, (t,p) appls. 8−25206
  - SU(6) exotic gauge model, lepton-quark symm., CP-violation and $\mu\rightarrow e\gamma$ decay 8−12875
  - SU(6) model of weak interactions, neutral weak currents at high energy *(Russian)* 8−45836
  - SU(6) unified gauge model, based on SU(3)×U(1) and colour SU(3) subgroups 8−12847
  - SU(8) symm. mag. moments of charmed vector bosons 8−4794
  - $SU(N)\supset O(3)$, angular momenta multiplicities in system of N-dimensional harmonic oscillators 8−32702
  - SU(N) conformal supergravity, gauge theories for extension 8−8577
  - supergravity, SU(4) invariant theory 8−41471
  - supertwistors and conformal supersymm. 8−29015
  - triangular anomaly, SU(n) Lie gauge groups 8−29270
  - two-dimensional classical field theory, nontrivial interaction between solitons *(Russian)* 8−32698
  - two-dimensional SU(2) Yang-Mills theory 8−24942
  - $U(1)\times SU(4)_l\times SU(4)_r$ based weak-EM synthesis with manifest left-right symm. 8−8571
  - U(1) colour symm., Higgs coupling, proton stability 8−29290
  - U gauge in Abelian and non-Abelian gauge theory, Gribov ambiguities 8−45788
  - unified SU(6) gauge theory, hierarchy of gauge symm. and CP nonconservation 8−41464
  - unified vectorlike gauge theory based on group SU(6) for quarks+leptons 8−4818
  - vector mesons, two-body photonic decays, 16-plet mixings in SU(4) quark symm. 8−33062
  - weak charge of electron, $SU_2\times U_1$ theories, $\bar{\nu}_\mu e$ scatt., isospin 8−16974
  - weak interactions, renormalisable model on gauge group $SU(2)\times SU(2)_r\times U(1)$ 8−12855
  - weak nonleptonic decays in SU(4) and SU(8), adjoint representation admixture 8−21426
  - Yang-Mills instantons, space-time topology 8−8522
  - Yang-Mills SU(2) field equations, props. of O(4)×O(2) symm. solns. 8−24931
  - Yang-Mills SU(N) 2-D theory in leading 1/N expansion 8−8516
  - Yang-Mills theory, Regeisation of scalars and dual model struct. 8−16927
  - Yang-Mills theory, SU(4) supersymmetric, charge renormalisation 8−24929
  - $D^+\rightarrow K^0\pi^+$, $D^0\rightarrow K^-\pi^+$, two body decays of charmed mesons, quark recombination scheme 8−37207
  - D*, pion and photon couplings, SU(4) violations, decay rates calc. 8−45914
  - $\mu\rightarrow e\gamma$, and other rare decays, in SU_6 superunified gauge theory 8−21408
  - $\mu\rightarrow e\gamma$, SU(2)×U(1) unified guage theory 8−8643
  - $\mu^-\rightarrow e^-e^-e^+$, decay rate calc. SU(2)×U(1) model 8−8641
  - ν-induced multilepton events, weak interaction model 8−41533
  - νN single- and di-muon prod., colour excitation, weak interaction model anal. 8−45906
  - $\bar{p}p$, three-body annihilations, rel. to quark rearrangement model 8−21444
  - π field, nonlinear chiral models, many dimensional solitons 8−4792
  - ππ phase shifts, nonlinear σ model Pade calcs. 8−8695
- **subboundary structure**
  - SEM channelling contrast technique for material deform. obs. 8−23917
  - $Ga_xIn_{1-x}P$, real struct. exam. by electron microscopy and channelling 8−2143
  - Ni, growth direction orientation effect on impurity distrib. 8−47261
  - Ti, single crysts., recrystallised, X-ray topography obs. 8−10054
- **subgrain structure** *see subboundary structure*
- **sublimation**
  - *see also heat of sublimation*
  - excess component concentration, appl. to conc. determ. in nonstoichiometric appls. 8−43131
  - poly(oxycarbonylimino-1,4-phenylene), apparent sublimation: thermal decomposition+condensation repolymerisation 8−3332
  - SEM cold stage microscopy, thin frozen hydrated specimens, temp. rise and sublimation of water 8−24198
  - CdS, transient phenomena in sublimation 8−30747
  - NaCl:Ca, single cryst., vaporisation kinetics meas. 8−18763
  - Ni_3Al, refractory transition metal alloying effects 8−26691
  - SiC, cryst. growth on oriented seeds by sublimation 8−35279
  - WSe_2, single cryst. growth by sublimation method 8−11091
- **sublimation** continued
  - ZnS-Mn sublimated phosphor films, annealing effects *(Russian)* 8−43949
  - ZrO_2-$HfO_2(Y_2O_3)$ solid soln. complex refractories *(Russian)* 8−47513
- **submarine cables**
  - *see also cable laying*
  - EM field rel. to geophysical prospecting at sea *(Russian)* 8−20557
  - laying using ship hull-mounted sub-bottom profiling 8−5620
  - optical fibre cable unit design and test results 8−46799
  - repeater housing, corrosion protection, of Be-Cu alloy 8−15583
  - St. Margarets Bay−La Paune, seabed measurements, sand ridges 8−15992
  - terminations, for sonar systems 8−45041
  - wire fracture modes and mech. props. correl. with fatigue life, large diameter cable 8−35520
- **submillimetre waves** *see microwaves*
- **suboptimal control** *see optimal control*
- **subroutines**
  - diffraction data unique reflection sets generation, in FORTRAN IV 8−18501
  - gravity effects computation, of two-dimensional and three-dimensional bodies 8−3961
  - neutron spectra determination program, computer ES 1030, algorithm SAND-II *(Russian)* 8−48723
  - Voigt profile, fast routine in FORTRAN IV 8−7767
- **subsets (mathematics)** *see set theory*
- **substrates**
  - *see also semiconductor device manufacture*
  - alkali halides, substrates for condensation of Au, film struct., stability and growth *(French)* 8−38989
  - IC with Si substrate, new microanalytical method *(French)* 8−35760
  - low temperature, vac. deposition of thin films, cryostat *(Japanese)* 8−27403
  - magnetron sputtering target/substrate configuration 8−39687
  - metal substrate effect on thermal positive ion emission from thick layers of KF 8−19627
  - metallic substrate pretreatment with plasmatron 8−11434
  - mica, defects effect on epitaxial film struct. 8−26794
  - mica substrate of Au film, surface defects on heterogeneous nucleation and growth 8−47684
  - PIXE, low energy mass absorpt. coeff., meas. technique 8−7309
  - quartz, CVD of Si, using CO_2 laser for substrate heating 8−39698
  - sapphire, polishing with colloidal SiO_2 8−39925
  - sapphire, surface quality determ. by optical reflectance method 8−43862
  - sapphire substrates, prep. for GaN epitaxy 8−39929
  - semiconductor substrate surface, low loss electron and Auger images correl. 8−22944
  - stepped substrate-adsorbed layer interaction, selective effect on epitaxy 8−14616
  - Al_2O_3 rich substrate, surface smoothness and metallization props. *(German)* 8−19906
  - CdS, polycrystn. layers on CdS substrate, electron microscope study of surface struct. 8−22940
  - Cu, epitaxial electrocrystallisation, substrate imperfections effect 8−18921
  - GaAS, semiinsulating, heat treatment effects 8−6382
  - GaAs film solar cell fabrication, substrate requirements 8−11125
  - GaAs, O implanted, LPE growth of GaAs film 8−2592
  - GaAs, semi-insulating, thermal conversion, Hall effect and luminesc. meas. 8−6405
  - GaAs:Cr, n-GaAs interface, elec. props. 8−6438
  - n-GaAs:Cr, semi-insulating, contact effects, trapping levels 8−10465
  - GaP, dislocation loops, effect on GaP epitaxial layer perfection 8−30843
  - Ge (111), CdS epitaxial layers 8−18920
  - Ge surface, wetting by Sn, Pb rel. to cryst. orientation 8−43211
  - Si, for Pb thin film, residual strains 8−18915
  - Si, stress field, induced by Si_3N_4 film edge, indentation-injected dislocation half-loops obs. 8−30839
  - Si, substrates, semicond., stress meas. in deposited thin films, X-ray topography techniques 8−5710
  - Si surface, wetting by Pb, Sn, Ge in H_2+HCl 8−43210
  - SnTe substrate, Ag epitaxial growth and topostactic exchanges 8−14640
  - $(Sr/Ba)(Fe/Al/Ga)_{12}O_{19}$ solid soln. crystal for hexaferrite layer substrate *(German)* 8−23672
  - $Zn_xCd_{1-x}S$, rough, lattice mismatch with Cu_2S and InP films 8−43263
  - $ZnGa_2O_4$, flux growth, for appl. as nonmag. substrate in LPE 8−44000
- **sudden commencement** *see magnetic storms*
- **Suhl effect**
  - No entries
- **sulfur** *see sulphur*
- **sulphur**
  - *see also nuclei with ......*
  - abundance in 20 galactic planetary nebulae, spectrophotometry 8−45375
  - abundance in lunar rocks rel. to C content 8−4123
  - adsorbed layer interaction with substrate steps, selective effect on epitaxy 8−14616
  - adsorbed on Fe, effects on surface reaction kinetics and surface self-diffusion 8−7234
  - adsorbed on Ni surfaces, directional UV photoemission 8−15295
  - adsorption on Cu (100), ang. resolved AES and LEED 8−18908
  - adsorption on Pt (100) 8−14606
  - air pollution transport over N.Atlantic 8−20507
  - Allende meteorite, $^{33}S/^{32}S$ ratio anomaly 8−49402
  - amorphous, structure, random chain assembly model 8−6015
  - antiprotonic atoms of light nuclei and isotopes, $\bar{p}$-n strong interaction effects 8−29867
  - atom, emission spectra in Ar plasma, lines above first ionisation limit 8−25462
  - atom, excited config., Hulthen and Slater type 2d functions 8−41972
  - atom, pseudopotential calculations, parameter fitting scheme appls. 8−41928
  - atom, X-ray and Auger transition probabilities to 2p level 8−17640
  - chemisorption on Ni, orbital energy spectrum of chemisorbed electrons 8−2542

sulphur continued

chemisorption on Ni, surface struct. from ang. resolved UPS 8-31303
chemisorption on Ni (100), geometry of overlayers 8-2373
determination, in water, by neutron activation and X-ray fluoresc. analyses 8-3428
diffusion and distribution in steels St3 and 12Kh18N9 8-2306
diffusion in Ag and Cu 8-47599
divalent, multiple bond linking in vinyl sulphides, spectrosc. obs. *(Russian)* 8-21929
electrical conductivity under shock compression *(Japanese)* 8-26923
evaporation from Fe-C(Si)(Mn)-S melts *(Russian)* 8-19716
high-field injection currents 8-47801
ion charge distrib., 70-140 MeV, through C and Be foils 8-13364
isotope separation, SF_6 photodissoc. by IR laser pulse, selectively excited vibr. levels 8-9209
isotopic composition determ. using RMO-4S omegatron mass spectrometer 8-5368
laser UV transitions of ion, performance and spectroscopy 8-22111
magnetic susceptibility meas. rel. to heat treatment 8-34952
metallic state, elec. resist., press. effects up to 600 kbar 8-26920
monoclinic, order-disorder transition, X-ray struct. determ. 8-30750
natural rubber accelerator, effect on viscosity *(German)* 8-30688
photoelectret state produced in polycrysts. by X-irrad. in elec. field 8-31147
photographic emulsion sensitisation by S and Au 8-16869
pionic atom, 2p level shifts and widths 8-46469
polymorphism and melting curve, effect of high pressure system configuration 8-43104
segregation to grain boundaries in Ni_3 Al and Ni_3(Al, Ti) 8-48410
solubility in Cr-rich Fe-Cr alloy *(French)* 8-30761
steel, mass spectrometric analysis of S content by remote meas. technique 8-23994
thermodynamic basis for generalisation of melting curves 8-2236
Volcan Poas, Costa Rica, subaqueous S lake 8-28206
X-ray L-emission spectra, in CoS, CdS, ZnS, MnS, $BaSO_4$ and K_2SO_4 *(Japanese)* 8-15254
^{3} S_2, interstellar, upper limits on abundance in mol. clouds 8-28738
Cu-Pb-S system, at 1473K, thermodynamic anal. 8-39746
GaAs, CVD, S doping behaviour during growth, electron conc. 8-26784
GaP:S, donor centre struct. and conduction band nonparabolicity 8-14695
n-GaSb:S, inhomogeneous, temp. depend. of elec. resist. 8-2482
Ge+S (vapour) reaction kinetics 8-35718
$H+S^+(S^{3+})$, ionization model for NGC 7027 planetary nebula 8:36671
In:S surface, impurity precipitation and resolution at melting point 8-14553
S XV, He-like ion, oscillator strengths of transitions between low-lying S and P states 8-13470
S XV, intercomb. line obs., in laser-produced plasma 8-9106
S^{11+}, charge state fraction on emerging from solids, K-shell vacancies effects 8-25686
S^{15+}, charge state fraction on emerging from solids, K-shell vacancies effects 8-25686
S+inert gas, ^1S-^1D collision-induced transitions 8-33588
$S+Si^{n+}(Al^{n+})(Cl^{n+})(Ar^{n+})$, K-shell vacancy sharing ratio 8-42198
S+X, (X=atom with Z=11-22), K-shell ionis. cross sections 8-13596
S^-+O_3, associative detachment, rate coeffs. 8-3325
S_2, effective spin-spin parameter, ab initio calc. 8-9067
S_2, fluoresc. quenching by He, Ar, Xe, N_2, S_2, CF_4, C_2F_6, fluoresc. lifetimes 8-46386
S_8, cyclic, electron deformation density distrib., SCF-Xalpha-scatt. wave method 8-33425
S_n^{2-} (n=4-8), vibr. and rot. isomers, Raman spectra *(German)* 8-13504
^{32}S 96 MeV heavy ion ps pulses, rebunching of MP Tandem pulses by spiral resonator 8-33357
Si:S IR detectors, performance and elec. transport props. 8-45702
ZnS:S, photoconductivity and negative differential photo-effect 8-39156

sulphur compounds

atmosphere S compounds, homogeneous chemistry 8-49119
Black Sea sediment cores, S and organic compounds geochemistry 8-49040
concrete and mortars, containing S, durability study in temp. cycles and water resistance 8-27613
graphite bisulphate, intercalation compounds, development as reagents in organic synthesis 8-27444
sulphide compounds of Si, Ge and Sn, struct. and chem. bonding *(French)* 8-30580
Ar-SF_6, thermophysical props., second virial and diffusion coeffs., thermal diffusion factors 8-42699
Ar-SF_6, volume discharge excited by electron beam, stable region *(Russian)* 8-22589
As-S amorphous film, photo-induced optical changes, annealing effect 8-27345
As-S film, guided light reversible control by electron beam irrad. 8-1331
As-S glass media, temp. control of hologram props. 8-17883
As_2O_3-SO_3, polarised Raman and IR spectra, force field calc. *(French)* 8-6674
B-S compounds, relative antiwear efficiency 8-35532
CO-O_2-SF_6, liquid, phase matched IR third harmonic generation 8-42384
Cu-Sb-S-I amorphous film formation and stimulated crystallisation, electrophysical props. *(Russian)* 8-30838
Fe-S eutectic, Lindmann's melting law, solid-liquid core boundary, core mantle boundary 8-18743
$KBr:SO_4^{2-}$, $Ba^{2+}(Ca^{2+})$, IR absorpt. band parameters, temp. depend. *(Russian)* 8-31226
$KBr:SO_4^{2-}$, IR absorpt. spectra, cation impurity influence *(Russian)* 8-10901
$KCl:SO_4^{2-}$, $Ba^{2+}(Ca^{2+})$, IR absorpt. band parameters, temp. depend. *(Russian)* 8-31226
$K_2CrO_4:SO_4^{2-}$, IR absorpt. spectra, local symmetry of impurity ions *(Russian)* 8-2893
N_2-SF_6 laser, UV, discharge-excited, improvement in efficiency *(Japanese)* 8-33724
$NH_4ClO_4:SO_4^{2-}$, thermal depolarisation, relax. parameters 8-43779

sulphur compounds continued

$P_2Se_xS_y$ glass, thermophysical props., 303-413K, struct. interpretation 8-47615
S containing small paramag. ions on MgO g-tensors and spin densities 8-46270
S-S bond chirality, biomolecule struct. and activity depend., review 8-27889
S-Se amorphous alloys, crystn. kinetics, elec. cond. meas. 8-34441
S-Se-Te semicond. glasses, mag. suscept. meas., refractive index 8-34952
S_3^-, adsorbed on MgO, g-tensors, spin densities, CNDO calc. 8-46270
SCO^-, adsorbed on MgO, g-tensors, spin densities, CNDO calc. 8-46270
SCl_2, electronic struct., group theoretical and CNDO/2 calcs. 8-33419
SCl_4, electronic struct., group theoretical and CNDO/2 calcs. 8-33419
S_2Cl_2, electronic struct., group theoretical and CNDO/2 calcs. 8-33419
S_4Cl_2, Raman spectra, vibrs. and rot. isomers of S_n^{2-} (n=4-8) *(German)* 8-13504
SF_5, IR spectrum, form. by VUV photolyses in Ar matrices 8-981
SF_6, ^{19}F NMR, chem. shielding, intermol. interactions and rovibr. motion effects 8-9171
SF_6, 10.4 μm laser pulse transmission 8-14128
SF_6, addition to high-press. N_2 laser, enhancement of output power 8-25859
SF_6 arcs in axial flow at const. press., steady-state characts. 8-1940
SF_6 based broadband gas isolator, for high power CO_2 lasers, design and evaluation 8-42339
SF_6, coexisting densities, revised and extended scaling 8-34613
SF_6, collisionless dissoc. using two reson. freq. CO_2 laser fields 8-5305
SF_6, collisionless fluoresc., 16 μm, following laser pumping, vibr. quasi-continuum 8-42111
SF_6, condensation in supersonic nozzle flow 8-34611
SF_6, dielectric strength, breakdown tests *(Czech)* 8-30498
SF_6 dissoc. by multiphoton IR absorption 8-42369
SF_6, dynamics of 10.4 μm absorption, vibr. bath model 8-17666
SF_6, gas, sparking pots., ionisation and electron attachment coeffs. 8-42705
SF_6, gas-liquid crit. pt. region, depolarised light scatt. 8-34612
SF_6, ground state, mol. consts., ν_2 Raman band calcs. *(French)* 8-9156
SF_6, IR absorpt. of highly vibr. excited mols., double reson. meas. 8-37662
SF_6, IR active mols., homogeneous excitation by laser pulses 8-9202
SF_6, IR multiphoton dissoc., energy randomization 8-21982
SF_6, IR multiphoton dissociation F atoms obs. by chemi-ionis. method 8-31661
SF_6, inhibition of homogeneous condensation by vibr. excitation, isotope separation appl. 8-37688
SF_6, isotopically selective collisionless laser induced dissoc. 8-1037
SF_6 laser isotope separation, rot. and vibr. relax. in mixture 8-25634
SF_6 mixtures, laser initiated explosions, chemilum. in near UV, visible and IR 8-48674
SF_6, multiphoton excitation from many rot. states by IR laser pulse 8-21986
SF_6, multiphoton isotope selective dissoc., pulse shape, energy, press. and geometry effects 8-25733
SF_6, multiphoton pathways, rot.-vibr. transition moments in excited states 8-25639
SF_6, multiple photon dissociation threshold behaviour, chemilum. obs. 8-42145
SF_6, ν_3 Q-branch, CO_2 laser pumped 8-21924
SF_6, Orsay MP gas handling system 8-29673
SF_6, photodissoc. by IR, laser pulse, selectively excited vibr. levels, S isotopes 8-9209
SF_6 purification in const. temp. adsorption process, appl. to electrostatic accelerators 8-29672
SF_6, radiative dissoc. in laser field *(Russian)* 8-9207
SF_6, refl., absorpt. and transmittance depend. on irradiance at normal incidence 8-13769
SF_6, spectroscopic consts. calc. from saturated absorption spectrum *(French)* 8-971
SF_6, Stokes signal amplification, effect of pump radiation incoherence 8-18015
SF_6, struct. by electron diffr. 8-29859
SF_6, thermalisation under reson. excitation by laser radiation *(Russian)* 8-26231
SF_6 tracer technique for near-stack reactor effluent dispersion studies 8-11992
SF_6, unimolecular reaction model 8-7189
SF_6, vibr. Raman spectrum, Q branches shapes 8-42077
SF_6, vibrational-translational relaxation, depend. on intensity of selective laser excitation *(Russian)* 8-9235
SF_6, vibrationally excited, collisionless intramolecular energy transfer 8-37663
SF_6-O_2 breathing, effect on respiratory mechanics 8-27992
SF_6+H_2, (oriented), total collision cross-sections, anisotropic pot. parameters calcs. 8-13568
$SF_6+H^+ \rightarrow SF_6^+ + e^- + H^+$, 0.3-1.8 MeV, electron energy and ang. distrib. 8-22015
SF_6+NO+O_3, laser sensitised reaction, time-resolved NO_2^* emission obs. 8-20017
$SF_6+SiH_4 \rightarrow S_2^* + SiF_4 + HF + H_2$, laser augmented reaction, isotopic selectivity retention during detonation 8-48673
SF_6^-+He, decomposition, SF_5^- form. 8-29833
SF_6Ar, multiple photon excitation, saturation and linear absorpt., pulsed optoacoustic detect. 8-42148
SF_5X, (X=Cl, Br, Sf_5), VUV photolysis, SF_5 radical form. in Ar matrix, IR spectrum 8-981
SH^-+O_3, associative detachment, rate coeffs. 8-3325
SH_n, LCAO-MO-SCF with Gaussian polarisation functions, energetic effect of p-, d-, and f-functions 8-41944
SHF, total energy, MOs nonempirical minimum STO-4LGF calcs. 8-9074
$(SN)_x$, acoustic phonons, inelastic neutron scatt. obs. 8-6136
$(SN)_x$, brominated, vapour species identification, mass spectrometric methods 8-44422
$(SN)_x$, cryst. struct. by neutron diffr. 8-34488
$(SN)_x$, electron tunnelling, absence of supercond. energy gap 8-47769

sulphur compounds continued
$(SN)_x$, electronic props. and comparison with TTF-TCNQ, review 8−6306
$(SN)_x$, electronic struct., X-ray and UV photoemission obs., OPW and pseudopot. calcs. 8−6832
$(SN)_x$, electronic struct. and opt. props. 8−6256
$(SN)_x$, IR transmission spectrum assignment 8−15160
$(SN)_x$, intrinsic cond. anisotropy from galvanomag. effect obs. 8−6369
$(SN)_x$, linear compressibilities, X-ray determ. 8−34565
$(SN)_x$, prep. and evaluation of Schottky barriers produced on III-V and II-VI cpd. semiconds. 8−6442
$(SN)_x$, preparation and properties 8−27389
$(SN)_x$, quantum chem. calcs. of electronic struct. 8−6257
$(SN)_x$, stress-induced phase change geometry 8−23776
$(SN)_x$, supercond., obs. of Meissner effect 8−6478
$(SN)_x$, supercond. at high press. 8−23194
$(SN)_x$, supercond. props., review 8−6474
$(SN)_x$, supercond. props., press. and field depend. 8−14903
$(SN)_x$, tensile and piezoresist. expts. 8−15447
$(SN)_x$, tight-binding SCF MO calcs., interchain interaction 8−30859
$(SN)_x$, X-ray and optical props. 8−39632
S_2N_2, $(SN)_x$, $(x=2$ or $3)$, minimal STO-3G basis HF ab initio LCAO SCF MOC, geometry 8−903
S_2N_2, XPS, solid-state polymerisation 8−19630
S_4N_4, Raman scatt., press. and temp. depend., 0-10 kbar, 10-295K 8−15160
$(SNBr_{0.43})_x$, vap., electron impact and field ionisation mass spectra 8−44422
$(SNBr_y)_x$, Raman scatt. exam. 8−39550
$S_4N_4H_4$ $(S_4N_4D_4)$, vibr. spectra, force consts. *(German)* 8−13499
$S_4N_4H_4$, SCF-Xα-CNDO/BW calcs., comparison 8−25435
SO, interstellar, millimetre wave emission obs. 8−24535
SO, pot. energy curves, pseudopot. multi-struct. valence bond calcs. 8−9094
SO_2 $(^3B_1)$, phosphorescent lifetimes, press. saturation effect on quenching by CO_2, CO, N_2 8−1017
SO_2, adsorption on Fe surface, X-ray photoelectron spectra 8−27370
SO_2, adsorption on microporous C 8−22956
SO_2, air pollutant levels in London, 1500-1900 period 8−44982
SO_2, air pollutant long path meas. with correl. spectrometer 8−44988
SO_2, air pollution, plume detect. 400 km from source 8−24361
SO_2, air pollution deposition to pine forest, radioactive tracer method 8−20508
SO_2, air pollution extent in India, containment and agricultural use 8−28309
SO_2, air pollution mesoscale transport over English Midlands 8−44983
SO_2, analytical pot. functions, several surface minima 8−5158
SO_2, atm. trace gases and pollutants, data compilation on mag. tape 8−44995
SO_2, atmospheric concentration determ., dye laser differential lidar system 8−32250
SO_2 attack of Cu, benzotriazole protective coating 8−11385
SO_2 collection efficiency with 0.5 N KOH-impregnated filters 8−16168
SO_2, effect on high temp. hot corrosion 8−48563
SO_2, effective spin-spin parameter and singlet-triplet transition intensities, ab initio calc. 8−9067
SO_2, fluoresc. and photosensitised phosphoresc. of biacetyl, quenching and triplet theory transfer 8−25608
SO_2, form. in combustion, oxidising agent excess depend., thermodynamic anal. 8−15677
SO_2, IR and Raman spectra, mol. and lattice vibrs. 8−19464
SO_2, IR spectra, $\nu_1+\nu_2$ combination band, rot.-vibr. anal. 8−5225
SO_2, in air, potentiometric determ. using solid state detector 8−16151
SO_2 in atmosphere, remote sensing via computer assisted correl. spectrometer 8−4002
SO_2, in O_2-variable gases, potentiometric determ. using solid state detector 8−20505
SO_2 inhibiting effect on embrittlement, magnetisation pressure isotherms for chemisorption of SO_2 on Fe particles 8−39949
SO_2, laser absorption spectra meas. air pollution detection and control 8−40672
SO_2, liq. props. representation, by modified Redlich-Kwong eqn. of state 8−34590
SO_2 low core, equilibria between air and water 8−16137
SO_2, matrix isolation spectra using tunable diode laser 8−45739
SO_2, optoacoustic detect. in air-pollution control below parts per billion level 8−41355
SO_2 oxidation in smelter plume 8−3922
SO_2 photo-oxidation products, smallest particle size detectable by condensation nucleus counters 8−24364
SO_2, pollutant, stationary source, quantitative meas. using Raman lidar 8−36291
SO_2, pollution high conc. duration in urban atm. 8−11982
SO_2 reaction with O_3 in water rel. to atmospheric oxidation 8−16083
SO_2, SO_4, pollutants long-range transport, airborne meas. over Denmark 8−3950
SO_2, two-photon spectra by three-wave mixing 8−29826
SO_2, washout from atmosphere and rain composition, model 8−28253
SO_2^-, adsorbed on MgO, g-tensors, spin densities, CNDO calc. 8−46270
SO_2-Ar atmosphere, effect on Co at 500-900°C 8−39953
$SO_2+CO(C_2H_2)$, photochem. reactions, rate consts. 8−23956
$SO_2+H_2O(N_2)(SO_2)$, linewidths, intensities, isotope shifts, 91.5-95.5 GHz 8−42044
SO_2+N_2, quenching of vibr. excited N_2, photoionis. detect. technique 8−46388
SO_2+NO_2 aerosol, form. kinetics, irrad. by 488 nm light 8−40067
SO_2+OH, role for stratospheric HSO_3 layer, reaction rate consts. 8−32202
$SO_2+O(^3P)$, vibr. excited, collision induced intramol. deactivation 8−25670
$SO_2+Sc(Y)$, nascent product state distribs., laser fluoresc. detect. 8−7187
SO_3, dissoc. pathways and mol. vibr., compliance consts. and min. energy coords. 8−35661
SO_3, electron impact mass spectrometry, proton affinity, ion-mol. reactions 8−3415
SO_3 evolution from anhydrous α-$CoSO_4$, gas equilib. and kinetic approach *(German)* 8−23943
SO_4, and isotopic forms, struct., normal coord. anal. 8−965

sulphur compounds continued
SO_4 dispersion, wind, temp. and conc. fields 8−3929
SO_4^{2-}, airborne particles, size meas. and chem. comp. by diffusion sampling 8−45007
SO_4^{2-}, detect. in subway air 8−36273
SO_4^{2-}, in atm. aerosol particles, sampling and anal. techniques 8−28304
SO_4^{2-}, in stratosphere, concs. at high altitudes 8−20468
S_2O, 3400 Å bands, rot. anal., upper state struct. 8−13506
S_2O, isotopes, force consts., mean amplitudes of vibr. 8−970
$SOCl_2$, immersion medium for Nd:glass disc laser 8−1262
$S_2O_6F_2$, heating and laser excitation fluorosulphate radical prod. and spectrum 8−35647
SPF_3 vibr. spectrum, assignment using matrix isolation and isotope substitution *(German)* 8−13498
SSO^-, adsorbed on MgO, g-tensors, spin densities, CNDO calc. 8−46270
SSe_{20}, crystalline phase growth in amorphous solid and liquid samples 8−43107
SSe_{40}, amorphous alloy, crystn., elec. cond. meas. 8−34440
$S(SiD_3)_2$, gaseous, liquid, solid phases, Raman spectra, IR spectra gas and solid phases, molecular vibr. exam. 8−25547
$S(SiH_3)_2$, gaseous, liquid, solid phases, Raman spectra, IR spectra gas and solid phases, molecular vibr. exam. 8−25547

sum rules
atoms, bound system, generalised virial theorem and dipole sum rules 8−21088
bag model, spin-depend. struct. functions in deep inelastic scatt. 8−8589
baryons, spin $1/2^+$, mag. moment sum rule, in SU_3 for u-, d- and c-quark sector 8−21428
bootstrap, planar pole, and existence of good finite mass sum rules 8−16948
charm particle photoproduction total cross sections, quantum chromodynamics *(Russian)* 8−45880
charm scheme of subhadronic constituents, weak decay processes 8−25012
charmonium, masses of 2P and higher levels, sum rules 8−4805
closure approximation, appl. to perturbation theory, muon capture and pion electroproduction 8−16680
Cottingham formula, nuclear Coulomb energy differences 8−37256
crossing sum rules for partial-wave amplitudes 8−21355
Drell-Hearn-Gerasimov sum rule determ. in low energy Compton effect anal. 8−21433
eikonal approx., electron-oriented nucleus scatt., polarisation of e^-, nuclei and emitted γ rays 8−37331
electroproduction, spin-dependent, sum rules, test of relativistic constituent quarks 8−25050
field theory, renormalisation of single particle states 8−24926
hypernuclei, produced by strangeness exchange reactions, sum rule cross section calcs. 8−17130
meson spectrum in simple planar bootstrap model 8−8618
nuclear dipole polarisability sum rule, HF calc.,, ^{16}O, ^{40}Ca appl. 8−21504
nuclear elastic form factors, properties from energy weighted sum rules 8−37319
octet baryons in SU_3, EM mass difference, u, d and c quark sectors 8−29334
parton transverse momentum dependence on longitudinal momentum 8−25016
progenitor sum rules, π-nucleon coupled fields, ρ-mesonic effects 8−17111
pseudoscalar mesons, sum rule, symm. breaking of chiral SU(4)×SU(4), decay const., masses 8−33000
QCD, sum rules for light quarks *(Russian)* 8−45812
quantum two-component plasma third sum rule and local mean-field theory 8−5982
radiative decay widths of charmonium states, superconvergent sum rules 8−21422
Reggeon amplitudes satisfying good finite mass sum rules 8−16953
scattering problem, universal sum rules 8−4806
semileptonic decay of charmed particles, formalism using helicity amplitudes 8−4852
single quark transition model, sum rules among charmed hadron decay amplitudes 8−12907
SU(4)×SU(4) current two point functions, meson decay consts. and bare quark masses from duality 8−8598
vector meson-nucleon scatt., sum rules 8−45810
virtual Compton amplitude, high-energy deep-inelastic scatt. 8−41550
weak hadronic $\Delta S=0$ baryon-π amplitudes, Melosh transformation 8−12857
weak nonleptonic decays in SU(4) and SU(8), adjoint representation admixture 8−21426
Weinberg sum rules, derivation of meson spectrum, duality unification with chiral symm. 8−29272
e+nucleus scatt., multipolar sum rules *(Russian)* 8−21548
GpN and πK scattering, chiral dynamics and asymptotical restrictions, sum rules *(Russian)* 8−17047
$\gamma\gamma\rightarrow$hadrons, sum rules and non-Regge terms 8−25093
$\gamma p\rightarrow p+$vector meson, total cross section *(Russian)* 8−8674
KN finite energy sum rules, Regge pole models, exchange amplitudes 8−470
KN scatt. length for S-wave $I=0$, dispersion reln. sum rules 8−37231
π electroprod., light cone dispersion sum rules, axial vector currents 8−41556
π inclusive prod., sum rules, π bremsstrahlung 8−45811
$\pi^-p\rightarrow\eta n$, tensor-exchange amplitude and polarisation determ. 8−45962
ψ leptonic decays, spectral-function sum rules 8−4857
Q mesons, sum rule for decay widths 8−449
^2H, photonuclear sum rules and interaction effects, integrated cross-section determ. from double commutator 8−21542
^3H, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^3H, muon capture 8−37314
^3He, enhancement factor calc. in photonuclear electric dipole sum rule 8−37288
^3He, muon capture 8−37314
^4He harmonic oscillator sum rules for photonuclear reactions, shell model, perturbative corrections 8−41692

sum rules continued
^{16}O, longit. isoscalar electroexcitation, sum rules and mean excitation energy 8−521
^{208}Pb, longit. isoscalar electroexcitation, sum rules and mean excitation energy 8−521
^{208}Pb(p,p′), sum rule anal. of inclusive cross section 8−33183
Pb(p,t), A=204,6,8, E=35 MeV, spectra and ang. distribs. meas. DWBA anal., sum rules 8−13101
^{45}Sc, neutron stripping and pick-up, reanalysed data, sum rule anal. and spectroscopic factors 8−8828

Sun
see also solar .....
see also cosmic ray solar modulation
absolute solar motion, rel. to discrete redshift 8−49530
apparent yearly precession, rel. to photospheric vel. research 8−20809
azimuth meas. for spacecraft location determ. on planetary surface 8−49287
as binary star, possible existence of companion 8−12198
diameter, comparison of transit obs. and photoelectric driftscans 8−4169
differential rotation/global convection system, modulation by nonlinear dynamo rel. to solar cycle 8−40889
education, solar physics, simple approx. model 8−36756
formation rel. to origin of planets, monograph 8−32625
global oscillations energy transport, upper bound from photosphere radiative equilib. 8−32430
gravitational deflection of light, effect of meas. on Gorky latit. *(Russian)* 8−40462
gravitational potential harmonics, effects on Earth rot. axis precession angle 8−48953
heliographic coordinates, rel. to use of solar graticules 8−16299
inhomogeneous models, neutrino flux survey 8−4166
Mercury transit, 1973 November 10, photographic obs. at Pulkovo *(Russian)* 8−28562
motion relative to neighbouring galaxies *(Russian)* 8−24553
nonradial p mode eigenfrequencies depend. on solar envelope struct. 8−16364
nonradial p-mode oscillations 8−32428
nonresonant second-order interaction of waves, generation of deeply penetrating gravity-like oscill. 8−28508
oblateness rel. to facular excess brightness, wavelength depend. 8−7955
oscillations, obs. results and theories 8−12182
pulsation with 2^h40^m period, possible magnetospheric origin 8−7961
review of present knowledge 8−40895
solar motion, rel. to centroid of Local Group 8−12376
solar motion and galactic rotation consts., from stellar proper motions 8−32440
spectral analogues, photoerectric scanner obs. of solar-type stars 8−40938
turbulent medium with density gradient, MHD effects, appl. solar convection *(Russian)* 8−47055
X-ray photographs, anal. and interpretation 8−4179

sunlight
see also atmospheric optics; sky brightness
absorption by water vapour, thermotidal exciting function 8−28310
absorption of shortwave radiation by plant cover, calc. procedures 8−16219
atmospheric turbidity at Athens Observatory, solar radiation meas. 8−7768
biological influences and appls. of optical radiation *(Japanese)* 8−44556
Campbell-Stokes recorder rel. to Dirmhirn global radiation recorder *(German)* 8−44953
circular polarization of sunlight reflected from planetary atmospheres 8−28558
cumulus clouds, downward scatt. solar radiation 8−3876
daily sunshine durations and temps., spatial variability over uniform terrain 8−3887
data, stochastic modelling and forecasting 8−36243
diffuse reflection by Earth, radiation press. perturbations of near-Earth satellite 8−24444
Earth surface UV radiation regime, effects of stratosphere pollution 8−16153
evolution implications for Earth's early atmosphere 8−36285
forward scattering from water surface 8−44872
insolation prediction at Fort Hood, Texas, rel. to climatological variables 8−24333
Lyman-α, mesospheric extinction meas. during Winter Anomaly Campaign (1975-76) 8−45001
meteorological aspects of solar and wind power 8−36250
monthly sunshine percentage rel. to 700 mb height field 8−3867
rocket, monoaxial controlled solar pointer for atmospheric occultation meas. *(Japanese)* 8−32312
scattering by noctilucent cloud particles 8−11945
sky brightness indicatrix rel. to single scatt. optical depth, new formula *(Russian)* 8−11999
spectral composition in 4000-7000 Å range at Moscow 8−16133
stratosphere, NO_2 light extinction rel. to Cretaceous-Tertiary extinctions 8−32215
transmission through uniform waterdrop atmosphere, computer calculation 8−36244
zenith photoelectric measurements during annular solar eclipse (1976, April 29) 8−3900
H Lyman-α radiation, mesospheric meas. rel. to O_2 density, press. and temp. profiles 8−44947

sunshine *see sunlight*

sunspots
see also solar activity
17th century, 1625 to 1626 and 1642 to 1644, anomalous solar rot. from sunspot drawings 8−36550
20 year variations in number rel. to Earth diurnal rot. vel. and geomag. vars. 8−32005
1972 August, struct. and dynamic props. of large sunspot group 8−49409
active regions gross energy balance 8−28633
broad-band circular polarisation, origin 8−45301
chromosphere, fine structs. extension into corona, Hα obs. *(French)* 8−28607

sunspots continued
circular polarisation of type III solar radio bursts in 24 to 220 MHz range *(Russian)* 8−16384
darkness difference between sunspots, mag. and vel. field effects 8−28629
intensity meas., correction for stray light during 1973 June 30 eclipse 8−28596
isolated magnetic configurations rel. to Hα-flares and microwave bursts 8−16387
magnetic field and vel. quasiperiodical oscills. *(Russian)* 8−12186
magnetic fields and motions, granulation and sunspots *(Russian)* 8−16376
magnetic flux elements, stability in horizontally stratified compressible plasma 8−28610
magnetic structures, correl. with radio noise storms 8−4185
morphological analysis of 1972 October large group *(Chinese)* 8−28603
numbers, quasi-biennial variation correl. with quasi-biennial geomag. var. 8−32006
numbers, rel. to equatorial solar rot. and terrestrial climatic changes 8−7960
numbers during solar cycle, relation to Pc 5 micropulsations features 8−36406
photosphere darkening, rel. to heat flow near obstacles in solar convection zone 8−28609
solar constant, effects of sunspots and faculae 8−4163
steady force-free dynamos, theory 8−20777
UV spectra, preliminary results from OSO-8 LPSP instrument 8−49317
AlF lines, intensities prediction 8−20803
FeH bands identification in spectra 8−7952
FeH, column densities rel. to Wing-Ford band identification 8−24507
H_2, detect. in sunspots EUV spectra 8−12184
SiO vibration rotation bands in sunspots, equiv. widths at 8 μ 8−40903

superaerodynamics *see rarefied fluid dynamics*

superconducting cables
He refrigerators for transmission lines, optimisation w.r.t cost and reliability 8−24802

superconducting critical field
intermetallic phases, technical superconductor applications *(German)* 8−27005
Kondo effect in type II superconductors, upper critical field and Ginzburg-Landau parameter 8−14874
Kondo superconductor, self-consistent theory of pairbreaking 8−26989
local state form. along dislocation, crit. field and current for destruction *(Russian)* 8−14905
materials and methods development trends *(Czech)* 8−23213
non-pure superconductor, type I-type II transition and lower crit. field 8−2615
power apparatus appls. for superconductivity, research study *(Japanese)* 8−19192
type I-type II transition and lower crit. field 8−2615
Al film, granular, crit. field anisotropy and fluctuation cond. 8−26994
Be-Zr alloy, glassy, quenched from melt, supercond. props. 8−26983
Bi, ultrathin film, crit. mag. fields *(Russian)* 8−23214
$Cu_xMo_6S_8$, sintered and sputtered, supercond. upper crit. field 8−23215
$Dy_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
$Er_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
Ga, films, distorted, crit. mag. fields *(Russian)* 8−39273
Ge, A1-type superconducting thin film, critical mag. field 8−31023
In, crit. RF mag. field, rel. to superheating 8−2632
In-Bi, crit. RF mag. field, rel. to superheating 8−2632
$La_{1-c}Ce_cAl_2$, Kondo superconductor, self-consistent theory of pairbreaking 8−26989
Mo-chalcogenides, crit. mag. fields *(Russian)* 8−34936
MoS_2 intercalation compounds, reaction with alkali and alkali earth metals, band struct., superconductivity 8−26541
Nb, cylindrical and ellipsoidal, rotational magnetisation and torque meas. in mag. field 8−43515
Nb:N, H_{c2} anisotropy, impurity and temp. dependence 8−43533
Nb-Pt alloy, superconducting parameters of A15- and σ-phases 8−39242
NbC_x, reactor irrad. effects on elec. resist. and supercond. props. *(Russian)* 8−47895
Nb_3Ge tape, prep. by continuous CVD process 8−11121
Nb_3Ge-based superconducting alloys, upper critical field temp. depend. *(Russian)* 8−10622
Nb_3Sn, fast neutron irradiation, effect on critical current density 8−19197
$Nb_3(Sn_{1-x}Ga_x)$, bronze processed wires, critical current densities in fields up to 23.5 T 8−47922
Ni-Nb(-Cu)-C, NbC dispersed supercond. tapes, fabrication and characts. 8−19773
Pb, crit. RF mag. field, rel. to superheating 8−2632
$PbMo_6Se_8(S_8)$, anisotropy of H_{c2} 8−39274
PdH_x, upper crit. field determ. 8−47919
$(SN)_x$, supercond. props., review 8−6474
$(SN)_x$, supercond. props., press. and field depend. 8−14903
Si, A1-type superconducting film, critical mag. field 8−31023
Sn, A1-type superconducting thin film, critical mag. field 8−31023
Sn, crit. RF mag. field, rel. to superheating 8−2632
Sn-In, crit. RF mag. field, rel. to superheating 8−2632
$SnMo_6Se_8$, anisotropy of H_{c2} 8−39274
$Tb_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
TiN, high dispersed superconductivity 8−43505
TiN, superconductivity 8−2605
V_3Ga, crit. temp. and field, prep. from V-Al and Cu-Ga 8−43506
$V_{1-x}Pt_x$, A-15 struct., Knight shift in normal state, upper crit. field curves *(French)* 8−43519
V_3Si, H_{c2} anisotropy in high field, grain boundary flux pinning 8−43532
$YbMo_6S_8$, supercond., low temp. thermal and mag. props. 8−14904
ZrC_x, x≐0.99 to 0.13, elec. cond., supercond. state 8−43504

superconducting critical temperature *see superconducting transition temperature*

superconducting devices
- *see also cryotrons*
- accelerometers, gravitational wave detection, and general gravit. expts. 8−45555
- capacitive transducer with superconducting resonator for mechanical vibration meas. 8−21127
- Cocatron, servo valve for liq. He II level control, superfluidity and supercond. applic. 8−18855
- coils, for Tokamak, active energy transfer rate control using inductor-convertor bridges 8−13338
- electron accelerators, elimination of electron multipacting in supercond. structs. 8−9004
- flux pump power supply, using inductive current transfer 8−12704
- levitation expt., search for quarks in matter 8−488
- linear accelerator, comparison of short muffin tin structs. *(French)* 8−33330
- liquid He level indicator *(Japanese)* 8−12705
- metrology appl. *(Japanese)* 8−37030
- multicontact thin-film switch, prod. 8−4661
- solenoid, current regulated sweep unit 8−4659
- solid dielectric props. meas. with superconducting resonators 8−21180
- transformer-rectifier flux pump power supplies performance anal. 8−12703
- Pb shell, mag. vacuum prod. by supercond. transition 8−8427

superconducting energy gap
- A15 compounds, supercond. rel. to struct. transform. 8−14873
- amorphous superconductor, ratio of energy to transition temp. 8−10619
- determination by point contact tunnelling 8−19185
- Fermi systems, review of methods in quantum field theory 8−8338
- film stripline, association with freq. range limitation of pulse propag. 8−43524
- insulator to superconductor in DC electric field 8−6481
- junction, nonequilibrium phenomena *(Russian)* 8−34934
- nonthermal quasiparticle distribs., energy gap instability 8−39256
- superconducting film, gap enhancement due to microwave irradiation 8−14892
- TCNQ salts, electron tunnelling 8−47769
- Nb, energy gap determ. by pt. contact tunnelling 8−19185
- Nb$_3$Sn, gap anisotropy, electron irrad. effect on transition temp. 8−10599
- Pb film, quantized resistances, RF fields effects 8−10604
- Pb-In alloys, supercond. energy gap determ. by pt. contact tunnelling 8−19185
- Pb$_{55}$Bi$_{45}$ film, amorphous, supercond. energy gap and transition temp. 8−14866
- (SN)$_x$, electron tunnelling, absence of supercond. energy gap 8−47769
- V-C sandwiches, energy gap fluctuations *(Russian)* 8−34930

superconducting junction devices
- automatic thermal cycling apparatus, for superconductive thin film devices 8−37014
- bolometers for submillimetre waves 8−37063
- bridges, switching process depend. on control impulse ascent time *(German)* 8−2627
- Dayem bridges, two interacting, coherent behaviour 8−14891
- gravitation antenna, quantum interferometer as recording element *(Russian)* 8−45557
- inhomogeneous distributed Josephson struct., mag. flux dynamics 8−34932
- inverse AC Josephson effect voltage standard 8−16808
- Josephson effect, current-versus voltage source model 8−6484
- Josephson effect heterodyne receiver 8−12754
- Josephson junction, millimetre-wave, far-infrared and infrared detectors *(Japanese)* 8−32872
- Josephson junction, radiation power spectrum 8−43522
- Josephson microbridge, variable thickness, DC and UHF props. *(Russian)* 8−10620
- Josephson pair-quasiparticle interference, in meas. of flux entry into supercond. interferometer 8−14895
- Josephson point contact detector, high-sensitivity, for 1.5 t 2 mm band, radioastronomical obs. appl. 8−4106
- Josephson tunnel junction, long, microwave induced resistive state 8−47914
- Josephson tunnel junction, Q-factor and reson. amplitude, calc. 8−10617
- Josephson tunnel junction in arbitrary cct., response 8−39265
- Josephson tunnel junctions, large, current-voltage characts. 8−6483
- Josephson tunnel junctions, resistively shunted 8−47916
- Josephson tunnelling current, theory of cos φ term. 8−14890
- LF spectral analyser with HF SQUID, threshold sensitivity 8−41328
- light induced weak link 8−34926
- long superconducting bridges with variable thickness, Josephson effects 8−14897
- magnetic transition-metal impurities effect on tunnel characts. *(Russian)* 8−34927
- microbridge, thin film, nonreson. detection of Josephson radiation 8−43523
- microbridges, effective capacitance, normal-current injection in supernormal junctions 8−47911
- microscopic theory of Josephson effect on supercond. bridges *(Chinese)* 8−14887
- nonequilibrium phenomena *(Russian)* 8−34934
- parametric convertor type pulse amplifiers, AC Josephson effect appls. 8−19184
- phonon generation and detection expts. with supercond. tunnelling junctions, sources of losses 8−18718
- quasiparticle scattering and current-volt. characts. of supercond.-normal-supercond. film struct. 8−10615
- resistance from superconductor in supercond.-normal metal interface 8−43525
- shunted Josephson junction model, autonomous case 8−34929
- shunted Josephson junction model, nonautonomous case 8−39267
- SQUID, UHF, tapped tank circuit, anal. and operation 8−41334
- SQUID arrays, for mag. field meas., geophysical, biomedical appls. 8−32830
- SQUID coupled to piezoelectric transducer, detection of gravitational waves 8−21218
- SQUID magnetometer, archaeomagnetic intensity meas. 8−352

superconducting junction devices continued
- SQUID systems, low noise circuitry 8−4672
- superconductor-metal point junction as microwave radiation detectors 8−16847
- symmetric double weak link device, hysteresis behaviour in mag. field 8−39268
- transistor, three-film three-terminal device, theory and construction 8−47908
- tunnel junction, nonequil. excitation distrib. and phonon generation *(Russian)* 8−23204
- two-junction Josephson interferometer, reson. phenomena, anal. 8−47910
- voltage measurements within equilibrium region near phase slip centres 8−26997
- weak link, RF impedance 8−14889
- weak link, solns. of nonlinear eqn. of resistively shunted model of Josephson junctions 8−2628
- weak link fabrication, electron beam lithography, ion implantation 8−47913
- weak links, interaction in stationary states 8−31020
- Al/formvar/Al(Sn) structures, low frequency phonon spectroscopy by tunnel effect 8−23206
- Al-PbBi tunnel junction as phonon spectrometer 8−47477
- Bi, amorphous, microbridge prep. and transition from superconducting to normal state 8−34933
- Nb selective plasma etching 8−39940
- Nb superconducting point contacts, DC and HF behaviour 8−31021
- Nb-Nb$_x$O$_y$-Pb Josephson tunnel junction form. and ageing, adsorbed gas effect *(Russian)* 8−14899
- Nb-oxide-Pb Josephson junctions, anomalous microwave-induced voltages 8−39266
- NbN-NbN point-contact Josephson junction, fabrication and characts. 8−19189
- NbN-V$_3$Ga point-contact Josephson junction, fabrication and characts. 8−19189
- Nb$_3$Sn, nonstationary Josephson effect, 13-18.3K, 9-10 GHz, 20 MW *(Russian)* 8−2631
- Nb$_3$Sn superconducting bridge junction, crit. current temp. depend. *(Russian)* 8−34938
- Nb$_3$Sn, thin film weak-links SQUIDs, localised region radiation damage, fabrication and properties 8−47912
- Pb alloy Josephson tunnelling gate, thermal cycling 8−19188
- Pb, narrow film strip, weak link induced by optical guided waves 8−14886
- Pb-In, series-connected Josephson tunnel junctions, fabrication procedure diagnostics 8−47909
- Pb-In-Au, series-connected Josephson tunnel junctions, fabrication procedure diagnostics 8−47909
- Pb-Sn eutectic, directionally solidified, periodic array of supercond.-normal contacts, supercurrent and dynamic resist. 8−34928
- PbIn-oxide-Pb junction, two-particle tunnelling and microwave effects 8−43527
- Sn microbridges, nonequilibrium enhanced supercurrents 8−43526
- Sn-oxide-Sn Josephson tunnel junctions meas. temp. depend. of cos 0 conductance 8−10611

superconducting lenses *see magnetic lenses*

superconducting machines
- heat transfer in rotating windings, free convection in cryo-fluid He-I modelling 8−26745

superconducting magnets
- *see also superconducting machines*
- CTR blanket design *(Japanese)* 8−46164
- drift chamber performance in supercond. mag. field, electron drift angle meas. 8−37485
- energy storage application for particle accelerators and power networks 8−25360
- fusion reactor large magnet systems safety 8−770
- magnetic field prod. and meas. 8−8425
- pulsed and DC types, high energy physics appl. *(German)* 8−21834
- quenching of technical superconductors by ht. and mag. field pulses 8−43537
- saddle-shaped, MHD generator appl., construction 8−22579
- solenoid, mag. field stability in persistent mode *(Czech)* 8−29131
- solenoid, superconducting, homogeneous, for superconductor props. meas. by NMR *(Czech)* 8−29130
- solenoids and resonators for H$^+$ collective accelerator, Q-values and field profiles 8−46188
- solenoids and resonators for H$^+$ collective accelerator 8−46187
- stability, against localised disturbances of limited magnitude 8−39264
- storage ring, torroidal, for neutrons 8−21795
- tevatron, Fermilab proton accelerator with supercond. mag. ring 8−835
- Tokamak plant, superconducting toroidal field magnet model 8−17425
- Tokamak requirements for supercond. materials and devices w.r.t. thermonucl. fusion *(French)* 8−13322
- UWMAK II, conceptual demountable TG magnet design 8−17426

superconducting materials
- *see also composite superconductors; dirty superconductors; strong-coupling superconductors; superconducting semiconductors; superconducting thin films; type I superconductors; type II superconductors*
- fatigue testing, in normal and superconducting states 8−19959
- friction between like metals, 4.2-80K, superconductivity effects 8−48543
- MHD conversion appl. *(Japanese)* 8−47925
- transition metal, normal state, resistivity, anomalous temp. coeff. at high temp. 8−2458
- (SN)$_x$, electronic struct. and opt. props. 8−6256
- (SN)$_x$, supercond. props., review 8−6474

superconducting quantum interference devices *see superconducting junction devices*

superconducting semiconductor materials *see superconducting semiconductors*

superconducting semiconductors
- transition in DC elec. field 8−6481
- InAs, supercond. of surface *(Japanese)* 8−14864

superconducting thin films
- automatic thermal cycling apparatus, for superconductive thin film devices 8−37014
- bridge, Josephson effect and collective oscillations *(Russian)* 8−31022

superconducting thin films continued
  bridges, switching process depend. on control impulse ascent time *(German)* 8−2627
  EM field absorption *(Russian)* 8−34924
  gap enhancement due to microwave irradiation 8−14892
  geometrical reson. effect, electron tunnelling density of states meas., review *(French)* 8−2626
  metastable systems, high transition temps., survey *(Russian)* 8−19172
  nearly two-dimensional superconductor, crit. exponent 8−14884
  nonequilibrium, inhomogeneous state onset 8−14875
  ordering parameter and current density, depend. on paramag. impurity conc. and electron pair rel. *(Russian)* 8−6489
  paramagnetic impurities, depend. of crit. conc. on mag. field 8−14863
  Pauli paramagnetism and Fermi surface topology changes under press., rel. to supercond. phase transition 8−2612
  quasiparticle scattering and current-volt. characts. of supercond.-normal-supercond. film struct. 8−10615
  resistive domains in long supercond. of small cross section, close to crit. temp. 8−26995
  stripline, propag. const., attenuation and phase vel. expressions, pulse propag. 8−43524
  two-layer model for ultrathin films 8−14849
  voltage measurements within equilibrium region near phase slip centres 8−26997
  Al, getter sputtered at low temp. 8−35305
  Al, granular, crit. field anisotropy and fluctuation cond. 8−26994
  Al, perforated, crit. currents associated with interaction of commensurate flux-line sublattices 8−34937
  Al strips, freq. depend. of microwave-enhanced supercond., and local injection of electrons 8−6492
  Al, supercooling mag. field and thermal fluctuations 8−34925
  Al-Cu, dil. alloy, quench condensed thin films, supercond. and struct. from electron diffr. patterns 8−47901
  Al-Si(Ge) film, ion-implanted, percolation and superconductivity 8−26982
  Bi, amorphous, microbridge prep. and transition from superconducting to normal state 8−34933
  Bi, amorphous, supercond. fluctuation effects in resist. transition 8−10609
  Bi, ultrathin film, crit. mag. fields *(Russian)* 8−23214
  $Cu_xMo_6S_8$, evap. film prep., supercond. props., lattice parameters 8−23195
  $Cu_xMo_6S_8$, sputtered, supercond. crit. currents and scaling laws 8−47923
  Ga, films, distorted, crit. mag. fields *(Russian)* 8−39273
  Ga, T_c and residual resist., variation with coating thickness 8−47900
  Ge, A1-type superconducting thin film, critical mag. field 8−31023
  In, film, flux nucleation meas. in current induced resistive state 8−27002
  In, metastable states supercond. parameters 8−47903
  $La_{1x}Au_x$, splat cooled amorphous alloy, sp. ht. 8−19182
  Mo, T_c and residual resist., variation with coating thickness 8−47900
  Mo:N, high T_c amorphous phase stabilisation by interstitial nitrogen 8−23622
  Mo_3Ge, RF sputtered, crit. temp. 8−14853
  Nb, superconducting film, thickness depend. of electrophys. parameter *(Russian)* 8−10590
  Nb superconducting film prod. by electron beam sputtering *(Russian)* 8−15308
  Nb-Au film, in versatile multicontact switch 8−4661
  Nb-Ge, TEM expts., correl. of struct. and elec. props. 8−14628
  Nb-Ge superconducting film, prod. by electron beam sputtering *(Russian)* 8−15308
  Nb-N system, ion-implanted, supercond. crit. temp., effect of implantation conditions 8−19176
  $Nb_3(AlSi)$, thermomodulation spectra, 1.1-2.8 eV 8−48250
  Nb_3Ge, α-particle irrad., supercond. transition width 8−23193
  Nb_3Ge, critical temp., resistivity, structure depend. on comp. 8−6470
  Nb_3Ge, electron beam co-deposited, prep. and supercond. crit. temp. 8−15310
  Nb_3Ge film, EXAFS meas. 8−2935
  Nb_3Ge film, low temp. sputter deposition 8−48315
  Nb_3Ge tape, prep. by continuous CVD process 8−11121
  Nb_3Ge:H film, sensitivity of supercond. transition temp. to H content 8−47894
  NbN film, ultrathin granular, zero dimensionality and Josephson coupling 8−10612
  Nb_3Si film, supercond., obtained by vaporisation in vacuum, props. 8−14865
  Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8−10301
  Nb_3Sn, gap anisotropy, electron irrad. effect on transition temp. 8−10599
  Nb_3Sn, thin film weak-links SQUIDs, localised region radiation damage, fabrication and properties 8−47912
  Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
  Pb, film, first order transition due to quasiparticle injection 8−23208
  Pb film, ultrathin quench-condensed, two-dimensional elec. cond., onset of supercond. 8−39233
  Pb, flux nucleation in current-induced resistive state 8−23210
  Pb, narrow film strip, weak link induced by optical guided waves 8−14886
  Pb, polycryst. or amorphous, thermal cond., 0.5-11K 8−39260
  Pb, quantized resistances, RF fields effects 8−10604
  Pb, superconducting thin film resonator, high-freq. characts. in mag. field *(Russian)* 8−31014
  Pb, T_c and residual resist., variation with coating thickness 8−47900
  Pb-Al_2O_3-Al tunnel junction, Pb supercond. film behaviour in mag. field 8−14894
  Pb-Au (2.5 wt.%) film, In diffusion, alloy form. 8−22899
  Pb-Cd, supercond. proximity effect, electron tunnelling study 8−10616
  Pb-M, M=Bi, La, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
  PbCu film, amorphous supercond., phonon heat transport, thermal cond. meas. 8−19181
  $Pb_{0.9}Cu_{0.1}$, polycryst. or amorphous, thermal cond., 0.5-11K 8−39260
  PdH_x film, elec. resist. meas. 8−31011
  Re, T_c and residual resist., variation with coating thickness 8−47900
  Re_5Ge_3, RF sputtered, crit. temp. 8−14853
  Si, A1-type superconducting film, critical mag. field 8−31023

superconducting thin films continued
  Sn, A1-type superconducting thin film, critical mag. field 8−31023
  Sn, film, superconducting transition curve stepped struct. due to microwave radiation *(Russian)* 8−2610
  Sn, film at supercond. transition temp. thermal noise fluctuations 8−47907
  Sn ribbon, penetration depth of nonequilibrium elec. field, temp. depend. *(Russian)* 8−23202
  Sn, thin film, supercond., acoustic wave absorpt., quasiparticle distrib. 8−10603
  V-M, M=Ti, Nb, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
  V_3Si, complex refr. index and reflectivity of thin film, microscopic characts. and superconductivity 8−31267
  $ZrGe_2$, RF sputtered, crit. temp. 8−14853

superconducting transition temperature
  A15 compounds, martensitic and supercond. transition models, anisotropy of vortices and US anomaly, review *(Japanese)* 8−23216
  A15 compounds, mode softening and high supercond. crit. temp. 8−14851
  A-15, A_3B type, cryst. chemical laws 8−34914
  A-15 compounds, effect on critical temp. for supercond. of disorder, induced by α-particles 8−47897
  A-15 materials, effect of neutron irradiation 8−6472
  A-15 superconductors with defects, transition temp. 8−14857
  alkali metal tungsten bronzes, enhanced supercond. T_c, possible explanation 8−14850
  alkali tungsten bronzes, dynamic fluctuations between local struct. states in supercond. TI phase 8−26981
  alloys, Kondo effect, specific heat jump at transition temp. 8−6479
  amorphous superconductor, ratio of energy to transition temp. 8−10619
  binary system, T_c-X state diagrams 8−31010
  biological membranes as excitonic superconductors *(Russian)* 8−23190
  contactless measurement method, high press. 8−23191
  dynamic instabilities in high T_c materials 8−10607
  Eliashberg eqn. soln. *(Chinese)* 8−26985
  Eliashberg equation, solution at $T=T_c$ 8−34918
  Eliashberg equation solution and series expression for T_c 8−31013
  Eliashberg equations at zero and crit. temps. 8−34919
  Eliashberg theory, strong-coupling superconductors 8−2614
  film, depend. of crit. conc. of paramag. impurities on mag. field 8−14863
  film, Pauli paramagnetism and Fermi surface topology changes under press. 8−2612
  film, ultrathin, two-layer model 8−14849
  film systems, metastable, high transition temps., survey *(Russian)* 8−19172
  Ginzburg-Landau parameter crit. value 8−10597
  Ginzburg-Landau theory, time depend., dissipative current carrying states in supercond. filaments 8−47906
  high T_c superconductivity, theory 8−14870
  ion-ion interaction in metals and intermetallic compounds, connection with supercond. transition temp. 8−47896
  itinerant magnets and superconductors, structural instabilities, phase diagrams 8−14922
  Kondo alloys and supercond. proximity effect 8−19190
  Kondo superconductor, self-consistent theory of pairbreaking 8−26989
  laser light scatt. spectroscopy, phase transitions 8−10156
  lattice instabilities in non-A15 superconductors, struct. instability temp., 8−10591
  layered compounds CDW instability rel. to supercond. T_c 8−14856
  linear chain system, exciton model of supercond. 8−6476
  local field effects, theory 8−14848
  localised states, T_c enhancement, band struct., electron-phonon interaction 8−47902
  low-lying vibrational modes and theory of local and transport props. at transitions 8−14425
  magnetically impure superconductors, finite relax. time at zero field transition point, exptl. obs. 8−23219
  metal, superconducting transition, effect of change of electrostatic interaction of defects 8−10610
  metallic fine particles, anharmonic lattice vibr. theory, Einstein model appl. 8−18714
  metallic glasses, structure and properties, review 8−47245
  noble metal alloys, superconductivity, correlations and predictions 8−23192
  nuclear spin relaxation rate fluctuation growth, mag. field effect 8−10606
  quasi-one-dimensional conductor, Peierls instability and superconductivity, possibility of coexistence 8−31028
  quasi-one-dimensional conductors, impurity effect on phase transitions 8−6297
  rare earth compounds, phenomenological study of supercond. 8−43512
  rare earth compounds, $R(Rh_{0.85}Ru_{0.15})_4B_4$, mag. ordering and supercond. 8−14861
  rigorous formula *(Chinese)* 8−26986
  transition element cpds. and their dil. alloys, supercond. crit. temp., s-d Coulomb interaction 8−31012
  transition metal alloy, binary, conc., superconductivity and electron-phonon interactions, theory 8−14868
  transition metals, and their carbides high temp. superconductivity and phonon softening 8−14848
  transition metals, supercond., effect of s-, d-electron hybridisation *(Russian)* 8−39243
  two-band superconductor with nonmagnetic impurities, transition temp. 8−2607
  two-dimensional fluctuation-induced cond. above crit. temp. 8−10608
  type II superconductor, dielastic, interaction of flux line lattice with internal stresses of cryst. imperfections 8−14906
  $Ag_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
  Al film, getter sputtered at low temp. 8−35305
  Al, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
  Al-Cu, dil. alloy, quench condensed thin films, supercond. and struct. from electron diffr. patterns 8−47901
  Al-Si(Ge) film, ion-implanted, percolation and superconductivity 8−26982
  Au, pure, supercond. transition temperature estimated 8−43358

superconducting transition temperature continued
- Au-Ga, resist. and supercond. meas., electron-phonon interaction and Coulomb pseudopot. determ. 8−43358
- $AuGa_2$ type supercond., mag. impurity and press. effect on crit. temp. *(Russian)* 8−23189
- Ba, BCC, superconductivity under press. 8−14858
- Be-Zr alloy, glassy, quenched from melt, supercond. props. 8−26983
- Bi, amorphous, microbridge prep. and transition from superconducting to normal state 8−34933
- Bi, amorphous film, supercond. fluctuation effects in resist. transition 8−10609
- Cd-Cr, dil., estimates of s-d interaction from supercond. transition temp. and mag. susceptibility 8−43561
- Ce, high press. superconductivity, phonon softening 8−14852
- Cu-Nb_3Sn, in situ formed multifilamentary composite, supercond. and mech. props. 8−39279
- Cu-Nb-Sn dil. alloys containing Nb_3Sn precipitates, superconductivity 8−43507
- Cu-V-Ga dil. alloys with V_3Ga particles, supercond. props. and microstruct. 8−39278
- $Cu_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
- $Cu_xMo_6S_8$, evap. film prep., supercond. props., lattice parameters 8−23195
- $Er_xMo_6Se_8$, long-range antiferromag. order and supercond. coexistence 8−10715
- Ga film, T_c and residual resist., variation with coating thickness 8−47900
- H_2, metallic, electron-phonon interaction and superconductivity, APW calcs. 8−14854
- HfV_2, C15 Laves phase, supercond. and stoichiometry 8−39245
- In, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
- $In_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
- (La,Ce)Ru_2, supercond. transition temp., its press. depend., and structural phase transform. 8−6473
- La, press. depend., mode softening 8−14847
- LaAg, under hydrostatic press., supercond. and phase transform, elec. resist., 1-300K 8−10595
- $La_{1-n}Ce_n$, supercond. mag. alloy, effect of interconfigurational fluctuations 8−19175
- $La_{1-c}Ce_cAl_2$, Kondo superconductor, self-consistent theory of pairbreaking 8−26989
- $(La_{1-n}Ce_n)_3Al$, mag. impurity effects in normal and supercond. state, NMR 8−2622
- La(Ce)$Sn_{3-x}Pb_x$ system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
- $(La_{1-n}Gd_n)_3Al$, mag. impurity effects in normal and supercond. state, NMR 8−2622
- La_3Sn, cubic phase, high press. and high temp. synthesis, and characterisation 8−19687
- $La_{1-y}Tb_yAg$, crystal field effects, normal and superconducting states 8−2621
- $(La_{1-x}Th_x)_{1-n}Ce_n$, supercond. mag. alloy, effect of interconfigurational fluctuations 8−19175
- $(La_{0.80}Y_{0.20})Ce$, three superconducting crit. point behaviour 8−10625
- $La_{1-y}Y_y$(Ce) system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
- Mg, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
- Mo and Nb-Mo alloys, superconductivity and phonon softening, between electron bands and phonons 8−14859
- Mo film, T_c and residual resist., variation with coating thickness 8−47900
- Mo selenides, ternary, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
- Mo sulphides, ternary, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
- Mo:N film, high T_c amorphous phase stabilisation by interstitial nitrogen 8−23622
- Mo-chalcogenides, crit. mag. fields *(Russian)* 8−34936
- Mo_3Ge, RF sputtered 8−14853
- MoS_2 intercalation compounds, reaction with alkali and alkali earth metals, band struct., superconductivity 8−26541
- $Mo_5SnGa_xS_6$ heat capacity from 2 to 25K 8−43518
- Na_xWO_3, dynamic fluctuations between local struct. states in supercond. TI phase 8−26981
- Na_xWO_3, semiempirical model for lattice instabilities in nonstoichiometric materials 8−14442
- (Nb,Ti)N_x, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
- Nb and Nb-Mo alloys, superconductivity and phonon softening, between electron bands and phonons 8−14859
- Nb, O enrichment of surface layers, penetration depth and resist. meas. 8−19180
- Nb, supercond. crit. temp. enhancement by radiation damage 8−2609
- Nb superconducting film prod. by electron beam sputtering *(Russian)* 8−15308
- Nb, T_c control by N ion implantation 8−2606
- Nb-Ga alloy, A15 type, melt produces specimens, supecond., homogeneity, transition temp. *(German)* 8−2608
- Nb-Ge film, supercond., TEM expts., correl. of struct. and elec. props. 8−14628
- Nb-Ge superconducting film, prod. by electron beam sputtering *(Russian)* 8−15308
- Nb-Ge-Si, Si effect on raising superconducting transition temp. in pelicular specimens *(Russian)* 8−23188
- Nb-Ir-O, phase struct., supercond. H-phase 8−39246
- Nb-N system, ion-implanted, effect of implantation conditions 8−19176
- Nb-Pt alloy, superconducting parameters of A15- and σ-phases 8−39242
- Nb-Sn, depend. of supercond. transition temp. on composition *(Russian)* 8−19173
- Nb-Ti, thermal conductivity in low temp. range 8−39259
- NbC, C implanted, channelling crit. angle and min. yields 8−47458
- NbC_x, reactor irrad. effects on elec. resist. and supercond. props. *(Russian)* 8−47895
- NbC_xN_{1-x}, s.p. ht., 4.2-100K, phonon anomaly rel. to supercond. transition 8−14880

superconducting transition temperature continued
- Nb_3Ge, α-particle irrad., supercond. transition width 8−23193
- Nb_3Ge film, electron beam deposited, comp. depend. 8−6470
- Nb_3Ge film, electron beam co-deposited, prep. and supercond. crit. temp. 8−15310
- Nb_3Ge film, low temp. sputter deposition 8−48315
- Nb_3Ge, low fluence alpha irradiation, behaviour of supercond. transition temp. 8−43510
- Nb_3Ge, superconducting transition temp. 8−47898
- Nb_3Ge tape, prep. by continuous CVD process 8−11121
- Nb_3Ge:H film, sensitivity of supercond. transition temp. to H content 8−47894
- Nb_5Ge_3, 0.30K T_c meas. with 0.14K transition width 8−6468
- $NbS(Se)_2$, polymorphism at high press. and temps., T_c and band struct. 8−26528
- $NbSe_2$ nonstoichiometry, electrical props. *(Japanese)* 8−10593
- Nb_3Si film, supercond., obtained by vaporisation in vacuum, props. 8−14865
- Nb_3Si, superconducting, high transition temp., sputtering 8−15309
- $Nb_{1-x}Sn_x$, sp. ht., supercond. T_c and martensitic transform. *(French)* 8−43508
- Nb_3Sn, effect on critical temp. for supercond. of disorder, induced by α-particles 8−47897
- Nb_3Sn, fast neutron irradiation, effect on critical current density 8−19197
- Nb_3Sn, gap anisotropy, electron irrad. effect on transition temp. 8−10599
- Nb_3Sn, low fluence alpha irradiation, behaviour of supercond. transition temp. 8−43510
- Nb_3Sn, martensitic transform. coupling with supercond. transition 8−44126
- Nb_3Sn, phonon softening and T_c, strong electron-phonon coupling 8−31009
- Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
- $Nb_{1-x}W_xSe_2$ x=0 to 0.15, elec. resist., mag. suscept., heat capacity, structural, supercond. transition *(Russian)* 8−31006
- Ni-Nb(-Cu)-C, NbC dispersed supercond. tapes, fabrication and characts. 8−19773
- NiH_x, electronic band struct. and interatomic bond 8−43295
- Pb film, T_c and residual resist., variation with coating thickness 8−47900
- Pb, plastic deform. rate rel. to supercond. transition, temp. depend. *(Russian)* 8−31015
- Pb single crystal, normal-superconducting transition and plastic flow 8−3166
- Pb, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
- Pb-Cd, supercond. proximity effect, electron tunnelling study 8−10616
- Pb-In, viscous drag on mobile dislocations, plastic deformation, critical temp. magnetic data 8−43514
- Pb-M, M=Bi, La, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
- Pb-Sn(Bi) alloys, dil., impurity effects on softening at T_c *(Russian)* 8−23220
- $Pb_{55}Bi_{45}$ film, amorphous, supercond. energy gap and transition temp. 8−14866
- $PbMo_{5.1}S_6$, high supercond. T_c, soft mode behaviour 8−14855
- $PbMo_6S_6$, cold-worked core-wires, supercond. transition temp. and lattice instability 8−6469
- $Pb_xMo_6S_{8-y}$, phase relns., stoichiometry, T_c 8−15378
- Pd-Ag-D system, instability and superconductivity 8−39248
- Pd-H system, instability and superconductivity 8−39248
- Pd-H(D), isotope effects in supercond. properties 8−6471
- PdH_x film, elec. resist. meas. 8−31011
- PdH(D), superconducting, electronic spin density, isotope effects 8−39262
- $PdH_x(D_x)$, band struct., supercond. props., APW calcs. and neutron scatt. 8−43511
- radiation induced enhancement of superconductivity 8−39249
- Re film, T_c and residual resist., variation with coating thickness 8−47900
- Re, plastic deform. rel. to low temp. sp. ht., supercond. *(Russian)* 8−31005
- Re_5Ge_3, RF sputtered 8−14853
- $(SN)_x$, electronic struct. and opt. props. 8−6256
- $(SN)_x$, supercond. at high press. 8−23194
- $(SN)_x$, supercond. props., review 8−6474
- $(SN)_x$, supercond. props., press. and field depend. 8−14903
- Sn, film, superconducting transition curve stepped struct. due to microwave radiation *(Russian)* 8−2610
- Sn, film at supercond. transition temp. thermal noise fluctuations 8−47907
- Sn, supercond. whiskers, current induced phase transition 8−10600
- Sn, whiskers, current-carrying, mutual influence of votlage steps in V-I characts. 8−10601
- $SnMo_5S_6$, high supercond. T_c, soft mode behaviour 8−14855
- $Sn_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
- Ta, flow stress at superconducting transition, temp. and strain rate depend. 8−2617
- Ta_3Ge, superconducting transition temp. 8−47898
- TaS_2 intercalates with alkali metals, prep., X-ray anal. and supercond. transition temp. 8−31007
- $TaSe_3$, superconducting transition *(Japanese)* 8−30880
- ^{99m}Tc, supercond. effect on decay rate, lattice consts., transition temp. 8−41671
- Ti-U(Cr)(Mo)(W), dilute, superconducting transition temp. and mag. suscept. 8−47899
- TiN, high dispersed superconductivity 8−43505
- TiN, superconductivity 8−2605
- U, phonon-softening 8−10592
- V-M, M=Ti, Nb, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
- V-Nb-Ta, elec. resist. and electron-phonon interaction parameters, comp. depend. 8−14862
- V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8−10594
- VC, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
- V_3Ga, crit. temp. and field, prep. from V-Al and Cu-Ga 8−43506

superconducting transition temperature continued
V_3Ga, single crystal prep. by iodine transport, supercond. T_c meas. 8−48294
$V_3Ga(Si)$, high T_c supercond., electron-phonon coupling, effect of electronic density of states sharp struct. 8−14877
V_3Ge, superconducting, high transition temp., sputtering 8−15309
V_3P, superconducting transition temp. 8−47898
V_3Si, chemical composition effect on phase transition and transition temp. 8−14860
V_3Si, electronic struct., electron-phonon interaction and high temp. superconductivity, APW calc. 8−14871
V_3Si, Hall effect, 77K to superconducting transition temp. 8−43359
V_3Si, low fluence neutron irradiation, behaviour of supercond. transition temp. 8−43509
V_3Si, martensitic transform. coupling with supercond. transition 8−44126
V_3Ti, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
$Y(Rh_{0.85}Ru_{0.15})_4B_4$, mag. ordering and supercond. 8−14861
$YbMo_6S_8$, supercond., low temp. thermal and mag. props. 8−14904
Zn, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
Zn-Mn, dil., Kondo effect and impurity interactions in resist., transition to supercond., 0.05-14K 8−14721
ZrC_x, x=0.99 to 0.13, elec. cond., supercond. state 8−43504
$ZrGe_2$, RF sputtered 8−14853
$Zr_3Ge(P)(Sb)(Si)$, superconducting transition temp. 8−47898
ZrN, plasma-formed, ESCA and supercond. transition temp. 8−19697
ZrV_2, supercond. rel. to struct. instability *(Russian)* 8−23196

superconductive tunnelling
see also Josephson effect; proximity effect; superconducting junction devices; tunnelling spectra; tunnelling spectroscopy
amorphous superconductor, ratio of energy to transition temp. 8−10619
Current-monitored superconducting bridge junctions *(Russian)* 8−23205
electron-phonon interaction function determ. using dispersion relation 8−34931
energy gap determ. by pt. contact tunnelling 8−19185
film, geometrical reson. effect, electron tunnelling density of states meas., review *(French)* 8−2626
film, ultrathin, two-layer model 8−14849
junction, involving high temp. A15 lattice-type superconds., nonlinear phenomena 8−14898
junction, nonequil. excitation distrib. and phonon generation *(Russian)* 8−23204
magnetic transition-metal impurities effect on tunnel characts. *(Russian)* 8−34927
microwave-induced step height, mag. field effect *(Chinese)* 8−6482
nonequilibrium double junction, tunnelling characts. 8−14893
nonequilibrium state, studied by large quasiparticle injection from external current source 8−10614
order parameter reson. fluctuations rel. to tunnel current *(Russian)* 8−31019
resistance from superconductor in supercond.-normal metal interface 8−43525
superconducting bridge, quantized vortex formation *(Russian)* 8−43521
Al/formvar/Al(Sn) structures, low frequency phonon spectroscopy by tunnel effect 8−23206
$Al-Al_2O_3-Pb$ junction, Pb supercond. film behaviour in mag. field 8−14894
$Al-Al_2O_3$-ferromagnetic alloy junction, spin polarised tunnelling results for Ni alloys 8−39372
$(La_{1-x}Ce_x)Al_2$, Kondo supercond., tunnelling density of states 8−14900
$(La_{1-x}Ce_x)Al_2$, Kondo supercond., tunnel junction fabrication with wax barriers, tunnelling meas. 8−19191
Nb, energy gap determ. by pt. contact tunnelling 8−19185
Nb, strong-coupling microscopic parameters, electron tunnelling obs. 8−14888
Pb, film, first order transition due to quasiparticle injection 8−23208
Pb superconducting junction, neutron irradiated, tunnel spectroscopy 8−10618
Pb tunnel barrier, oxidation in humidity-controlled O_2 regulated atm. 8−19187
Pb-In alloys, supercond. energy gap determ. by pt. contact tunnelling 8−19185
V-C sandwiches, energy gap fluctuations *(Russian)* 8−34930

superconductivity
see also BCS theory; coherence length; composite superconductors; Cooper pairs; critical currents; dirty superconductors; fluctuations in superconductors; Ginzburg-Landau theory; Meissner effect; penetration depth (superconductivity); strong-coupling superconductors; superconducting critical field; superconducting devices; superconducting energy gap; superconducting materials; superconducting transition temperature; superconductive tunnelling; type I superconductors; type II superconductors
anharmonism, effect on supercond. *(Russian)* 8−39255
boson method, extension to systems containing randomly distrib. nonmagnetic impurities 8−39253
charged gapless superconductor, order parameter modes, dynamical pair-field susceptibility 8−2613
collective excitations, appl. of generalized self-consistent field method 8−10598
cryogenics critical review 8−37022
definition of terms for fundamental states, flux phenomena, meas. practices 8−34916
destruction by optical pumping, theory 8−47905
dislocation electrostatic interaction *(Russian)* 8−23198
elastic constants, single crystals, rel. to vibr. behavior, supercond. 8−10114
electron-phonon thermal cond. *(Russian)* 8−26993
Eliasberg's equations, solvability *(Russian)* 8−39250
Eliashberg equation, solution at $T=T_c$ 8−34918
Eliashberg equations, soln.. by means of N-point Pade approximants 8−6475
EM properties, general lecture 8−26901
excitonic, applic. of biological membranes *(Russian)* 8−23190
fermion systems, eqns. of motion for field operators and energy spectrum for isotropic systems 8−36926

superconductivity continued
Ginzburg-Landau equations, time-depend., soln. for external time variable mag. field *(German)* 8−10596
ground state of quasi-orbital electrons 8−39252
high temperature, superconductivity mechanism, metallic excitonium form. *(Russian)* 8−39254
high temperature supercond., contactless expt. methods 8−23221
ion-ion interaction in metals and intermetallic compounds, connection with supercond. transition temp. 8−47896
linear chain system, exciton model of supercond. 8−6476
low lying lattice vibrational modes, conf., San Juan, Puerto Rico, (Dec 75) 8−10131
low-dimensional crystals, excitonic superfluidity 8−6359
magnetic order coexistence 8−19177
metal, criterion for supercond. rel. to compressibility *(Russian)* 8−23200
metal, superconducting and normal, attenuation, EM generation and detection of US shear waves 8−39261
metrology appl. *(Japanese)* 8−37030
mutual compatibility with ferroelectricity 8−15104
narrow channels, voltage jumps in current-voltage characts. *(Russian)* 8−23197
neutron stars, superconducting props. of π condensates 8−32993
one-dimensional Peierls-Frolich state, impurity pinning of charge density wave 8−6298
one-dimensional Tomonaga model with impurities, localisation versus delocalisation 8−6311
order-disorder transitions, static precursor nuclei, anomalies in high temp. superconductors, ferroelectrics, organic conductors 8−10165
physics of transitions, introduction 8−26660
quantum polarisation effect of uniform superconductor in EM field having crit. frequency 8−34923
quark matter, asymptotically high density 8−12863
quasi-one-dimensional conductor, Peierls instability and superconductivity, possibility of coexistence 8−31028
quasi-one-dimensional conductors, order in coupled metallic chains problem 8−6358
quasi-one-dimensional electron systems, instabilities, mean field approx. 8−23036
quasi-one-dimensional metal systems with random impurities, cond. at T=0 8−6360
quasi-one-dimensional systems, three-dimens. ordering in system of weakly coupled chains 8−6295
quasi-orbital conduction electron model 8−34917
quenching of technical superconductors by ht. and mag. field pulses 8−43537
Raman sound scattering in normal metals and superconductors *(Russian)* 8−23199
Rayleigh sound absorpt. in normal and supercond. metals *(Russian)* 8−43233
reentry of superconductivity, rel. to ferromagnetism 8−39247
slab in AC mag. field, I-V characts. *(Japanese)* 8−19183
sliding Frohlich waves, lack of superconducting behaviour 8−10378
surface thermoelectric effects *(Russian)* 8−34921
thermopower, possible existence in supercond. state 8−23201
two order parameter system, one subsystem supercond., in const. ordering field 8−34915
US attenuation and Fermi surface topology *(Russian)* 8−23203
H metal, superconductivity and crystal struct. *(Hungarian)* 8−38659

superconductors *see superconducting materials; superconductivity*

supercooling
electron-hole droplet, supercooling in adiabatic spraying *(Russian)* 8−43306
electropatented wire, austenitizing, supercooling and heating temp. effects 8−23737
glycerol, supercooled liq., dynamical struct. factor, Mossbauer spectroscopy 8−27126
HOAOB, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8−42896
PAA, isotropic-nematic transition, supercooling and nucleation, interface dendrites 8−42896
soft core system, crystallisation, mol. dynamics method 8−18565
steam bubble, nonspherical, collapse in suddenly pressurised water *(French)* 8−33997
superconductor, paramagnetically limited, supercooling curve meas. 8−14885
trimethylphosphate, plastic and hard crysts., liq., nucl. spin-lattice relax. mol. motion 8−48065
tristearin irreversible liq.-liq. phase transition, ^{13}C NMR meas. 8−26681
water, probability of ice nuclei form. 8−3909
Al-Cr(Mn), struct. form. and phase transform. kinetics *(Russian)* 8−15359
AuIn-Pb pseudobinary system, DTA 8−23667
Bi film, supercooling, exam. by electron diffr. and electron microscopy *(French)* 8−14636
$Ca(NO_3)_2-H_2O$ solns., ice I homogeneous nucleation temp., slow vitrification mechanism 8−26666
Cu-Ni(Su), supercooled melt, dendrite growth morphology *(Japanese)* 8−11216
$Fe^{3+}-Fe^{3+}$ distances, in aq. NO_3^- and ClO_4^- solns., from small-ang. X-ray diffr. maxima 8−42880
Ga metastable states, supercooling and polymorphism *(French)* 8−14325
Ga, with 100 ppm Ag single cryst. growth by pulling, thermal parameters governing purity *(French)* 8−2046
Ge, single cryst. growth, supercooling needed for Czochralski and Stepanov methods 8−3015
In film, metastable states supercond. parameters 8−47903
In-In-P-GaP, liquidus surface obs. 8−22829
InP layers, grown by LPE from supercooled solns., thickness meas. 8−10307

superexchange interactions
antiferromagnet, charge transfer light absorpt. 8−34975
calcium copper acetate hexahydrate, $CaCu(CH_3COO)_4.6H_2O$ and $CaCu(CD_3COO)_4.6H_2O$ 8−2680
channel model in exchange theory 8−14950
copper acetates, antiferromag. exchange coupling, superexchange mech. 8−39310
magnetic insulators, potential exchange theory 8−19242

superexchange interactions continued
transition metal oxides (fluorides), potential exchange theory in mag. insulators 8−19242
$Co_{2-y}Zn_yTiO_4$, cation distrib. and mag. props. 8−14939
$Cu(NO_3)_2.2^1/_2H_2O$, singlet ground-state system, mag. props., short-range ordered state 8−23289
Eu_2O_2S, cooperative optical absorption obs. in luminesc. excitation spectra 8−27308
$GdVO_4$:Ho^{3+}, optically excited doublet splitting in magnetically ordered state 8−19238
K_2NiF_4, 2D antiferromag., volume depend. of superexchange, US velocity meas. of T_n 8−19237

superfluid helium-3
A phase, NMR on textural defects 8−38895
A phase, stability of superflow 8−14532
A phase, theory of sound propag. 8−38896
A-phase, analogy between disclination rank and vortex line invariant, in Cosserat continuum *(French)* 8−1977
A-phase, coupled spin orbit relaxation theory 8−6192
A-phase, ferromag. props. 8−14529
A-phase, ferromagnetic orbital magnetisation 8−38902
A-phase, in rotating bucket 8−2328
A-phase, intrinsic angular momentum, and its hydrodynamics with unclamped normal fluid 8−22922
A-phase, Lagrange and Hamilton hydrodynamic eqns. *(Russian)* 8−10248
A-phase in a half-space, exact soln. for fountain-like texture 8−43199
antiferromagnet, itinerant electron, dynamic magnetisation as internal Josephson effect 8−47931
B-phase, collective excitations exam. by kinetic equation method 8−18860
B-phase, dynamic magnetism relaxation, wall-pinned mode 8−43201
B-phase, nonlinear NMR, instability analogous to ferromag. reson. predicted 8−43202
B-phase, static spin susceptibility 8−30807
B-phase, viscosity near superfluid transition 8−38903
B-phase ferromagneticlike reson. behaviour obs. in NMR 8−10245
Bogoliubov transform for spatially varying gap, gradient free energy 8−38901
correlated pairing theory 8−10247
Fermi superfluid hydrodynamics, time-depend. BCS formalism, compared with He II, finite nuclear systems 8−22920
Fermi systems, review of methods in quantum field theory 8−8338
film on metal surface, superfluidity mechanism *(Russian)* 8−30809
free energy, strong coupling corrections, spin-fluctuation theory 8−38899
heat capacity, spin susceptibility, NMR and viscosity *(Danish)* 8−22921
hydrodynamic action functional, phase transitions *(Russian)* 8−14534
ion motion and mobility, A and B phases 8−18861
magnetic relaxation, tip-angle-depend. 8−43203
magnetic relaxation near crit. temp. 8−18862
magnetoelectric textures in ^3He-A slabs, capacitive meas. 8−22924
multipole pair vibrations, BCS soln. 8−47627
negative ion motion in normal and superfluid phases 8−38900
negative ions motion, model for A, B phases 8−2326
NMR, pulsed, nucl. susceptibility, spin-lattice relax., freq. shifts, A and B phases 8−47628
orbital dynamics in two-fluid model 8−30806
ordered nonsingular systems, topology appls. 8−10166
physical properties of superfluid ^3He *(Danish)* 8−2325
point and line singularities 8−47625
quasiparticle transport equation, shear viscosity 8−14531
soliton solns. for spin orbital freedom wave eqns. *(Japanese)* 8−38904
spin relaxation effects in nonlinear parallel ringing of magnetisation 8−6193
spin susceptibilities, flow depend. 8−14528
strong coupling effects 8−47626
transition temperature, strong coupling theory 8−47629
B-phase, n-solitons, and NMR freq. calcs. 8−34670

superfluid helium-4
^3He bound states on ion bubbles in liq. ^4He 8−2329
adsorbed film, density profile, effect of substrate on superfluidity suppression 8−10252
bubblon generation on charged surface, and instability generation *(Russian)* 8−18858
Cocatron, servo valve for liq. He II level control, superfluidity and supercond. applic. 8−18855
confined film near T_λ, sp. ht. scaling 8−38894
cyclotron reson. freq. increase, electric field on surface dimple electrons 8−47624
elementary excitations, Brillouin-Wigner perturbation theory with correlated basis functions 8−2319
film, finite size effects, effect of boundary conditions, below 0.5K 8−47616
film, neutron scatt., surface effects 8−10251
film, on oscillating planar substrate, energy dissipation 8−47620
film, superflow onset, 2-dimens. XY model 8−47623
film, two-reservoir, oscillations below 1K, damping 8−14535
film, universal jump in superfluid density 8−18856
film, unsaturated, direct obs. of third-sound mass displacement waves 8−30804
flows, healing and relax., first, second and fourth sound 8−47617
fountain effect 8−22917
fourth sound vel. under press. 8−2322
free convection at supercritical pressures 8−26745
hydrodynamics of three particle condensate model 8−22919
isochores between 25 bar and melting curve 8−14523
multi-electron bubbles *(Russian)* 8−30805
negative ion velocity-field characts., effect of one-roton emission process 8−47622
neutron scattering and thermodynamic quantities, need for more precise data 8−22916
pressure-modulated flow in narrow channels, nonlinear friction force effect on vel. *(Russian)* 8−22914
pressurized, attenuation and dispersion of first sound near superfluid transition 8−14524
purification technique from ^3He, for neutron source bottle 8−17823
ripplons, microscopic theory 8−14525

superfluid helium-4 continued
rotating dynamics, rel. to pulsar astrophysics problems accessible in laboratory 8−49469
rotating He II, vortex-disc interaction 8−10237
rotating high speed frame, normal-superfluid λ transition 8−38892
rotating superfluid, vortex oscills., continuum model 8−34669
sound propagation, asymmetry phenomenon *(Russian)* 8−22913
structure factor anal. 8−34667
structure factor and sound vel., first and second sound 8−34668
surface, hydrodynamic modes for ripple waves 8−43195
surface electrons, HF cond. 8−10238
surface profiles, evidence of large superfluid vortex 8−18857
surface tension and surface entropy 8−10235
thermal hydrodynamic fluctuations at interface *(Russian)* 8−23477
thermodynamic properties, interacting boson systems 8−2320
three-particle structure function, convolution approx. for ground state 8−26746
two-dimensional superfluid, dissipation near crit. point 8−47619
US generated quantised vorticity 8−38893
vacancy wave and tunnelling effect 8−47618
vortex lines, stability and interaction 8−47621
vortex quantisation and Higgs mechanism 8−2321
He II rotating, geostrophic and Tkachenko wave threshold intensity, Raman scattering *(Russian)* 8−43192
^3He-^4He mixture, conc. susceptibility near superfluid transition 8−18865
^3He-He II degenerate soln., kinetic coefficients, thermodynamic props., hydrodynamic, acoustic and spin wave propag. *(Russian)* 8−18867

superfluidity
see also quantum fluids; superfluid helium-3; superfluid helium-4; vortices
acoustic turbulence, first and second sound kinetic eqn. soln. *(Russian)* 8−43193
Bose-condensated electron-hole fluid, phase fixation, excitonic and spin superfluidity 8−30872
Cocatron, servo valve for liq. He II level control, superfluidity and supercond. applic. 8−18855
Fermi gas, hydrodynamic action and Bose spectrum 8−139
Fermi superfluid hydrodynamics, time-depend. BCS formalism, compared with He II, finite nuclear systems 8−22920
Fermi system, Bose spectrum, hydrodynamic action functional *(Russian)* 8−14534
fermion systems, eqns. of motion for field operators and energy spectrum for isotropic systems 8−36926
Josephson's relation and ε expansion for helicity modulus, renormalisation group approach 8−10239
low-dimensional crystals, excitonic superfluidity 8−6359
physics of transitions, introduction 8−26660
Poisson's formulas for wave propagation 8−38891
polaritonic Bose condensation, effects of superfluidity 8−18976
rotating superfluid, vortex oscills., continuum model 8−34669
rotating superfluid dynamics, rel. to pulsar astrophysics problems accessible in laboratory 8−49469
strong coupling theory of superfluid transition temp., appl. to ^3He 8−47629
two-dimensional superfluid, dissipation near crit. point 8−47619
H, system of H atoms with polarised spin 8−30812
^3He-^4He liquid mixture, nucleation of superfluidity and phase separation 8−43204
^4He solid, search for superfluidity 8−10254
Pd, triplet pairing, spin fluctuation contrib. 8−10711

supergiant stars
ξ Orionis, O-type supergiant, wind and corona struct. from Hα line profile anal. 8−40947
B2 to G0 type, small amplitude light vars. 8−32469
bright IR star monitoring at 2.7 μm 8−16433
α Camelopardalis, O-type, spectroscopic study, model atm. anal. 8−28681
Cassiopeia A supernova, progenitor, consistent evolutionary picture involving supergiant mass loss 8−36623
ρ Cassiopeiae, absolute energy distrib. in 3400-7100 Å range 8−49440
AZ Cassiopeiae, interacting eclipsing binary, mass loss of cool supergiant component 8−32522
UW Centauri, visual magnitude estimates, UBV photometry 8−40962
19 Cephei, O-type, spectroscopic study, model atm. anal. 8−28681
VV Cephei, spectroscopic obs. during 1976/77 eclipse ingress phase 8−45359
VV Cephei, UBV photometry during ingress phase of 1976-78 eclipse 8−20862
cool stars, near IR excesses 8−16406
α Cygni, Na I interstellar lines hyperfine struct. 8−24542
γ Cygni, radio emission upper limits rel. to nature of Cygnus X radio source 8−28809
α Cygni (Deneb), Ca II K line high-resolution obs. 8−16408
α Cygni (Deneb), Copernicus obs. of UV spectrum 8−45330
Cygnus X-1 (HDE 226868), optical photometry, (1972-1976) 8−32609
early-type supergiants, spectrum variability, UV obs. *(Italian)* 8−32458
G and K Ib supergiants, C, N and O abundances 8−24509
G- and K-type, Li abundances 8−28676
galactic supergiants, five-channel photometric obs. 8−16398
HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
HD 77581 (3U 0900-40), X-ray binary, spectroscopic orbit and masses of components 8−16461
α Herculis, 1.25-3.25 μ airborne photometric obs. 8−40934
late-type, 1.25-3.25 μ airborne photometric obs. 8−40934
ρ Leonis, non-anomalous diffuse interstellar absorpt. features 8−16418
in LMC, long-term light vars. 8−45326
in LMC, spectral types and magnitudes, catalogue of 1882 objects 8−32361
luminous blue variable stars in M31 and M33, IR detect. 8−49437
luminous variable stars in M31 and M33, spectra and photometry 8−28686
M6 field, supergiant IR photometry and interstellar matter towards galactic centre 8−16405
M-type, in central region of 30 Doradus, IR survey 8−32544
massive stars, bulk yields of nucleosynthesis 8−36552
in NGC 2439 association, photometry and spectra 8−16470

supergiant stars continued
O- and B-type stars, ionization conditions in expanding envelopes 8−28671
OB supergiant X-ray binaries, line distortion effects 8−7995
OH/IR sources, microwave spectra, galactic distrib., radial velocity 8−16432
α Orionis, 1.25-3.25 μ airborne photometric obs. 8−40934
α Orionis, ang. diameter, speckle interferometry *(Russian)* 8−40922
α Orionis, circumstellar shell heterodyne interferometry 8−8000
α Orionis, CO and SiO millimetre line emission search rel. to circumstellar shell props. 8−49423
α Orionis (Betelgeuse), circumstellar gas shell spatial extent 8−28673
S Persei, supergiant 22 GHz H_2O maser emission temporal var. 8−49461
reddened OB supergiant, as optical counterpart of (3U 1538-52) 8−12412
FG Sagittae, photometric radius and pulsation mass 8−36576
α Scorpii, 1.25-3.25 μ airborne photometric obs. 8−40934
α Scorpii, circumstellar shell heterodyne interferometry 8−8000
α Scorpii (Antares), spectrum of nebula 8−41014
SMC, supergiant spectrometry and photometry, catalogue 8−16411
Tr 27-102 (HD 159378), GOIa supergiant, possible long-period Cepheid 8−45336
H_2O masers, detect. of new sources 8−32466
OH large-scale sky survey at 1612 MHz 8−32358

superheating *see heat transfer*

superheavy nuclei
see also nuclei with mass number 220 or higher
^{258}104 compound nucleus, prod. method optimisation 8−46103
^{260}106 compound nucleus, prod. method optimisation 8−46103
^{262}[105] spontaneous fission, fragment mass distrib., total kinetic energy release 8−17256
A=114-116 superheavy elements produced in ^{48}Ca ion reactions on Am, Pu, Cm 8−29493
in Allende meteorite, search for fission tracks 8−32415
alpha half-lives, alpha particle struct. effects 8−17158
compound nucleus reaction, superheavy element prod. method optimisation 8−46103
fission of ^{300}120, effect of nuclear force finite range on fission and heavy-ion reactions 8−13180
giant haloes and search for superheavy elements in Yugoslav biotites 8−16008
heavy ion collisions, superheavy atoms, electronic binding energy, wave functions 8−46252
lifetime, theoretical prediction of nonoccurrence in nature 8−662
monazite, giant halo inclusions, evidence against superheavy elements 8−40554
monazite from South India beach sands, superheavy elements search using X-ray fluorescence 8−16017
Moon, superheavy elements as heat source for primaeval melting 8−24478
naturally occurring, rel. to radioactivity distribs. and isotopic abundances 8−20407
spontaneous fission, natural 8−13172
volatile element synthesis and identification 8−46239
Z=110, Dirac-Slater SCF relativistic mol. calcs. 8−41970
$^{208}Pb+^{86}Kr$, 469 MeV, search for superheavy nuclei, $Z>106$, lifetimes >2 ps 8−46102
$^{260}X_{105}$, prod., L X-ray spectra, decay 8−8780
$_{126}^{228}X$, primordial and other nuclei, shell model calc. 8−8752

superheterodyne receivers
frequency analyzing equipment, device for scientific education in oscillatory phenomena 8−41126
HF, receiver design principles 8−45714
quasi-optical radiometer receiver design 8−8447
Schottky diode concepts, heterodyne radiometry 8−45713

superionic conducting materials
see also ionic conduction in solids; mixed conductivity
AC properties of ionic conductors 8−47578
β″-alumina, K^+ ion nonuniformity, in contact with $NaNO_3$ and Na_xS_y melts 8−10215
dynamics, review *(Japanese)* 8−30791
fluorite crystals, disorder at high temp., Brillouin scatt. 8−2866
hopping conduction, one-dimensional, and diffusion, theory 8−6355
hopping conductivity of interacting particles 8−10214
ionic thermoelectric power, lattice gas model 8−26717
prefactor anomalies, absolute rate theory breakdown 8−47559
prefactor anomalies, absolute rate theory breakdown 8−47560
prefactor anomalies, effect of low dimensionality 8−48061
pyridinium pentosilver hexaiodide, freq. depend. ionic conductivity 8−2291
Raman spectra, interpretation using liquid like model 8−2855
scattering of light and neutrons in diffusion model 8−26719
solid electrolyte interface, small signal AC response 8−6444
Ag^+ superionic conductors, US attenuation due to hopping of Ag^+ ions 8−22890
Ag_2HgI_4, order-disorder transform. at 51°C, sound vels. and dielec. losses 8−10129
AgI, density of states, IR cond., and Raman scatt., lattice dynamics calc. 8−30709
α-AgI, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
β-AgI, ion dynamics and transition to superionic state, nucl. spin-lattice relax. meas. 8−43179
β-AgI, low temp. electronic hopping 8−39111
α-AgI, Raman spectra, freq. depend. cond. exam. 8−10883
α-AgI, Raman spectra, interpretation using liquid like model 8−2855
AgI, single cryst. neutron diffr. meas., Ag distrib. determ. 8−10025
α-AgI, superionic cond., sublattice melting, Raman spectra, rel. to AgBr(Cl) melts 8−10882
AgI type solid electrolytes, sp. ht. anomaly, theory *(Russian)* 8−10198
AgI-Ag_2O-P_2O_5 system, glass form. and superionic cond. characts. 8−26722
$Ag_{44}I_{53}(C_{11}H_{30}N_3)_3$, cryst. struct. determ. 8−26553
α-Ag_2S, struct., X-ray scatt. intensity anal. 8−38672
$Ag_2S(Se)$, ionic-electronic mixed conductor, solid state controlled growth using cryst. rotation 8−31338
β-Al_2O_3, additive modified charact. by NMR 8−10785
β-Al_2O_3-$H^+(H_2O)_n$, IR and Raman spectra, OH stretching freqs., struct. and cond. 8−27210

superionic conducting materials continued
β-Al_2O_3-M_2O (M=Li,Na,K,Ag), sp. ht., 0.1-1 K, evidence for localised low-energy excitations 8−34632
β-Al_2O_3-Na_2O, calculation of simultaneous ionic cond. and tracer diffusion 8−43178
β-Al_2O_3-Na_2O, colour centers, AES, electron energy loss, and optical spectroscopy obs. 8−35176
β-Al_2O_3-Na_2O, nucl. double reson. interferometry, satellite spectrum 8−31123
β-Al_2O_3-Na_2O:Mg, with and without Co co-doping, ionic cond. and cryst. struct. 8−26723
β-Al_2O_3-Na_2O:Mn^{2+}, EPR of Mn^{2+} 8−6569
β-″-Al_2O_3-Na_2O:Na^+,Ca^{2+}, charge compensation mechanism, Na^+ and Ca^{2+} ion movement 8−22891
β″-Al_2O_3-NaO-LiO_2, stabilised, effect of phase composition, grain size, on Na ion cond. 8−47582
β-$Al_2O_3Na_2O$, H-exchanged, effect of moisture, on H_2 activity changes and thermal stability 8−47580
β-Al_2O_3.$(NH_4)_2O$, neutron scatt. study of $N1_4{}^+$ motion 8−30785
Bi_2O_3-$M2O_5$, sintered, (M=V, Nb, Ta), high oxide ion cond. 8−14503
CaF_2, computer simulation 8−43173
CuI, superionic cond., Raman spectra in all 3 phases 8−19486
$CuIn_{11}S_{17}$, defect spinel, cryst. growth, search for new superionic cond. cpds. 8−31307
$CuInSnS_4$, spinel, cryst. growth, search for new superionic cond. cpds. 8−31307
Cu_6PS_5Br, cryst. struct. of new superionic conductor 8−26514
$Cu_2S(Se)$, ionic-electronic mixed conductor, solid state controlled growth using cryst. rotation 8−31338
CuTeBr, ionic cond., phase transition obs. by millimetre wave spectroscopy 8−22855
Ga_2O_3-Na_2O, β- and β″-phases, IR spectra 8−39552
$HUO_2PO_4.4H_2O$, H^+ ion cond., struct. mechanism, X-ray diffr. obs. 8−34651
Li_5AlO_4 pure and doped ionic conductivity increase obs. 8−14506
$LiAlSiO_4$, crystalline, glass and glass-ceramic form, effect of composition changes, substitutions and press. on ionic cond. 8−43172
LiCl-Li_2O-B_2O_3 system of vitreous electrolytes *(French)* 8−27767
$LiMSO_4$, M=Li, Na, K, Li_2SO_4-$ZnSO_4$, ht. capacity and ht. of transform. 8−26690
$Li_{16-2x}Mg_x(GeO_4)_4$, $0<x<4$, synthesis, resistivity and structure 8−18831
$Li_{16-2x}Mg_x(SiO_4)_4$, $0<x<4$, synthesis, resistivity and structure 8−18831
Li_3N, IR and Raman spectra and lattice dynamics 8−48177
Li_3N, ionic conductivity obs. 8−14507
$LiSiO_4$, pure and doped ionic conductivity increase obs. 8−14506
$Li_2Ti_3O_7$, NMR data for new ionic hopping rate prefactor expression 8−47559
$Li_2Ti_3O_7$, NMR data for new ionic hopping rate prefactor expression 8−47560
$Li_{16-2x}Zn_x(GeO_4)_4$, $0<x<4$, synthesis, resistivity and structure 8−18831
$Li_{16-2x}Zn_x(SiO_4)_4$, $0<x<4$, synthesis, resistivity and structure 8−18831
Na_2O-Ga_2O_3 system, new superionic conductor *(French)* 8−14504
β-PbF_2, complex impedance exam. 8−47579
PbF_2, cubic, dielec. const., ionic cond., soft modes 8−14427
PbF_2, inelastic neutron scatt. study of phonon dispersion relation 8−30712
PbF_2:Mn^{2+}, cryst. field fluctuation dynamics, EPR 8−23328
$RbAg_4I_5$, I_2 diffusion obs. using ^{131}I radiotracers 8−18830
$RbAg_4I_5$, solid electrolyte, electronic cond. meas. 8−2483
$RbAg_4I_5$, solid electrolytes, co-ionic cond. 8−26721
$RbAg_4I_5$, struct. transition at 209K, Ising like behaviour 8−14460
$RbAg_4I_5$, US absorpt., ionic cond., relaxing sp. ht. 8−14505
$RbAg_4I_5$-metal interface, photocurrents, photoelectrochem. effects 8−34897
$SrCl_2$, high temp. powder neutron diffr., transition to highly conducting phase 8−47586
ZrO_2-CaO (12-19 mole%), AC elec. behaviour, 300-900°C, grain size, electrode material, and sintering effects 8−34649
ZrO_2-Y_2O_3, solid electrolyte, cond. maximum 8−47577
ZrO_2-Y_2O_3, solid solns., density meas. rel. to O vacancy model 8−2113

superlattices
alloys, substitutional disorder description within supercell model 8−26479
γ-brass, inversion antiphase domain boundaries, superlattice diffr. spots 8−6071
chloranil, neutron superlattice reflection, soft phonon and central peak scatt., phase transition 8−18732
copper formate tetrahydrate, short-range order, diffuse neutron scatt. 8−15124
heterojunction superlattice, energy spectrum 8−6259
perturbed crystals in Kg representation, orthonormal localised states 8−6327
piezoelectric semiconductor layers, periodic pot. 8−19142
rare earth oxide film, short-range order to long-range order transition 8−10288
semiconductor, EM field nonlinear penetration, self-induced transparency 8−25930
semiconductor, size quantised, superlattice state 8−39142
semiconductor, with hot electrons, temp. superlattice, transport props. effects *(Russian)* 8−34839
semiconductor with superlattice, Coulomb screening 8−14684
semiconductor with superlattice, nonlinear interaction of two waves 8−10494
semiconductor with superlattice, nonlinear plasma oscills. 8−26897
semiconductor-dielec., high freq. electromagnetic, response 8−19073
semiconductors, absolute negative resist. *(Russian)* 8−34838
TCNQ salt, $(TMA^+)_3(I_3^-)(TCNQ^-)_2(TCNQ^0)$, struct., phys. props. and lattice distortion evidence 8−6305
TTF-TCNQ, theory of structural phase transitions 8−38831
AgZn-AgMg quasibinary alloy, phase relation and superlattice form. 8−3097
AlAs-GaAs (100) superlattices, band struct. 8−30868
Au_4V, effect of structural changes on phys. props. 8−31400
Cu-Zn-Al Marmem alloy, β_1 phase superstruct. obs., rel. to transform. mode 8−39776
Cu_5FeS_4, bornite, superstructuring, vacancy clustering, high-resolution electron microscopy 8−42981

superlattices continued
Cu_9S_5, digenite, superstructuring, vacancy clustering, high-resolution electron microscopy 8−42981
GaAs-$Ga_{1-x}Al_xAs$ superlattices, resonance enhanced Umklapp Raman process 8−39547
GaP_xAs_{1-x} ($0 \leqslant x \leqslant 0.32$) epitaxial film, one-dimens. superlattice, X-ray spectrometer scanning, struct. variations 8−47681
LaF_3 single cryst., electron diffr., superlattice struct. 8−42993
$Mn_{0.25}NbS_2$, mag. anomaly rel. to struct. disordering 8−43557
$NbSe_3$, CDW form., direct electron diffr. 8−30877
$Ni_{1-x}Al$ solid solution, vacancy ordering exam. by electron diffr. after annealing 8−3123
Pt complex, $(C(NH_2)_3)_2Pt(CN)_4Br_{0.23}.H_2O$, pseudo-one-dimens. cpd., solitary wave excitations, and cryst. struct. 8−6307
Si (111) surface structure induced by Ag evaporation, RHEED meas. 8−22942
SiC crystal, energy band struct. and optical spectra 8−18962
Si(110), clean surface structural transitions, LEED obs. 8−6203
$SrTiO_{3-x}$, superlattices in anion-deficient compound 8−22708
TaS_2, polytypes, charge density waves and superlattice effects, intercalation with hydrazine 8−39043
$TiSe_2$, mechanism for 200K transition, sp. ht. meas. 8−22853
$TiSe_2$, superlattice formation, Raman and far IR spectra 8−35135

supernovae
1972e in NGC 5253, Type I, spectrum after 365 and 435 days 8−4255
analytic models of supernovae and black holes, Einstein eqn. solns. 8−4258
in anon. galaxy, discovery obs. 8−20846
in anonymous faint spiral galaxy, discovery obs. 8−8031
Brahe's SN 1572, location from original obs. rel. to remnant 8−12256
Canis Major R1 association, supernova induced star formation 8−8063
Cassiopeia A, image tube spectrograms 8−16485
Cassiopeia A, progenitor, consistent evolutionary picture involving supergiant mass loss 8−36623
Cassiopeia A, radio emission evolution, freq. dependence *(Russian)* 8−4387
Cassiopeia A, remnant, 38 MHz flux density meas. 8−12344
Cassiopeia A, remnant, CO emission obs. 8−8071
Cassiopeia A, remnant, interpretation of spectra, massive presupernova star hypothesis 8−36652
Cassiopeia A direction, OH and formaldehyde absorpt. obs. 8−45381
Cepheus OB3 association, supernova-induced star form. 8−12306
collapse and transport supernovae with neutrino degeneracy 8−40977
collapsing core, shock struct. and neutrino radiation, rel. to supernova explosions 8−49427
in Coma cluster of galaxies, light curves anal. 8−32497
compact remnants, positional coincidences with COS-B γ-ray sources 8−45435
cosmic ray production, time delay between nucleosynthesis and accel. to relativistic energies 8−28455
Crab Nebula, flux density at 1.8 mm *(Russian)* 8−32558
Crab nebula, parametric plasma instabilities 8−45220
Crab Nebula, polarimetry with OSO-8 X-ray polarimeter 8−12426
Crab Nebula, remarkable spectra in outskirts of supernova remnant 8−36662
Crab Nebula, remnant, nature of EM field and radiating particles *(Russian)* 8−12351
Crab Nebula, search for thermal X-ray line emission 8−8095
Crab Nebula, struct. at 327 MHz from occultation obs. 8−12339
Crab Nebula search for gamma ray lines 8−8013
Cretaceous-Tertiary extinctions, effects of supernovae and stratospheric aeronomy 8−32215
γ Cygni SNR, ang. diameter from 1.4 GHz aperture synthesis obs. 8−4328
Cygnus Loop, remnant, CO emission obs. 8−8071
Cygnus Loop, remnant, UV spectral obs. of bright filament 8−45387
Cygnus Loop, supernova remnant, high vel. gas obs. and filaments spectra *(Russian)* 8−41028
Cygnus Loop remnant, forbidden Fe XIV emission radial distrib. 8−32545
Cygnus region, new optical remnant discovery 8−4330
Cygnus X region, supernova remnant component of γ Cygni radio source 8−28809
ejecta condensation, presolar grains and meteorites isotopic anomalies 8−20845
explosions, Rayleigh-Taylor instability 8−36551
G127.1+0.5, remarkable supernova remnant centred on very compact radiosource 8−16555
G206.9+2.3 (=PKS 0646+06), supernova remnant, optical identification 8−36660
G291.0−0.1, supernova remnant, location in Tr 18 open cluster 8−20875
G296.1−0.7, radio SNR in Crux, assoc. optical nebulosity 8−16499
G55.7+3.4, shell source, high resolution obs. at 610 and 1415 MHz 8−8140
G74.9+1.2, remnant, distance estimate from H I absorpt. line meas. 8−28765
grain condensation in expanding envelope, as source of presolar grains in meteorites 8−24520
IC 443, remnant, CO emission obs. 8−8071
interstellar hot gas, nature, origin and evolution 8−16506
interstellar three component model regulated by supernova explosions in inhomogeneous substrate 8−16486
IR excesses, role of Fe II dielectronic recomb. 8−32478
Kepler's supernova remnant, struct. at 327 MHz from occultation obs. 8−12339
light curves, pulsar theory, dynamical effect and thermalisation of strong waves 8−8028
light curves rel. to existence of central pulsar 8−4256
LMC X−1, luminous extended X-ray source as supernova remnant 8−16570
massive close binary stars, effects of supernova explosion on evolution 8−49479
Monoceros Loop, remnant, high vel. gas, Na I lines obs. 8−12348
Monoceros Loop, remnant, narrow band photography, shock wave model 8−32547
Monoceros Loop, remnant, photographic obs. of diffuse and filamentary nebulosity 8−32548

supernovae continued
MSH 11−54, remnant rel. to new H1122−59 X-ray source in Centaurus 8−28859
MSH 14−63, probable remnant of A.D. 185 supernova, X-ray emission obs. 8−45427
near-Earth supernova, effect on Cretaceous-Tertiary environment 8−32499
near-Earth supernova and extinctions at end of Cretaceous, astronomical evidence 8−32500
nearby, impact on climate and biology on Earth 8−28297
neutrino processes, reaction rates 8−45215
neutrino radiation for hot neutron star form., rel. to envelope outburst problem 8−45350
neutrino transport in collapsing stellar core model 8−8029
neutron stars formation, neutrinos and gravit. waves emission 8−12266
neutron stars formation rate in Galaxy, upper limit rel. to gaseous remnants form. 8−49471
in NGC 1325, Type II, UBV photometric obs. 8−16444
in NGC 4402, Type I, UBV photometric obs. 8−16444
in NGC 7723, Type I, UBV photometric obs. 8−16444
NGC 7822 (W 1), supernova remnant, 2.8 and 6 cm wavelength obs. 8−4383
North Polar Spur, old reheated SNR 8−16580
North Polar Spur, possibly supernova remnant *(Russian)* 8−41072
ξ Ophiuchi interstellar cloud, CO obs., density and identification as supernova remnant 8−36656
outburst light, expanding gas shell external excitation 8−40976
photometric classification *(Russian)* 8−12255
photon helicity detection for matter/antimatter star discrimination 8−12092
Puppis A remnant, optical and radio comparison 8−28760
Puppis A supernova remnant, X-ray spectrum and struct. 8−20876
radio emission from immediate postoutburst, origin and evolution 8−40973
radio pulses, searches and possible sensitivity improvements 8−40975
relativistic electrons accel. in explosion 8−28710
remnants, acceleration of high-vel. clouds 8−20877
remnants, CO emission obs. 8−8071
remnants, cosmic rays accel. in shock fronts rel. to synchrotron emission 8−32302
remnants, density and energy 8−20868
remnants, Hα emission of optical filaments, shock waves interaction with interstellar medium 8−8103
remnants, optical filaments form. problem, observational approach 8−45384
remnants, radial instability of adiabatic self-similar blast waves 8−8089
remnants, rel. to extended 0.1-2.0 keV soft X-ray emitting regions 8−16581
remnants, rel. to model for clusters of discrete gamma-ray sources 8−49558
remnants and soft X-ray sources in Cygnus region 8−4397
remnants in M33 detected by strong S II forbidden line emission 8−36665
runaway stars, as witnesses to supernova explosions 8−32448
in Sc-type galaxies, max. likelihood estimate of occurrence rate 8−45402
shock waves, cosmic ray particles accel. 8−49241
Simeiz 147, remnant, Hα emission of optical filaments, shock wave vel. 8−8103
SN 1181 (3C 58), discovery of optical counterpart 8−32546
SN 1604 (Kepler's supernova), optical remnant expansion time scale, brightness, reddening 8−28747
SN 1970g, in M101, spectra of type II supernova 8−8030
stellar gravitational collapse, hydrodynamics 8−45318
Thomson scattering in envelopes and emission line profiles *(Russian)* 8−16445
Tycho supernova remnant, search for fossil Stromgren sphere 8−36661
Type I, light curve postmax. stages, model *(Russian)* 8−36624
type I, list of 44 objects, luminosity peak on secondary distance indicator *(French)* 8−4257
Type I, photometric class depend. on parent galaxy type *(Russian)* 8−32498
Type I supernovae, interpretation of spectra 8−49467
Type II events, spectral analysis from 8 to 15 months after explosion 8−40974
Vela supernova remnant, obs. of extended X-ray source centred on Vela pulsar 8−41095
VRO 42.05.01, remnant, Hα emission of optical filaments, shock wave vel. 8−8103
W44, remnant, relation to W48 and mol. cloud 8−28762
W44, supernova remnant, associated molecular cloud obs. 8−8079
wind driven circumstellar shells, struct. and evolution 8−16400
young remnants, search for radio emission at 3.7 and 11 cm 8−40972
in Zw 310-31 = VV 11-10-52 faint galaxy NE of nucleus 8−4259
$\nu(\bar{\nu})$ emission from supernovae, form. and cooling of neutron stars 8−8038
^{26}Al production from explosion near solar system rel. to lunar interior melting 8−40849
^{26}Al production in explosive C burning 8−20814
Fe-O stars with masses of $2M_\odot$ and $10\ M_\odot$, gravit. collapse 8−20815
K, Ar, nucleosynthesis rel. to interstellar isotopic anomalies 8−28761
Ne-E, anomalous meteoritic Ne component, thermonuclear origin, supernova models 8−45292

superparamagnetism
see also magnetic properties of fine particles
cubic anisotropy, asymptotic superparamag. time consts., negative anisotropy const. 8−10679
cubic anisotropy, asymptotic superparamag. time consts., positive anisotropy 8−10678
magnetisation vector diffusion coeff., anisotropy energy, vol. distrib. of particles by Mossbauer effect 8−48099
Mossbauer effect study of superparamagnetism, relax. of magnetisation vector 8−19402
red ochre, chem. anal. by Mossbauer spectroscopy, and superparamagnetism 8−20397
spin glasses, theory, review 8−2696
spontaneous coherent state, phase transitions 8−47991
Co-Ga, binary alloy, small-angle neutron scatt. from superparamag. behaviour 8−19217

superparamagnetism continued
CoO-Al_2O_3-SiO_2, spin glasses, low-field susceptibility, freq. depend. 8–47981
Cu-Ni-Fe alloys superparamag. early stages of decomp. *(Russian)* 8–6890
Fe ultrafine particles prepared by vacuum evaporation, mag. props. 8–35007
γ-Fe_2O_3 acicular particles, coercivity, magnetic recording tape appls. 8–14983
α-Fe_2O_3, inclusions in α-Al_2O_3, superparamag. props. 8–48405
γ-Fe_2O_3 small particles, hyperfine field below superparamag. blocking temp., Mossbauer obs. 8–19392
Fe_3O_4, ultrafine particles in ferrofluid, superparamag. and ferromag. reson. 8–15026
β-FeOOH, colloidal suspension, ionic spin relax. theory for Mossbauer spectra 8–19384
MnO-Al_2O_3-SiO_2, spin glasses, low-field susceptibility, freq. depend. 8–47981
MnO-Al_2O_3-SiO_2 glass, spin freezing, muon spin depolarisation 8–39491
$Na_2O.2Al_2O_3.5SiO_2$:Fe^{3+}, Mossbauer effect and magnetometric exam. 8–6613
Ni film, adsorbed H_2(CO), ferromag. reson. exam. 8–15028
Pt_3Fe, collision cascades, neutron induced superparamagnetism *(Russian)* 8–2166

superplasticity
Incaloy IN 738, dispersion hardened superalloy 8–11156
microstructure resulting from alloying and heat treatment, effect on creep, fatigue, fracture strength 8–11246
powder metallurgy techniques applied to superalloys 8–3073
rheological and metallurgical discussion of superplastic behaviour 8–30200
steel, austenitic stainless, ferritic, prep. with fine grains by cold rolling and recrystallisation, superplasticity *(French)* 8–35406
steel, eutectoid and hypoeutectoid stress relaxation during rapid heating transform. *(Japanese)* 8–11258
steel, martensitic, Cr-Ni, grain refining and phase transforms. effect on plasticity *(Russian)* 8–39837
steel, stainless, 0Kh12G14N4Yu2, effect of plastic deform. on biphase struct. 8–44176
steel USA, spheroidised pearlitic, superplasticity *(Russian)* 8–19826
two-phase materials, role of interphase-boundary dislocations, ledges and diffusion 8–11295
Zircaloy, micrograin superplasticity at 850°C 8–23758
Al alloys, superplastic, tensile deform. behaviour *(Japanese)* 8–27558
Al bronze, superplastic low cycle fatigue 8–27632
Al, single and polycrystals in torsion, superplasticity *(Russian)* 8–3180
Al-Ge (4 wt.%), superplasticity exam. *(Russian)* 8–39836
Al-Zn (22 wt.%), superplastic strain rate sensitivity, rel. to ductility 8–31478
Al-Zn eutectoid, superplastic, fracture, electron microscope obs. 8–31533
Al-Zn-Mg, cavitation during superplastic deform. *(Japanese)* 8–15464
Cu-Al-Si-C (95, 2.8, 1.8, 0.4 wt.%) fracture characts. of superplastic single phase, exam. 8–48500
Fe-Cr-Ni-Ti-Al, superalloy, Ti, Ni, Al, H_2 variations effect on mech. props. 8–3188
Mg-alloy, superplastic deformation mechanism, deformation model 8–31477
Mg-Mn-Ce, structural changes and deformation during superplastic flow 8–15472
Mg-Mn-Ce alloy, superplastic deform., role of grain boundaries 8–19843
Mo and Mo superalloys high temperature properties 8–44173
Ni superalloy, cast, microstruct. and microanalysis 8–35393
Ni superalloy powder, thinning technique for microstruct. obs. using analytical electron microscopy 8–48587
Ni-Al_2O_3 alloy, electron beam evaporated, struct. and mech. props. 8–11114
Ni-base superalloy, coated with Ni-Co-Cr-Al-Y, fatigue cracking in coating 8–11438
Ni-Cr-Ti-Co-W-Al-Mo alloys AF-115 and AF2 1DA, superalloy powder compacts, fatigue origins 8–48521
Ni-Nb-Cr-Al, directionally solidified eutectic superalloy, high temp. oxidation resistant coatings 8–39937
Ni-W-B, superalloy, M_5B_3 type boride 8–44131
Pb and Pb-Tl (2.5 wt.%), grain boundary sliding, grain size and stress effects 8–27571
Pb-Sn (62 wt.%), superplastic eutectic, exceptional ductility 8–27579
Pb-Sn eutectic, superplastic, anelasticity effect on stress relaxation 8–31443
Sn-Pb-(Bi)(Ag)(Sb) (Cu), microduplex eutectic, cavitation during superplastic flow 8–48457
Ti-Al-V (6,4 wt.%) superplastic deform. 8–31471
Ti-Mn, superplastic, microduplex grain struct. stabilisation 8–44058
Zn-Al (22 wt.%), superplastic deform. mechanism, electron microscope obs. 8–3167
Zn-Al (22 wt.%) eutectoid, superplastic, grain size effect on plastic deform. at room temp. *(Japanese)* 8–31462
Zr-Nb microduplex alloys, struct. and props. 8–3170

superradiance
see also acoustic superradiance
Dicke Hamiltonian, spin-spin interaction on super-radiant phase transition 8–16762
dye amplifier, amplified spontaneous emission and spatial depend. of gain 8–42332
dye DFB laser, N_2 laser pumped, external mirror effect on characts. 8–42352
dye laser, superluminesc. pulse waveform *(Russian)* 8–22120
dye laser, superradiant, coherence and beam geometry 8–37876
fluoromethane, single-mode optical pumping, superradiant far IR emission 8–42329
harmonic oscillators system, superradiant decay 8–42314
many-level molecules, unitary dynamical symmetry for superadiance, classical limit 8–9355
multi-level system, swept excitation model 8–9354
pulsed amplified spontaneous emission source, statistics and spatial distrib. meas. 8–22102
rhodamine 6G, emission kinetics in ps. range 8–13699

superradiance continued
scaling theory and exact soln., fluctuations and relax. near instability point 8–37864
two-(three-)level systems, steady and transient behaviour 8–1200
two-level degenerate system, superradiance 8–46553
γ-rays from pair recombination in travelling wave struct., stimulated emission 8–37863
CdS, superluminescence due to pulsed X-rays, 170 and 295K 8–42338
Cu, superradiance at 511, 578 nm during two discharge current pulse vaporis. *(Russian)* 8–29942
D_2O laser, optically pumped, superradiant line obs., 235, 280, 97 and 98 μm 8–1215
D_2O oscillator, zigzag pumped, superradiant 66 μ emission 8–33743
D_2O, single-mode optical pumping, superradiant far IR emission 8–42329
He-Ne laser, field distrib. and spatial coherence of superluminescence at 3.39 μ transition *(Russian)* 8–13682
N_2 laser, superrad., inexpensive construction *(Korean)* 8–22147
Ne, pulsed amplified spontaneous emission source, statistics and spatial distrib. meas. 8–22102
Rb_2, vapour, laser radiation absorpt. superradiance 8–46553

supersaturation control *see chemical variables control*

supersaturation measurement *see chemical variables measurement*

supersonic flow
see also shock waves
acoustic wave nonlinear distortion in propagation through supersonic flow 8–22367
air in supersonic nozzle, shock activation with overexpansion, jet form. 8–18330
axisymmetric bodies, aerodynamic coeffs. in supersonic flow *(Russian)* 8–34153
axisymmetric flow past body of revolution *(Russian)* 8–34154
blunt biconic at incidence, laminar viscous shock layer, supersonic/hypersonic flow 8–30313
boundary layer, external acoustic perturbations *(Russian)* 8–34152
boundary layer on cone, transition 8–38368
boundary layer on cone at Mach 5, transition 8–38369
Burgers' turbulence, similarity law and renormalisation 8–46994
cascade with strong in-passage shocks, unsteady flow 8–14041
cascades, aerodynamic anal., response predictions 8–34160
cascades, aerodynamic anal., unsteady press. field 8–34159
circular cane, vibr. relaxing gas, numerical anal. 8–46993
compressible flow fields, two-dimensional, computation by modified local stability scheme 8–1681
contrary wall jet, interaction with supersonic flow on plate with turbulent boundary layer *(Russian)* 8–22398
corner, three-dimens., Navier-Stokes eqn. soln., numerical code 8–30314
corner flow with compression and expansion numerical and exptl. results 8–18313
electric discharges, transversally combined, low temp. *(Russian)* 8–22590
finite difference method calcs. *(French)* 8–34157
gas centrifuge, pressure recovery of supersonic flow in diffuser 8–29104
heat source moving through fluid, sound radiation 8–1688
heat transfer, highly cooled turbulent boundary layers 8–9652
inverted population gas flow round blunt bodies, amplification factor 8–5828
jet, impinging on barrier, sound field 8–9495
jet, Mach wave emission 8–26172
jet, supersonic, noise, Reynolds number depend. 8–14053
jet, turbulent wave, laser velocimeter meas. 8–26173
jet flame stabilisation in subsonic and supersonic flows 8–34206
jet flow from nozzle, coords. of acoustic cross-section 8–5778
jet flow over obstacle, discrete tones generation 8–1708
jet noise, amplification by higher-mode acoustic tone 8–9664
jet noise spectrum, discrete component 8–9493
laminar boundary layer separations, quasi-3-dimens. 8–46995
low supersonic lifting surface, finite element anal. and collocation method 8–1687
Mach 6 hydrodynamic flow past permeable wedge, holographic interferometry meas. *(Russian)* 8–14108
mass transfer in near wake 8–9650
MHD convertor, acceleration nozzle, with supersonic flow deformation 8–26181
perturbations, high and low freq., growth calc. for perfect inviscid gas *(Russian)* 8–46992
potential flow, panel flutter, finite element calc. 8–26152
pseudo-transonic eqn. with diffusion term 8–38365
radiative gas dynamics, spectral models, applicability 8–14100
shock and combustion waves around supersonic cone 8–26154
shock propagation along 90 degree bends, curvature effects on stability 8–18314
shock wave–turbulent boundary layer interactions, Reynolds no. effect 8–1689
supersonic boundary layer, separated bubble induced by wall depression 8–9651
thermal boundary layer, effect of wall hollow-induced separated bubble *(French)* 8–5784
thin airfoil in stratified atmosphere, supersonic-transonic flow 8–5764
thin turbulent layer, hot-wire anemometry, error reduction 8–34235
turbulence, near wake flow 8–22368
turbulent axisymmetric near wake behind bluff-base bodies 8–1665
turbulent boundary layers, separation ahead of protuberances 8–14040
turbulent boundary-shock wave interaction, aerodynamic heating 8–26155
two-phase flow, nonequilib. subsonic/supersonic, acoustic vel. obs. 8–42642
two-phase flow, vertical density surges, rel. to sound vel. *(German)* 8–42641
vibrational relax. in supersonic flow, meas. using high temp. spectropyrometric unit 8–9275
wake, laminar, of thin flat plate set parallel to stream, centre line vel. variation 8–14042
wake, supersonic, of transverse circ. cylinder, laminar to turbulent transition, external noise effect 8–38367
wave equation generalised axial radiation soln., flow patterns, wakes in supersonic field *(German)* 8–14043
wave system of flow past slender body 8–34155

supersonic flow continued
wind tunnel, Mach 5, development 8−38437
wind tunnels, pressure fluctuations, freestream 8−14102
Br_2, dissociating flow in supersonic nozzles, atomic recomb. and vibr. relax. effects 8−42677
Br_2 recombination in supersonic expansion in nozzle *(Russian)* 8−1757
CO_2, supersonic jet, $(CO_2)_n^-$ cluster formation and electron attachment 8−5385
CO_2-N_2-H_2O gas mixture, oscillatory nonequilib. in planar supersonic nozzle flow 8−1758
D_2-HCl electric discharge gasdynamic laser, turbulent mixing characts. 8−9366
H_2, supersonic combustion in vitiated airstream, using transverse injection 8−14095
He-N_2-CO_2 mixture in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
N_2 in supersonic nozzle, shock activation with overexpansion, jet form. 8−18330
SF_6, condensation in supersonic nozzle flow 8−34611
SF_6, inhibition of homogeneous condensation by vibr. excitation, isotope separation appl. 8−37688

supersonics *see supersonic flow*

supersymmetry
axial anomaly for Majorana spin 3/2 loop with external gravitons in supergravity 8−8580
classical solns. in two-dimens. field theories 8−16943
conformal spinor current anomalies 8−8520
conformal spinor current anomaly from symmetry arguments 8−4803
coupling of O(2) supergravity with vector multiplets, Yang Mills field appl. 8−33020
Fermi-Bose and internal symmetries with universal Clifford algebras 8−24970
fermionic Goldstone-Higgs effect in (2+1) dimens. supergravity 8−29291
gauge sypersymmetry eqns., spherically symm. soln. 8−4532
gauge theories with extended supersymm., superfields formulation 8−41410
gauge theory, supersymmetric, charge renormalisation vanishing 8−24930
geodesic in gauge supersymm. 8−12634
geometric aspects of supergauge theory 8−8506
Higgs effect, supergravity and supersymm. massless QED 8−29268
Higgs mechanism and non-linear realisation for extended supersymmetry 8−16941
invariant supersymmetry space integrals using nonmetric formalism 8−4796
mass generation in a normal product formulation 8−25027
massive supergravity nonlinear realisation of orthosymplectic gauge symm., coupling to spin 1/2 spin 1 multiplet 8−33019
massless supersymmetric Wess-Zumino model and SU(2) gauge supermultiplet, classical solns. 8−8549
mixing of weak and gravit. interactions, massive gravitino 8−8578
nonAbelian gauge theory, supercurrent anomaly 8−24958
nonlinear σ model in two dimens., supersymm. form 8−24957
physico-geometrical remarks on unified gauge field and supersymm. concepts 8−37167
sine-Gordon model and two-dimens. bag 8−21382
SO(8) extended supergravity 8−16970
spin 3/2 field and Cartan's geometry 8−16712
spin systems, supersymmetric, extensions 8−21344
spinor field geometrodynamical superspace, quasi-catastrophe theory 8−41137
spinor Yang-Mills superfield 8−12825
SU(2) gauge theory, sypersymm. breaking by pseudoparticles, supergravity implications 8−24959
SU(N) conformal supergravity, gauge theories for extension 8−8577
superconformal unified field theory 8−12848
superfield eqns. of motion 8−8503
supergravity, canonical formulation 8−29016
supergravity, classical solns. 8−122
supergravity, covariant quantisation 8−41470
supergravity, Hamiltonian formalism, quantisation and S-matrix 8−16972
supergravity, Hamiltonian formulation 8−24722
supergravity, SO(3) and SO(4), finiteness and renormalisability of scalar multiplet coupling 8−4821
supergravity, SU(4) invariant theory 8−41471
supergravity, supercurrent anomaly 8−29267
supergravity, superfield Lagrangian 8−41468
supergravity, superspace formulation, consistency checks 8−37170
supergravity, supersymmetric generalisation of differential geometry tensors 8−45546
supergravity and gravity as gauge theories on group manifold 8−41469
supergravity as gauge theory of supersymmetry 8−8576
superspace, auxiliary mass BPHZ renormalisation procedure 8−16902
superspace, effective potential calc. 8−16944
superspace, new class of superalgebras and local gauge groups 8−29230
supertranslated soliton solution, two dimens. supersymm. quantum theory construct. using Dirac's method 8−45783
supertwistors and conformal supersymm. 8−29015
superunified theories, geometry of gauge invariance 8−24723
vector-like model of lepton interaction 8−412
Yang-Mills supersymmetric gauge theory, cancellation of supercurrent anomaly 8−8518
Yang-Mills theory, allowed supersymmetric vacuums 8−4783
Yang-Mills theory, SU(4) supersymmetric, charge renormalisation 8−24929
Yang-Mills theory and instantons 8−32986

supply systems (electric) *see power systems*

supports
cable-stayed cantilever beam dynamics 8−46889

suppression wavemeters *see wavemeters*

suppressors (surge) *see surge protection*

surface activity *see surface energy*

surface-atomic beam collisions *see atom-surface impact*

surface chemistry
see also chemisorption; corrosion; oxidation
AES with secondary emission imaging 8−11475
alkali halide, screw dislocations in puncture rosettes, motion-starting-stresses, surface-active media effects *(Russian)* 8−10051
alloy surface chemistry, sample morphology effects 8−7233
aqueous magnetic fluid prep. by peptisation with anionic surfactant 8−44408
atom-surface reaction, EPR anal. via ultrahigh vacuum/flow system 8−7232
carbonaceous chondrite meteorites, surface catalysis rel. to organic matter origin in early solar system 8−20767
cell for surface studies using IR transmission spectroscopy 8−41361
cells, electrochemical, photovoltaic phenomena and mechanisms 8−8198
chemical states at surfaces exposed to high-temp. vapours 8−11559
chemisorptive luminescence systems for surface reaction obs. 8−7236
conference, Budapest, Hungary (Sept. 1975) 8−11567
contaminants analysis by plasma chromatography-mass spectroscopy 8−3433
cortisol, gas phase fragmentation, high voltage scanning field desorption obs. 8−3320
defects role, review 8−14551
1,1-diphenylethylene, adsorbed on porous Vycor glass, reson. Raman spectrum, surface species identification 8−42066
electrochemical electron transfer at electrodes in soln., review, in book, for teaching 8−8203
electrode processes possessing charge transfer mechanism, overvoltage theory, in book, for teachers 8−8204
electrode systems, nonequilib. polaris. states props. overvoltage theory, in book, for teachers 8−8205
graphite, burning permeable surface, accel. flow, turbulent heat/mass transfer 8−38417
inorganic compounds, field ionisation mass spectrometry, review 8−35764
ionic solid volatilisation, surface charge effects 8−14457
liquid crystal, colloid and surface chemical aspects 8−9950
liquid phases interface, hydrochemical stability 8−22933
marine sediment particles, surface organic layer containing U and Th, thickness meas. 8−40592
merocyanine dye monolayer on p-chloranil cryst. in sandwich cell, electrochromic detection of internal charges 8−11549
metal-gas interactions, kinetics and mechanisms, book contrib. 8−11558
metals and alloys, sulphidation, high-temp., thermobalance for studying kinetics 8−23876
organic compounds, field ionisation mass spectrometry, review 8−35763
Portland cement, hydration mechanism 8−35349
quartz, theory of etching in HF 8−27666
semitransparent rotating disc electrode, photochem. and electrochem. surface reactions 8−40056
solid surface fluorescence analysis, calibration curves 8−31719
steel, C, H attack kinetics and service behaviour 8−39951
STEM use for two-dimensional molecular assemblies construction 8−24201
water reaction with pyrolytic graphite surface 8−15707
Al surface hydrous, oxide film formation 8−15602
Al+H_3PO_4, porous anodic films nucleation and growth 8−44273
η-Al_2O_3, surface, laser Raman fluoresc. background, OH^- excitation 8−10875
Ba films, chemisorptive luminescence systems for surface reaction obs. 8−7236
C fibres, PAN-based, surface characts., investig. by flow microcalorimetry 8−48694
C polymer chars, associated O_2 and H_2 8−11551
CO, catalytic oxidation on Pt, CO_2 product vel. and ang. distribs. 8−20065
CO, chemisorpt., surface struct. chemistry and electron impact props. on Rh(110) 8−6225
CO+O_2 on Ag (111) ordered and damaged surfaces 8−14583
$CoFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
Cr particle nitrogenation, metallographic obs. *(Bulgarian)* 8−15712
$CuFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
ErT_2, film, surface oxide form. and interfacial metal loss, AAS, XES 8−31733
Fe, adsorbed S effects on surface reaction kinetics and surface self-diffusion 8−7234
Fe-Zn system, Zn vapour interaction with solid Fe, Zn chem. potential effect on interaction layers 8−11416
α-Fe_2O_3, reduction to active magnetite and direct air oxidation to α-Fe_3O_4 *(German)* 8−7060
H+C, surface chemical reaction of thermal at. H 8−20071
$H_2+D_2 \rightarrow 2HD$ on stepped Pt surface, selective adsorption effect 8−20066
I_2 surface chemi-ionisation by Rb_2 beam 8−7231
LaB_6 cathodes, residual gas poisoning in vac. system, thermionic emission decay 8−27364
$LaNi_5$, self restoring of active surface, photoemission, mag. susceptibility study 8−48280
LiH+Te exothermic solid-state reaction, ion backscatt. obs. 8−20064
Mg films, chemisorptive luminescence systems for surface reaction obs. 8−7236
Mg, surface nitridation in N_2 DC glow discharge, 0.3-5 torr, mechanism 8−3370
Mg-noble metal alloy, sintered, supercorroding for heat and H_2 gas generation, seawater reaction 8−15607
MgO, surface, laser Raman fluoresc. background, OH^- excitation 8−10875
$Mo+H_2S \rightarrow MoS_2$ 8−3078
Ni, sulphidation in H_2S-H_2 mixtures, 450-600°C 8−3257
$NiFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
$Ni_{1-x}S$, oxidation, TG/DTA/MS obs. 8−31745
Pb (100) and (110) surfaces, oxidation and sulphidation, LEED and XPS obs. 8−20070

surface chemistry continued
- Pt on C, crystallite behaviour on sintering 8−7235
- PtAl, form. in hollow cathode discharge, emission spectrum obs. 8−27819
- PtD, form. in hollow cathode discharge, emission spectrum obs. 8−27819
- PtH, form. in hollow cathode discharge, emission spectrum obs. 8−27819
- PtO, form. in hollow cathode discharge, emission spectrum obs. 8−27819
- Ru (110), methanol reaction, thermal desorpt. meas. 8−31685
- ScD_2, surface, interactions with reactive gases 8−23964
- Si-SiO_2 system, structural defect formation rel. to thermal oxidation kinetics *(Russian)* 8−43478
- SiO_2+H_2 reactions, rate controlling processes for H_2 transport in vitreous silica 8−26733
- SnTe substrate, Ag epitaxial growth and topostactic exchanges 8−14640
- Ti-O alloys+Li melt, ternary solid soln. formation *(Russian)* 8−11396
- Ti(C,N), hydrolysis 8−15713
- $TiO_2.nH_2O$, U extraction from seawater by adsorption-exchange concentration 8−36198
- $Ti_{1-x}Zr_xMn_2$, hydride formation, hydriding characts. of reversible uptake 8−44402
- U extraction from seawater, tests of adsorbents 8−36198
- Zr(C,N), hydrolysis 8−15713

surface composition *see surface structure*

surface conductivity
- *see also surface scattering*
- anisotropic metals in perpendicular mag. field, surface impedance behaviour *(Russian)* 8−39145
- electron mobility of two-dimens. electron-impurity system, theory 8−43457
- ionic crystal, effect of surface cond. on crystal bulk anal. 8−6177
- metal, in mag. field normal to surface, reson. singularities of surface impedance 8−10495
- metals, surface impedance in mag. field, theory *(Russian)* 8−6427
- MIS capacitor, current transient response, effect of insulator surface conduction 8−34910
- MIS structure, charge-transfer, surface mobility and Hall mobility determ. 8−23175
- MIS structures, surface recombination and photoeffect, statistics *(Russian)* 8−39221
- MOS system photocapacitance, influence of surface charge fluctuations *(Russian)* 8−43480
- MOS system surface charge inhomogeneity modelling and analysis *(Russian)* 8−43479
- polyacrylonitrile, pyrolyzed, surface layer, anal. of elec. cond. mechanism by impedance diagram *(Japanese)* 8−23148
- polyethylene terephthalate, lateral motion of charge 8−43458
- polymer coated glass, current leakage path form. by water diffusion 8−10535
- semiconducting surface inversion layer, cyclotron reson. of interacting electrons 8−34885
- semiconductor, relax. time energy depend. and surface galvanomagnetic props. 8−43459
- surface resistivity, effect of hydrofluoric acid treatment 8−10537
- AgBr, epitaxial layer, ionic field effect 8−10588
- Al, superconducting and normal state, anisotropic impurity scatt. and EM surface resist. 8−30970
- Cd, surface impedance, in mag. field *(Russian)* 8−19079
- GaAs, semi-insulating, effects of heat treatment characterised by SIMS 8−6091
- Ge, field effect characts. rel. to surface inhomogeneity 8−26933
- Ge, relax. time energy depend. and surface galvanomag. props. 8−43459
- Ge slab, intrinsic, longit. cond., influence of surrounding gas *(French)* 8−10448
- ^4He, liq., HF cond. of electrons trapped at surface 8−10238
- ^4He liquid, hot electron theory 8−22915
- InSb(111) surface, oxidation props., LEED and surface cond. meas. 8−15559
- K, calc. of change in surface impedance, due to cyclotron wave excitation 8−6429
- Nb, O enrichment of surface layers, supercond. penetration depth and resist. meas. 8−19180
- Si (111), adsorpt. of Cs, LEED, work function and thermal desorpt. 8−14590
- Si, field effect characts. rel. to surface inhomogeneity 8−26933
- Si, inversion layer, dynamic conductivity of electrons, temp. depend. 8−19115
- p-Si, inversion layer, screening effect and quantum transport in strong mag. fields 8−19155
- p-Si inversion layers, hot carrier effects in high mag. field, 1.25-20K 8−34908
- Si, spin-depend. carrier recomb. at surface, photocond. expt. 8−19096
- n-Si, surface conductivity anisotropy in accumulation layers 8−10536
- Si-SiO_2 microsensor, surface conductivity effect of aliphatic alcohol molecule adsorption *(Russian)* 8−34887
- SiO_2 grown on polycryst. Si, surface asperity mechanism of cond., SEM obs. 8−19153
- Te film, atm. comp. influence on elec. surface props. 8−26980
- TiN-Nb(Ta)N, microcomposite film prod. for radio resistors 8−3052
- W plate, impedance oscillations in mag. field 8−39140
- W thin plate, oscillations of surface impedance in circularly polarised RF fields *(Russian)* 8−39144

surface contours
- *see also surface topography measurement*
- complex profiled surface alloying, automatic electrode feeding *(Russian)* 8−19936
- contouring method by parallel light Moire holography 8−33702
- Moire contouring of large objects by scanning technique 8−32791
- paper, surface characterisation and printability criteria, stochastic approach 8−18878
- profiles reference line selection and fitting, based on random process analysis 8−45594
- GaAs, VPE, surface defects rel. to technological parameters 8−44015

surface contours continued
- $Hg_{1-x}Cd_xTe$, surface topographic stoichiometry variations, electrolyte electrorefl. obs. 8−27249
- Si, substrates, semicond., stress meas. in deposited thin films, X-ray topography techniques 8−5710

surface diffusion
- *see also sorption*
- adhesion energy of two crystals, effect of surface diffusion 8−2380
- adsorbate diffusion on single cryst. surface 8−38969
- adsorbate diffusion on single crystal surfaces, influence of lateral interactions 8−38953
- alloy, single phase, annealing of diffusion layer 8−14518
- anthracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- atomic diffusion mechanisms *(Hungarian)* 8−38868
- Au film, diffusion of Ag along grain boundaries, scanning Auger microscopy obs. 8−22897
- benzene on graphitized C black, adsorbed layer mobility 8−6216
- Brownian diffusion model 8−6214
- Brownian particle motion in periodic field of force, diffusion coeff. in large friction limit 8−38869
- cluster motion, stochastic model 8−14550
- coefficient, from sorption kinetics, time-lag theory 8−38937
- crystallite migration on surface, Monte Carlo calc. 8−26783
- cyclohexane on graphitized C black, adsorbed layer mobility 8−6216
- diffusion bonding, in Ar atmosphere, aspects *(Japanese)* 8−11491
- film deposition, adatom diffusion and capture by clusters, random-walk problem 8−2385
- film growth, initial stages, ion bombardment effects 8−14639
- grain boundary groove evolution in presence of evaporation 8−14364
- graphite, Ag particle motion on heating in gaseous environments 8−34695
- graphite, interaction with Cs, study of surface diffusion, computer simulation 8−30837
- ice, I_h, water monomer on basal plane, static interaction model 8−18891
- impurity distribution, calc. for cryst. solid with inhomogeneous layers *(Russian)* 8−14500
- metal, FIM direct obs. of surface diffusion and atomic interactions 8−34716
- metal surface, near point-defect, annealing, diffusion theory and Monte Carlo anal. 8−47646
- MHD generator, cathode spot erosion, thermal conduction-diffusion 8−5955
- Monte Carlo simulation diffusion and evaporation on (100) surface of FCC crystal 8−30836
- morphological changes occurring by surface diffusion on body with anisotropic surface energy, elec. stress effects 8−6202
- perylene, anthracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- refractory metal, surface geometry and emission parameters, changes during directional mass transport 8−2344
- SEM with ultrahigh vacuum system for surface physics expts. 8−38925
- sorbent solid, moisture diffusion, diffusion cell and pore diffusion 8−10210
- spherical powder sintering by surface diffusion, computer simulation 8−48344
- stearic acid monolayers on HCl subsoln., surface diffusion by ^{14}C-tracer 8−34679
- tetracene, radical cation, EPR, acidic surface anisotropic rot. diffusion 8−27095
- two-dimensional substrate lattice, migrating adatom capture by point capture centres 8−43236
- Al_2O_3, activated, moisture diffusion 8−10219
- Au foil, radiation damage, in situ study by HV electron microscopy 8−6101
- Fe, adsorbed S effects on surface reaction kinetics and surface self-diffusion 8−7234
- Hg on metal surfaces, flow kinetics in temp. grad. *(Russian)* 8−6198
- NaCl, evaporating surface, step motion obs. and simulation 8−26766
- Ni, polycryst., bulk-to-surface precip. and surface diffusion of C, AES data interpretation 8−34713
- Pt, of Ba, vaporisation expts. on Pt-Ba cathodes 8−10272
- Pt, of single atoms of Pt, Ir and Au, FIM expts. and Morse potential calcs. 8−34717
- Ta, diffusion and surface distrib. of N, probed by (p,γ) resonance broadening method 8−38918
- TiO_2, rutile, mass transport mech. determ. by sinusoidal profile decay method 8−6178
- W (310), field emission current instability induced by migrating atoms 8−35254
- W, anisotropy of surface self-diffusion 8−34689
- W emitter tip, surface shape changes, field ion microscopy meas. 8−26754
- W, with adsorbed Pd, field emission obs. of adsorpt., diffusion and self-diffusion 8−38945
- W, with H adatoms, PMR meas. of adsorption state, surface migration 8−10275

surface discharges
- *see also corona*
- creep discharge at dielectric surface, statistical anal., independ. discharges model 8−1938
- epoxy mica generator insulation, dielectric stress conc. influence on voltage endurance 8−15094
- solid dielectric, surface discharge initiated breakdown, in high pressure gaseous mixtures 8−48117
- H_2, superluminescence in surface discharge *(Russian)* 8−37676

surface electron states
- *see also interface electron states; surface scattering*
- adatom monolayer, on model transition metal surface, densities of states, chemisorption effects 8−26769
- adsorbed atoms, electronic struct. and UPS, appl. to O on Ni 8−15281
- adsorbed species, plasmon versus shake-up satellites in XPS 8−48286
- alkali halide film, low energy electron scatt. 8−26928
- alkali metal chemisorbed layers, changes in work function due to charge transfer 8−18900
- anisotropic crystal films, surface polaritons 8−26822
- anthracene, intermol. relax. energies, UPS 8−31304
- antiferromagnet, FCC lattice of second kind, surface magnons and mag. structs. 8−23261

surface electron states continued
atomic chemisorption on simple metals, chem. trends, core-hole relax. 8−14586
atomic electronic levels, near crystal surface, pot. drop effects 8−19123
catalysis, heterogeneous, role of surface science expts. 8−15710
CDW of two-dimensional electrons, in strong mag. fields 8−43316
characterisation, state-of-the art and need for standards 8−38916
charge disturbances, surface-induced, in filled bands 8−10532
charge exchange scatt. 8−43974
conference on surface physics, Tagow, Poland (June 1976) 8−26747
conference on surface science, York, England (March 1977) 8−14540
covalent and ionic solids, determ. of electronic struct. 8−2409
covalent surface, pot. and charge distribs. and dangling-bond state 8−2537
d-band width, surface at. relax. effects 8−34878
density of states in tight-binding formalism 8−10530
density-density correlation function, exchange corrections 8−14786
diamond, (111) surface states and relax., modelling and using mol. SCF calcs. 8−39186
diamond, surface electronic struct., self consistent pseudopotential calc. 8−47842
dielectric, energy struct. determ. by electron absorpt. spectra 8−11040
dielectric sum rule for electron response function 8−39184
disorder at surfaces and interfaces, effect on electronic props. 8−26932
dyes, photographic emulsion spectral sensitisation, latent image form., subcond. band events 8−32905
electric field sustained in δ-well crystal, energies greater than work func. 8−10528
electron liquids, two-dimens., short-range order onset, thermodynamic props. 8−43454
electron spectroscopy, (e,2e) reactions, theory 8−39640
electron-plasmon and electron-phonon interactions in bulk and near surface, Kikuchi patterns 8−26759
field emission spectroscopy, extended range 8−39669
FIM role of surface states, one-dimens. model 8−26399
Green's function formalism for N-interfaces 8−39179
impurities, surface bound states, quantum and classical liquids 8−18859
inversion layer, threshold conduction 8−43450
ionic crystal-degenerate semiconductor interface, localised plasmon-optical phonon coupled modes 8−38930
ionic crystals, surface electron states in continuous spectrum 8−26931
jellium-vacuum interface, charge distrib., nuclear density profile 8−30962
LEED Kikuchi pattern, contrast change due to plasmon excitation 8−34686
many-valley cubic semiconductor, light absorpt. by free carriers at surface 8−48200
mechanical metal-semiconductor contacts, I-V characts., press. effects 8−2564
metal, chemisorption, theoretical models, chemical and solid state approaches 8−18911
metal, light reflection, adatom characts. depend. 8−10918
metal, periods IV, V, and VI, work function depend. on plasmon energy 8−18986
metal, surface energy calc. in model of discrete positive charge *(Russian)* 8−38911
metal, surface region, absorption of EM radiation 8−43456
metal, with substitutional disorder, density of states, Green's function theory 8−23145
metal spheres, optical surface plasmon modes, theory 8−2539
metal spheres, small, plasmon freqs., calc. by hydrodynamic theory 8−43319
metal surface, Friedel oscillations around adatom 8−30967
metal surface, light refl. from dye molecule monolayer 8−48246
metal surface, linearised secondary electron cascade , surface and subsurface sources 8−11036
metal surface, linearised secondary electron cascades 8−11035
metal surface, self consistent electronic struct. effect on atomic positions, computer simulation 8−30969
metal surface, tight-binding, dissociative chemisorption of molecule 8−2368
metal surface, van der Waals, interaction with mol., effect of spatial dispersion 8−10534
metal surface electronic density of states, random distribution of impurity atoms 8−6424
metal surface with substitutional disorder, electronic struct. 8−23144
metals, density of states and spin susceptibility, normal and giant surface effects 8−10322
MIM tunnel junction, surface plasmon excitation 8−10578
MIS tunnelling Schottky barrier, surface state effect on electrical characts. 8−47877
molecular solid, surface props., review 8−34886
MOS p-channel transistors, boundary surface band bending 8−34903
MOS structure, charge motion, surface state effects 8−2573
MOS structure, effect on surface and bulk generation currents 8−47883
MOSFET and gated diode, surface states, density and capture cross section determ. *(German)* 8−23173
noble metal, electronic structure and d-holes of films and surfaces 8−39180
perturbed crystals in Kg representation, orthonormal localised states 8−6327
photoelectron spectroscopy of localised levels near surfaces, scatt. effects and relax. shifts 8−15291
photoemission, angle-resolved, from localised orbitals at solid surfaces, theory 8−15292
piezoelectric crystal, optical SHG with surface plasmons 8−18008
plasmon, momentum or energy fixed dispersion relations 8−14687
polar liquids, surface dipolar plasmons, nonradiative, dispersion relations 8−6308
polariton effects in spontaneous emission, effects of spatial dispersion 8−34879
polaritons, molecular thin plate, with near-surface polariton transition layer, reflection and transmission spectra *(Russian)* 8−14677
polymer, surface props., review 8−34886
Raman scattering by surface polaritons and compensation effect 8−10374
rare earth atoms at surface, photoionisation of 4f electrons 8−11077

surface electron states continued
semiconducting surface inversion layer, cyclotron reson. of interacting electrons 8−34885
semiconductor, effect of surface space charge region 8−43939
semiconductor, electron states at planar and stepped surfaces 8−10531
semiconductor, electronic struct. rel. to sorption 8−14784
semiconductor, magnetoplasmon-polariton surface modes, Voigt geometry 8−43451
semiconductor, surface properties, investigation by laser and photovoltages *(Russian)* 8−23130
semiconductor cyclotron resonance 8−6575
semiconductor doped surfaces, inversion layers, quantum model 8−30961
semiconductor surface with incomplete impurity ionisation, quantum model 8−34877
stilbene:rhodamine-6Zh, luminesc. of adsorbed mols., excitonic energy transfer to surface 8−31255
submonolayer films on metallic surface, struct. and props. review 8−38972
surface phase shift rule, and density of states 8−2538
surface polaritons allowing for spatial dispersion *(Russian)* 8−14675
thin crystals, surface state calc. 8−14778
transition metal, electronic structure and d-holes of films and surfaces 8−39180
transition metal surface, chemisorbed H_2, Hartree-Fock-Slater model cluster calc. 8−26929
transition metal surface electronic struct., influence of size and roughness 8−14785
transition metals, field emission and field ionisation, role in heterogeneous activation of gas molecules 8−35271
trapping of positive energy electrons on infinite sheet 8−14779
two-band crystal, surface reconstruction, Green's function formalism 8−14543
two-band crystal, surface reconstruction, model for CsCl struct. 8−14544
two-dimensional classical plasma, on dielectric film, collective excitations *(Russian)* 8−34788
two-dimensional electron system in strong mag. field, crystallisation 8−30966
Vycor glass, positronium-surface interaction in pores 8−27347
Wannier-Stark ladders of finite crystal, level shifts 8−30895
water, surface dipolar plasmons, nonradiative, dispersion relations 8−6308
Ag (111), adsorbed layers of $O_2(N_2)(S)$, electronic props., XPS and UPS 8−10279
Ag, angular resolved photoemission from low index faces 8−48282
Ag clean (111) surface, absence of filled surface states in s-p gap, LCAO calc. 8−2543
Ag, electrode pot. effects on surface plasmon excitation 8−15149
Ag grating, surface plasmons rel. to diffr. order intensity profile, higher harmonics influence 8−25981
Ag halide, photographic image form., defect and impurity states, LCAO calc. 8−16876
Ag, surface polariton absorption and emission spectra, edge effects 8−10375
Al (111), LEED Kikuchi pattern, contrast change due to plasmon excitation 8−34686
Al, adsorption of O_2, intrinsic and extrinsic plasmon coupling, XPS of adsorbed atoms core states 8−10278
Al, ang. depend. of plasmon loss features in XPS 8−43987
Al, anisotropic Fermi vel., surface Landau level reson. 8−10333
Al, SCF Xα scattered wave calc. for clusters up to 43 atoms 8−10323
Al(100), angular resolved photoemission from intrinsic surface states 8−39665
Au (100), characterisation of reordered and normal surfaces by LEED, AES and EELS 8−34687
Au, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
Au alloys, surface electron states, photoelectron spectra meas., rel. to Au 8−14781
Au, electrode pot. effects on surface plasmon excitation 8−15149
Au, surface electron states, photoelectron spectra meas., rel. to Au alloys 8−14781
Ba, ang. depend. of characteristic energy loss, surface plasmon excitation 8−2962
$BaTiO_3$, controlled surface layers 8−48120
$BaTiO_3$, surface layer exam. 8−43805
Bi, and Bi_2O_3, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
CdS, exciton obs. in thin surface layers, refl. spectrum *(Russian)* 8−2877
CdS, exciton spectra anomalies, surface state effects 8−18974
CdS, spatial dispersion and surface layer effects on the phase of reflected light *(Russian)* 8−35182
CdS, surface photovoltage in exciton absorpt. range 8−19119
CdSe (1120), surface electronic struct. and chem. struct. 8−14788
CdTe, surface photovoltage 8−2540
Cu, (001), electronic struct. of steps 8−34884
Cu, (111), (100), (110), energy band parameters, EHT calc. 8−34883
Cu, electronic structure and d-holes of films and surfaces 8−39180
Cu metal cluster, adsorption of CO, mol. orbital calc. 8−18895
Cu, N covered, self-consistent electronic struct. calc. 8−2544
Cu, ordered monolayer on Zn (0001), electronic struct., photoelectron spectra 8−39660
Cu, surface d-band narrowing, angle resolved XPS 8−19635
Cu, surface polariton absorption and emission spectra, edge effects 8−10375
Cu(111), adsorption of Cs, struct. and electronic props. 8−23147
EuTe, antiferromag. FCC lattice of second kind, surface magnons and mag. structs. 8−23261
Fe (001) surface, spectral density of transfer matrix formalism 8−39185
GaAS, O_2 chemisorption on (110) surface, bonding sites 8−38938
GaAs (110), valence band Auger spectra 8−35230
GaAs (110) surface, exposed to O and O_2 photoemission spectra meas., Space Shuttle expt. 8−35246
GaAs, adsorbed O, (110), surface electronic struct., synchrotron irradiated photoemission 8−43453
p-GaAs, field emission, role of surface electron states 8−2993
GaAs, positron annihilation in disturbed surface layers 8−6809

surface electron states continued
n-GaAs, real epitaxial surface, photoelec. spectroscopy, mechanisms 8−34858
GaAs, struct., elec. props., effects of illumination, O_2 absorpt., electron bombard. *(French)* 8−34690
GaAs, surface, (110), ang.-resolved photoelectron spectra 8−43984
GaAs, surface photovoltage due to photo-thermo-ionization of surface states 8−14787
n-GaAs, valence band studies of clean and O_2 exposed surfaces 8−43298
GaAs:Cr semi-insulating substrate, photoluminescence obs. of surface degradation during LPE growth 8−6865
GaAs:Sb (100) surface, Sb-induced surface states 8−10529
GaP, Cs(Cs-O) activated, with negative electron affinity, near UV photoemission and secondary emission 8−11074
GaSb (100) surface, Sb-induced surface states 8−10529
Ge, chemisorption of Cl_2, photoemission polarisation effects with synchrotron radiation 8−14580
Ge slab, intrinsic, longit. cond., influence of surrounding gas *(French)* 8−10448
Ge, surface electronic struct., self consistent pseudopotential calc. 8−47842
Ge, work function, meas. by thermionic emission 8−19628
Ge(111), chemisorption of Cl, threefold co-ordinated site chemisorption, cluster model calc., extended Huckel theory 8−39178
Ge(111), dangling-bond surface states 8−43452
He, liq., image-pot.-induced surface states, in strong elec. and mag. fields 8−946
He, liquid, cyclotron reson. freq. increase, electric field on surface dimple electrons 8−47624
^{3}He, liquid cyclotron resonance of localised electrons above surface *(Russian)* 8−14533
^{4}He, liq., broadening of inter-subband transitions in image-pot.-induced surface states 8−43194
^{4}He liquid surface, theory of hot electrons 8−22915
^{4}He, superfluid, surface, hydrodynamic modes for ripple waves 8−43195
InAs, supercond. of surface *(Japanese)* 8−14864
InAs:Sb (100) surface, Sb-induced surface states 8−10529
InP cleaved surfaces, and interfaces with metal electrodes 8−10554
InSb inversion layer, spectroscopy of electron subband levels 8−10569
n-InSb, n-type, photoconductivity with different surface treatment 8−2517
n-InSb, surface accumulation layer, sub mm electron cyclotron reson. 8−6576
InSb(111) surface, oxidation props., LEED and surface cond. meas. 8−15559
KCl, and KCl-AgCl, surface positron and positronium states, positron annihilation expts. *(Russian)* 8−39623
LaB_6 (001), surface state exam. by angular resolved UPS 8−19114
Mg, ang. depend. of characteristic energy loss, surface plasmon excitation 8−2962
Mo (001) surface, surface CDW phase transitions 8−43455
Mo, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
Mo, UPS, angle-resolved, surface resonances on (100) face 8−2987
Mo(001) surface, atomic displacements and electronic struct. 8−30963
Mo(110), surface densities of states for normal photoemission 8−35251
NaCl, energy struct. determ. by electron absorpt. spectra 8−11040
Ni (110) surface, electron spin polarisation, effect of H_2 adsorption, electron capture spectroscopy 8−14933
Ni, adsorbed O, electronic struct. and UPS 8−15281
Ni, CO adsorbed on (001), orbital energy spectrum 8−2369
Ni, chemisorption of O(S)(Se)(Te), orbital energy spectrum of chemisorbed electrons 8−2542
Ni film, surface properties and photoelectron spin polarisation 8−14782
Ni, hydrocarbon chemisorption, C 2s levels, initial state shift 8−34703
Ni metal cluster, adsorption of CO, mol. orbital calc. 8−18895
Ni, rel. to absorption spectrum anomalies, 2-3 eV, optical anisotropy *(French)* 8−43893
Ni surface, spin distribution of electrons, electron capture spectroscopy 8−14932
$Ni_{1-x}Cu_x$ (x=0.03, 0.16, 0.24), photoemission study, surface, bulk electronic struct. 8−48281
NiO (100) surface, electronic states, electronic energy loss spectroscopy 8−6426
Ni(001) surface, O chemisorption induced states, angle-resolved photoemission from adsorbates 8−23585
Pt (100), cyanogen adsorbed layers, electron energy loss spectrum 8−14592
Pt(III), electronic struct. of adsorbed Na 8−19117
Ru (001), electron stimulated desorption of CO, correl. with other meas. 8−47658
Sb, Sb_2O_3 and Sb_2S_3, AES and characteristic energy loss spectra, expt. and interpretation 8−27354
SbSI, surface layer exam. 8−48119
Si (100), chemisorption of H, new type of chemisorptive bond, theory 8−26930
Si (100), chemisorption of H, pairing model calcs., compared with expt. 8−34719
Si (111), (e,2e) reactions, theory 8−39640
Si (111) covalent surface, pot. and charge distribs. and dangling-bond state 8−2537
Si, (111) surface, Ag interaction, AES 8−14589
Si (111) surface, H chemisorbed, electronic struct. 8−39182
Si, chemisorption of Cl_2, photoemission polarisation effects with synchrotron radiation 8−14580
Si, clean cleaved, surface photovoltage, effects of atomic steps 8−19120
Si, field emission, role of surface electron states 8−2993
Si inversion layer, IR spectrum, 10^5G effect on linewidth 8−946
Si inversion layers, CDW mag. fields and stability 8−10533
Si, O_2 adsorption, UPS, new adsorption state 8−34702
Si, surface potential, influence of metal impurities, surface photo-EMF obs. 8−19122
Si, surface with incomplete impurity ionisation, quantum model 8−34877
Si:Ag, surface layer, ellipsometry 8−19121

surface electron states continued
p-Si:B-SiO_2 interface in MOS structures, carrier mobility and impurity distrib. 8−34902
Si(100) inversion and accumulation layers, effective mass and collision time of electrons, oscillatory magnetoconductance 8−34909
Si(100) surface, temp. depend. of electron intersubband reson. 8−14783
Si(111), dangling-bond surface states 8−43452
Si(111) surface, interpretation of intrinsic surface states 8−6423
Si(111), water vap. and O_2 interactions, EELS 8−14571
Sm, divalent surface states, photoemission meas. 8−47841
$SrTiO_3$ photoelectrolytic electrodes, defect surface states obs. 8−14815
p-Te, photocond. and lifetime, surface trapping, spectral distrib. 8−34840
TiO, (001) surface, spectral density of states 8−39187
TiO_2, surface electronic struct. by discrete variational $X\alpha$ cluster calc. 8−43449
V, and its cpds. with light elements, surface state, XPS investigation 8−11070
VO, (001) surface, spectral density of states 8−39187
W (001), surface resonance bands 8−47843
W (001), surface resonance band fine struct. in LEED 8−47844
W (001) clean surface, spectral density of states 8−39181
W (001) surface, surface CDW phase transitions 8−43455
W tip, photon assisted field ionisation 8−3000
W, UPS, angle-resolved, surface resonances on (100) face 8−2987
(W-Au)-SiO_2-Si:B MOS transistor, ion implantation effect on threshold voltage 8−34903
W(001), surface state resonance exam. above vacuum level 8−30965
W(100) surface, angle-resolved photoemission from surface states, refraction effects 8−48279
W(111), surface densities of states for normal photoemission 8−35251
ZnO (0001), $(000\bar{1})$ and $(10\bar{1}0)$, UPS rel. to elec. struct. 8−15288
ZnO (0001) surface, hardness, electrolyte pH and bias voltage effect 8−47654
ZnO, electronic surface and bulk transitions exam. by electron energy loss spectra 8−30964
ZnO, field emission energy distrib., surface state emission obs. 8−35258
ZnO, strong accumulation layers, negative magnetoresistance 8−6428
ZnS:Ag, electroluminesc., surface barriers *(Russian)* 8−2919
ZnS:Cu, polycryst. phosphor, excitation storage, recombination barrier participation 8−27316
ZnSe (111), low-energy electron loss spectra, bulk and surface transitions 8−11042
ZnSe film, surface polaritons, thermostimulated emission *(Russian)* 8−10904
ZnSe film, thermostimulated polariton emission 8−2436
ZnSe(100) surface, anomalous oxidation props. 8−15558
ZrO_2 film, CVD from organometallic cpds. and characterisation 8−23626

surface energy
see also surface electron states; surface energy measurement
acetone-chloroform solution, Monte Carlo calcs. for interface struct. with directed intermol. forces *(Russian)* 8−1975
adhesion of solids, review of physical mechanisms *(French)* 8−6231
alloy, FCC, Monte Carlo simulation of surface segregation 8−31413
anthracene, intermol. relax. energies, UPS 8−31304
p-azoxyanisole, depend. of phase transition temp. on thickness 8−26669
binary alloy, morphological stability, discrete lattice theory, appl. to interfacial zones 8−3133
contact adhesion between solids in vacuum, deform. and interfacial energy 8−22306
crystallite growth on curved metal surface, fragmentation *(Russian)* 8−22676
cubic metals, theoretical eqn. 8−43234
electron response function, dielectric sum rule 8−39184
eutectic alloys, surface energy considerations 8−44152
liquid, simple, nonadditivity contrib. 8−18874
liquid in equilibrium with vapour, surface tension rel. to cohesive energy density 8−34680
metal, cubic, relation between surface energy and Debye temp. 8−10271
metal, surface energy calc. in model of discrete positive charge *(Russian)* 8−38911
metal surface-void van der waals interaction energy 8−10036
microemulsions, lattice gas model, surfactant effects 8−23974
morphological changes occurring by surface diffusion on body with anisotropic surface energy, elec. stress effects 8−6202
solid, new measurement method 8−44187
step excess energy 8−47254
stilbene, depend. of phase transition temp. on thickness 8−26669
water droplet interactions, expts. for educational use 8−4441
zinc oxalate, crystallisation kinetics, specific surface energy at cryst.-soln. interface 8−26471
Al, neutron irradiated, void surface props. determ., anisotropic small-angle neutron scatt. 8−10095
Al_2O_3 surface energy measurement by const. temp. method data for liquid Cu-Sn and Au-Ag 8−6208
Al_2O_3, surface energy meas. by temp. variant method for liquid metals 8−6209
Ar, surface energy and surface tension near triple pt. 8−43218
C fibres, PAN-based, surface characts., investig. by flow microcalorimetry 8−48694
Cu, liq., surface tension rel. to temp., surface enthalpy, entropy 8−38912
Cu-Fe, growth kinetics and interfacial energy of coherent γ-Fe particles *(Japanese)* 8−19765
Fe-As, liquid alloy, density and surface free energy *(Russian)* 8−11204
KCl, (100) face, mol. dynamics computer simulation of surface props. 8−18880
$MgAl_2O_4$ spinel, surface energy calc. contribs. from Coulomb and Born-Mayer interactions 8−18890
MgO, cryst. surface strain and polarisation fields, breathing shell model calcs. 8−22946
Pb-In films, atom redistrib., ion-ion emission obs. *(Russian)* 8−18926
Pt-W interface, contaminated, contact adhesion, deform. and interfacial energy 8−22306

surface energy continued
- Si, electron-hole drop luminescence, hysteresis effect and surface energy 8−2907
- UO$_2$ and UO$_2$-Ni, surface, grain boundary and interfacial energies 8−21649

surface energy measurement
- No entries

surface hardening
- Fe, cast, compact graphite inclusions, surface hardening by continuous action laser emission *(Russian)* 8−15567
- ferromagnetic material, induction heating for case hardening 8−15570
- metals, thermochemical treatment *(German)* 8−15598
- steel, by focused laser beam *(Russian)* 8−27670
- steel, by heating in electrolytic plasma *(Russian)* 8−11390
- steel, C, wear charact. of worn surface layer under lubrication *(Japanese)* 8−35526
- steel, carbonitrided 25KhGT, 25 KhGM, exam. of hardenability and phase composition 8−44272
- steel, fatigue strength of 30 KhGSNA, 12 KhN3A, effect of friction in abrasive medium after hardening 8−35507
- steel surface HF inductive pulse hardening *(German)* 8−27687
- Al alloy 2024-T3, work hardening in surface layers and bulk during fatigue 8−48428
- Fe, cast, steel cam-roller pair, wear resistance strengthening treatment *(Russian)* 8−31542
- α-Fe, exam. of structural defects due to shock waves, and induced hardness 8−48427
- Fe, wear of surface due to friction, surface hardening 8−44227
- Mo, chromizing, formation of ordered solid soln. *(Russian)* 8−11402

surface-ion beam collisions *see ion-surface impact*

surface ionisation
- adsorbed atom, on metal containing dislocations, calc. 8−47670
- amine, chemisorbed on metal or oxidised metal, mass spectra expts. 8−2360
- EPMA correction procedure, Monte Carlo derivation 8−20119
- ice, sputtering by MeV light ions, erosion rate 8−48268
- ion source, for mass separator operating on heavy-ion beam 8−5083
- physicochemical surface processes investigated by alpha-particle effect on electron work function 8−2547
- K, on W, stimulated ionisation by Na, Cs beams, energy depend. 8−31292

surface-molecular beam collisions *see molecule-surface impact*

surface phenomena
- *see also acoustic surface waves; atom-surface impact; capillarity; crazing; crystal surface and interface vibrations; emissivity; field evaporation; interface phenomena; ion-surface impact; magnetic surface phenomena; molecule-surface impact; sorption; surface chemistry; surface conductivity; surface diffusion; surface discharges; surface energy; surface ionisation; surface potential; surface scattering; surface tension; surface treatment; surface waves (fluid)*
- adsorption isotherm and solute activities from spreading pressure-surface charge data 8−14576
- air-water interface, modified technique for dynamic surface press. and relax. meas. 8−6201
- caffeine in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
- conference, Budapest, Hungary (Sept. 1975) 8−11567
- conference on surface physics, Tagow, Poland (June 1976) 8−26747
- conference on surface science, York, England (March 1977) 8−14540
- diffusion bonding, in Ar atmosphere, aspects *(Japanese)* 8−11491
- fluid surface correlations, density profiles 8−6196
- free surface, wrinkling 8−5676
- gas adsorption, surface areas calc. using programmable calculator 8−15706
- liquid surface relief prod. by US field, holographic interferometry meas. 8−1519
- melt surface velocity, expt. meas. and prediction in 30000 lb inductively stirred melt 8−11139
- mica surfaces, van der Waals interactions 8−30973
- ocean, heat exchange in small-scale sea-air interaction 8−3810
- polyethylene, anisotropic surface stress 8−14562
- refractory, castable, stability in steam-N$_2$ and steam-CO atmos. at 199°C 8−20063
- steel, C, H attack kinetics and service behaviour 8−39951
- steel, H$_2$ absorption, effect of organic inhibitors *(Russian)* 8−35570
- steel, oxidation-reduction processes on surface during heating in vacuum *(Russian)* 8−11403
- steel, strengthened by surface plastic deform., tempering effect on physicomech. props. *(Russian)* 8−35409
- uracil in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
- Cu, creep rate, effect of surface anodic dissolution in acetate buffer soln. 8−3249
- Fe-Zn system, Zn vapour interaction with solid Fe, Zn chem. potential effect on interaction layers 8−11416
- GaAs-Al$_{0.2}$Ga$_{0.8}$As periodic layered media, optical surface waves 8−43946
- He, liq., 2D electron plasma, RF absorpt., parallel pumping *(Russian)* 8−22911
- ^{4}He superfluid film, neutron scatt., surface effects 8−10251
- Mo-Zr, nitride form. in N$_2$ atmos. *(Russian)* 8−19938

surface phonons *see crystal surface and interface vibrations*

surface potential
- alkali halide crystals, ultrahigh vacuum equipment for surface charge and pot. meas. 8−12708
- band-discontinuity surface, temp. of electron gas induced by passage of electron currents 8−14793
- covalent surface, pot. and charge distribs. and dangling-bond state 8−2537
- desorption, fission fragment induced mol. ions desorption, electrochemical surface pot. effect *(German)* 8−6228
- electrochemical machining, approx. method for solving problems 8−44241
- electrolyte, free surface struct., single ion hydration energies 8−26752
- ferroelectric domains, quantitative electron mirror microscopy 8−15132
- galvanomagnetic-recombination field effect, theoretical model 8−43420
- glass/Cu-polymer compound powders, prep. and corona charging props. *(Japanese)* 8−19679

surface potential continued
- metal, surface charge density prod. in satic electrification 8−14797
- metal, surface pot. drop and contact pot. difference in terms of orbital electronegativity 8−2546
- metal surface barrier, transmission and reflection of low-energy electrons 8−18507
- metallic films, interacting, surface pot. 8−30968
- MOS capacitor photovoltage characterisation 8−10573
- pattern measurement by potential probes, crevice depth determination in metallic testpieces appl. *(German)* 8−35597
- photocathodes, alkali metal multilayers, high field enhancement of photoemission 8−19639
- poly-N-vinylcarbazole, electrophotographic film, dark discharge 8−34864
- polyethylene, corona charged, direct drift mobility meas. 8−10837
- polyethylene, high density corona charged, TSC, oxidation effect 8−26882
- polyethylene film, corona charged, surface potential decay 8−14795
- probe for 77K operation and with nanosecond response 8−12726
- two-domain analysis of field producing bodies using fictitious poles 8−33649
- type II superconductors, flux flow state, static electric potential structure 8−43535
- water, free surface struct., single ion hydration energies 8−26752
- Ag (111), clean or Na-covered, adsorpt.-desorpt. props. of Br$_2$ 8−38944
- Bi, surface potential under high mag. fields 8−26887
- C, black, surface acidity effects on work function 8−2548
- CO on Rh(110) 8−6225
- Ge, field effect characts. rel. to surface inhomogeneity 8−26933
- Ge, galvanomagnetic-recombination field effect, theoretical model 8−43420
- Mg vermiculite, adsorbed water mol. orientation, elec. pot. calc. 8−26763
- PbTe substrate for MIS capacitor, C-V and G-V characts. 8−26962
- Si (100), chemisorption of H, pairing model calcs., compared with expt. 8−34719
- Si (111) covalent surface, pot. and charge distribs. and dangling-bond state 8−2537
- Si, field effect characts. rel. to surface inhomogeneity 8−26933
- Si, influence of metal impurities, surface photo-EMF obs. 8−19122
- Si, surface potential spread rel. to chemical treatment *(Russian)* 8−11363
- Si-SiO$_2$, interface, distinction between donor and acceptor character of surface states 8−39216
- Si-SiO$_2$ structure, oxide charge evaluation, appl. of Kelvin method 8−19157

surface scattering
- *used for carrier scattering by surfaces*
- *see also surface conductivity*
- metal, cyclotron resonance with almost specular boundary *(Russian)* 8−10778
- metallic film, strain gauge factor anal. 8−6458
- semiconductor film, quantised, indirect interband absorption rel. to surface irregularity 8−39618
- SOS MOS devices, elec. characts., cryst. defects and residual stress effects 8−34906
- surface CCDs, electron mobility surface diffuse scatt. model 8−47879
- K, electron scatt. effect, excitation of cyclotron waves, calc. 8−6429
- p-Si, inversion layer, screening effect and quantum transport in strong mag. fields 8−19155
- Sn, aggregate film, resist., temp. depend. 8−39230
- W, surface reflection of conduction electrons *(Russian)* 8−43373
- ZnO, strong accumulation layers, negative magnetoresistance 8−6428

surface structure
- *see also interface structure; surface texture*
- AES, low beam current density, surface anal. 8−15748
- AES, quantitative, applic. to impurity segregation and depth profiling 8−19611
- AES, quantitative, formalism for surface conc. calcs. 8−19612
- alloy, BCC, order-disorder transform. in surface layers, theory *(Russian)* 8−19739
- alloy, segreg., surface miscibility gaps, reg. soln. theory 8−18882
- alloy surface, enhanced diffusion effect on preferred sputtering 8−43973
- alloys, binary, surface composition, regular soln. theory 8−10265
- amino acid monolayers and ordered films on Cu, surface struct. LEED 8−38968
- analysis using alpha-induced X-ray emission 8−20132
- atomic relaxation effect on d-band width 8−34878
- bent single crystal, equilib. face, surface relief form. during annealing 8−47651
- brass, surface microstruct. changes on immersion in CuSO$_4$+H$_2$SO$_4$+HI soln. 8−19945
- butadienepstyrene, surface phenomena in struct. rearrangement after deform. *(German)* 8−19913
- catalysis, heterogeneous, role of surface science expts. 8−15710
- catalysts, surface investig. methods 8−14546
- cavitation erosion, observation of eroded surface by SEM 8−15536
- cellulose hydrated film, orientational heterogeneity, IR spectra and dichroism obs. *(Russian)* 8−38990
- characterisation, state-of-the art and need for standards 8−38916
- chemisorption on defective surface, theory 8−2362
- composition changes in sputtering 8−2343
- conference on surface science, York, England (March 1977) 8−14540
- corundum, optical, polished, surface layer obs. by IR reflection spectra *(Russian)* 8−19458
- corundum, shaped crystal, grown from melt, struct. perfection 8−3021
- crystal surface steps, statistical props. 8−47648
- defects, review 8−14551
- diamond, form. by shock compression of graphite, cryst., surface struct. 8−44060
- electrolyte, free surface struct., single ion hydration energies 8−26752
- electrostatic interactions and the structure of water, conf. Brussels, Belgium (1972) 8−26413
- ellipsometry, principles and appls. 8−16834
- ellipsometry applied to surface films and film growth 8−39619
- field emitting micro-points, location, nanosecond UHV discharges 8−332

surface structure continued
friction surfaces microstructure, during tribotechnical processes *(German)* 8–15540
garnet epitaxial layer, decomposition caused by annealing 8–18918
glass, glass surface, inhomogeneities and defects, detection using microbubbles, implantation technique *(German)* 8–47647
glass, physical chemistry exam. 8–2018
glass, surface flaws, decoration technique 8–14547
glass, surface struct. and reactivity influence of separation *(German)* 8–30817
glow discharge and ion-microprobe sputtering, SEM and ion-microprobe mass anal. 8–43977
graphite, pyrolytic, ion bombarded, surface deformation *(Japanese)* 8–18879
graphite, pyrolytic crystals, surface topography, bombarded with Ar^+, N^+, He^+ ions 8–6820
graphite, surface erosion by ion bombardment crystal anisotropy effect 8–23845
graphite, surface morphology changes after irrad. with energetic He ions 8–21767
ice surface, near 0°C, 100 keV proton channelling meas. 8–14549
III-V semiconductor, surface microhardness depend. on surface treatment method 8–15560
imaging atom probe for surface studies 8–14555
ion microprobe analysis, elemental imaging errors, polarity role 8–20103
Kikuchi pattern intensity, angular and temp. depend. 8–2349
kinetic stability of plane-faced crystal growth forms 8–47259
LEED, ZA 8–42870
LEED intensity curves, spin-depend. features, model calcs. on W (001) 8–34685
LEED patterns, intensity dynamics 8–10267
LEED rotation diagrams appl. 8–38917
LEED surface crystallography, past and present 8–14253
low energy ion backscattering, struct. anal. 8–15271
LPE ripple wavelength, morphological stability theory 8–34725
metal, IR spectroscopy methods of investigation *(Japanese)* 8–19470
metal, sliding wear, surface topography and integrity effects 8–3235
metal oxide powder, quantitative surface meas., XPS method and appl. 8–40104
metal surface, near point-defect, annealing, diffusion theory and Monte Carlo anal. 8–47646
metal surface, self consistent electronic struct. effect on atomic positions, computer simulation 8–30969
metallic surface, mirror electron microscopy for total electron refl. coeff. determ. 8–5994
metallic thin film, structure-related optical characteristics in visible and UV 8–35217
mica, defects effect on epitaxial film struct. 8–26794
mica substrate of Au film, surface defects on heterogeneous nucleation and growth 8–47684
mica surface, static SIMS anal. 8–38922
microanalysis, using heavy ion 400 kV accelerator of Thomson-CSF Central Research Lab. *(French)* 8–41880
molecular solid, surface props., review 8–34886
optical surface layer, reflection related to density profile Fourier transform *(Russian)* 8–31269
oxide film characterisation, using low energy electron induced X-ray spectroscopy *(French)* 8–41386
photomacrography and photomicrography, oblique transmitted light techniques 8–306
point defect-inclusion interaction energy near solid surface *(Germany)* 8–38750
polymer, surface props., review 8–34886
polymers, ESCA investigation of struct., reactivity and bonding, O_2 (inert gas) surface modification 8–3438
quantitative surface anal., comparison of XPS results with model 8–40091
quartz, hydrothermally grown single crystals, real struct. investig. of rhombohedral faces *(German)* 8–2348
quartz, theory of etching in HF 8–27666
quartz natural microcrystals, elementary growth layers on faces 8–14634
Rayleigh wave dispersion, surface layer struct. estimation, anal. theory for sparse data case 8–38928
refractory metal, surface geometry and emission parameters, changes during directional mass transport 8–2344
RHEED developments *(Japanese)* 8–22607
RHEED-AES combined system, simultaneous struct. and comp. information 8–47216
Rutherford backscattering *(French)* 8–43976
sapphire, absorbing microdefects effect on anisotropy of optical strength 8–2952
sapphire substrates, prep. for GaN epitaxy 8–39929
scanning electron stimulated desorption, appl. to surface anal. 8–34700
secondary ion emission, intensity changes correction via new total ion monitoring method 8–12796
SEM with ultrahigh vacuum system for surface physics expts. 8–38925
solid surface characterisation techniques, review 8–22945
solid surfaces, problems *(Japanese)* 8–43222
steel, low C, high strength impact deposited white-layer on X65 8–48566
steel, stainless, depth profiling of passive film by quantitative AES 8–19611
steel, stainless, type 316, neutron irrad. damage simulation using HVEM, surface effect on void swelling 8–29572
step-step interaction on clean surfaces, morphological changes 8–14552
submonolayer films on metallic surface, struct. and props. review 8–38972
surface layer structure, rel. to neutron refl. on boundary *(Russian)* 8–1976
topography, high-resolution polymer replication 8–10264
trace analysis *(Japanese)* 8–40102
two-band crystal, surface reconstruction, Green's function formalism 8–14543
two-band crystal, surface reconstruction, model for CsCl struct. 8–14544
W, field emission tip, microscopic protuberance formation, min. elec. field and temp. 8–6835

surface structure continued
water, free surface struct., single ion hydration energies 8–26752
Ag film, substrate surface structure effects on absorptance 8–19585
Ag, vacuum deposited film, surface struct., HEED meas. 8–6234
Ag-Pd alloy, surface comp., AES expts., correl. with O_2 heat of chemisorpt. data 8–34684
Al (111), ordered O overlayer associated with chemisorption state 8–47665
Al alloy, 2024-T3, adherend surface, chem. comp., effects of chem. and thermal treatments 8–39939
Al and Al alloys, Auger spectroscopy produced in glow discharge *(Russian)* 8–14545
Al, extrusion, pick-up form. on surface 8–39882
Al, low vacuum condensates, struct., IR refl. obs. *(Russian)* 8–30850
Al-Ag alloy, thin foil, X-ray microanalysis, surface film effect 8–44428
Al_2O_3 anodic layer formation in H_3PO_4 solns., surface charact. 8–15603
Al_2O_3 hard anodic coatings, effects of cellular structures 8–11448
Al_2O_3, quantitative surface anal., comparison of XPS results with model 8–40091
Al_2O_3 rich substrate, surface smoothness and metallization props. *(German)* 8–19906
Au (100), characterisation of reordered and normal surfaces by LEED, AES and EELS 8–34687
Au (111) film, sputtered, surface struct., HV electron microscopy and theoretical model 8–22981
Au, spherical crystal, drop grown from melt, RHEED obs., superstructs. 8–43225
Au, stepped surface, edge atom dipole moments 8–14791
Au, vacuum deposited film, surface struct., HEED meas. 8–6234
Au-Cu-O surface, quantitative Auger analysis using relative sensitivity factors 8–7295
Au-Ni-O surface, quantitative Auger analysis using relative sensitivity factors 8–7295
$BaTiO_{3-x}$, single cryst. and film, Auger spectra, surface comp. 8–27353
C fibres, PAN-based, surface characts., active surface area, microporosity 8–35536
C fibres with large breaking strain, prep., mech. props., struct., appl. 8–44077
C, glassy, surface erosion by ion bombardment crystal anisotropy effect 8–23845
C materials, optical microscopy, reflection, interference colours, terminology 8–42871
$Ca_3Al_2Si_3O_{12}$-$Mg_3Al_2Si_3O_{12}$, synthetic garnet, soln. grown, surface features 8–2346
CaF_2, polished crysts., rocking curve meas. *(German)* 8–2347
Ca_3SiO_3, hydrated, composition and morphology 8–26755
$Cd_xHg_{1-x}Te$, surface microhardness depend. on surface treatment method 8–15560
CdS film, surface stoichiometry rel. to CdS-Cu_2S cell performance 8–2956
CdS, polycrystn. layers on CdS substrate, electron microscope study of surface struct. 8–22940
CdSe:Cu surface layer of CdSe, microstruct., photoelec. props. 8–43221
CdTe, surface layers formed by etchants, XPS meas. 8–44240
CeB_6, thermionic emission rel. to surface state 8–39654
Co (100), clean and C-covered, LEED-Auger expts. 8–38921
Co {001} surface, LEED struct. anal. 8–47645
Co, martensitically transforming, state of surface 8–43223
$CoFe_2O_4$, thermally induced surface chemistry and struct., XPS 8–22939
$Co_{1-y}Fe_{2+y}O_4$ ferrite, $-0.1 \leqslant y \leqslant 0.1$, surface composition, AES 8–14557
Cu, (100) surface, Auger emission ang. depend., overlayer effects 8–39637
Cu, (110) surface struct., ion focusing effect *(Russian)* 8–26757
Cu, (111) and (100) surfaces, Sn segregation 8–14554
Cu (111) surface, structural determ. using reliability factor proposed for LEED 8–43224
Cu electrodeposition potential and electrolyte composition effects on surface morphology *(Russian)* 8–48337
Cu, He ion irrad., 1 to 25 keV, range profiles, reemission, blistering 8–38758
Cu, point emitter, surface microrelief under explosive electron emission 8–2973
Cu, vacuum deposited film, surface struct., HEED meas. 8–6234
Cu-Ni, surface segregation, comparison of low-energy ion-scatt. results with theory 8–38923
Cu-Ni (50 wt.%), preferential sputtering, thickness and in-depth comp. profile of altered layer, AES 8–39649
Cu-Ni alloy, sputtered altered layers, in-depth profile, model 8–19613
Cu-Pt, surface segregation, comparison of low-energy ion-scatt. results with theory 8–38923
$CuFe_2O_4$, thermally induced surface chemistry and struct., XPS 8–22939
Fe, nitrided, X-ray and Mossbauer study of surface 8–48568
Fe-Cr, mechanically polished, XPS determ. of comp. of surface and surface oxide 8–7074
Fe-Ni, surface comp. obs. by AES 8–10266
$Fe_{72}Ni_8P_{13}C_7$, glass, erosion craters produced by spark machining, scanning microscopy obs. 8–44268
GaAs (110), comparison of LEED intensities for chemically polished and cleaved surfaces 8–18884
GaAs (110), subsurface atomic displacements, evidence from LEED/CMTA analysis 8–38920
GaAs epitaxial layers, substrate prep. effect on surface morphology 8–26780
GaAs, epitaxially grown (001), (111) and $(\bar{1}\bar{1}\bar{1})$ surfaces, LEED, AES, photoemission 8–38924
GaAs, GaP, field ion microscopy 8–19644
GaAs, positron annihilation in disturbed surface layers 8–6809
GaAs, struct., elec. props., effects of illumination, O_2 absorpt., electron bombard. *(French)* 8–34690
GaAs-AlGaAs LPE layers, baking effect on surface morphology 8–14625
GaN:Zn epilayers, growth parameters effect on props., device struct. 8–26975

surface structure continued
- GaSe, photoemission anisotropy, possible surface struct. determ. 8−11076
- Ge, vicinal surface, LEED obs. 8−14561
- $Hg_{1-x}Cd_xTe$, surface topographic stoichiometry variations, electrolyte electrorefl. obs. 8−27249
- In, impurity precipitation and resolution at melting point 8−14553
- In, quantitative surface anal., comparison of XPS results with model 8−40091
- InSb(111) surface, oxidation props., LEED and surface cond. meas. 8−15559
- InSe, photoemission anisotropy, possible surface struct. determ. 8−11076
- Ir (111), oxidation, combined LEED/UPS obs. 8−19955
- KBr in contact with KCl, mutual diffusion, development of relief on contact surfaces 8−22964
- KH_2PO_3, mechanically treated single crystal, depth and struct. of disturbed layer *(Russian)* 8−23839
- LaB_6, thermionic emission rel. to surface state 8−39654
- Mg rough deposits, surface struct. autocorrelation function, electron microphotographs 8−26756
- MgO, cryst. surface strain and polarisation fields, breathing shell model calcs. 8−22946
- Mo, point emitter, surface microrelief under explosive electron emission 8−2973
- Mo(001) surface, atomic displacements and electronic struct. 8−30963
- NO, first monolayer on MgBr cleavage face, triple point 8−6227
- NaCl, bent single crystal, equilib. face, surface relief form. during annealing 8−47651
- NaCl, evaporating surface, step motion obs. and simulation 8−26766
- Ni plated Fe single crystal, deformed at 77K, surface obs. 8−19916
- Ni-Cr-Al, oxidation, NaCl vapour effects on microstruct. 8−44274
- Ni-Cu, surface composition, AES 8−14558
- Ni-P amorphous alloy prep. by ion implantation 8−22748
- $NiFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
- PLZT, refr. index, 405-764 nm, surface layer 8−35110
- Pb, quantitative surface anal., comparison of XPS results with model 8−40091
- Pd-Ag (Cu) alloys, epitaxial growth and surface characterisation 8−14638
- Pd-Ba (1.5 wt.%), thermionic emitter, Auger spectrum fine struct. 8−2954
- Pd-Ni, Auger sensitivity factors 8−43964
- $Pd_{781}Cu_{55}Si_{164}$ glass, erosion craters produced by spark machining, scanning microscopy obs. 8−44268
- Pt (111) surface, 400 eV H^+ ion scatt. obs. of surface relax. 8−43972
- Pt, effects on rates of O_2 adsorpt. and CO oxidation 8−43251
- Pt, stepped surface, edge atom dipole moments 8−14791
- Pt-Ba alloy, elemental comp. and chem. state of surface during thermal activation, AES obs. 8−2345
- Re, steps, effect on adsorption of CO *(French)* 8−43250
- Rh (100) surface, structural determ. using reliability factor proposed for LEED 8−43224
- Si, 5 MeV α-particle irrad., X-ray exam. of surface layer struct. changes 8−6114
- Si, (100) surface, Auger emission ang. depend., overlayer effects 8−39637
- Si (111), surface reproducibility and impurity segregation ion neutralisation spectra and UPS obs. 8−34688
- Si (111) surface structure induced by Ag evaporation, RHEED meas. 8−22942
- Si, clean cleaved, surface photovoltage, effects of atomic steps 8−19120
- Si, epitaxial layer grown by saturated Sn melt undercooling, morphology 8−22969
- Si, forbidden 200 diffr. spots 8−47214
- Si, intensity dynamics of slow-electron diffr. patterns 8−10267
- Si, oxidised surface, irregular growths of $B(OH)_3$ 8−39926
- Si, Pb implantation, channelling and RHEED anals. 8−30657
- Si, self-implanted, ⟨100⟩ and ⟨111⟩, crystallised layers by laser annealing, struct. 8−47644
- Si, short range order in surface layers, electroreflection exam. 8−6703
- Si, surface layer, thin, density meas. by total external X-ray reflection 8−14635
- Si, surface layer defects, influence of multiple oxidation *(Russian)* 8−47650
- Si, surface structure changes by laser pulses 8−14548
- Si wafer, HCl etching, smooth or pitted surface struct., gas phase comp. effect 8−11360
- Si:Ag, surface layer, ellipsometry 8−19121
- SiO_2, amorphous, induced crystallisation exam. 8−6016
- Si(100) (1×1)H surface structure, LEED meas. 8−14602
- Si(110), clean surface structural transitions, LEED obs. 8−6203
- Si(111) 7×7 surface struct., LEED intensity calc. 8−34683
- Si(111), adsorption Ag, cohesive energy and 2-dimens. phase diagram, AES exam. 8−43246
- Sn-Ni equiatomic electrodeposited alloy, surface comp. 8−47649
- $SrTiO_{3-x}$, single cryst. and film, Auger spectra, surface comp. 8−27353
- Ti, HCP to BCC type struct. transition at surface, FEM obs. *(Japanese)* 8−22938
- Ti, surface impurity segregation, quantitative AES 8−19611
- Ti, using digital scanning Auger electron microscope 8−12797
- V, and its cpds. with light elements, surface state, XPS investigation 8−11070
- V-Pd, dil. alloys, surface segreg. 8−18883
- W (001), spin-depend. features in LEED intensity curves, model calcs. 8−34685
- W (001), surface relax. determ. using LEED rot. diagrams 8−38917
- W (001), surface structure, LEED anal. 8−38919
- W (001), with adsorbed Cs, photoemission anisotropy, possible surface struct. determ. 8−11076
- W clean {001}-(1×1) surface, struct. determ., dynamical and exptl. LEED results 8−14560
- W, coadsorption of La and B, field emission meas. 8−47662
- W emitter tip, surface shape changes, field ion microscopy meas. 8−26754
- W, fine tip microcrystal, microscopic protuberance form., crit. remoulding obs. 8−27380

surface structure continued
- W, fine tip microcrystal, thermal smoothing after critical remoulding 8−27381
- W, fine tip microcrystal, vertex remoulding, effects on field emission 8−27379
- W, stepped surface, edge atom dipole moments 8−14791
- $Y-Y_2O_3-Au$ junction, defect struct. and local conduction 8−26970
- ZnS:Mn on SnO_2/glass transparent conductive base, surface morphology effects on electroluminesc. *(Russian)* 8−48238
- ZrO_2, near-surface phase transforms., effect of grinding and polishing 8−15557

surface tension
- adsorbed layer, spreading press. 8−38971
- azo dye sulphonates and analogs., aqueous solns., surface tensions 8−47641
- black lipid film stability, interfacial props. effects 8−15798
- computation in molecular dynamics experiments 8−30815
- conducting liq. layer, surface tension effects, MHD convection stability and thermocapillarity *(Russian)* 8−47054
- conference, Budapest, Hungary (Sept. 1975) 8−11567
- cryolite melts saturated with alumina, interfacial tension between Al and melt 8−38913
- cyanobiphenyl, meas. near nematic-isotropic transition temp. 8−43219
- deformable solid surfaces, thermodynamics 8−34694
- droplet, viscous, deform. due to deposition of surfactant 8−18876
- drops, diffusophoresis in viscous media 8−35731
- Dynamic fluid interface displacement and prediction of air entrainment 8−2337
- eddy diffusivity, near open channel free surface, heat transfer expt. 8−5798
- electrocapillary emulsification 8−48697
- electrohydrostatic theory 8−43213
- electron-hole liquid, in semiconductors, equilib. props., review *(Russian)* 8−34773
- electrostatic drop formation, effects of conductive liquid props. 8−1122
- ethyl n-dodecoate, photocapillary effect, temp. depend. *(Russian)* 8−34682
- film flow, meniscus shape theory, Navier Stokes eqn. 8−38270
- fluid, multiphase system, vapour bubble collapse, charact. functions 8−18156
- fluid dynamics expts. and problems *(French)* 8−9645
- fluid interface, perturbations surface tension and gravity effects *(Russian)* 8−10256
- gas-liquid surface, penetrable sphere model 8−10261
- gas-liquid system, digital simulation 8−2341
- glass fibres, evaluation of surface tension 8−47657
- history Berthelot's first publication, 1850, subjection of liqs. to tension 8−32639
- interfacial order parameter profile near critical point, renormalisation group approach 8−6200
- Ising model, using real-space renormalisation group methods 8−47985
- lipid monolayer phase transitions, model 8−2338
- liquid crystal, colloid and surface chemical aspects 8−9950
- liquid in equilib. with vapour, rel. to cohesive energy density 8−34680
- liquid microclusters, thermodynamics, size effects, theory 8−22935
- liquid spreading on liquid surface, hydrodynamics 8−30814
- meniscus, equilib. and stability props., exact determ. of surface tension 8−10263
- metallic surface rippling induced by surface tension during laser melting 8−11405
- monolayer, mobile or registered, surface tension and spreading press. 8−38960
- nematic liquid crystals, Marangoni effect 8−6009
- pendant drops, surface area meas. 8−30813
- PMMA, monolayers collapse mechanism, surface press. and ellipsometric obs. 8−43214
- polybutadiene, adsorption behaviour, surface tension exam. *(Japanese)* 8−31690
- polymer melts, immiscible, surface and interfacial tension, thermodynamic theory *(German)* 8−26753
- rimming flow, numerical simulation of free-surface flow with surface tension 8−22353
- rotating fluid dynamics, review *(French)* 8−30300
- rotating thin-ring electrode, bubble nucleation 8−48664
- sea, surface tension variability with mean wind speed 8−7656
- sphere in continuum model, surface tension rel. to internal press. 8−2336
- steel, Si-Mn, melt, surface tension *(Russian)* 8−43212
- temperature, rel. to surface tension *(Chinese)* 8−18873
- Thermodynamics of adsorption and Gibbsian distance parameters in two and three-phase systems 8−10282
- triple point surface tension and bulk modulus, theoretical relationship 8−47638
- two-phase fluid equilibrium, thermodynamic functions and surface tension 8−2262
- vortex sheet evolution, buoyancy and surface tension effects 8−9643
- water, surface tension, temp. coeffs. meas. 8−43216
- water jet, penetration through water surface, high-speed photography 8−42693
- Ag-Cu, liquid, surface tension 8−43217
- Al-Cu, liq. alloys, surface tension meas. *(French)* 8−18875
- Ar, liquid-vapour interfacial width near central pt. 8−22931
- Ar, surface energy and surface tension near triple pt. 8−43218
- Ba, liquid thermophysical properties, up to 1800K 8−30767
- Cu, liq., surface tension rel. to temp., surface enthalpy, entropy 8−38912
- Cu, molten, O_2 absorption, surface tension driven flow effect 8−6199
- Cu, surface tension at intermediate and high temps., influence of additional elements 8−15476
- ^3He-^4He mixture, near absolute zero, holographic interferometry exam. of phase changes 8−38905
- ^3He-^4He solutions, interfacial tension near tricrit. point 8−2330
- ^4He, superfluid, surface tension and surface entropy 8−10235
- InP, molten stoichiometric, surface tension 8−39684
- $MgCl_2$-NaCl(RbCl) binary melts, surface tensions *(Japanese)* 8−10260
- N_2O_4-HNO_3-H_2O di1sociating system, surface tension at liquid-vapour boundary *(Russian)* 8−47643
- $NaNO_3$ floating zone melting, surface tension driven flow 8−48313

surface tension continued
  Rh-Cu(Si), melts, surface props. *(Russian)* 8−26750
  UCl_4 molten mixtures with alkali metal chlorides, physicochemical props. 8−38915

surface tension measurement
  using filter paper Wilhelmy plates with insoluble monolayers 8−357
  insulating liquids, capacitive sensing of capillary rise 8−41399
  interfacial tension, electrochem. data numerical differentiation by Fourier transformation 8−41139
  Lippmann electrometer, for interfacial tension meas., capillary wear effects 8−26751
  multicell spinning drop interfacial tensiometer 8−45770
  spin drop surface tensiometer, alternative soln. 8−47642
  He, and other liquified gases, proposed quick method 8−43208

surface texture
  cholesteric helix surface, elec. field-induced high-order ref. 8−35115
  colour reproduction of surface texture, visual qualities 8−16881
  contact resistance, metal-metal effect of surface roughness and surface films 8−10540
  corundum ceramic, roughness depend. on initial grain size of alumina *(Polish)* 8−30816
  digital capacitance-based meas. instrument 8−4593
  divalent metal oxides, (100) surfaces, rumpling calcs. 8−14559
  electrospark coating formation factors *(Russian)* 8−19908
  glass ceramic, bonding thermosprayed Si 8−23848
  glass ceramic, surface prep. for Si thermosprayed coating 8−11367
  metal surface roughness meas. using laser speckle 8−8383
  Michelson interferometer, double-passed, influence of surface roughness on photometric setting-accuracy 8−12746
  paper, surface characterisation and printability criteria, stochastic approach 8−18878
  polycarbonate film, by aq. acetone solns., roughness form. mechanism *(Russian)* 8−48554
  quartz grains of podzols, surface texture, SEM study 8−36151
  randomly stepped surface, He backscattering 8−11055
  semiconductor substrate surface, low loss electron and Auger images correl. 8−22944
  steel, maraging, 18 wt.% Ni, solution heated and aged, surrface damage during machining, unlubricated 8−15599
  topography as nonstationary random process 8−24739
  transition metal surface electronic struct., influence of size and roughness 8−14785
  Ag film, surface roughness determ. from light scatt. meas. 8−5541
  Ag-MgF_2 layered system, optical excitation of surface plasma waves 8−6803
  Ag-Pd and Ag-Ag contact resistance, effect of surface roughness and surface films 8−10540
  Al_2O_3, Ni dispersed epitaxial layer, textural effects on catalyst, ferromag. reson. 8−23963
  Al_2O_3, surface smoothness and densification, effects of SiO_2 additive 8−27462
  Al_2O_3-SiO_2 glasses, thermally toughened, residual compressive stresses evaluation 8−31523
  C fibres, oxidation, surface props. *(French)* 8−44238
  C fibres, oxidation by NO_2, struct., props. modification 8−44237
  C fibres, PAN-based, surface characts., investig. by flow microcalorimetry 8−48694
  C materials, optical microscopy, reflection, interference colours, terminology 8−42871
  CdS, single cryst., surface treatment effects on photoluminesc., struct. and optical props. *(Russian)* 8−15224
  Fe alloy, surface layers examination, X-ray method 8−35606
  He scattering by surfaces, diffr. intensities, topographic curves 8−15274
  Pt, adsorption of H_2, electrolyte environment and crystallite size effects 8−27774
  Re, adsorpt. of CO on basal (0001) and stepped $|14(0001)\times(10\bar{1}1)|$ planes 8−14594
  SiO_2, Ni dispersed epitaxial layer, textural effects on catalyst, ferromag. reson. 8−23963
  Y-Er, surface, high-freq. elec. cond. dispersion function, effects of polishing and annealing 8−19506

surface topography measurement
  conference New Delhi, India (1977) 8−4590
  contour slope meas. of an object, coherent optical method 8−32862
  digital capacitance-based meas. instrument 8−4593
  films deposited on semicond. substrates, X-ray topographic meas. method 8−5710
  friction surfaces, wear meas. using profilograph, mould producing material quality factors 8−7116
  high sensitivity interferometric measurement study *(Japanese)* 8−37048
  holographic double-exposure and fringe projection techniques comparison *(Polish)* 8−32788
  image speckle contrast for meas. of object surface roughness 8−1168
  interference surface testing with quarter-wavelength sensitivity 8−32870
  interferometric surface mapping with variable sensitivity, IC manufacturing appl. 8−45592
  laser speckle granularity growth, appl. to surface inspection 8−12750
  light interferometry, correlation functions determ. 8−5428
  machined part flatness and parallelism meas., contactless interferometric method 8−21208
  mean lines of surface profiles from different electrical filters 8−16773
  metal surface, diamond turned, finish meas. by differential light scatt. 8−5544
  metal surface roughness meas. using laser speckle 8−8383
  methods survey *(German)* 8−4591
  microscope, phase-locked interferometric, design and construction 8−45687
  mirror, plane lattice point light source appl. *(Japanese)* 8−9463
  Moire contouring of large objects by scanning technique 8−32791
  Moire holography contouring method 8−1183
  Moire method applied to high speed deform. meas. 8−36970
  Moire projection topography accuracy and sensitivity 8−45677
  Moire topography, projection-type, theory 8−16776
  Nomarski polarisation interferometry, for slope determ. of microscopic surface features 8−16840
  nosetip ablation holography in 10 MW plasma arc facility 8−20621
  optical surface mapping with quarter wavelength fringes 8−46846

surface topography measurement continued
  optical surface profile testing with set of spherometers, math. analysis 8−13823
  parameters calc. *(German)* 8−4592
  photometry appl. 8−4682
  profiles reference line selection and fitting, based on random process analysis 8−45594
  rotating surface roughness meas. apparatus 8−4588
  roughness, by amplitude density distribution and autocorrelation function of surface profile *(Hungarian)* 8−12668
  roughness parameter determ., profilometer attachment 8−36967
  roughness parameters, error due to feeler probes 8−169
  SEM, stereoscopic observation and three-dimens. meas. instrument 8−21287
  SEM, three-dimensional stereo data acquisition, presentation and treatment 8−21297
  semiconductor manufacturing, interferometric method for surface deform. meas. 8−32793
  solid surface characterisation techniques, review 8−22945
  speckle, polychromatic, for surface roughness properties meas. 8−21210
  surface finish automatic inspection by laser scanning *(German)* 8−170
  surface potential pattern measurement by potential probes, crevice depth determination in metallic testpieces *(German)* 8−35597
  two-frequency microwave holographic imaging with axial resolution 8−1184
  X-ray diffraction characterisation, highly collimated beam, appl. to Si 8−9912
  X-ray image processing, quantitative, with SEM, surface meas. appls. *(French)* 8−41379
  Ag film, surface roughness determ. from light scatt. meas. 8−5541
  Fe ore, adsorption methods for determ. of specific surface 8−21096

surface treatment
  see also etching; polishing; surface hardening
  bone-cement interface bond enhancement technique 8−31980
  borosilicate glass, porous, surface area change with acid treatment, adsorption of N_2 and H_2O *(Japanese)* 8−44244
  complex profiled surface alloying, automatic electrode feeding *(Russian)* 8−19936
  controlled environment exposure of atomically clean surfaces 8−19954
  DC glow discharge techniques for surface treatment and coating 8−11374
  decoration, film growth, initial stages, ion bombardment effects 8−14639
  diffusion welding, surface treatment by glow discharge effect 8−7089
  erosion by ion bombardment *(Russian)* 8−23567
  glass ceramic, bonding thermosprayed Si 8−23848
  glass ceramic, surface prep. for Si thermosprayed coating 8−11367
  glass workpiece, US drilling, structural alterations 8−48555
  III-V semiconductor, surface microhardness depend. on surface treatment method 8−15560
  laser beam materials processing, thermophys. and hydrodynamic effects 8−19957
  laser treatment of material influence of oxidising atmosphere *(Russian)* 8−23840
  material processing by high power lasers, comparison of available systems 8−30003
  metal, thermomechanical treatment by ionic bombardment *(French)* 8−11418
  metallic materials, thermochem. treatment *(German)* 8−15598
  metallic substrate pretreatment with plasmatron 8−11434
  metallic surface, heat treating and melting with scanning laser or electron beam 8−11406
  metallic surface alloying methods *(Russian)* 8−19931
  metallic surface rippling induced by surface tension during laser melting 8−11405
  metals, ion surface treatment 8−11415
  nonferrous metals, C, O, AND N content., microanal., surface treatment effects 8−11596
  plastic deformation treatment, tool design for 8−13824
  plastic laminate removal from metal using laser beam 8−7061
  plastic sample containers, for trace element samples, selection, cleaning methods 8−35745
  polycarbonate film, by aq. acetone solns., roughness form. mechanism *(Russian)* 8−48554
  polyethyleneterephthallate, sorption of low MW solvents on struct. and mech. props. *(Russian)* 8−11358
  polymer lattices, purification 8−7243
  powder metal sprayed coatings, bond strength, influence of surface preparation 8−11150
  resin-coated optical fibre, tensile strength tests *(German)* 8−33871
  single crystal surfaces, grinding and electropolishing using simple goniometer 8−4604
  steel, Fe-Cr-Al, sulphidation behaviour, 750°C, preoxidation effect *(French)* 8−15566
  steel, impact strength, effect of surface decarburization and carburization of faces and core struct. 8−23811
  steel, low and medium C, surface alloyed with nitride forming elements, nitriding *(Russian)* 8−31569
  steel, mech. strength, effect of H_2 sorption and Al and N_2 surface treatment *(Russian)* 8−31570
  steel, Mn, solutioning of castings in salt baths 8−23871
  steel, Mn-Cr, blank hardened, shot peening effect on bending fatigue strength *(German)* 8−35402
  steel, Mn-Cr, normalised, shot peening effect on bending fatigue strength *(German)* 8−35401
  steel, N_2 implantation, nitride form., wear rate reduction 8−27149
  steel, stainless, nitriding charact. at low atmos. press. of NH_3, thermodynamic *(Russian)* 8−15573
  steel, surface saturation with Sb and As under glass fusion treatment *(Russian)* 8−35585
  steel, white layers effects on stress-corrosion resistance rel. to C content *(Russian)* 8−11393
  steel 10, carburizing in fluidized bed 8−19951
  steel ShKh15, fatigue strength and residual stress distrib., machining method effects 8−31528
  surface resistivity, effect of hydrofluoric acid treatment 8−10537
  thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
  Al, alloy, laser surface melting 8−48557

surface treatment continued
  Al alloys, laser surface melted, porosity form. 8−44279
  Al, US cleansing process 8−11417
  Be-Cu surface preparation for Au electrodeposition 8−7100
  C fibre reinforced polymer, strength props., fibre surface treatment effects 8−27636
  C fibres, oxidation by NO_2, struct., props. modification 8−44237
  C fibres, PAN-based, surface characts., active surface area, microporosity 8−35536
  C fibres, PAN-based, surface characts., investig. by flow microcalorimetry 8−48694
  $Cd_xHg_{1-x}Te$, surface microhardness depend. on surface treatment method 8−15560
  CdS, polycrystn. layers on CdS substrate, electron microscope study of surface struct. 8−22940
  CdS, surface photovoltage in exciton absorpt. range 8−19119
  $CdSe_xTe_{1-x}$ crystal, acoustoelec. oscillations affected by surface treatment *(Russian)* 8−10517
  Cu (111), chemisorpt, of CO on differently prepared surfaces 8--6223
  Fe, Armco, nitriding charact. at low atmos. press. of NH_3, thermodynamic *(Russian)* 8−15573
  Fe, atomically clean, N_2 treatment, corrosion inhibition 8−19954
  Fe chromised layers, fatigue fracture kinetics study by reverse bend tests *(Russian)* 8−31511
  Fe, pure, nitrided layers obtained by ion bombardment, microstruct. exam. *(French)* 8−15581
  Fe, solid, liquid, reaction with solid Fe, interdiffusion exam. *(Japanese)* 8−39944
  Fe-Al(V)(Ti), nitrided, struct. and props. 8−19950
  Fe-V (1.06, 5.23, and 15.55 wt.%), nitriding 8−3253
  GaAs, clean or contaminated (001) surface, Au film growth 8−26785
  n-GaAs, real epitaxial surface, photoelec. spectroscopy, mechanisms 8−34858
  GaAs:Cr erosion by laser beams *(Russian)* 8−2950
  GaP, surface cleaning by oxidation and heating, characterisation for electron emitter appl. 8−35548
  $Gd_2(MoO_4)_3$, ferroelectric domain decoration 8−10862
  KCl, cryst., plasma prod. by laser impact, effect on surface 8−1866
  LiF, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
  Mo, ionic siliciding, diffusion layer prod. 8−23855
  Mo-W (50 wt.%), emissivity, 1200-3000K, effects of annealing and surface treatment 8−43154
  NaCl, cryst., plasma prod. by laser impact, effect on surface 8−1866
  Re, interaction with F_2 and fluorides at low temp. and high press. 8−39700
  Si, prior to thermal oxidation, rel. to chem. struct. of interface 8−27654
  Si, surface, controlled stripping, automated system 8−31557
  Si, surface potential spread rel. to chemical treatment *(Russian)* 8−11363
  Si:B high-temp. diffusion, glass layer formation obs. 8−7069
  SiF_4, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
  Ta, interaction with F_2 and fluorides at low temp. and high press. 8−39700
  Ti alloys, pseudo-α, salt-corrosion effects on long-term strength, vacuum annealing and stress concentrators effects *(Russian)* 8−11392
  Ti, surface layer alloying element distrib. *(Russian)* 8−19934
  W, interaction with F_2 and fluorides at low temp. and high press. 8−39700
  Zn and Zn coated surfaces, cathodic pretreatment 8−19929
surface vibrations *see crystal surface and interface vibrations*
surface wave acoustic devices *see acoustic surface wave devices*
surface waves (fluid)
  see also liquid waves; oceanography
  beach slope sand granulometric composition variations during wave cycle *(Russian)* 8−15991
  capillarity-gravity waves, third-order reson. interactions 8−34148
  capillary wave theory and mean field theory of interfaces 8−18309
  cnoidal waves, higher order solns. *(Japanese)* 8−42625
  continental shelf wave side band instability and long wave resonance 8−16030
  eddy diffusivity, near open channel free surface, heat transfer expt. 8−5798
  film, vertical wall, large amplitude waves 8−14030
  gravity waves, growth and equilib. in wind-wave tank 8−1679
  gravity waves, surface, multi-dimensional packets 8−42624
  gravity waves, triple roots and curved caustics 8−40584
  gravity waves diffraction, ray methods 8−40574
  gravity waves incident on submerged horizontal plate 8−5758
  gravity-capillary surface waves, nonlinear interactions 8−18310
  Hamilton's principle for surface waves 8−5759
  Hamiltons principle 8−5760
  ideal fluid with free surface, laminar flow instability, reson. surface wave buildup 8−34106
  laminar film, mass transfer with dissolution 8−26098
  liquid film flow, drop form., size spectrum 8−34187
  liquid interface, mol. light scatt., heat fluctuations *(Russian)* 8−23477
  magnetic liquid, surface vibration mode obs., steady-state, for teaching lab. 8−41111
  magnetic liquid thin layer with two free boundaries, instability conditions, surface wave dispersion eqn. *(Russian)* 8−1752
  nonlinear surface waves with gravity or surface tension restoring forces 8−22357
  ocean, calcs, of main waves generated by tropical hurricane *(Russian)* 8−16021
  ocean, surface waves breaking rel. to turbulence generation *(Russian)* 8−16022
  ocean surf, atmospheric elec. space charge generation 8−36235
  ocean wave slope meter, fast response instrument, wind-wave moments meas. 8−45012
  ocean waves, synthetic aperture radar imaging, focusing effects 8−40555
  ocean waves on erodable base, bottom vel. and scouring 8−49029
  opto-acoustic antenna, floating, acoustic field statistical characts., surface waviness depend. *(Russian)* 8−1536
  rectilinear surface waves incident on submerged circ. sill 8−1677
  ring vortex instability, wave formation dependence on vorticity distrib. 8−34146
surface waves (fluid) continued
  ripple, annular, two phase flow, statistical characteristics 8−9672
  scattering, by submerged sphere 8−34145
  sea state and wind sensing by HF skywave radar 8−24396
  Stokes waves, higher order solns. *(Japanese)* 8−42625
  vertical body of revolution beneath surface, focus on body 8−38347
  viscous fluid film, approx. eqns. for long nonlinear waves 8−38346
  viscous incompressible liquid, wave generation by radially symm. press. on free surface 8−26133
  water, irrotational waves, existence theory 8−38348
  water, long-wave propag., modelling criteria, appl. to tsunamis 8−26132
  water, oscillotory waves, Korteweg-de-Vries and Schrodinger eqns. solns. and expt. 8−26131
  water of finite depth, soliton solns. of Davey-Stewartson eqn. for long waves 8−38351
  water of variable depth, conf., Canberra, Australia (July 1976) 8−40572
  water surface, optical pulse refl., probability characts. *(Russian)* 8−22081
  wind waves on water, duration-limited, 1-dimens. spectra of growth 8−46990
  wind-generated in deep water, Rayleigh method *(Russian)* 8−36178
  wind-wave generation of surface gravity wave 8−49033
surge absorbers *see surge protection*
surge protection
  Si:Al lamellar devices, surge protector, solar cell, HV diode and negative resistor appls. 8−10068
surge suppressors *see surge protection*
surgery
  aneasthesia delivery system, closed loop design 8−40402
  cardiac surgical patient postoperative computerised meas., analysis, and treatment 8−36044
  cardiology, development progress 8−3646
  cryocatheter tourniquet, appl. 8−7521
  cryogenic instruments for local tissue destruction, choice of instrument working temps. for cryogenic instruments 8−36036
  cryosurgery, freezing patterns of normal and diseased tissues 8−44685
  cryosurgery instruments, effects of heat transfer material on working parameters 8−36037
  ECG monitor, non-fade, battery-powered, features 8−7528
  electrosurgical instrumentation review 8−44680
  electrosurgical load-independ. const. current generator 8−44684
  eye, detached retinal tears computer localisation for scleral buckling procedure 8−7529
  glaucoma surgery, Nd:glass laser with freq. doubling capability 8−40403
  gynecological cryosurgical apparatus using N_2O as coolant 8−7525
  hydrocephalus surgical treatment, valve system design *(Japanese)* 8−31963
  laser applications in otology, review 8−48860
  laser beam operation in surgery and treatment, safety 8−35903
  laser biomedical research in USSR 8−48858
  laser endoscope treatment of urinary tract strictures *(German)* 8−35914
  laser iridectomy, energy required, hazards and techniques 8−11713
  laser microsurgery, CO_2 laser use and laryngology applics. 8−35905
  laser neurosurgery, CO_2 laser uses *(German)* 8−35912
  laser osteotomy, new results *(German)* 8−24114
  laser surgery, acute and long term laser beam effects on fibroblasts and smooth muscle cells in culture 8−40268
  laser surgery, Ar ion laser treatment of haemangiomas, teleangectasia, radiodermatitis and tattoos 8−35906
  laser surgery, healing of tissue wounds following CO_2 laser action *(German)* 8−35913
  lasers in medicine, appls. and equipment development 8−48862
  microneurology, appl. of colour TV as surgery teaching aid 8−40396
  microprocessor-based patient monitoring system 8−44681
  mitral valve replacement, prediction of postoperative systolic left ventricular wall stress 8−40427
  monitoring, 4-channel telemetry system 8−31961
  monitoring, developing crisis 8−40401
  monitoring, inexpensive general purpose computer 8−36045
  muscle relaxation in surgical patient indicated by frontalis muscle spontaneous elec. activity 8−44686
  myocardial activity determ. at surgery using shrinking stress meas. 8−31966
  neurosurgical cryoprobe, self-contained, with replaceable flask, features 8−7526
  operating room airborne contamination protection using electrostatic particle repulsion system 8−28125
  operating table with interchangeable top 8−36042
  ophthalmology, extraocular muscle system mechs. model 8−40155
  pacemaker implantation, therapy/measuring combined unit *(German)* 8−7519
  pacemaker implantation surgery, intracardiac ECG derivation during electrocoagulation 8−40397
  paediatric intertrochanteric osteotomy fixation of modified Kuntscher's nail *(Croatian)* 8−44675
  photocoagulating scalpel for laser surgery 8−48866
  Sharplan 791 CO_2 laser for clinical surgery 8−35904
  US applications and new developments, review 8−11712
  ventilatory monitoring in operating room, current techniques and future requirements 8−20307
  ventricular septal defect plastic repairing instrument 8−7522
  wound preoperative force meas., transducer device 8−36041
  Ti for implantation, biological props. 8−3678
surgical operations *see surgery*
surveying
  aerial photography, high altitude, aspects and results 8−36309
  automatic drafting system, appl. to problems of geodesy *(German)* 8−15952
  Baikal rift zone, recent crustal movements, precise levelling data 8−36139
  Digital Terrain Model, use of electronically controlled drawing machines *(German)* 8−20348
  distance measurement, micrometer errors and short period errors of graduated circles *(German)* 8−45038
  Earth's surface, air survey methods *(Dutch)* 8−3972
  Earth resource surveying and interpretation 8−24391

surveying continued
  fluid tube tiltmeters, thermally induced errors 8−36303
  German Standards Institute, 50 years of standardisation in surveying *(German)* 8−45591
  interpolation method using multiquadratic eqns. *(German)* 8−15951
  levelling, influence of temp. in Telyvel electronic system *(German)* 8−45037
  levelling data, automatic evaluation prospects *(German)* 8−32258
  magnetic surveying using horizontal gradient vectors 8−28334
  photogrammetry, orientation, triangulation and digitisation, numerical methods 8−36312
  singular compensation problems, hypothesis tests *(German)* 8−44758
  Switzerland geomagnetic survey instrumentation and results *(French)* 8−15966
  theodolite microprocessor selection, development, and programming 8−24218
  trigonometric networks calculation, development and form. *(German)* 8−15947
  United States east coast, recent vertical crustal movements 8−32052
  Very Long Baseline Interferometry (VLBI), foundations and geodetic appl. *(German)* 8−45036
susceptance, electric *see electric admittance*
susceptance, electric, measurement *see electric admittance measurement*
susceptibility, dielectric *see optical susceptibility*
susceptibility, magnetic *see magnetic susceptibility*
susceptibility, optical *see optical susceptibility*
suspensions
  alkali n.-alkanoates, long-chain, ethanolic solns., solubility temp. depend. 8−15724
  asbestos fibre suspension, heat transfer and friction coeffs. for tubular flow 8−22405
  Baltic Sea sedimentation, role of river suspensions *(Russian)* 8−7616
  blood, US propag., effects of red cell shape and orientation 8−24104
  β-carotene, solubilised in lecithin liposomes, linear dichroism, absorption statistics 8−1014
  ceramic suspension, ferromagnetic filtration apparatus improvement 8−11561
  ceramic suspension, ferromagnetic treatment, optimum system construction with FOL instruments 8−4666
  charged rigid sphere suspension, rheology, suspension mechs. 8−40086
  chloroplasts, in suspension, near IR radiation dispersion *(Russian)* 8−24045
  clay plate suspensions, ordering, statistical mech., theory 8−23968
  colloids, hydrophobic, coagulation mechanism 8−40085
  complete suspension of particles in stirred tanks 8−27824
  deposition, onto rot. disc, convective diffusion, external force field 8−40081
  dilute suspension of spheres in power model fluid, apparent stress deform. behaviour 8−42578
  disperser for powder, suspension and emulsion production 8−23636
  dumbbell shaped particles in power-law liq., struct.-phenomenological theory 8−1730
  dust-laden gas flow, heat transfer 8−14067
  dusty gas flow in horiz. and vertical tubes, heat transfer 8−22409
  dusty viscous conducting liquid, unsteady flow in annulus in mag. field 8−38412
  electrophoretic mobility, mass transport method 8−35696
  ellipsoid freely suspended, rotation about a slow viscous flow's vorticity axis 8−38386
  ferrocene derivatives in smectic B phase liquid cryst. BBOA, ^{57}Fe Mossbauer study 8−27136
  ferrosuspension, MHD flow, heat transfer *(Russian)* 8−26203
  fibre suspension, rheology, rel. to turbulent drag reduction 8−22315
  fibre suspension in water, turbulent jet, analogous behaviour to polymer solns. 8−1732
  filtration, 2-component, conc. wave bifurcation *(Russian)* 8−22420
  flow, time-depend, dilute arbitrary-shape particles, Brownian rot. effect 8−26188
  gas bubble suspensions, incompressible nonNewtonian and Newtonian fluids, dilatational props. 8−30343
  gas-solid suspension flow in tube, press. drop, entry length 8−42647
  graphite particles, diamag. levitation, Brownian-motion press. gauge appl. 8−24807
  heat transfer in channel flow, particle-wall interactions 8−5787
  heat transfer to suspension with solid separation at wall 8−9685
  hydrodynamic screening and viscous drag at finite conc. 8−35725
  hydromagnetic, physical property variations *(Russian)* 8−47022
  instability conducting anisotropic suspension, macroscopic transport coefficients *(French)* 8−35729
  latex, colloidal cryst., optical props. near MP 8−11562
  latex, purification 8−27828
  latex sphere suspensions, ordering, statistical mech., theory 8−23968
  light scattering, turbidity 8−44407
  metal powder suspension in air, spontaneous ignition temperature *(Russian)* 8−47027
  MHD laminar flow, suspended particle motion stabiity *(Russian)* 8−5808
  ocean, fine suspended particles, removal mechanisms and residence times 8−32106
  oceans, Atlantic and Pacific, suspended particles rel. to chem. processes 8−36201
  particle interactions in fluid suspension, averaged-equation approach 8−23972
  particle swarm moving in viscous fluid 8−26186
  particles suspended in turbulent fluid, dispersion 8−14073
  platelet adhesion to solid surfaces, effects of plasma proteins and substrate wettability 8−35814
  polydisperse discs, particle size distrib., transient elec. birefr. data, two-parameter distrib. functions 8−40083
  polydisperse ellipsoids, particle size distrib., transient elec. birefr. data, two-parameter distrib. functions 8−40084
  polydisperse rod suspension, elec. birefringence relax. 8−23430
  polyethylene single crystal in suspension, Fourier transform IR study 8−10877
  polystyrene latex particles in CTAB (Na_2SO_4), gas bubble surface charge meas. 8−21100
  polystyrene particle colloidal suspension in KCl(LiCl) aq. solns., dielectric loss 8−35728
  polystyrene solutions, ordered and disordered, particle dynamics determ. from time depend. multiple light scatt. 8−33672
suspensions continued
  polystyrene spheres, crystallised suspension, gravitational compression 8−23975
  PVC, mechanochemical degradation in primary struct., mech. vibration effects, IR spectra *(German)* 8−19769
  random behaviour simulation, interval of quiescence method 8−31708
  rivers, suspended sediments vertical distrib. in translational flow 8−3841
  sedimentation, settling instability, horizontally homogeneous suspension 8−42652
  sedimentation, three-parameter Markov model 8−34183
  sedimentation Markov model for very slow settling of dilute suspension 8−22406
  silt suspension turbulent boundary layer, steady state model 8−28242
  spheres, uniform suspension, effective shear viscosity theory 8−11565
  spherical agglomeration in conical drum 8−14064
  spherical particle suspension, Brownian motion effect on bulk stress 8−7246
  stirred, suspended particles absorpt. of solute molecules 8−30342
  tobacco mosaic virus suspensions, ordering, statistical mech., theory 8−23968
  turbulence, suspended particle motion 8−22408
  turbulent, combined radiative and convective heat transfer 8−9724
  turbulent, heat transfer and struct. 8−9683
  turbulent and pseudo-turbulent transport 8−14068
  turbulent pipe flow, vertical cond. distrib. 8−1714
  viscosity of suspension of nonharmonic dumbell mols. 8−2282
  Fe_3O_4, magnetite, analysis using magnetovibr. analyser 8−4668
  MnO, hydrated, adsorpt. of Cs and Sr radioisotopes 8−3822
  PbS, colloidal, light scatt. and electron microscopy 8−3379
  $^{239}PuO_2$, in vivo solubility in rat lung 8−28093
  V_2O_5-water, EPR of VO_{aq}^{2+} formed by solar light photoreduction, electrolysis appl. 8−11540

swelling
  alloys, irradiated, effect of defect trapping and solute segregation, on defect recombination rates and void swelling 8−47369
  bounded media, dislocation loop growth and void swelling by charge particle damage 8−6110
  concrete and mortars, containing S, durability study in temp. cycles and water resistance 8−27613
  fast reactor materials, fast neutron damage 8−10093
  fission reactor fed, effect of solid fission products and dislocations on swelling and fission gas release during fast overpower transient 8−8917
  glassy polymer multi-phase Stefan problem describing swelling and dissolution 8−2263
  Inconel 600, Neutron irradiation using HFIR for evaluation as fusion reactor material 8−13324
  irradiated materials, cascade damage and self-ion injection effects on swelling 8−34549
  LMFBR core materials, effect of swelling and creep on performance 8−13261
  LMFBR reactor materials, simulation of void swelling and radiation-induced creep 8−8907
  metal swelling, max. point on temp. scale rel. to point defect generation *(Russian)* 8−38751
  metals, influence of a surface coating, on void formation 8−47416
  metals, swelling during pulsed irrad., model, void growth exam. 8−47436
  nylon, stress cracking induced by $ZnCl_2$ solns. 8−27594
  nylon 6, swelling by absorbed water, mol. orientation effect 8−11285
  polyacrylamide, mech. degradation, polymerisation effect *(Japanese)* 8−11194
  polycarbonate film, by aq. acetone solns., roughness form. mechanism *(Russian)* 8−48554
  polyester resin, unsaturated, $CaCO_3$ system, $CaCO_3$ addition effect on degradation in boiling water *(Japanese)* 8−11281
  polyester resin, unsaturated $CaCO_3$ system, $CaCO_3$ addition effect on water absorption in boiling water *(Japanese)* 8−11282
  polyester resin mortar, degradation in boiling water *(Japanese)* 8−11280
  polyester resin-filler system, resistance to degradation in boiling water *(Japanese)* 8−11283
  polyethylene, low density, with a single texture, oriented crystallisation of biphenyl 8−9966
  polymer gels, thermodynamic props., review *(German)* 8−20073
  polyoxymethylene-copolyamide blend melt, viscoelastic peculiarities *(Russian)* 8−38263
  reactor materials, radiation-induced embrittlement and swelling due to void form, ASTM research 8−13231
  reactor materials, void swelling simulation, review 8−8906
  self-ion bombardment induced swelling, effect of implanted interstitials 8−10099
  steel, austenitic 316, displacement energy determ., HVEM obs. and electron bombardment 8−6100
  steel, austenitic stainless, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
  steel, stainless, ion bombardment, primary recoil energy spectra characts. 8−10103
  steel, stainless, neutron irrad., solution-annealed and cold-worked, swelling 8−13229
  steel, stainless, solution treated FV 548, irradiated with 22 MeV C^{2+} and 46.5 MeV Ni^{6+} ions void swelling 8−22771
  steel, stainless, swelling, effect of free surface 8−10097
  steel, stainless, type 316, neutron irrad. damage simulation using HVEM, surface effect on void swelling 8−29572
  steel, stainless, type 316, stress-free swelling at high neutron fluence, rel. to LMFBR core environment 8−13239
  steel, stainless, type 316, struct. life anal. for fusion reactor first-wall appl. 8−13326
  steel, stainless 316, 20% cold worked, swelling increase due to inreactor temp. reduction 8−34547
  steel, stainless 316, irradiated void swelling incubation period, stress effects 8−6105
  steel, stainless 316, irradiation induced swelling, stress effects 8−34545
  steel, type 316 stainless, Neutron irradiation using HFIR for evaluation as fusion reactor material 8−13324
  void growth, rel. to intrinsic point defect properties 8−47315
  void swelling, transition from gas bubbles 8−14383
  void swelling simulation, effect of self ion injection 8−22772

swelling continued
- Al, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
- B_4C, effect of fast neutron irradiation on struct. 8−26597
- Be, neutron irradiated, annealed, tensile props. and swelling, effect of He bubbles 8−22765
- Cu, He ion irrad., 1 to 25 keV, range profiles, reemission, blistering 8−38758
- Cu, surface tension at intermediate and high temps., influence of additional elements 8−15476
- Fe-Ni alloy, disordered, short-range order study by time-depend. PAC method 8−6618
- $Fe_{40}Ni_{40}P_{14}B_6$, irradiation swelling 8−30682
- Mo, ion bombardment by Ni^{2+}, TEM study of damage depth distrib. 8−10101
- Ni, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
- Ni, form. of vacancy micropores during bombardment by 300 keV Ni ions 8−2172
- Ni, self-ion irradiated, He effect on void form. 8−6112
- Ni, void swelling caused by neutron and self-ion bombardment, 573 to 873K 8−14387
- UC, effect of porosity on fission-gas-induced swelling 8−8959
- UO_2, matrix swelling rate 8−8900
- V, neutron irradiated, void swelling, O_2 effect 8−6106
- V-O alloy, temp., dose and conc. depend. of void form. following V^+ ion beam irradiation 8−10105

swept-frequency oscillators
- optical fibre transfer function meas., swept-frequency technique 8−1375

swept-frequency reflectometry
- No entries

switches
- *see also relays; semiconductor switches*
- bistable switch, based on waveguide coupler, exam. 8−38086
- contact thermometer, bimetallic, basic parameters *(Czech)* 8−12692
- electro-optical active components for guided light 8−42470
- electro-optical directional coupler switch, used as amplitude modulator, exam. 8−42467
- high current diffuse vac. arc, stable mode with ring array rod electrodes 8−9894
- laser triggered Krytron-Blumlein electro-optic switch 8−9450
- Mach-Zehnder interferometer, switch, integrated optical format 8−38084
- microoptical switch, Mach Zehnder interferometer, for use with optical fibre transmission lines, exam. 8−38085
- multicontact thin-film superconducting switch, prod. 8−4661
- nonlinear Fabry Perot devices, integrated optic format 8−38087
- nuclear fusion expt., switch for mag. cct. supply *(German)* 8−37441
- optical Bragg switch, thin film 8−38088
- optical fibre switches for fault terminal isolation 8−46833
- optically activated switch/modulator using photoconductor and two channel waveguides 8−1437
- plasma valve design with liq. metal cathodes, high-power conversion/switching appls. 8−9865

switching
- *see also electrical conductivity transitions; ferroelectric switching; magnetic switching; switches*
- chemical laser flameout using fluidic switching 8−29943
- fast-action, of signals on SAWs governed by MOS ICs 8−33963
- initiation, Anderson model 8−10524
- solenoid, supercond., mag. field stability in persistent mode *(Czech)* 8−29131

switching circuits
- *see also choppers (circuits); trigger circuits*
- control circuits using diode switches with switching of nsec pulses 8−8415
- ECG amplifier with automatic lead switching 8−28106
- US, two-board design, alarm and data transmission systems appl. 8−46870

switching transitions *see electrical conductivity transitions*

symbol manipulation
- atom, first-order wave functions, computer calcs. using Green's functions 8−41934
- space time curvature tensor, Newman Penrose formalism, CAMAL program calcs. 8−24701

symbols *see nomenclature and symbols*

synchrocyclotrons
- construction principles, advantages and appls. *(German)* 8−5078
- JINR synchrophasotron, neutron prod. by deuteron stripping 8−33340
- proton spectra, high energy, emerging from 680 MeV synchrocyclotron shielding 8−17530

synchronisation
- atomic clocks, VLBI obs. 8−29092
- dye laser, tunable, improved freq. doubling for 217-360 nm 8−33781
- laser by small external signal, capture dynamics 8−46559
- magnetic recording, one-channel, direct and reversible synchronisation unit 8−3620
- multichannel GaAs laser array output synchronisation 8−42417
- relativistic synchronization procedures, geophysical tests in rotating frame 8−24662
- walking, synchronisation of optical press. distrib. and 3-dimens. force meas. under sole human foot *(German)* 8−35975
- weather satellite, detection of 300 Hz pulses 8−36420

synchronism *see synchronisation*

synchroscopes *see cathode-ray oscilloscopes*

synchrotron radiation
- applications, review 8−9010
- applications to struct. of matter determ. 8−32963
- astronomical polarised compact radio sources, physical conditions 8−4384
- astrophysical plasma synchrotron reactor as RF source *(Russian)* 8−4098
- black holes, accreting, synchrotron gamma ray emission spectrum 8−32504
- charged particle acceleration, three-photon vacuum radiation *(Russian)* 8−5406
- charged particle in plasma with random inhomogeneities synchrotron-transient radiation spectrum 8−45213

synchrotron radiation continued
- Compton scattering spectroscopy appl. 8−23547
- Crab Nebula, relativistic particles injection rel. to synchrotron spectrum 8−36678
- Crab Nebula, X-ray polarisation meas. rel. to synchrotron emission model 8−12426
- depolarisation, in orbital plane in presence of vertical betatron oscillations *(Russian)* 8−33656
- directed beam, possibility of obtaining from relativistic charge *(Russian)* 8−1139
- electron produced synchrotron radiation spectrum, high energy struct. from $^{12}C(\gamma,\gamma)$ scatt. 8−13062
- electron storage ring, vacuum ultraviolet and soft X-ray radiation sources appl. *(Japanese)* 8−25941
- electron synchrotron orbit radiation characts. in visible spectrum, rel. to use as radiometric standard 8−9008
- filtering methods, for Mossbauer source production 8−25374
- Galaxy, synchrotron radiation rel. to mag. field configurations 8−20884
- geological samples, chem. microanal., by X-ray microscopy near absorption edge with synchrotron radiation 8−20527
- holographic grating monochromator for 5 to 1000 eV synchrotron radiation 8−18049
- inelastic scatt. of X-rays and synchrotron radiation in crystals, review 8−39625
- light velocity meas., Marinov's expt. 8−32673
- modulation spectroscopy, in vacuum UV, with synchrotron radiation, review 8−4710
- monazite, giant halo inclusions, evidence against superheavy elements using synchrotron radiation excitation 8−40554
- monochromator using wavelength dispersion 8−296
- N-100 storage ring, vacuum ultraviolet-radiation extraction channels 8−5071
- NP 0532, Crab pulsar, model, X-ray, optical and radio emission 8−4265
- PETULA device, electron beam interaction, UHF radiation *(Russian)* 8−38532
- PKS 0735+178, flat spectrum radio source struct. 8−16549
- pulsars, incoherent synchrotron radiation model 8−40979
- quantum corrections, second order effects 8−1136
- quantum corrections to power spectrum 8−21362
- radio galaxies, radiation transfer, dynamics, stability and evolution of synchrotron plasmon, book 8−24564
- radiosources, nonuniform struct. effects on physical parameters 8−8138
- radiosources, superlight flux vars. in relativistically expanding sources, models 8−4377
- relativistic charged particle in arbitrary EM field, radiation, accel. 8−42269
- relativistic electrons, emission harmonics, inhomogeneous line broadening 8−25782
- Sagittarius A region, 8.2 mm obs. 8−28794
- soft X-ray synchrotron radiation focusing using toroidal mirror 8−45760
- sources and utilisation, review 8−41390
- spectral chart of radiation from circular accelerator 8−46498
- spectroscopy appls. in VUV and X-ray regions, lecture 8−24870
- supernova explosions, relativistic electrons accel. 8−28710
- undulator emission from 'Pakhra' synchrotron *(Russian)* 8−5409
- vacuum UV radiation scales, plasma blackbody lines and synchrotron radiation 8−1309
- VEGA device, electron beam interaction, UHF radiation *(Russian)* 8−38532
- wavelength dispersion system normal incidence monochromator 8−296
- X-ray energy-dispersive diffractometry using synchrotron radiation 8−18487
- X-ray source for struct. determ. of biopolymers 8−47210
- Be, neutron focus in synchrotron radiation *(Russian)* 8−33344
- CO_2, partial photoionisation cross-sections, branching ratios, synchrotron radiation meas. 8−42141
- Kr, $^3P_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8−33454
- Xe, $^3P_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8−33454
- Xe, 5s electron photoionisation cross section with synchrotron radiation 8−5180

synchrotrons
- *see also cosmotrons*
- beam depolarisation in magnetic field 8−33336
- bevatron, intercomparison of high-energy accelerator field dosimetry 8−25331
- CERN 400 GeV superproton synchrotron, facility description 8−37471
- electron, synchrotron orbit radiation characts. in visible spectrum, rel. to use as radiometric standard 8−9008
- electron produced synchrotron radiation spectrum, high energy struct. from $^{12}C(\gamma,\gamma)$ scatt. 8−13062
- electron synchrotron storage ring RF power supply *(German)* 8−17453
- KEK, harmonic current AC filters 8−33333
- MWPC instrumentation for CERN SPS secondary beams 8−46206
- neutrino, beam channel characts., Protvino Inst. 8−37474
- neutrino beam focusing system, Protvino Inst. 8−37477
- passive filter for annular electromagnet 8−5074
- proton, CERN, online function generation optimisation 8−834
- proton, Rutherford, pulsed neutron facility 8−29208
- proton beam, 70 GeV, channel, shaping system, for Protvino Inst. neutrino expts. 8−37476
- proton beam 70 GeV, for Protvino Inst. neutrino expts., characts. 8−37475
- proton synchrotron slow extraction beam parameter monitoring and control system in CAMAC standard online with ES 1010 computer 8−29674
- protons in synchrotron, beam parameter diagnostics via IR undulator emission *(Russian)* 8−836
- relativistic electrons, emission harmonics, inhomogeneous line broadening 8−25782
- Sirius, shaping of highly stable flat top in excitation current pulse of electromagnet 8−5075
- synchrophasotron, acceleration of laser-injector-generated C nuclei 8−29675

synchrotrons continued
tevatron, Fermilab proton accelerator with supercond. mag. ring 8−835
Tomsk synchrotron, system of tagged photons 8−833
vacuum feedthrough, bakeable, with 22 pins, for monitor system of proton synchrotron 8−21798
ZGS polarised proton beam splitting 8−13366
synoptic climatology *see climatology*
synthetic rubber *see rubber*
system documentation *see program and system documentation*
system theory
see also artificial intelligence; identification; information theory; modelling; pattern recognition; simulation
biological systems and systems theory *(Japanese)* 8−24018
Fabry-Perot interferometer response to AM light beams 8−16836
incoherent electro-optical meas. systems with arbitrary stops and misfocusing *(German)* 8−1366
instability of evolving systems, elastic stability theory and catastrophe theory approaches 8−44442
measurement dynamics rel. to system and information theory 8−8377
visibility reduction by aerosols, visual acuity theory appl. 8−11997
volume-conductor fields of isolated axon, linear filtering problem 8−3463
systems analysis
see also program and system documentation
conversion from two to three functional modes of logical address space 8−36981
neurotransmitter dynamic balance, systems and control theoretic anal. 8−44495
systems design *see systems analysis*
systems engineering
see also systems analysis
transmission system design, influence of optical component baseband frequency response 8−1415
systems programming *see systems analysis*
Szilard-Chalmers reactions *see radiochemistry*
T invariance
colour gauge theory of strong interactions, P and T invariance 8−37153
SU(3)×U(1) gauge models, exam. of weak currents and associated features 8−16975
β-decay, time reversal invariance and second class weak currents, review 8−37309
$e^+e^-\rightarrow F\bar{F}$, with polarised particles, weak asymmetries, unified gauge theory anal. 8−8636
Λ, polarised, β decay, ang. correl. parameters meas. 8−25044
NN scatt. formalism 8−21463
ν oscillation, CP or T violation effects 8−21349
pp elastic scatt., 6 GeV/c, polarisation anal. 8−41568
$\Sigma^\pm\rightarrow\Lambda e\nu$, transverse polarisation anal. 8−45919
^{57}Fe, γ-ray emission, test of time reversal invariance 8−29421
^{3}He(p(polarised),p)^{3}He, nuclear force and T-violation effects 8−4797
Ta *see tantalum*
tables (data) *see collections of physical data*
tachometers
see also angular velocity measurement
gyrotachometer, error autocompensation at angle vibr. of base *(Russian)* 8−16782
optoelectronic revolution counter for X-ray tube anodes *(German)* 8−12678
tachyons
bi-metric gravitation theories, kinematical consequences of causal tachyons 8−21038
causality, problems in theory of tachyons 8−28945
charged, detect., theory, rel. to general relativity 8−41614
dual string theory, lattice approach, tachyon problem exhibited 8−4840
existence of quarks, monopoles, tachyons, etc., review of expts. 8−12872
extended relativity, absorpt. of tachyons 8−32672
kinematics for scatt. of spacelike momentum 8−12559
light-like motions of particles in gravitational fields 8−4480
monopoles and massive photons 8−20986
scalar waves in Schwarzschild space-time 8−45558
Schwarzschild metric and tachyon production inside horizon 8−36635
spinning tachyons as particle constituents, free spinning point particle theory 8−41155
superluminal and subluminal causal transformations through transformations of metrics 8−28943
tachyon dust universe 8−24583
Yang-Mills coloured theory, string like phase 8−32990
Yang-Mills theory, tachyon bound state and vac. instability 8−29244
tackiness *see adhesion*
TADMR *see microwave-optical double resonance*
tandem accelerators *see particle accelerators*
tantalum
see also nuclei with ......
adsorption of CO(CO$_2$), FEM and flash filament method exam. 8−43245
adsorption of Cs, direct meas. of adsorpt. isobars 8−43235
adsorption of O$_2$, FEM obs. of work function changes 8−26771
anodic oxidation, open-cct. transient method for overpotential anal. 8−27776
atom, α-particle impact K-shell ionisation, 40 to 110 MeV 8−17752
atom, K X-ray energy, excitation mode depend. 8−17597
atom, K X-ray energy, excitation mode depend. 8−17598
atom, magnetic hyperfine struct. 8−934
coating of mild steel by CVD 8−15594
corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
determination, in Mg alloy, emission spectrographic DC arc-powder technique 8−48713
diffusion and surface distrib. of N, probed by (p,γ) resonance broadening method 8−38918
diffusion of H$_2$ *(Japanese)* 8−10221
diffusion of H and D at high conc. 8−26731
electrical resistance temp. depend. in solid and liq. states, 2200-4200K 8−10415
tantalum continued
electrical resistivity, 4.5-300K, singularities found *(Russian)* 8−26842
electromigration of H, temp. depend. of mobility, 20-250°C *(Russian)* 8−47587
electron-phonon interaction, calc. using APW band struct. calcs. and measured phonon spectra 8−14869
film, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
film, anodisation voltage relationship to oxide thickness *(German)* 8−11443
film, vacuum-deposited, gas adsorpt. effects on photoelec. props. 8−15298
film on Corning glass, N and O content nondestructive determ. *(German)* 8−43272
flow stress at superconducting transition, temp. and strain rate depend. 8−2617
flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
gamma-ray attenuation meas. using Ge(Li) detector 8−17539
heat capacity, 10^8-10^9 K s^{-1} pulsed heating, (2-4)×10^3K 8−14473
internal friction and elastic constants, reson. vibrs. of metal spheres 8−15443
ion, electron cyclotron resonance source *(French)* 8−29680
ion implantation effect on corrosion behaviour of pure Fe 8−31559
ion irradiated, ordered void arrays 8−34553
lattice distortion and migration energy of H impurities 8−30796
liquid, thermophysical measurements, up to 7500K 8−43136
melt, thermal expn., 1146-2288K 8−43148
muon$^+$ spin resonance, diffusion, temp. depend. 8−39490
muon diffusion, μ^+SR meas. 8−39487
oxidation comparison with O$_2$ adsorption, SIMS 8−15273
oxidation in O$_2$-N$_2$ and O$_2$-inert gas mixtures 8−3255
photoelectric cross section, total to K-shell ratios 8−5188
photoelectric cross sections of low energy photons 8−46309
photoelectric cross-section at K-edge measurements 8−2983
photofield emission spectroscopy of band struct. 8−35261
pionic atom, quadrupole hyperfine interactions, nucl. moment 8−37772
polycrystalline, trace diffusion of nuclear reaction products, lanthanides 8−22896
purification from Nb during precipitation from gaseous phase, during H$_2$ reduction of NbCl$_5$ and TaCl$_5$ *(Russian)* 8−44017
range and range straggling of heavy radioactive ions 8−22776
secondary electron emission coeffs. for multiply charged ion bombard. 8−11051
sintering with transition metal additions 8−15335
slip, between 0.7 and 40K 8−19808
sputtered layer, thermal oxidation, reaction kinetics 8−39959
superconducting intermediate state, mag. props. and N-S surface energy 8−2633
surface, interaction with F$_2$ and fluorides at low temp. and high press. 8−39700
surface (110), electron-stimulated desorpt. of O 8−2363
surface (111), 100 eV electron bombardment adsorbed mol. luminesc., coherent bremsstrahlung *(Russian)* 8−31290
surface (112), oxidised, emission and work function, K adsorption effects 8−11060
surface layers, Mossbauer conversion electron studies 8−15068
thermal conductivity, 0.3-20K, temp. and impurities effects 8−14883
vacancy annealing stage after heavy ion implantation, Mossbauer meas. 8−39463
GaP:Ta, donor centre struct. and conduction band nonparabolicity 8−14695
Ta, photo field emission characteristics, band struct. influence 8−27373
Ta XLVI(XLVII), 3d^k-3d^{k-1}npnf transitions in laser plasma 8−9108
Ta-D, dil. soln., high temp. thermodynamics 8−43128
Ta-H, dil. soln., high temp. thermodynamics 8−43128
Ta-H, incoherent spinodals, meas. by Gorsky effect 8−19712
Ta-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
Ta-O, dil. soln., high temp. thermodynamics 8−43128
Ta+F$_2$ reaction, modulated molecular beam mass spectrometry 8−15678
TaD$_{0.06}$, D diffusion, 6.2 keV Mossbauer reson. of ^{181}Ta 8−39472
ZrB$_2$-Ta composite, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649

tantalum alloys
see also tantalum compounds
Co-Cr-Ni-W-TaC (15.7, 9.5, 3, 12.77 wt.%) alloy Co50B3W, temperature cycling effect on rupture strength 8−39898
Co-Cr-Nr-TaC eutectic alloys, fatigue, microstructure effects 8−23803
Co-Ni-Cr-Ta-C (10, 10, 14, 1 wt.%), aligned eutectic, directionally solidified, fatigue crack propag. 8−27624
Cu-Ta metastable alloy form. by ion implantation, combined TEM and ion channelling obs. 8−34530
Fe-Ta alloy, mech. drawn and aged, exam. of electrical resistivity, hardness, microstruct., and mag. props. *(Japanese)* 8−48545
Nb-Ta (20.at.%), optical props., 0.1-25 eV, band models 8−10892
Nb-Ta-O solid soln., thermodynamic props. 8−31386
Nb$_{80}$Ta$_{20}$, supercond., phonon cond. below 1k 8−14881
Ni-Ta, dil., crit. behaviour, ^{181}Ta PAC expt. 8−43723
Ni-Ta, dil., crit. behaviour of local magnetization, PAC and magnetisation meas. 8−48098
TABe$_{12}$, by diffusion saturation in vacuum, resistance to heat 8−44259
Ta-D, dil. soln., high temp. thermodynamics 8−43128
Ta-Fe, X-ray emission spectra study of electron struct. of Laves phases *(Russian)* 8−23555
Ta-H, dil. soln., high temp. thermodynamics 8−43128
Ta-H, incoherent spinodals, meas. by Gorsky effect 8−19712
Ta-H, spinodals and diffusion coefficients of H, sample shape depend. 8−19713
Ta-H alloy, high conc., Huang diffuse X-ray scatt. from lattice strains 8−38746
Ta-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
Ta-Ni film, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
Ta-O, dil. soln., high temp. thermodynamics 8−43128
Ta-T(D), diffusion and resistivity at low temps. 8−14511
Ta-W optical props., temp. depend., 4.2-1100K 8−2874

tantalum alloys continued
  Ta-W TV-10 alloy, thermal expn., 1146-2288K 8−43148
  Ta(C,N)-Ni-HfC(HfN)(Mo$_2$C)(VC), sintering, prod. of hard metals 8−11155
  TaC-NiC, powder for plasma arc spray coating appl. 8−15591
  TaD$_{0.06}$, D diffusion, 6.2 keV Mossbauer reson. of ^{181}Ta 8−39472
  V-Nb-Ta, supercond., elec. resist. and electron-phonon interaction parameters 8−14862
  V$_2$Ta, NMR meas., mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359
  W-C-Ta, vacuum melted, phase composition, struct. and props. 8−31403
  WC-Co-Ta, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
  WC-Co-Ta-Ti-Nb, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
  WC-TiC-TaC, powder for plasma arc spray coating appl. 8−15591
tantalum compounds
  see also tantalum alloys
  carbides, changes in phase structure during prolonged heating in vacuum 8−44095
  dichalcogenide, domain-like incommensurate CDW states and first order incommensurate-commensurate transition 8−26824
  1T-TaS$_2$, nearly commensurate phase, harmonics effect on phase transitions 8−14462
  Bi$_2$O$_3$-Ta$_2$O$_5$, sintered, high oxide ion cond. meas. 8−14503
  CeTaO$_{4+x}$, oxidation-reduction reactions, phase equilibrium, thermogravimetry and magnetic susceptibility meas. 8−39930
  Cr$_{8-x}$Ta$_{3+x}$Si$_8$, cryst. struct. *(French)* 8−38675
  Eu$_2$O$_3$-Y$_2$O$_3$-Ta$_2$O$_5$, struct., phase form., luminesc. and X-ray diffr., obs. *(Russian)* 8−6765
  H$_x$TaS$_2$, nonstoichiometric, incoherent neutron spectra, X-ray diffr. 8−42998
  Hf$_x$Ta$_{1-x}$C$_y$ solid solns., mag. susceptibility, 20-1300K *(Russian)* 8−39287
  SnTaS$_2$ intercalate, cryst. struct. determ. 8−26534
  Ta-D system, thermodynamic stability of Ta$_2$D, rel. to long-range order parameters *(Japanese)* 8−15376
  TaC CVD coating, on W-ThO$_2$ and SiC filaments, effect on high temp. mech. props. 8−15347
  TaC, thermal and electrical conductivity, 1500-3000K 8−43385
  TaCl$_5$, mol. struct., vibr. assignments, barries to pseudorotation 8−29858
  Ta$_2$Co$_4$O$_9$, flux growth and chem. characts. 8−23595
  Ta$_2$D, atomic displacements determ. by deuteron magnetic resonance *(Japanese)* 8−15035
  Ta$_3$Ge, superconducting transition temp. 8−47898
  ε-TaN, cryst. struct. determ. by neutron diffr. exam. 8−26522
  Ta$_2$N, sputtered layer, thermal oxidation, reaction kinetics 8−39959
  Ta$_2$O$_5$, anodised film, nonuniformities, optical props., spectrophotometric obs. 8−2933
  Ta$_2$O$_5$ doped systems, struct. and ordering, high resolution TEM obs. 8−35378
  Ta$_2$O$_5$, elec. props. as dielec. in Ta solid dielectric capacitor *(Spanish)* 8−19405
  Ta$_2$O$_5$, film form. by reactive HF sputtering with voltage bias 8−3045
  Ta(OR)$_2$Cl$_3$.L, halo-alkoxide complex, prep. and props. 8−18605
  TaS$_2$ (1T), domain-like incommensurate CDW states and first order incommensurate-commensurate transition 8−26824
  TaS$_2$ (2H), sp. ht. and resist. near CDW phase transitions 8−34786
  TaS$_2$ (2H) single crystal, specific heat meas. in mag. field, 0.3 to 3K, AC calorimetry technique 8−43516
  TaS$_2$ intercalates with alkali metals, prep., X-ray anal. and supercond. transition temp. 8−31007
  IT-TaS$_2$, layered cpd., anisotropic X-ray absorption 8−39629
  TaS$_2$, phase transformations and domain structures *(French)* 8−27509
  TaS$_2$, polytypes, charge density waves and superlattice effects, intercalation with hydrazine 8−39043
  TaS$_2$, TDPAC meas., CDW, structural and charge transfer effects 8−39468
  TaS$_2$, thermal expansion, lattice parameter meas. 8−18804
  TaS$_3$, electron diffr. evidence for one-dimens. Peierls distortion 8−10024
  TaS$_3$, Peierls transition *(Japanese)* 8−30880
  TaS$_2$(Se$_2$), intercalated with ethylenediamine, Raman spectra 8−48182
  TaS$_2$(1T)(2H), nucl. quadrupole interactions, high press. effects 8−35072
  TaSe$_2$ (2H), anisotropy in mag. susceptibility 8−43558
  TaSe$_2$ (2H), sp. ht. and resist. near CDW phase transitions 8−34786
  TaSe$_2$ (2H) and (1T), Raman spectroscopy of CDW state 8−35141
  1T-TaSe$_2$, CDW obs. by ^{181}Ta Mossbauer effect 8−39469
  TaSe$_2$, TaSe$_3$, comparison of elec. cond. 8−14715
  TaSe$_3$, superconducting transition *(Japanese)* 8−30880
  TiN-Nb(Ta)N, microcomposite film prod. for radio resistors 8−3052
  Ti$_{1-x}$Ta$_x$O$_2$, solid soln. formed in TiO$_2$-Ta$_2$O$_5$-Ta at 1100°C *(French)* 8−35375
  Tl$_3$TaSe$_4$, new SAW zero temp. cuts 8−2351
tantalum electrolytic capacitors *see electrolytic capacitors*
tape recorders
  see also magnetic recording
  4-channel cassette recorder for 24-hour epileptic patient EEG monitoring 8−3639
  ambulatory ECG monitoring problems 8−11763
  ECG cassette recording and automatic processing microprocessor system 8−36021
  EEG digital recording system for epileptic event observation 8−3641
  elements with large time constants *(Russian)* 8−187
  physiological 4-channel recording 8−24154
  stereo, sound track production for home cinefilm 8−16883
  tutored videotape instruction advantages for science and engineering courses 8−8194
  video, high-resolution for medical X-ray work 8−24120
Taylor instability *see flow instability*
t.d.m. *see time division multiplexing*
teaching
  see also demonstrations; education; student laboratory apparatus; training
  advanced energy systems, future needs and developments 8−8197
  advanced undergraduate physics laboratory, industrial research roleplaying 8−36755
teaching continued
  antiferromagnetic and ferromagnetic parallel susceptibilities, graphical illustration 8−41118
  atomic spectra, Rydberg-Schuster law 8−16591
  atomic spectral line breadth, conversion from freq. to wavelength widths 8−32632
  audio-visual systems, Hungarian developments, BEAG activities 8−46860
  Balmer wavelength calc. with hand calculator, student project 8−12512
  bicycle dynamics, nongyroscopic aspects, lab. demonstration 8−36769
  cells, electrochemical, photovoltaic phenomena and mechanisms 8−8198
  centrifugal buoyancy forces, particle in rotating fluid 8−12487
  CGS to SI conversion for electromagnetism 8−16592
  chemistry, first order kinetic data anal., optimisation method 8−12500
  chemistry, M-C-O deformation modes, no. and symmetry determ., group theoretical method 8−11
  chemistry curriculum, ion-ion, ion-dipole, dipole-dipole interactions 8−10
  classical Kepler problem in momentum space 8−36764
  classical mechanics, complementary Lagrange formalism 8−36745
  clock escapement mechanisms, mathematical theory 8−41108
  colour centres, absorption wavelength, finite-pot. well models 8−12463
  colour reproduction of surface texture, visual qualities 8−16881
  conservative motion in phase space *(Spanish)* 8−36785
  crystal optics, group vel. and energy density, monochromatic wave dispersion depend., for teaching 8−25792
  delocalisation, organic chemistry courses 8−4426
  developing countries, electromagnetism and telecommunication, course content 8−3
  differential operators, direct derivation in curvilinear coords. 8−12478
  diffraction of plane δ-function pulse at a half plane, boundary pulse effects 8−12460
  diffusion, random walk approx., theory of generating function and method of steepest descent 8−36744
  Doppler effect formula, acoustic, derivation on intuitive basis 8−24621
  Doppler effect in special relativity for teaching 8−24609
  Doppler-shifted photons, origin of increased energy explained by mechanics of source 8−28897
  double group theory, half-shell and two-level systems, rot. and half integral spin states 8−45447
  dry friction problems, graphical soln. for teaching 8−12511
  dynamics, laws of, teaching in Soviet schools *(Hungarian)* 8−9
  Einstein's relativity paper (1905) and the electromagnetic world picture 8−16616
  electric energy density in dissipative medium by cct. analogue 8−36759
  electrical circuit geometrical representation 8−12513
  electrochemical electron transfer at electrodes in soln., review, in book, for teaching 8−8203
  electrochemical oscillations, of voltage and current, spontaneous, maths. anal. of mechanisms, in book, for teaching 8−8201
  electrochemical species-selective sensor, use of semi-permeable membranes, in book, for teachers 8−8200
  electrochemistry, special topics, undergraduate level teaching, book 8−8196
  electrode processes possessing charge transfer mechanism, overvoltage theory, in book, for teachers 8−8204
  electrode systems, nonequilib. polaris. states props. overvoltage theory, in book, for teachers 8−8205
  electromagnetic theory, Hertz vector potentials, instructional appls. 8−12490
  electromagnetism, to undergraduates, showing practical appls. 8−20922
  electron relax. time in metals, waiting time paradox 8−36771
  electrostatic problems with simple dielectric boundary, solution method 8−12458
  elemental evolution and isotopic composition, teaching 8−41128
  elementary particle weak interactions, resource letter, WI-1 8−16601
  EM field theory, moment methods, for undergraduates 8−28886
  EM fields, multipole expansions, using Debye potentials 8−41116
  EMF, potential difference and voltage, definitions 8−12469
  Fermat principle, tutorial for physics teachers *(Hungarian)* 8−36775
  finite rigid-body rotations, kinematics 8−12482
  Fizeau effect, theory, expt., and Zeeman meas., for teaching 8−24597
  Franklin, Benjamin, exptl. philosopher, theory of electricity, for teaching 8−24630
  free-electron gas, n-dimens., specific heat and density of states 8−12466
  Friedmann cosmology luminosity distance eqn. 8−6
  Friedmann models, views of the evolving Universe 8−24598
  Friedmann universe, closed, black-body spectrum evolution 8−24599
  fuel saving by thermostat setback 8−24626
  Fues potential, vibr.-rot. spectra, Schrodinger eqn. soln., pot. energy curves *(Spanish)* 8−36784
  gas, relativistic energy and momentum transformation 8−24618
  gas transport processes, alternative approach to kinetic theory 8−28890
  general relativity, two-, three-dimens. space times 8−5
  general relativity, uniformly accelerated reference frame 8−36747
  geometrical optics, handling of spherical mirrors and lenses *(Hungarian)* 8−12449
  glass tube cutter, hot wire technique 8−20925
  gravitation, Newton's law, deductive and inductive nature 8−24617
  group theory, from common objects to mols. 8−32631
  gyroscope, reaction to impulsive torque, description for teaching 8−24604
  gyroscope motion, elementary discussion 8−16605
  heat conduction, generalised eqn., parabolic or hyperbolic soln. 8−36746
  HMO calculations, minicourse in HMO theory using small computers 8−25444
  Hooke's law oscillator, ideal, anharmonic vibrs. 8−36743
  industrial internship programme in nuclear engineering education 8−4432
  interference fringes, formation and optimisation 8−36766
  Kepler's third law, mean radius calcs. 8−24612
  Kepler orbit, from initial conditions via Lenz vector 8−16602
  laser oscillator bandwidth, role of spontaneous emission 8−41114
  lens aperture, rel. to depth of focus, appl. to reading with relaxed eye 8−12489

teaching continued
lens object-image relations 8−36780
light polarisation on reflection 8−24616
light propagation tutorial *(Hungarian)* 8−36774
linear regression, least-squares eqns. derivation, appl. to g determ. 8−45450
Lippman-Schwinger equation, soln. for n delta-shell pots. 8−41112
logarithms! and estimation 8−36748
longitudinal standing wave in gas, press. var. 8−12514
Lorentz transformation, derivation in acoustic and ballistic situations 8−24623
Lorentz transformation, kinematic consistency 8−24608
Lorentz transformation, vector formulation, as student introduction to special relativity *(Italian)* 8−12447
Lorentz transformation and causality condition 8−7
Mathematical Association of America, activities relevant for physicists 8−41107
measurement theory, for student physics labs., university level 8−24601
mechanics, non-isochronous small oscills. 8−36749
medical diagnostics, xeroradiography 8−45449
metallic glasses, phase transition and mech., elec. and mag. props. 8−36765
molecular orbitals, localised and delocalised for polyatomic mols., undergraduate course 8−32630
molecular orbitals calcs., back-of-the-envelope type 8−16593
momentum distributions, in at., nucl. and proton struct. 8−24596
momentum operator in nonCartesian coords. 8−24620
nerves, electrochem. theory, steady and transient pots., in book, for teaching 8−8202
Newtonian mechanics, estimates of human body mechanical performance 8−40211
noise formulae, elec. derivation, using Campbell's theorem 8−24602
nuclear engineering, teaching laboratory for expansion of student knowledge horizons 8−4445
nuclear engineering, teaching project management as part of international technology transfer 8−4428
nuclear engineering laboratory, computer modules for calculation of prompt-neutron generation time 8−4447
nuclear engineering teaching laboratory, development at Ecole Polytechnique 8−4444
nuclear fuel management analysis core, computer code for teaching assistance 8−4449
nuclear instrumentation, computer-based data acquisition system for multi-station teaching laboratory 8−4446
nuclear laboratory course at Purdue University 8−4443
nuclear reactor development, secrecy and simultaneous discovery, 1938-45 8−12523
nucleon-nucleon hard-core systems, bound states and scatt. 8−41115
perturbation theory, stationary state function ambiguity, resolution, for teaching 8−24603
photon interference, quantum field theoretic description using QED methods 8−12464
physics, undergraduate students teaching eighth grade classes 8−12446
plasma physics, low-cost advanced undergraduate lab. expt. 8−12456
polar gas, polarisation by external and internal elec. fields 8−12459
potential scatt., classical and quantum transport theories 8−16603
primary cell systems without liq. junction, use of central connectors 8−8199
principles of equivalence 8−12455
probability in submicroscopic processes, dice games illustrating reactor neutron flux and radioactivity 8−12515
projectile range formula for above ground level launch 8−8190
quantum measurements, interactive computer program, for teaching 8−41113
quantum mechanics, Feynman path integrals, classical limit 8−12476
quantum mechanics *(Hungarian)* 8−36753
quantum mechanics and perturbation theory, perturbed harmonic oscillator *(Spanish)* 8−36786
radiation health physics, graduate educational program to prepare science majors for career 8−4427
relative velocity problems concerned with boating 8−12510
relativistic line of charge over ideal conductor, net force 8−36762
relativistic torque, comment on 'right-angle lever paradox' 8−36750
relativistic vector formulation, of electric and mag. fields *(Italian)* 8−12448
relativity, appearance of objects moving at relativistic speeds, computer programs 8−12484
relativity, Einstein's 1907 essay, discussion 8−12454
resonance Raman spectroscopy 8−4425
Riemann curvature tensor and closed geodesic paths, for teachers 8−24600
satellite motion in vicinity of triangular libration points 8−12488
Schrodinger equation, numerical integration, using WKB approx., eigenvalue estimates 8−12486
Schrodinger equation and the accel.-gravity equivalence principle, for teaching 8−24614
science and technology, philosophy of new methods, special reference to biomedical engineering 8−28883
second quantisation, in weak external EM field, as one-particle problem 8−12462
SI units, classification 8−36962
soft spring, dynamic behaviour, mathematical anal. 8−12491
solar eclipse demonstration *(Hungarian)* 8−36773
solar physics, simple approx. model 8−36756
special relativity, mass velocity dependence without momentum principle 8−24613
statistical mechanics, information-theoretic, system in contact with heat reservoir 8−36770
statistics, choice of mean 8−16604
stellar aberration and the Kepler problem hodograph 8−24622
telecommunication, at university, of Rio de Janeiro, course structure 8−2
temperature concept without zeroth law 8−24607
thermodynamics, 1st law, axiomatic vs. conventional formulation 8−24619
thermodynamics, air conditioners, second law efficiency, energy efficiency ratio and performance coeff. 8−36742
thermodynamics, Caratheodory's integrating factor choice 8−41110
time dependent Hamiltonian, scale gauge transforms., adiabatic approx. principle, suitability for teaching 8−45506

teaching continued
torque and Newton's third law 8−12517
trapped species in host lattice 8−16594
TV appl. in colleges, closed-circuit system preparation and installation *(German)* 8−12521
TV instruction by satellite, India, reception systems, overall appraisal 8−8185
two-body problem, orbits from Lenz vector 8−36763
underdeveloped countries, electromagnetism, telecommunications, factors against learning 8−4
unimolecular gas reactions, Lindemann theory 8−27753
velocity of string pulse, derivation without calculus 8−24610
wave packets, time dependent elastic scatt. in one dimens. 8−12461
wave-packet, position probability, classical and quantum spreading, for teaching 8−24606
waveguide, quantisation of radiant energy 8−36757
^{11}B, NMR, for senior level inorganic courses 8−4424
He, ^{1}S ground state, variational perturbation calc., teaching 8−41129
He, Schrodinger eqn. solns., existence criterion 8−41117
LiH, lattice energy calc. 8−16595
S-S bond chirality, biomolecule struct. and activity depend., review 8−27889

teaching approaches to particular topics *see teaching*

teaching demonstrations *see demonstrations*

teaching machines *see computer-aided instruction*

technetium
see also nuclei with
HCP, elec. field gradient 8−14698
red giant stars, Tc I absorpt. lines obs. 8−28689
in T Cephei, Me variable star, Tc I lines obs. 8−32483
Tc:^{51}Fe, dilute, quadrupole splitting and isomer shift, Mossbauer spectrum 8−48096
^{99}Tc sorption on USA subsoils from differing weathering intensity areas 8−16014
^{99m}Tc, production from ^{99}Mo 8−37353
^{99m}Tc, supercond. effect on decay rate, lattice consts., transition temp. 8−41671

technetium alloys
see also technetium compounds
No entries

technetium compounds
see also technetium alloys
$Tc_2Cl_8^{3-}$ ion, visible spectra, electronic struct. 8−5240
TcF_6, heat capacity, entropy Gibbs energy, 2.23-350K 8−38852
^{99m}Tc radiopharmaceuticals, rapid miniaturised chromatographic quality control procedures 8−28070

technical information centres *see information services*

technical presentation
technical meetings, visual and oral presentations, preparatory tech. for technicians 8−8215

technicians *see personnel*

technological forecasting
see also research and development management
optical fibre transmission, American view *(German)* 8−33845
space research programmes *(Japanese)* 8−24418

tectonics
abyssal fractures rel. to tectonics *(Russian)* 8−3731
W.Africa, Archaean supracrustal relics zonation rel. to tectonic settings 8−44815
W.Africa, kimberlites and plate tectonics 8−11868
aftershocks of Canal de las Ballenas, Gulf of California, earthquake, rel. to plate tectonics 8−20363
Albian open seaway between northern and southern proto-Atlantic 8−40538
central Aleutians, double Benioff zone and lithosphere unbending 8−32047
Alpine geology, resoln. of fundamental questions *(French)* 8−24281
Alps, shearing subductions mechanisms *(French)* 8−20376
Ancona region, Italy, seismo-tectonic considerations *(Italian)* 8−40492
Andean Wadati-Benioff zone morphology, andesitic volcanism, Nazca plate tectonic features 8−32039
andesitic island arcs of SW.Pacific, peralkaline rhyolites origin rel. to tectonics 8−32043
Appalachian fold belt, palaeomagnetism of Middle Ordovician volcanic rocks from Quebec 8−15965
Arabian Shield, ophiolite belts and island arc collisions 8−20421
Arizona, palaeomag. poles, polarity zonation and polar wandering from Cambrian and Devonian strata 8−28156
E. and SE.Asia, evolution of marginal basins and adjacent shelves 8−32055
asthenosphere, thermal stability or instability of shear flow 8−20370
Atlantic Ocean palaeobathymetry from Jurassic to present 8−20387
Baffin Bay continential margin and Lancaster Sound, seismic refr. meas., continental/oceanic crust boundary determ. 8−20368
Baie d'Audierne (Brittany) basic-ultrabasic complex, age and tectonic implications 8−11852
Baikal rift zone, fault evolution 8−36132
Baikal rift zone, recent crustal movements, precise levelling data 8−36139
Baikal rift zone, seismotectonics 8−36134
banded deformation structures description and origin, regional strain, local perturbs. 8−7629
British Columbia, mag. anomalies and magnetizations, rel. to subduction 8−11796
SE.Bulgaria, Upper Cretaceous resedimentation phenomena rel. to tectonics 8−36160
S California, tectonic process numerical simulation 8−11860
Canadian Cordillera, Mesozoic-Tertiary basin models, geological constraints 8−28232
Canadian Pacific margin, subduction zone 8−40530
Carpathians, recent vertical crustal movements, geoid residual local undulation *(Russian)* 8−15987
Charleston-Summerville area of South Carolina, Geological and geophysical studies of seismicity 8−11837
Chile, Quaternary tectonics 8−44980
SW.China, tectonic evolution 8−32054
circum Pacific mountain belts from continental collisons, lost Pacifica continent hypothesis 8−11863

tectonics continued
- Connemara Antiform, tectonic evolution from palaeomag. data 8−36093
- continental growth and emergence timing 8−11867
- continental margins, stress state 8−3742
- continental movements and rotation determ. using astronomical methods *(French)* 8−40529
- continental shear zones, geological aspects of deform. 8−3768
- continents, secular changes in marine inundation of USSR and N.America during Phanerozoic 8−3735
- convergent plate margins, volcanic activity rel. to great earthquakes 8−7588
- Cordilleran Benioff zones 8−11866
- creep in geodynamic processes 8−3744
- Crimea, crustal tectonic stresses rel. to weak earthquake foci *(Russian)* 8−11862
- Crimea, seismic processes rel. to tectonics *(Russian)* 8−3721
- crustal movements observation for earthquake prediction *(Japanese)* 8−28180
- crustal rifting and subduction causes, appl. to Atlantic margin of Brazil 8−3743
- crustal structure formation using plate tectonics and rotation hypothesis *(Russian)* 8−15986
- crustal structures formation, mechanical modelling rel. to interpretation of regional gravity anomalies *(Russian)* 8−49154
- crustal subduction, P.J. Holmquist theories 8−20379
- Dinarides, tectonic framework and evolution 8−32053
- discrete islands formation in linear island chains due to discrete mantle plumes 8−44796
- dolomite, stacking faults obs. 8−3761
- DSDP abyssal igneous cores, remanent mag. inclinations, postemplacement tectonic effects 8−28161
- dunite complex, S.Shetland Islands, deform., serpentinisation and emplacement rel. to fracture zone tectonics 8−44814
- earthquake fracture energy for shallow events as tectonic indicator 8−20358
- earthquakes maximum magnitude prediction, geotectonic method and appl. to N.Italy area 8−40493
- East Pacific Rise at 21°N, hydrothermal activity and crestal struct. 8−28216
- Echzell/Wetterau, earthquake, 1975 November 4, seismotectonics 8−40512
- N Egypt, shear zones from gravity data 8−28208
- energy and mineral resources rel. to plate tectonic research 8−7606
- Eolian Islands, S. Thyrrenian Sea, basement structural trends from aeromagnetic and gravimetric data 8−40519
- Ethiopian rift valley, present day strain rates 8−32051
- expansion of Earth or new global tectonics, comparison *(Russian)* 8−28211
- Farallon Escarpment vicinity, seismicity and tectonics 8−32018
- fault creep events, empirical law 8−3745
- fault gouge, structural changes during stable sliding and stick-slip 8−32079
- fault gouge composition effect on frictional sliding stability 8−3759
- faults, local gravit. field effects on cloudiness distrib. 8−32136
- folding in simple shear, expt. anal. 8−32077
- French Western Alps, internal mineralogy, petrology rel. to Alpine metamorphism and tectonics 8−36157
- Fruili area, seismic activity rel. to neotectonic movements 8−24229
- geological sciences, evolution rel. to plate tectonics 8−7605
- Georgia Inner Piedmont, hornblende and biotite ^{40}Ar/^{39}Ar ages, rel. to tectonothermal history 8−48990
- global heat flow map and flow pattern, plate tectonics interpretation 8−7603
- Gondwana Palaeozoic apparent polar wander path 8−36094
- Gondwanaland break up, revised model *(German)* 8−44797
- Great Slave Lake, Canada, early history and tectonics of East Arm graben 8−49017
- Greece, lithospheric model for earthquake interp. 8−3726
- Guacanayabo Bay, Cuba, tectonic processes rel. to Holocene sedimentation 8−3752
- Gulf of Aden, mag. survey, seafloor spreading phases determ. 8−32049
- Gulf of Oman, fold development 8−15984
- heat flow and tidal drag as driving forces of plate tectonics 8−32050
- S Hemisphere, plate to tectonics rel. to circum-Antarctic Ocean and Antarctic glaciation 8−16063
- Hercynian Front in Ireland, probably local feature 8−32035
- Himalayan mountain front NW termination, active tectonics from microearthquakes 8−40505
- Himalayas, seismicity, earthquake mechanisms and tectonics 8−40514
- Himalayas, seismotectonics, continental plate convergence 8−7593
- Hindu Kush, tectonic lineaments from ERTS imageries 8−3739
- Iceland, tectonic spreading, problems and mechanism 8−36137
- India, northward motion since Late Cretaceous, palaeolatitudes 8−28209
- NE.India, seismicity and focal mechanisms rel. to faults and tectonics 8−24221
- India, seismotectonics 8−44782
- Iranian Makran, Recent faulting episode 8−32038
- isostatic compensation on continental scale, local and regional mechanisms 8−11859
- NE.Italy, surface geology rel. to seismically active tectonic structures 8−24286
- Jamaica, Late Cretaceous and Miocene igneous rocks, palaeomag. rel. to tectonics 8−20352
- James Bay gravity survey rel. to Kapuskasing Gneiss Belt, Ontario 8−48959
- SW.Japan, major earthquake focal mechanisms rel. to tectonics 8−11827
- Japan, subduction tectonics rel. to geology 8−20377
- Karakorum, tectonic lineaments from ERTS imageries 8−3739
- King's Trough, NE.Atlantic Ocean, struct. from bathymetric, seismic and gravity data 8−49005
- Labrador Sea and North Atlantic evolution 8−28210
- Lake Biwa, Japan, secular gravity change meas. rel. to vertical crustal movement 8−40463
- Lake Van tectonic activity and sedimentation study *(German)* 8−3843
- land subsidence in England and Wales, implications of Flandrian sea level changes in Thames Estuary 8−24304
- Late Quaternary uplift in New Hebrides, U series ages 8−3741

tectonics continued
- Laxfordian deformation in Carloway area, Isle of Lewis, Scotland 8−7638
- lithospheric plates driving force, induced suction phenomenon 8−40534
- major continental blocks, drift since Devonian 8−11864
- mantle convection shaping by tidal bulge, rel. to global tectonics 8−32048
- marginal basins, diffuse magnetic anomalies and their tectonic and petrologic significance 8−32064
- Maubisse Formation, East Timor, palaeomag., tectonic implications 8−3716
- E.Mediterranean Sea, tectonic elements and crustal struct. 8−44801
- Mid Atlantic Ridge and Kurchatov Fracture Zone, sonar obs. 8−28214
- mineral exploration and plate tectonics 8−7607
- Minnesota, crustal struct. and seismicity, rel. to historic earthquakes 8−11840
- mylonites from Grenville Front Tectonic Zone, Ontario, distortional strain estimation 8−7628
- Narmada-Son lineament, extension towards Murray Ridge 8−15985
- Nazca plate off S. Peru, crustal model from ocean bottom seismometer obs. 8−32032
- Nelson River gravity anomaly, SE.Saskatchewan, seismic survey 8−28153
- Nemaha Uplift in Oklahoma, Kansas and Nebraska, geological survey of seismicity and tectonic rels. 8−7589
- New Guinea-Solomon Islands region, seismicity maps 8−7592
- New Hebrides, Quaternary volcanism geochemistry and origin rel. to tectonics 8−20375
- New Zealand, present tectonics and Late Cenozoic evolution 8−20378
- New Zealand plate boundary distortion *(German)* 8−20382
- Newfoundland Basin, Mesozoic evolution 8−32045
- oceanic circulation with partial shallow return flow rel. to oceanic plates 8−40520
- oceanic crust, tectonics rel. to time scales and dynamic models of deep-sea sedimentation 8−15988
- Ondrejov laser satellite-tracking station, regional tectonics and seismicity 8−36418
- Onverwacht Group, Transvaal, sedimentology rel. to early Earth tectonics 8−44812
- Pacific Margin, Vancouver Island and adjacent regions, tectonic-stratigraphic evolution 8−20399
- Pacific plate motions rel. to N Pacific basalts mag. props. 8−40543
- E.Pacific Rise, equatorial, regional shape and tectonics 8−44800
- E.Pacific Rise near 3°25′S, structural geomorphology of fast-spreading rise crest 8−44799
- Palaeozoic igneous rocks, Welsh Borderlands, palaeomag. survey rel. tectonic rot. of Britain 8−48961
- Pamir, tectonic lineaments from ERTS imageries 8−3739
- Peru-Chile Trench, faulting rates and angles 8−36138
- Philippine Sea plate instantaneous rotation vector rel. to Eurasian plate 8−7608
- Philippine Sea-Eurasian plate boundary, crustal deformation in S.Kanto, Japan 8−40533
- plate deformation, dislocation differential geom. in 2D space 8−22719
- plate motion rel. to large energy release from earthquakes 8−28186
- plate tectonics, Earth crust evolution rel. to prebiotic chemical evolution 8−40666
- pseudofaults and plate tectonics, propagating rift model 8−32046
- Puerto Rico Trench origin and gravity anomalies 8−11861
- ridge migration and asymmetric sea floor spreading 8−11858
- rifts at high angles to orogenic belts, origin, Upper Rhine Graben example 8−48989
- rock folding under confining pressure, anal. of faulted drape-folds 8−7626
- rock sheet, Dent-Blanche, stressing subductions and Eocene flexure *(French)* 8−24282
- rocks, inclined asymm. upward-moving gravity structs. 8−7637
- Romanche fracture zone, equatorial Atlantic, Neogene crustal emersion and subsidence 8−11857
- Rumania, lithospheric microplates rel. to regional gravity anomalies *(Rumanian)* 8−20380
- San Andreas fault, continuous strain meas. during and preceding episodic creep 8−36127
- San Andreas fault, Rn emanation vars. meas. 8−32022
- Sardinia, late Palaeozoic volcanics multivectorial mag., partial remag. and tectonic rot. 8−48960
- sea floor depth anomalies, depend. on latitude and plate motion 8−28215
- seafloor spreading, south of Agulhas Fracture Zone 8−24277
- seismic refraction methods for tectonic dislocation detection *(Russian)* 8−12010
- Sinkiang-Tibetan region, seismicity and tectonics 8−32030
- Slave craton-Churchill craton collision tectonics, Canadian Shield 8−24278
- W.Slovenia, tectonic structures, rel. to macroseismic effects 8−24254
- source-span-sink thermal models of arcs and ridges 8−32040
- South Mayo Trough, W.Ireland, possible Ordovician marginal basin 8−36162
- spreading centres, perpendicularity to transform faults questioned 8−24276
- spreading ridges, crests palaeobathymetry rel. to ocean basin ages and latit. 8−11869
- strain distribution across experimental single-layer fold 8−32076
- strike-slip fault in laterally inhomogeneous region 8−7591
- subducting lithosphere boundary determ. using ScS to P conversions 8−7572
- subduction angle, in plate tectonics 8−11865
- subduction zone, ascending flow between descending lithosphere and overlying asthenosphere 8−40531
- Sulawesi, Indonesia, past and present geotectonic position 8−32056
- Sunda Arc earthquake foci distrib. rel. to backarc area rotation 8−20381
- Surkhob fault zone, crustal deformations rel. to tectonics 8−15979
- Tasman Sea evolution, marine magnetic data 8−11870
- tectonoelectricity, review 8−36095
- Tjornes Fracture Zone, N.Iceland, N.American-Eurasian plate boundary 8−3740
- Transdanubian Central Mountains, palaeomag. pole position, tectonic implications 8−48970

tectonics continued
- Triassic Nikolai Greenstone, Alaska, palaeomag. 8−36166
- United States east coast, recent vertical crustal movements 8−32052
- N.W.urope, gravity and height vars. meas. via gravity base network *(German)* 8−15948
- USA, East-Central, geological perspectives of earthquake hazards 8−11834
- N.E.USA, seismic risk analysis in rel. to nuclear plant siting 8−11835
- USSR, tectonics and mineral resources *(Russian)* 8−40536
- Very Long Baseline Interferometry applications *(Russian)* 8−32357
- volcanic rocks, relation between major element chemistry and tectonic environment 8−16006
- Wharton Basin near Investigator Fracture Zone, geophysical study 8−40532
- Yap arc-trench system, metamorphic rocks rel. to tectonic history 8−32093
- Yellowstone hot spot, tectonics and crustal props., earthquake and aeromag. data 8−48996
- Yellowstone volcanic plateau, conf., USA (1974) 8−49004

tektites *see meteorites*

telecommunication
- *see also biocommunications; communication channels; communication networks; communications applications of control; optical communication; radiocommunication; telemetering*
- teaching, developing countries, course content 8−3
- teaching, underdeveloped countries, factors against learning 8−4
- university teaching, course structure, Rio de Janeiro 8−2

telecommunication cables
- *see also coaxial cables; submarine cables; telephone lines; underground cables*
- duplex fibre-optic cable interconnection system 8−46801
- optical fibre cable construction, installation, and testing 8−46797
- optical fibre cable design, splicing and interconnection system developments 8−42431

telecommunication systems
- *see also data communication systems; digital communication systems; radio systems; telephone systems; television systems*
- JROE II LIDAR, atmospheric measuring instruments *(Italian)* 8−3957
- mankind's future needs and aspirations in space, conf., Washington USA, 1976 Oct. 8−4078
- optical fibre applications, future trends 8−22214

telecommunication theory *see information theory*

telecontrol
- *see also alarm systems; telemetering*
- marine profiling system for shallow water 8−36328
- remotely controlled computer-guided preparation facility for X-ray fluoresc. anal. at fuel reprocessing plant *(German, English)* 8−17399

telecontrol equipment
- cation-exchange sorption microcalorimetry, automatic micro-injection system 8−24777
- light link coupled system for particle accelerator foil strippers 8−29670
- monochromator drive, using high-speed digital servo 8−36992
- myocardial regional function and coronary blood flow study during ischaemia in baboons 8−44752

telefilming
- colour film quality improvement, KT 116 M camera appl. *(Russian)* 8−29200
- electronic masking techniques, colour film reproduction appl. 8−32902

telemetering
- ambulatory ECG monitoring problems 8−11763
- biotelemetry of glomerular filtration rate in man by external detection of DTPA-(Sn)-^{99}Tc^{m} with CdTe 8−44591
- cardiovascular emergency clinical assessment, use of ECG telemetry 8−44677
- deep body temperature measurement in rodents, inexpensive telemetry system 8−24185
- emergency medical telemetry standard development and implementation 8−3635
- frequency measurement methods using VHF/UHF receivers *(German)* 8−4631
- Japanese weather satellite, on board equipment, geostationary orbit 8−4076
- locomotion studies, technique for correlating film and EMG 8−24186
- patient heart condition monitoring during bath therapy using immersed electrodes 8−3665
- sleep telemetry in rat, automatic identification and recording of vigilance states 8−48948
- US inner planets exploration programme, data rate improvement 8−32317
- Viking Lander seismometer 8−16274

telemetering equipment
- body temp./heat rate monitoring of hibernating/normothermic ground squirrels 8−3688
- bone strain in-vivo telemetry in monkeys, method 8−3697
- cerebrospinal fluid pressure meas. by passive telemetry, improved instrument 8−31927
- coils for RF powered implant telemetry, design 8−31926
- digital FM detector, multichannel, EEG appl. *(Danish)* 8−35980
- ECG telemetry, totally implantable multichannel system 8−44746
- electrode, implantable stress-resist. design for biotelemetry 8−44629
- EMG and temporal data monitoring during gait 8−3638
- flowmeter, implantable Doppler design with phase-locked loop 8−31873
- FM, foetal ECG and heart rate monitoring 8−3651
- FM-AM miniaturised transmitter for EEG and EMG, for sleep telemetry in rat 8−48947
- human hip prosthesis pressure radiotelemetering, design features 8−3671
- intracranial pressure monitoring, in vivo and in vitro, with capacitance transducer 8−7457
- multispectral camera, use on Soyuz 22 spacecraft 8−40794
- optical pulse receivers for distance meas., basic params. determ. 8−33843
- orthotics parameter assessment based on telemetric heart rate monitoring, paediatric patient appl. 8−31974
- radiotelemetry pill for biomedical meas. of ionising radiation using HgI$_2$ detector 8−40318
- RF powered cage system for implant telemetry 8−44745

telemetering equipment continued
- temperature measurement, using an RF transmitter 8−205
- thermometer, electronic, using controlled hysteresis feedback comparator *(Spanish)* 8−16793
- US implantable IC CW Doppler flowmeter 8−31877

telemetering systems
- avian heart rate meas. using autocorrel. techniques 8−31989
- bioelectric signal measurement and processing instrument trends *(Croatian)* 8−44665
- blood flow telemetering system using implantable CW Doppler US flowmeter, IC appls. 8−11749
- clinical paediatric gait biotelemetry 8−3652
- coastal buoy data collection systems 8−36320
- demodulation system, microprocessor based 8−44627
- EEG, automatic nocturnal sleep sampling 8−31916
- EEG, including PWM multichannel system 8−31914
- FM/PWM, multichannel, for EEG recording from unrestrained psychiatric patients 8−3636
- four-channel, cardiovascular response to dynamic/static exercise monitoring 8−3633
- GEOS, technical features 8−4071
- human motion 3-dimens. monitoring by optoelectronic means, calibration and meas. 8−31913
- intraocular pressure, telemetry monitoring 8−3632
- multichannel, EEG monitoring for epiltogenic focus localisation 8−3653
- multichannel cable system, for EEG seizure-monitoring 8−3640
- myocardial regional function and coronary blood flow study during ischaemia in baboons 8−44752
- ocean buoy testing, radiotelemetering meas. system *(Russian)* 8−16192
- optical fibre link for EM probe, microwave radiation effects obs. appl. 8−15859
- patient monitoring during surgery, 4-channel system 8−31961
- seven-channel, fully integrated, patient monitoring appl. 8−3634
- Solar Maximum Mission GSTDN/TDRSS compatible RF system 8−45198
- telemetry, low power PAM/FM system for ventricular press. and cardiac dimension meas. 8−44747
- temperature telemetry system for small animals, miniature CMOS 4-channel PWM design 8−44751
- two-channel intracranial pressure temp. monitoring system, implantable 8−3637
- vertical automatic profiling system for lakes temp. and current meas. 8−36327

telemeters *see telemetering*

telemetry *see telemetering*

telephone lines
- 9 km fibre-optic telephone transmission system 8−42435
- military local distribution systems, use of plastic clad/fused silica fibre 8−9457
- optical fibre telephone carrier systems 8−42463
- St. Margarets Bay-La Paune, submarine cable, sea bed measurements 8−15992

telephone networks
- optical fibre link, experimental system operating at 140 Mb/s 8−1321

telephone systems
- 9 km fibre-optic telephone transmission system 8−42435
- 140 Mb/s optical fibre transmission system 8−42436
- Las Vegas, 4.5 km fibre optic cable 8−46822
- light-wave telephone service in Chicago (USA) 8−5574
- lightwave communications, Bell system evaluation in Chicago 8−46821
- optical fibre links in Europe 8−46781

telephotography *see facsimile*

telescopes
- *see also astronomical telescopes*
- anallactic (divergent lens), mounting and adjustment devices *(Hungarian)* 8−30038
- IR Galilean telescope system, attachment for information scanning device, aberrations 8−46751
- laser beam steerer-expander device, two-mirror afocal telescope design 8−46700
- pancratic systems with linear and nonlinear relations between component motion, comparison 8−13782
- random image displacements in turbulent atm. *(Russian)* 8−20509
- reflecting, with concave and flat mirrors *(Hungarian)* 8−32841
- sighting, principles and designs *(Hungarian)* 8−21194
- vision, light vergence and accommodation 8−24065
- visual angle increase, optical devices, geometrical and physiological optics *(Hungarian)* 8−20312

television applications
- *see also videotelephony*
- acoustic field schlieren visualization, using closed circuit TV system 8−46867
- analyzer for material structure studies 8−27696
- arc discharges, periodic processes, spectral emission characts., vidicon system investig. *(Russian)* 8−9848
- astronomical imaging tubes, utilisation *(French)* 8−40829
- automatic evaluation system, solid state nuclear track detectors 8−17496
- V1500 Cygni (Nova 1975), TV photometry 8−36602
- educational display appl. *(Japanese)* 8−20924
- EEG real-time display of 2-dimens. fields 8−44651
- Hagerstown, MD, instructional TV system cost analysis 8−12501
- holographic droplet image analysis by TV camera and table calculator via IEC-Bus 8−36337
- instruction by satellite, India, reception systems, overall appraisal 8−8185
- lip-opening area in speech, fast continuous meas. via. TV camera 8−3520
- meteor trails televised spectra, photometry 8−20764
- microneurology, appl. of colour TV as surgery teaching aid 8−40396
- multichannel analogue detector system for star/planetary nebulae spectroscopic obs. 8−36461
- nonfilm method of high-speed process coords. meas., review 8−5093
- ocean wave slope meter, fast response instrument, wind-wave moments meas. 8−45012
- oceanography, slow-scan television camera for deeply towed vehicle 8−45045

television applications continued
ophthalmological research, training appl. *(German)* 8−24157
optical fibre pattern display 8−33820
p-n junction struct., X-ray topography visualisation during prep. *(Russian)* 8−26386
physics teaching, suggestion for teaching of physics, suggestions for demonstrations using TV 8−28895
picosecond exposure scanning camera, and associated recording system *(French)* 8−42429
plastic track detector, heavy ion tracks, automatic meas. device 8−17495
solid state track detector, video electronic measuring system 8−17493
stellar radial velocities, determ. via TV detector and cross-correl. techniques 8−16305
stroboscopic TV study, interaction of two high-velocity gas jets 8−42695
teaching, closed-circuit system preparation and installation in colleges *(German)* 8−12521
TV lecturing system using frame multiplexing technique 8−28887
US fish finder display 8−38159
viewfinder for balloon-borne solar telescope, narrowband TV appls. *(Japanese)* 8−24464
X-ray, medical, high-resolution TV system and video recorder 8−24120
X-ray image transmission system response rel. to X-ray diagnosis 8−35941
X-ray picture transmission *(Hungarian)* 8−21306
X-ray TV system for polymer deform. obs. 8−15610

television broadcasting
cues for depth perception, visual sensitivities *(Japanese)* 8−48808
RF radiation levels in urban areas 8−40351

television camera tubes
see also image storage tubes
astronomical spectrophotometry using intensifier Si vidicon 8−32356
Intensified Silicon Intensified Target (ISIT) tubes, medium speed gating 8−12766
Pyricon thermal imaging tube 8−9437
pyroelectric vidicon, ultrafast photography, with 10.6 μm radiation 8−38035
streak camera, direct readout devices 8−38037
vidicon, Quantimet 720 system, video electronic image analyzing system, solid state track detector, automatic fission track counting 8−17494
vidicon tube, video-electronic measuring system, nuclear track emulsions 8−17493

television cameras
see also colour television cameras
C-CD, implantable, for continuous recording of sheep ovary images during reproductive cycle 8−40442
pressure tolerant, small, oceanographic appl. 8−32243
slow-scan television camera for deeply towed oceanographic vehicle 8−45045
TV 300 m lenses, modular construction method, Gaussian optics, Seidel aberrations 8−311
Viking visual imaging subsystem, inflight performance 8−36417

television equipment
Hungarian developments, BEAG activities 8−46860
laser, epitaxial waveguide type with distrib. second-order feedback, electron beam pumped *(Russian)* 8−29973

television interference
monochrome flickering, subjective colours obs., using subjective modulation transfer functions *(Japanese)* 8−3490

television picture tubes
see also cathode-ray tubes; fluorescent screens
electron beam pumped semiconductor laser as TV tube screen 8−29969
human picture distortion ratings compared with objective error measures 8−44510

television signals *see video signals*

television systems
see also cable television; closed circuit television
acoustooptic FM and freq. shifted heterodyne CO_2 laser system 8−5568
astronomical imaging tubes, utilisation *(French)* 8−40829
colour rendering evaluation, extension of CIE colorimetric system, in film and television 8−310
digital system, for stellar radial vels. determ. using cross-correl. techniques 8−16305

tellurium
see also nuclei with ......
acoustoelectric domain induced transparency at 11 μm 8−27182
adsorption, on W, work function, field emission meas. surface film effects 8−19645
adsorption on single cryst. faces of Mo and W field emitters 8−34714
amorphous, structure, random chain assembly model 8−6015
anisotropic thermal motion of atoms, X-ray exam. 8−18730
chemisorption on Ni, orbital energy spectrum of chemisorbed electrons 8−2542
contact charge density, press. depend., trends for Ag-Te 8−39077
cfystallisation by hydrothermal method *(French)* 8−11096
cyclotron resonance for holes with $B \perp c$ 8−10777
Debye temperature, using elastic consts. and Kopp-Neumann relations 8−2220
detector for CO_2 pulsed laser radiation, using photon drag and optical rectification 8−21216
dielectric function in trigonal phase, model calc., local-field corrections 8−39045
diffusion in $NaNO_3$, KNO_3 and $RbNO_3$ melts, high dilution 8−47546
distribution equilibrium between $FeO-Fe_2O_3-SiO_2-Al_2O_3-CuO/Cu$ slag/metal system 8−44111
energy gap under press., elec. resist. and Hall effect meas. 8−30926
film, atm. comp. influence on elec. surface props. 8−26980
film, elec. props. effect of deposition rate 8−14844
film, electronic struct. charge on ordering, double beam photoemission 8−19634
film nucleation on Au oriented islands, grain growth 8−2388
galvano- and thermomagnetic effects 8−30939
impurity spectroscopy, magnetoresist. meas. under nonohmic conditions 8−30942

tellurium continued
ion implanted in semiconductors, Mossbauer spectroscopy exam. of radiation damage 8−2176
laser induced EMF, photon drag, optical rectification and spurious signals 8−19083
liquid, classical fluid model, neutralising negative background density 8−22621
liquid, mag. susceptibility, temp. depend. 8−47943
liquid, US rel. temp. depend., melting effects 8−38782
magnetic susceptibility meas. rel. to heat treatment 8−34952
MIS structure, photosensitivity spectrum 8−14834
NMR chemical shift, tight-binding calc., trigonal Te 8−2759
photon drag effect theory 8−19084
quadrupole interaction for ^{129}I, ^{131}I, and ^{132}I, PAC expts. 8−48087
quadrupole interaction in Ni, β-γ TDPAC meas. 8−43730
quadrupole interaction of 81 keV state of ^{133}Cs and 247 keV state of ^{111}Cd, TDPAC expts. 8−48088
SHF, high efficiency, of 12.8 μm laser radiation 8−25923
stopping power nucl., in ferromag. Gd, transient mag. field 8−34555
thermodynamic basis for generalisation of melting curves 8−2236
three-photon absorption, selection rules and exciton peak 8−43303
X-ray photoemission, core level binding energy 8−2984
Ag/AgI/Te thin film galvanic cell, shelf life determ. 8−35702
$Al_{0.36}Ga_{0.64}As$, LPE films, Te-induced defects 8−43037
Bi:Te neutron radiation defects 8−47430
Bi-Te, combination freq. in Shubnikov-de Haas and surface impedance oscillations *(Russian)* 8−10476
Fe:Te, interaction of impurities with point defects, Mossbauer spectroscopy exam. 8−47414
n-GaAs:Te, 0.93-0.99 eV luminesc. band characts. 8−19560
n-GaAs:Te, electron-irrad., absorpt. spectra *(Russian)* 8−15200
GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8−6067
GaAs:Te, laser annealing of implanted Te 8−35400
GaAs:Te influence of fluctuations of impurity pot. on Burstein-Moss effect 8−48240
$In_{1-x}Ga_xP$:Te, composition depend. of bound state luminesc. transitions 8−39595
InP:Te, mag. props. of conduction electrons 8−6510
PbTe-Te, contact fusion in complex metallic systems 8−26664
Se, atom positions, effect of press. 8−34465
SnTe-Te, contact fusion in complex metallic systems 8−26664
TE, small-ang. X-ray scatt., at. microgrouping depend. *(Russian)* 8−14271
Te I, UV line rel. oscill. strengths and unexcited atom conc., AAS meas. *(Russian)* 8−31749
Te II, vis. spectral lines, relative isotope shifts 8−37579
Te, trigonal, electronic struct., near metal transition, press. depend. 8−34758
Te+LiH exothermic solid-state reaction, ion backscatt. obs. 8−20064

tellurium alloys
see also tellurium compounds
steel, stainless, Cs enhanced corrosion, Te influence 8−23866
Au-Te, thermodynamic props., calorimetric meas. 8−20051
$FeTe_2$, Mossbauer spectroscopy and nonstoichiometry 8−31125
Ga-Te, alloys, liq., thermodynamic functions, struct. 8−40075
$PdTe_2$, bandstructure, Fermi surface, LMTO method 8−6264
Te-Ge eutectic alloy, glassy, crystn. mechanism 8−22836
Te-Pb (20 at.%), amorphous, obtained by rapid cooling from liq. state, crystn. behaviour 8−26445
Te-Sb(Bi), liq., diamag. susceptibility, semicond./metal behaviour 8−14927
Te-Sn (20 at.%), amorphous, exam. of crystallisation by DTA, X-ray diffr. and TEM 8−47242
TeSn, ^{115}Te elec. quadrupole interaction, temp. depend. 8−19399

tellurium compounds
see also tellurium alloys
chalcogenides, ternary, glass transition temp. predictions 8−38823
X-ray photoemission, core level binding energy shifts rel. to Mossbauer isomer shifts 8−2984
As-Se-Te glasses, electron transport props. 8−10439
BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
Fe_2TeO_5, mag. struct. 8−27020
$Ga_{20}Te_{80}$, amorphous, splat cooled, thermoelectric props. 8−43426
Ge-Te, exam. of new compound, using light microscopy and X-ray diffr. exam. 8−48383
Ge-Te alloy films, amorphous, semicond. props., refr. index, struct. study 8−26978
$Ge_{10}As_{40}Te_{40}I_{10}$, chalcogenide glass film, switching delay time 8−26926
$Ge_xAs_xTe_xSe_{100.3x}$, glassy, IR absorpt. spectra 8−23448
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
$Ge_{15}Te_{85}$, amorphous, splat cooled, thermoelectric props. 8−43426
$Ge_{13.3}Te_{61.7}As_{19}$ film, amorphous, characts. of optical switching 8−18031
$Ge_{15}Te_{81}As_4$ film, amorphous, characts. of optical switching 8−18031
$Ge_{15}Te_{81}Sb_2S_2$ film, amorphous, characts. of optical switching 8−18031
$In_{20}Te_{80}$, amorphous, splat cooled, thermoelectric props. 8−43426
Pb-Te-O, thermal stability 8−44104
S-Se-Te semicond. glasses, mag. suscept. meas., refractive index 8−34952
$Si_{12}Ge_{10}As_{30}Te_{48}$, amorphous, energy controlled switching obs. *(Japanese)* 8−34867
$Si_{12}Ge_{10}As_{30}Te_{48}$, chalcogenide glass film, switching delay time 8−26926
$Si_{12}Ge_{10}As_{30}Te_{48}$ chalcogenide glass threshold switch conductivity in high ohmic state *(Russian)* 8−43502
$Si_{12}Ge_{10}As_{30}Te_{48}$, dark cond. and thermoelec. power, thermal activation energies interpret. 8−23123
$Si_{12}Ge_{10}As_{30}Te_{48}$ glass, thermally stimulated depolarization current meas. *(Japanese)* 8−34875
$Si_{12}Te_{48}As_{30}Ge_{10}$ amorphous film, high-field transient conduction 8−43500
$Si_{12}Te_{48}As_{30}Ge_{10}$ film, amorphous, Poole-Frenkel cond. for centres with screened Coulomb pot. 8−19044
Te-Se, Debye temp. calcs. using elastic consts. and Kopp-Neumann relation 8−2220
Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8−23474
$TeF_6+H^+ \rightarrow TeF_6^+ + e^- + H^+$, 0.3-1.8 MeV, electron energy and ang. distrib. 8−22015

tellurium compounds continued
$Te_{0.81}Ge_{0.15}As_{0.04}$, amorphous and cryst., sp. ht., 1-20K 8−22864
α-TeO_2, anisotropy of atomic vibrations, Mossbauer absorption spectra 8−27147
TeO_2, glass, refractive index, effects of alkali oxide comp. changes *(Russian)* 8−22182
TeO_2, nonlinear optical susceptibility, antisymm. components 8−13755
TeO_2, paratellurite, refr. index, equal-deflection method, UV laser rad. 8−29145
TeO_2, paratellurite, stress induced changes in Raman spectrum 8−39540
TeO_2, paratellurite cryst., polariton Raman scatt. 8−25928
TeO_2 piezoelec. powder, orientation depend. of memory echo 8−35094
TeO_2, tunable acousto-optic filters 8−5570
TeO_2, visible and UV refr. indices 8−19439
TeO_2-CoO, phase diag. from thermographic analysis 8−23687
TeO_2-Fe_2O_3 system, mag. props. 8−27020
TeO_4^{2-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
$TeSe_{12.5}$, amorphous alloy, thermal and elec. cond. during devitrification 8−26922
Te_xSe_{1-x}, localised gap states estimated by dielec. relax. 8−35087
$Te_{43}Se_{30}Sn_7$ in MSM struct., switching effects 8−19164
Tl_5SbO_6, isomorphism with Tl_2SnO_3 *(French)* 8−10012
Tl_2SnO_3, isomorphism with Tl_5SbO_6 *(French)* 8−10012
V-O-Te-Cl system, chem. transport of V_nO_{2n-1}, V_6O_{13}, V_2O_5 *(German)* 8−31343
V_2O_5-TeO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667

TEM *see transmission electron microscopy*

temper brittleness *see brittleness*

temperature
see also atmospheric temperature; boiling point; critical points; Debye temperature; ferroelectric Curie temperature; magnetic transition temperature; melting point; temperature scales
increase and skin sensation under strong lighting *(Japanese)* 8−44557
intergalactic medium, temp. determ. from extended H I regions around spiral galaxies 8−12354
interstellar graphite grains, effect of IR optical consts. 8−12324
M-type giant stars, spectral energy distribs. and effective temp. scale 8−28678
nebulae central stars, temps. determ. from forbidden O III lines 8−41015
Neptune, effective temp. from IR photometry 8−32394
planetary nebulae, electron temps. from radio continuum obs. 8−41027
stars, uvbyβ photometric system calibration in terms of temp. and gravity 8−4198
stellar effective temperatures, effect of atmospheres finite extent on colour indices 8−32450
Talyvel electronic level, temp. effects *(German)* 8−45037
teaching, temp. concept without zeroth law 8−24607

temperature compensation *see compensation*

temperature control
see also thermostats
automated vapour deposition apparatus based on programmable calculator 8−44022
body temp. regulation method for hyperthermia and hypothermia study 8−15778
calorimetric system, 3-300K, with on-line computer, adiabatic shield temp. control 8−4620
cryostat, temperature regulator for liquid ^4He bath near 4.2K 8−41319
cryostat controller, He, using digital voltmeter *(Czech)* 8−29120
cryostat for film vac. deposition onto low temp. substrate *(Japanese)* 8−27403
DC proportional heater/cooler temperature controller for physiological research 8−7553
EM field cell culture exposure under controlled temp. and field strength conditions 8−40449
end-temperature in semi-infinite rod, distributed parameter optimal control problem 8−13886
EPR spectrometer, simple temp. controller, 85-400K *(German)* 8−45663
float glass, heat transfer and temp. control in annealing, computer appl. 8−27543
humans, control theory model 8−35805
improved set-point setting temp. controller, construct. *(German)* 8−45606
IR radiation thermometry, temp. monitoring and thermal inspection 8−45622
mass spectrometer, microcomputer-based controller for temp. programming direct inlet probe 8−16893
microprocessor triac interface, used to control kiln temperature 8−45632
multiple incubators, temp. drift elimination, for biological expts. 8−3696
photographic developing solutions *(Russian)* 8−29202
sample heater, high vacuum, using Zener diode 8−12690
semiconductor thermocamera, thermojunction method appl. *(Russian)* 8−45693
set-point of body temperature regulation *(Japanese)* 8−24032
thermocouple temperature controller for field emitter 8−24898
thermometers time constant influence obs. of resistance and thermoelectric types *(Czech)* 8−29114
vapour from solid N for temp. production in 20-63K range 8−221
varicap diode thermometer stabiliser, up to 150°C *(Czech)* 8−29115
viscosity meas. device design 8−5834
X-ray camera, 10 cm diam. back-reflexion focusing, design and fabrication 8−18489
Si ribbon growth, high-meniscus, thermal balancing via distributed inert gas streams 8−31329

temperature distribution
Antarctic Polar Frontal Zone from Australia from Drake Passage, thermal struct. 8−44850
atmosphere, spatial anal. of temp. field from weather satellite meas. 8−20488
atmosphere boundary layer, diurnal temp. cycle 8−20434
atmospheric temperature, vertical profile, from satellite data, information retrieval 8−3959

temperature distribution continued
auroral arc, N_2^+ first negative (0-1) band temp. height profile 8−40725
Baltic Sea, water temp. stratification in offshore zone 8−3792
Benard problem, two dimens. nonlinear temp. and vel. distribs. 8−34134
boundary layer on rough surface, temp. distrib. 8−30279
boundary layer temperature fluctuation space correlation coeff. in turbulent core *(Russian)* 8−14001
burnt skin heat and water losses, thermal modelling 8−31790
chemically reactive flow characts., simultaneous heat-mass transfer *(Japanese)* 8−22431
coaxial jet, Raman scattering diagnostics of turbulent flow field 8−18328
convection, natural, in closed container, numerical simulation 8−46969
Cosserat medium subject to thermal stresses, plane contact problem *(Polish)* 8−22268
crystal growing oven, temp. distrib. in working zone, heat transfer calc. 8−3016
cup ironing process, two-dimens. plastic flow prod. by temp. field *(Polish)* 8−26053
cylinder, rotating, non-steady temp. distrib. *(Polish)* 8−13885
cylinder immersed in liq., correct boundary conditions 8−38171
cylinder in hot gas cross-flow, steady state temp. distrib. 8−30160
cylindrical shell of complex configuration, calc. of nonsteady thermal regime 8−1543
Czochralski method, thermal conditions effect in temp. distrib. 8−3019
drop, diffusional evap. in EM radiation field 8−43112
earthquake slip, frictional heating on fault zone with finite thickness 8−36124
equatorial Indian Ocean, seasonal temp. and density fields caused by monsoons *(Russian)* 8−44839
fjords, horizontal temp. and density gradients 8−24303
forced convection flow and heat transfer of compressible fluid in porous medium *(French)* 8−30354
frozen food, hydrostatic press. effect on phys. props. 8−26706
fuel element transient heat transfer, temp. distrib. 8−17280
fuel rod with cladding, time depend. temp. distribs. 8−17288
gas centrifuge with insulated end walls, Stewartson layer struct., temp. distrib. 8−46973
gas-regulated heat pipe, anal. of operating temp. regimes 8−194
geothermal reservoir, effect of magma dike intrusion on free convection 8−7599
glass strip, surface temp. field during annealing in tower of vertical drawing system 8−11242
grey medium between concentric cylinders, 2 dimens. radiative equilib. 8−42523
heat exchanger, porous cylindrical board temp. field, heat transfer efficiency 8−5793
interplanetary-interstellar H, temp. meas., Prognoz-5 obs. 8−7922
ionosphere and protonosphere, electron temp. profile over S.Atlantic geomag. anomaly *(Japanese)* 8−28368
irreversible transport processes, noncoupled, nonstationary, classical variational principles 8−4567
Jupiter, thermal structure from IR spectral meas., filtered iterative inversion method 8−7918
kohlestein thermal insulation, temp. and heat flux distribs. meas. *(German)* 8−26023
labyrinth caloric test, estimation of stimulus strength 8−40210
Lake Shlavantas, deep autumnal cooling and freezing *(Russian)* 8−36213
Lake Superior, Keweenaw Current, surface temp. structure 8−40597
lakes, vertical automatic profiling system for temp. and current meas. 8−36327
lakes, winter season energy balance *(Polish)* 8−24315
lamina, heat distrib., thermal conductivity 8−22246
lamina, porous, generalised boundary conditions, heat and moisture transfer Prudnikov problem soln. 8−1551
laser cylindrical resonator thermal distortion due to surface absorbed energy *(Russian)* 8−13729
LMFBR, Clinch River Plant, pipe rupture simulation using DEMO code 8−8927
low-flow vessels, temp. gradients, appl. to blood temp. distrib. 8−27990
Mars, thermal and albedo mapping during Viking primary mission 8−20683
methane-air flame, Raman scattering diagnostics of turbulent flow field 8−18328
MHD, unsteady free convection flow past vertical porous plate 8−30361
MIM cathode, radial temp. distrib. *(Russian)* 8−6833
monitoring temp. uniformity in solid state reaction system 8−230
nonstationary temperature field, in a crystal on a substrate, variational method *(Russian)* 8−18158
W.North Atlantic Ocean, temp. meas. rel. to mesoscale motion space and time scales 8−49035
nuclear reactor, fuel element array, temp. distrib. for turbulent liq. metal flow 8−13203
ocean, bottom nepheloid layers and bottom mixed layers, on continental shelf off Oregon 8−16027
ocean, Loop Current winter intrusions 8−40569
ocean, low temp. skin-layer model *(Russian)* 8−36180
ocean, model of annual temp. var. and appl. to study of climate 8−20433
ocean, radiothermal location, inverse problem soln. method *(Russian)* 8−16188
ocean, thermohaline circulation in two-dimens. dynamical model *(Russian)* 8−40557
ocean surface temp., mid-latitude changes NCAR general circulation model response 8−16098
ocean temperature field space/time struct. during NORPAX POLE expt. 8−3777
ocean thermocline approx., discontinuity surface in active layer *(Russian)* 8−16037
optical fibre drawing, neck-down shape prediction from furnace temp. distrib. 8−5594
optical fibre splicing using CO_2 laser, thermal conditions 8−13820
E.Pacific and equatorial Atlantic Oceans, hemispheric asymm. of heat budget 8−40570
N.Pacific Ocean, synoptic obs. of Kuroshio and Oyashio fronts 8−32113

temperature distribution continued
Peru Current, sea surface temp. rel. to advection, satellite obs. 8−16029
pipe entrance region boundary layer, turbulent temp. and vel. fluctuations *(Japanese)* 8−38301
plane parallel layer with canonical boundary, temp. field determ. *(Russian)* 8−30148
plane walls of variable thermal cond., transient temp. fields *(Polish)* 8−18155
plate, heated thin annular circular, of variable thickness, buckling, thermoelasticity 8−9581
polymer sheet, stretching, with suction and blowing, heat and mass transfer 8−34033
prismatic body for nonstationary thermal action, stress-state algorithm *(Russian)* 8−13905
retina, primate, temp. rise and tissue damage due to Ar laser irrad. 8−44559
rod, two-layered, temp. distrib., 1D approx. applicability 8−1544
rod and attached wire system, time depend. temp. distrib. 8−18147
rod pulled from melt, asymptotic calc. of thermoelastic stresses 8−2031
rotating channel with porous walls, heat transfer and temp. distrib. 8−30355
rotating heat pipe, temp. distrib. and heat load characts. noncondensable gas effects 8−33992
NW.Sargasso Sea, effects of 1976 to 1977 winter cooling 8−28243
sea, temp. field fine structure influence on internal wave spectra *(Russian)* 8−36182
sea, thermal wedge, effects of tidal flow on position of upper surface *(Russian)* 8−16046
sea boundary layer, diurnal temp. cycle 8−20434
sea temp. vertical distrib., modelling and prediction on expedition *(Russian)* 8−16190
seawater, salinity rel. to specific electrical conductivity and temp. *(Russian)* 8−16039
second order liquid porous parallel walled channel flow with free and forced convection 8−42635
sedimentary formations, bore hole drilling effect on thermal field *(Rumanian)* 8−20372
semitransparent shaped components, temp. and thermal stress patterns 8−2035
shell cooled by evaporating liq. drops, temp. fields 8−9546
solar corona, EUV anal. of polar plumes 8−4178
solar corona, temps. and Fe abundances from XUV emission lines 8−4180
solar coronal holes, radio and EUV meas. *(Russian)* 8−16378
solar photosphere, adiabatic cooling and mag. fields hydraulic conc. in downdraughts 8−45300
solar photosphere, north-south brightness and temp. asymmetry 8−45303
solar photosphere, temp. depth relation in faculae and pores from line profile families 8−49408
solid propellent burning in three coord. systems, anal. 8−1558
specimen with bilateral electronic heating 8−26015
stomach tissues, canine, Ar and Nd laser damage 8−48831
Sun, coronal temp. distrib. 8−40908
supersonic thermal boundary layer, effect of wall hollow-induced separated bubble *(French)* 8−5784
temperate lakes, finite element analysis of one dimensional thermocline problem 8−49042
thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
thermoluminescence glow curve anal., temp. inhomogeneity 8−27332
tissue, dynamic temp. distribs. in normal and neoplastic tissues during diathermy 8−31776
tissue microwave heating models, surface cooling and blood flow effects 8−7388
tube, elliptical, laminar liq. flow, nonsteady heat transfer 8−42598
tube, with heated inner eccentric rod, steady convective laminar heat transfer 8−38311
tube entrance velocity and temp. distrib. with turbulent hot air flow *(Russian)* 8−14087
turbulent boundary layer, viscous sublayer temp. fluctuation spatial correlations *(Russian)* 8−34114
turbulent boundary layer characterisation by velocity and temperature profiles *(Russian)* 8−34115
two-layer plate with separated suction, nonstationary temp. field 8−22255
under-surface temp. pattern estimation by dynamic remote sensing *(Japanese)* 8−36315
Uranus, thermal structure from IR meas. 8−36509
water, cooling from surface under free and forced convection regimes *(Russian)* 8−36179
water, fine struct. of thermal boundary layer near air-water interface *(Russian)* 8−22332
water droplet aerosol interaction with EM radiation, temp. field and refractive index distrib. model 8−3899
X-ray tube rotating anodes, physical props. 8−29222
Al, cutting, temp. effect on built-up edge behaviour *(Japanese)* 8−7083
CO$_2$ waveguide laser discharge, cooling, gas temp. meas. 8−17958
Ge shaped single crystal, Stepanov method growth, temp. distri b. 8−2032
Ge single crystal of circular cross section, thermoelastic stresses 8−2033
Ge strips grown by Stepanov method, thermoelsatic stress calc. 8−2034
He flow in rot. cryostat, temp. distribs., thermodynamics 8−34666
NaCl, Czochralski growth, temp. distrib. near crystn. front 8−2036
NaCl:MgCl$_2$ (0.1 mol.%), thermoluminesc. glow curves, temp. distrib. and trapping centres 8−48241
Si, CVD growth, high- and low-temp. models 8−6244
ZnSe, Bridgman growth under Ar press., temp. distrib. in furnace 8−11100

temperature measurement
see also pyrometers; spectral methods of temperature measurement; temperature scales; thermocouples; thermometers
absolute-reciprocal temp. convertor *(Polish)* 8−45626
alloy, solidus temperature determ. by method of moving specimen boundary projected on screen 8−35353

temperature measurement continued
anemometer, hot wire technique for simultaneous nonisothermal flow vel. and temp. meas. *(Japanese)* 8−38421
astrophysical plasma, use of a priori information in temp. structs. derivation from X-ray spectra 8−20778
biomedical, implantable miniature transmitter *(Dutch)* 8−48908
boiling point, uncertainty in thermistor ebullioscopes sensitivity 8−12695
cancer detection by microwave thermography 8−24172
combined radiation/contact thermometer, −10 to 600°C range, features *(German)* 8−32815
by compensated thermocouples *(German)* 8−41304
digital meter, using Wien-Robinson oscillator, and digital frequency divider *(German)* 8−29110
digital quartz crystal thermometer principle and technical parameters *(Polish)* 8−24791
digital thermocouple cold junction compensation methods *(Italian)* 8−37002
digital thermometer, portable, liquid crystal display *(German)* 8−29112
disperse system with solid particles, temp. meas. from mag. props. variation near Curie pt. 8−9556
electronic device, using a thermistor in a current bridge for clinical use 8−29109
electronic sensor, with 4-bit A/D convertor *(German)* 8−12693
electronic sensors for clinical replacement of metethmor 8−7473
electronic thermometer for telemetric link with direct reading *(Spanish)* 8−16793
emissivity determination from thermal rad. spectrum and optimal methods of opt. pyrometry 8−24797
exposure measured by thermolum. fading 8−24786
fibre optic temperature probe 8−208
flow, heated grid flow, temp. derivative skewness, alleviation 8−46951
fluidic capillary sensor appl. 8−24793
gas flow dust content, temp. and speed meas. method 8−34216
gas flow temp. meas. by two thermocouples 8−34218
geothermal shallow-hole temp. meas. 8−11849
glow discharge, gas temp. meas. by fluoresc. spectroscopy 8−18467
heated turbulent flows, cct. for instantaneous temp. meas. 8−21137
high temperature metrological cooperation between USSR and GDR *(German)* 8−4622
holographic interferometry, 3-D temp. field meas. 8−37009
hot turbulent flow, temp. fluctuations, hot-wire anemometer *(French)* 8−42684
hot-wire probe, simultaneous, instantaneous, temp. and vol. component meas. in turbulent flow 8−34236
intracranial temp. monitoring, implantable two-channel telemetry system 8−3637
ionic sensors for nuclear reactor in-core temp. meas. *(Czech)* 8−32820
IR radiation thermometry, temp. monitoring and thermal inspection 8−45622
jet stagnation point heat transfer on plate, turbulence effects, liquid crystal meas. 8−18327
lakes, vertical automatic profiling system for temp. and current meas. 8−36327
leaf, infrared thermometer method in connection with plant physiology *(Japanese)* 8−31993
linear meas. with double p-n junction diodes, cct. *(German)* 8−201
linear temp. and temp. difference sensor using ferroelectric sensitive element 8−21136
linear temperature-to-voltage convertor 8−32811
LMFBR-subassembly outlet computerised temp. monitoring based on estimation theory 8−8948
low temperature measurement in high mag. fields, instrumentation and methods, review 8−37003
low-temperature measurement, via Krion 1-2 instrument 8−222
metal testing, thermoelec. thermometer error anal. 8−19975
microprocessor based data acquisition and exptl. control system 8−36086
moving surfaces, contactless temp. meas. unit 8−4616
myocardial transmural heat gradient instantaneous meas. 8−44661
nuclear reactor temperature sensors, response time testing by noise anal. 8−13300
oceanic temperature-depth profiles, recording via solid-state memories 8−24383
platinorhodium-Pt thermocouples, 1000-1300°C range, cold junction electrode compensation 8−216
pressure cell with temp. uniformity monitoring 8−230
quartz microbalance, influence of tabs thickness on resonating props. of quartz cryst. 8−18140
radiant heat flux portable direct reading measuring device, CERL flux-probe features 8−45633
radiation balance microwave thermograph for industrial and medical appls. 8−45621
resistance thermometer and thermocouple, rel. to radiation temp. scales 630-1064°C 8−37004
resistance thermometer based on thermal noise of sensors *(Russian)* 8−29113
rotating-object surface temp. transducer test installation 8−4612
scale differences between IPTS-68 and thermodynamic temp. above 0°C 8−32814
sensors, use of LEDs 8−4619
small-animal microwave induced hyperthermia development system 8−11715
surface, automated zero-derivative method *(Japanese)* 8−210
surface, thin film resistance thermometers appl., Ti and Ge, design and fabrication 8−24792
surface temp. meas. at arbitrary heat flux *(Russian)* 8−45629
surface-mounted beaded thermocouple transient response models 8−8405
telemetric measurement, using an RF transmitter 8−205
telemetry system for measuring deep body temperature in rodents 8−24185
telemetry system for small animals, miniature CMOS 4-channel PWM design 8−44751
temperature scales above 0°C, evidence of IPTS-68 departures from thermodynamic temp. 8−32813
thermal, temp. field meas., buoyant vortex bubbles and turbulent thermals 8−34232
thermal exchange between sensor and supports, temp. fluctuation meas. in turbulent airflow 8−21135

temperature measurement continued
- thermal interference from photolamps, reduction using Therm-O-lux 85 film 8−41302
- thermal noise appl. *(German)* 8−4615
- thermistor appl. in potentiometer 8−207
- thermistor probe, implantable, for continuous core temp. in rats 8−3686
- thermocouple network *(French)* 8−4613
- thermocouple principles, ccts., and instrum. *(Dutch)* 8−198
- thermocouples, error due to time varying mag. field effects 8−4617
- thermocouples and resistance thermometers properties 8−199
- thermograph for soil temp. meas. 8−4005
- thermostatic air chamber, influence of radiation *(Japanese)* 8−37007
- thin film temp. sensor with high temp.-resistivity 8−41308
- three-dimens. fluid vel. vector and temp. fields from acoustic transmission meas. 8−30394
- tissue, noninvasive monitoring using temp. depend. of US vel. 8−40281
- transducer, temperature sensing, cct. and characts. *(Polish)* 8−29103
- transistor thermometer, precision, −50 to +125 deg. C at ±0.1 deg. C 8−21134
- turbulent boundary layer, temp. dissipation fluctuation component simultaneous meas. 8−26113
- turbulent boundary layer, viscous sublayer temp. fluctuation spatial correlations *(Russian)* 8−34114
- ultra low temp. generation and meas. *(Japanese)* 8−45635
- US resonance method 8−16792
- very low temp. physics and meas. *(Japanese)* 8−45636
- voltage transfer standard SDET01, appl. *(French)* 8−236
- Na, liq., incipient superheat meas., expt. and physical parameter effects 8−18289
- Ni-NiCr probe for multichip component temp. meas. *(German)* 8−202
- Pt resistance thermometers, thick film, resistance/temp. relationship 8−37008

temperature scales
- 1337.58-2200K range representation by photoelec. comparator and W lamp *(German)* 8−4621
- education, elec. noise and Boltzmann's const. determ., absolute temp. scale noise thermometer 8−36767
- International Practical Temperature Scale 1968, fixed point determination, amendment discussion 8−41270
- IPTS realisation above 1337.58K using multiplicative comparator of spectral radiances *(Japanese)* 8−8407
- IPTS-68 and thermodynamic temp. differences above 0°C 8−32814
- IPTS-68 scales departures from thermodynamic temp. above 0°C, evidence 8−32813
- low-temp. thermometry reference points based on H_2 and He 8−206
- multiplicative comparator of spectral radiances, systematic errors *(Japanese)* 8−29139
- neodymium ethyl sulphate, magnetothermodynamics, absolute temp. scale, mag. moment and magnetization, below 0.5K 8−34984
- pyrometer, wide spectral range, scale calc. 8−217
- resistance thermometer and thermocouple, rel. to 630-1064°C scales 8−37004
- Y_2O_3, laser heated pellet, melting point determ., secondary melting point standard 8−37011

tempering
- Ferrography, use of temper colours 8−3302
- glass, thermal stresses, temporary and residual, monitoring by semiautomatic heating polariscope-polarimeter 8−16833
- glass plate, physically or chemically tempered, contact fracture resist., model 8−19895
- glass plates, thermally tempered, strength degradation 8−48505
- reversible temper embrittlement, book contrib. 8−11334
- steel, 18 Kh2N4MA, grain size effect on mech. props. 8−44207
- steel, 30N9K4, effects of Mo, V, and N on grain growth, tempering, hardenability, strength and toughness 8−44202
- steel, 4340, quenched, tempered, and austempered, effect of plastic strain followed by ageing on elastic limit 8−31446
- steel, alloy, 300M, fracture toughness and strength, effect of heat treatment on microstruct. 8−15436
- steel, alloy, nonmartensitic decomposition of austenite, fracture strength of high tempered products *(Russian)* 8−11304
- steel, austenitic Mn, existence of carbide M_5C_2 phase, electron microdiffr. analysis *(Russian)* 8−23727
- steel, austenitic type 110G13L, preliminary strengthening inheritance, exam. 8−44137
- steel, C, hard patch of rubbed surface, tempering effect *(Japanese)* 8−7054
- steel, C, hypo-eutectoid naturally fibrous composites, strength analysis 8−3190
- steel, C, quenched and tempered, ductility, effect of hydrostatic press. 8−44190
- steel, C-Mn-Cr-Mo (0.4, 0.8, 1.1, 0.25 wt.%) C, Ni, Mo, Cr addition effects on toughness of bainite 8−11327
- steel, C-Ni-Cr (0.6, 1, 1 wt.%), grain boundary segregation of S, N, P, As, Sb and Bi *(Japanese)* 8−15405
- steel, carbide formation during tempering on martensite decomp. and ductility 8−23733
- steel, carburised, alloying effect on props., mathematical-statistical determ. 8−19794
- steel, complex alloy, exam. of temper brittleness 8−44209
- steel, Cr, high C, in situ transform. of cementite to M_7C_3 and internal defects of M_7C_3 by tempering 8−31412
- steel, Cr (13 wt.%), tempered, quenched, fatigue resistance in corrosive medium *(French)* 8−23870
- steel, Cr-C (13, 0.15 wt.%), bainitic transform. *(German)* 8−11218
- steel, Cr-Mo (2.25, 1 wt.%), weld metal, high temp. crack growth, effect of tempering, prestrain and grain refinement 8−27622
- steel, Cr-Mo (9,1 wt.%), austenitized in $\gamma+\delta$ phase field, secondary hardening and tempering 8−11247
- steel, Cr-Mo-V, creep, effect of microstruct., heat treatment, transform. temp. 8−11248
- steel, ferritic martensitic, effect of ductility of second phase on ductile fracture 8−19847
- steel, hardened and casecarburized, fatigue crack initiation, propag. and termination, notch depth effects *(Japanese)* 8−7022
- steel, high speed tool rapidly quenched, exam. of solidification struct. 8−39758

tempering continued
- steel, lath martensite, elastic interaction of H_2 with precipitates 8−3129
- steel, low alloy, 18KhMVTCh, corrosion cracking resistance in sulphide environments *(Russian)* 8−31571
- steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
- steel, low alloy, impurity and strength effect on H_2 induced cracking 8−27625
- steel, low alloy, radiation embrittlement, heat treatment effects 8−19893
- steel, low alloy, strengthening by strain tempering, deform. effects 8−15424
- steel, low alloy and C, reversible temper brittleness kinetics *(French)* 8−35498
- steel, low C, and hardened and tempered, impact specimen fractures, stress concentrator sharpness effect on size of tough component 8−7015
- steel, low C, quenched, struct. and props. after plastic deform. and tempering 8−23734
- steel, martensitic, high-C, formed from hot-worked austenite, struct. *(Russian)* 8−6950
- steel, martensitic, impact bending failure resistance, initial crack length and tempering effects 8−31530
- steel, martensitic, low C wire, strain tempering by rapid heating *(Japanese)* 8−31428
- steel, martensitic, retained austenite study by X-ray diffr. *(Korean)* 8−44143
- steel, martensitic, tempered, C and low alloy, hardness, effect of alloying additions 8−27629
- steel, medium strength plate, quenched and tempered, fracture toughness in ductile-brittle range 8−7036
- steel, middle and low C, clad plate, inhomogeneity and residual stresses, heat treatment effects *(Japanese)* 8−6955
- steel, mild, yield strength and fracture toughness, microstruct. effect, heat treatment 8−27615
- steel, Mn, tempered, sementite crystals, carbide phase segregation, X-ray study *(Russian)* 8−35391
- steel, quenched, martensite, tensile and compressive deform. resist. *(Russian)* 8−19819
- steel, Si-Mn-Cr-C (1.1, 0.9, 1.0, 0.29 wt.%) 30KhGSA, heat treatment effect on strength and toughness 8−15437
- steel, sintered type M2 high speed, heat treatment response and cutting props. 8−15336
- steel, stainless, sulphide stress corrosion cracking resistance, improvement by heat treatment 8−7076
- steel, strengthened by surface plastic deform., tempering effect on physicomech. props. *(Russian)* 8−35409
- steel, temper embrittlement, fracture mech. of grain boundary segregated phases 8−48531
- steel, tempered, kinetics of solution of Mn in precipitated cementite *(Russian)* 8−6891
- steel, type 27KhGSNL, castings, exam. of cracks due to treatment 8−44205
- steel, ultrahigh strength, Si addition and retain austenite effect on SCC, quenched and tempered 8−48567
- steel, V- or Cr- or Mn-, initial stages of carbide form., electron diffr. *(Russian)* 8−19760
- steel, wire, reinforced prestressed concrete, strain-tempering conductions and mech. props. *(Japanese)* 8−39816
- steel 35KhGSA, resist. to fracture after low temp. temperating, P content and grain size effects *(Russian)* 8−48490
- steel 40Kh, notch sensitivity under cyclic impact loads 8−3220
- steel-cast Fe cam-roller pair, wear resistance after strengthening treatment *(Russian)* 8−31542
- steels, Cr and Cr-Ni-Mo refining effect on low cycle fatigue strength, resistance to hydrogen embrittlement 8−44208
- steels, low C S25C, medium C S45C, Cr-Mo SMC3, statistical fatigue props. eval., heat-to-heat variations 8−7048
- Al alloy, semifinished materials, fracture toughness determ. after tempering 8−7128
- Cu-Be-Co (2,0.3 wt.%) alloy, heat treatment, influence of tempering on hardness, tensile props. transform diagram *(French)* 8−31384
- Cu-Ga alloys, massive phase ξ tempering, kinetics, order-disorder transform. *(French)* 8−44118
- Fe, cast, steel cam-roller pair, wear resistance strengthening treatment *(Russian)* 8−31542
- Fe-Ni-Al-Co-Cu-Ti, 38 to 40 wt.% Co, 8 to 8.5 wt.% Ti, alloy YuNDKT tempering and thermomagnetic treatments 8−3154
- Fe-Ni-C, martensitic, mech. charact., effect of ageing and tempering *(Slovak)* 8−19791
- Fe-Ni-C, martensitic, mech. and fracture charact., effect of starting austenite heterogeneity *(Slovak)* 8−19792
- TiC-steel composite, effect of method of Cr additions on props. 8−15341

tenacity *see tensile strength*

tensile strength
- *see also fracture; yield strength*
- alumina, diametral compression test, parametric study 8−44282
- aorta, strength variation with age in humans 8−48823
- automatic testing methods, process computer appl. *(German)* 8−35598
- brittle material, tensile strength determ., based on radial and compression tests 8−7156
- brittle materials, ultimate tensile strength determ. by radial compression testing 8−7132
- brittle rupture, strength time depend. *(Russian)* 8−46912
- cement, hot pressed, type III, role of admixtures on pastes and H_2O cured cement, exam. 8−44073
- cement paste, direct tensile tests and tied crack model 8−11306
- cement paste, direct tensile tests and tied crack model 8−11307
- ceramics, error sources in mech. testing of tensile and bend strength *(German)* 8−35421
- chamotte concrete, alumina-based cement, thermomech. props. 8−35455
- composite, physics of strength, kinetics of failure 8−3206
- composite materials loaded in uniaxial tension under pressure 8−19828
- concrete, creep, elasticity and strength in tension and compression 8−11287

tensile strength continued
- concrete, creep, time dependent behaviour under high tensile stress *(Japanese)* 8−31465
- cotton fibres, specimen clamps for X-ray angle-tensile meas. 8−4603
- cylinder, plastic flow rules and Bauschinger effect parameters 8−6984
- dislocation density depend. *(Russian)* 8−19820
- dispersion hardened alloy, load type effect on yield stress 8−35458
- elastomeric block copolymer properties obs. 8−27560
- ELN-1 alloy, prestrain effects on strength *(Russian)* 8−11267
- endopelvic fascia, human, stress/strain history relations in simple elongation 8−44539
- equine long bone forces and moments, in vivo and anal. studies 8−40216
- ethylene-propylene-diene terpolymer, sulphonated, ionically cross-linked, foam elastomer, thermo-mech. props. 8−48362
- FCC crystal, transient effects during tensile tests in model of correlated dislocation motion 8−38715
- fibre reinforced composites, intralaminar-shear charact., 10 deg off axis test 8−35422
- fibre-optic cable manufacture, testing, and installation *(German)* 8−33863
- fibrous composite materials, models for composites with different props. in tension and compression 8−35417
- GFRP laminate, damage assessment by stress wave emission and dynamic mech. meas. 8−11461
- glass ceramic prep. by hot pressing and crystallisation of glass powder, mech. props. 8−15351
- glass fibre properties for information transmission *(German)* 8−9439
- glass fibre reinforced composites, impact tensile strength obs. *(Japanese)* 8−23781
- glass fibre reinforced epoxy resin, cryogenic tensile, compressive and shear props. 8−6983
- glass fibre reinforced plastic, strengthening under biaxial tension 8−23797
- glass fibre reinforced plastics, stress luminescence, volume resistivity effects *(Japanese)* 8−43943
- glass fibre reinforced plastics, temperature-force depend. of lifetime 8−23795
- glass fibre reinforced polyester, epoxy-polyamide, single lap joint, tension-shear strength *(Japanese)* 8−11494
- glass fibre reinforced polyester, single lap joint, tension-shear strength *(Japanese)* 8−11494
- glass fibre-reinforced polyester cross-ply laminates, effect of resin failure strain on tensile props. 8−3212
- glass optical fibre, epoxy-acrylate coated, strength and static fatigue 8−1386
- glass optical fibres, UV-cured, epoxy-acrylate coated, environmental effect on long-term strength 8−5582
- graphite, irradiated ultimate tensile bending and compressive strength charact. 8−15479
- graphite fibre reinforced epoxy laminate tension-compression fatigue loading, fatigue residual strength degradation model, comparison with expt. results for 8−35491
- graphite fibre reinforced epoxy resin, cryogenic tensile, compressive and shear props. 8−6983
- graphite particle-Al alloy composite, prod. by pellet method, and mech. props. 8−27454
- gypsum casts, improvement in impregnation method, exam. of mech. props. 8−48503
- heterogeneous composite materials, influence of prestress and limited deformations 8−38205
- history Berthelot's first publication, 1850, subjection of liqs. to tension 8−32639
- Kevlav fibre reinforced cement composites, cement boards, exam. of mech. props. 8−48499
- laminated composite, tensor polynomial failure criterion 8−39886
- LMFBR hexagonal ducts, cracking, effect on safety and fuel pin failure 8−17318
- mechanical anisotropy evaluation, using hardness test *(Polish)* 8−48575
- metal, deposition condition relationship with struct. and props. 8−11369
- metal-glass material, relation between struct. and props., prod. by hot densification 8−11145
- metallic glasses, structure and properties, review 8−47245
- multimode fibres, recent advances in production 8−30096
- neointimas developing on flocked surfaces of left ventricular assist device, mech. anal. 8−40431
- nonmetallic material, mech. props., testing installation, +600 to −190°C 8−15633
- Nylon 6, fibre, crystallite dimensions, effect on struct., mech. and diffusive props. 8−11273
- nylon fibre reinforced polypropylene, enhanced fracture strain 8−15503
- optical fibre, rupture stress rel. to ageing *(German)* 8−38009
- optical fibre coating concentricity improvement by tapered nozzles *(German)* 8−38095
- optical fibre strength tests, pulling machine construction 8−33931
- optical fibre tensile strength testing 8−42481
- optical fibre waveguide testing, extrapolation of short length test results 8−9456
- optical fibres, breaking strain estimation for long lengths of fibres 8−30060
- optical glass, reproducibility of symm. bending mech. strength values 8−46737
- optical waveguides, dependence on sample length, Weibull distribution figures 8−30084
- PET, fibre, crystallite dimensions, effect on struct., mech. and diffusive props. 8−11273
- PET fibre reinforced polypropylene, enhanced fracture strain 8−15503
- PET film, PET, transverse constriction and stresses accompanying uniaxial orientation 8−48475
- piezoceramic, polarisation method effect on mech. strength 8−39879
- plastic, deformation speed in static tensile tests, machine rigidity effects *(German)* 8−48473
- plastic instability during tensile deform., numerical calc. 8−30203
- polyamide, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
- polyethylene, cross linking by energy rich radiation, mech. and elec. props. *(German)* 8−20035

tensile strength continued
- polyethylene, modified with phosphonate ester pendant side group, thermal and mech. props. 8−11195
- polyethylene implant-bone composite interfacial strength, porous high density polyethylene 8−31979
- polyimide film, heat treatment conditions effect on ultimate strength, expt. planning methods 8−6952
- polymer, physical problem determ. problems, tensile strength, elastic moduli *(German)* 8−15470
- polymers, multicomponent, props. and struct., review 8−44076
- polyolefines, filled, struct.-mech. props. relation *(German)* 8−35451
- polypropylene, glass fibre reinforced, injection moulded discs, struct. and mech. props. 8−19706
- polypropylene monofilaments, tensile props., orientation degree depend., IR dichroism obs. 8−3163
- polypropylene nonfilaments, highly drawn, plastic deform. 8−44174
- polypropylene-bitumen mixture, thermomech. investigation changes in viscosity, ductility, elasticity, mol. wt. effects *(German)* 8−35454
- polystyrene, oriented amorphous, supermol. structures rel. to mech. behaviour 8−22673
- polystyrol, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
- polystyroles, filled, struct.-mech. props. relation *(German)* 8−35451
- polyvinyl alcohol fibre reinforced epoxy resin, fracture kinetics 8−3222
- Portland cement, hydration mechanism, rel. to strength 8−35349
- powder, tensile strength data and failure loci from Jenike shear cell tests 8−31476
- pressure vessel for tensile testing in high-pressure gases at high temps. 8−44303
- PVC, filled, struct.-mech. props. relation *(German)* 8−35451
- PVC, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
- refractory ceramic creep meas. in tension and compression 8−31486
- reinforced concrete deep beams, optimal force transmission 8−34009
- resin mortar, strength anal. by reliability concept *(Japanese)* 8−31466
- resin-coated optical fibre, tensile strength tests *(German)* 8−33871
- solids weakened (strengthened) by inhomogeneity, tensile and compressive strength 8−42571
- steel, AISI 1010, low-cycle fatigue at temps. up to 1200°F 8−35516
- steel, alloy, 300M, fracture toughness and strength, effect of heat treatment on microstruct. 8−15436
- steel, austenitic Kh18N9T, porous fibres, oriented struct., strength props. 8−3199
- steel, austenitic stainless, 304, solution annealed, tensile flow behaviour after exposure to flowing Na, in temp. range 550 to 700°C 8−35463
- steel, austenitic stainless, deformed plate, X-ray line profile anal. *(Japanese)* 8−7144
- steel, austenitic stainless, electron beam welding effect, on mech. props. of steels 310L, 316, 21-6-9 8−48498
- steel, austenitic type 110G13L, preliminary strengthening inheritance, exam. 8−44137
- steel, C, relax. resist. rel. to struct. 8−23788
- steel, C, rotating bending fatigue strength, periodic high tensile load effects *(Japanese)* 8−11313
- steel, C-Mn, pressure vessel usage, elevated temp. mech. beahviour 8−35462
- steel, CC Cr-Mo (2.25, 1 wt.%) effect of heat treatment on tensile props. 8−23745
- steel, continuously cast, optimum conditions for annealing castings during dynamic working *(Russian)* 8−44134
- steel, Cr (13 wt.%), fatigue, effect of toughness *(Japanese)* 8−7025
- steel, Cr-Mn, annealing effect on mech. props. for cryogenic appl. *(Russian)* 8−19788
- steel, Cr-Mn, unstable austenite, martensitic transform., effect of alloying, heat treatment, and deform. 8−19751
- steel, Cr-Mo (2.25, 1.00 wt.%), bainitic, strain rate effects on elevated temp. tensile behaviour 8−35461
- steel, Cr-Mo (2.25, 1 wt.%), annealed, heat treatment effect on tensile props. 8−11243
- steel, deformation ageing of 40Kh, effect of impact resistance and tensile strength *(Russian)* 8−31427
- steel, ferritic martensitic, effect of ductility of second phase on ductile fracture 8−19847
- steel, free cutting, with MnS inclusions, tensile flow and fracture 8−11290
- steel, H_2 effect on yield 8−15474
- steel, high strength, press. depend. yield and plastic vol. change 8−19810
- steel, high temperature strength, corrosion-erosion effect of gas metal mixtures stream *(Russian)* 8−35576
- steel, low alloy, fracture strength investigation under various types of loading 8−7042
- steel, low C, relation between low yield behaviour and tensile speed, preloading and temp. effect *(Japanese)* 8−6982
- steel, maraging 350, produced by powder metallurgy, mech. props. 8−15334
- steel, maraging Ni-Co-Mo, precipitation, elec. resist. meas. *(Japanese)* 8−11228
- steel, martensitic, low C wire, strain tempering by rapid heating *(Japanese)* 8−31428
- steel, Mg effect on precipitation of C and or N, and mech. props., during strain ageing *(German)* 8−35387
- steel, mild, cold rolled sheets, microstruct. and strain path in deep-drawing 8−19775
- steel, natural gas environment effects on strength *(Russian)* 8−11401
- steel, Ni-Cr-Mo-U, ferritic, B segregation and high temp. embrittlement 8−7040
- steel, pearlitic, deform. microstruct. and cementite fracture, −196 to 700°C 8−27576
- steel, pearlitic or spheroidal plastic deform. and fracture *(French)* 8−35448
- steel, plasticity of grooved specimens at high temp., rel. to hot forming 8−23902
- steel, quench ageing effect of Mn content on C and N precipitation and mech. props. *(German)* 8−31409
- steel, silchrome, thermomech. hardening 8−23736
- steel, stainless, 304, creep fracture propag., elongation, tensile strength, yield stress meas. applicability of fracture mechanics parameters 8−35508
- steel, stainless, α+γ phase, tensile deform. induced α' martensite, morphology 8−44122

tensile strength continued
steel, stainless, filament produced by glass-coated melt spinning, tensile strength 8−31488
steel, stainless, martensite nucleation and growth, expt. study 8−3125
steel, stainless, oxide dispersed, prod. by spray dispersion method, mech. props. exam. of mech. props. *(Japanese)* 8−48419
steel, tensile prestrained strength of anisotropic rolled steel, rot.-bending fatigue tests, slip bands 8−27590
steel, U8, diffusion coating protection for H_2 embrittlement, SCC and tensile tests *(Russian)* 8−31513
steel, unalloyed, brittle fracture, effect of prestrain and ageing *(German)* 8−19857
steel, V strengthened dual phase, deform. and fracture props. 8−48467
steel 17G1S, magnetic method of mech. prop. determ. of thick sheet 8−48600
steel 23K2G2T, corrosion cracking susceptibility, C and Cr effects 8−19952
steel bimetal, low-alloy austenitic ferritic stainless steel, fracture toughness *(Russian)* 8−35482
steel fibre reinforced epoxy composite, static tensile behaviour *(Japanese)* 8−15482
steel M16C, low C, natural discrete microlamellar composite *(Russian)* 8−39810
steel sheets, overlapped, glued with nonuniform epoxy resin layer, strength tests *(German)* 8−15647
steel tubing, cold rolled, nondestructive mag. method for determ. of mech. props. 8−23903
steel wire reinforced Al-Zn-Mg, tensile strength depend. on angle of reinforcement *(Russian)* 8−15452
steel wires, drawn and annealed, tensile fatigue and tensile strength under cyclic stress *(Japanese)* 8−15507
submarine cables, wire fracture modes and mech. props. correl. with fatigue life 8−35520
superalloy, microstructure resulting from alloying and heat treatment, effect on creep, fatigue, fracture strength 8−11246
tubes, thin wall, long-time strength, steady creep conditions *(Russian)* 8−46900
two-axis tensile test machine, for static and dynamic tests *(French)* 8−15627
VT3-1, HTMT effects on struct. and props. 8−23740
wound healing, var. of mech. props. in different areas 8−27984
Ag_3Sn, dental alloy, prod. by melt extraction technique, exam. of mech. props. 8−48349
Al alloy, dispersion strengthened, made by mech. alloying 8−3136
Al alloy 7075, fracture toughness, hydrostatic press. depend., tensile ductility 8−3209
Al alloy A356-T61, creep rupture props. 8−27612
Al alloys, superplastic, tensile deform. behaviour *(Japanese)* 8−27558
Al, plane stress calc. with two dimensional elastic-plastic computer program 8−35465
Al, polycrystalline, deform. sub-struct., effect on tensile props. *(Japanese)* 8−11279
Al-Al_3Ni, aligned, eutectic alloy, mech. behaviour at high strain rates 8−39855
Al-Al_4C_3, dispersion hardened physical props. meas. *(German)* 8−31415
Al-Cr (3 to 11 at.%), cooling rate effect on solidification struct. and mech. props. *(Japanese)* 8−39755
Al-Cu-Mg alloy, extruded, press forming in liquid/solid coexisting state, mech. props., Mg effects 8−11151
Al-Cu(Ag), tensile ductility, effect of ageing and impact velocity *(Japanese)* 8−15465
Al-Mg (7 wt.%), β-phase soln. behaviour and mech. props. *(Korean)* 8−11277
Al-Mg alloy AMg6, deform. in plane stress at low temps. 8−39873
Al-Mg_2Si (0.95 wt.%), excess Si effect on ductility 8−27580
Al-Mg-Cu-Si-Cr (1,2.7,0.6,0.2wt.%), laser shock hardening of weld zones 8−39800
Al-Mg-Mn-Cr (4, 0.45, 0.15 wt.%), laser shock hardening of weld zones, exam. 8−39800
Al-Mn profiled alloy components pulled from melt, physicomech. props. 8−3175
Al-Zn (22 wt.%), superplastic strain rate sensitivity, rel. to ductility 8−31478
Al-Zn-Mg (4.5, 2.5 wt.%), composition effect on stress corrosion and mech. behaviour 8−27684
AlB_2 flake reinforced composites, prep., props. rel. to aspect ratio, book contrib. 8−48366
Al_2O_3, polycrystalline, fracture probability under static bending and tensile loading at 800°C *(German)* 8−23806
Al_2O_3, unflawed polycryst., tensile failure, SEM and acoustic emission expts. 8−27598
B fibre reinforced Al, tensile and compressive strength, prior thermal treatment effect 8−11264
B fibre reinforced Al, thermal degradation of tensile strength, due to fibre strength degradation 8−39861
B fibre reinforced epoxy and Al, cryogenic tensile, compressive and shear props. 8−6983
B fibres of various diameters, tensile strength, elasticity, elongation 8−3189
B_4C fibres, yarn prep. from C fibres, mech., chem. props., struct., book contrib. 8−48365
BN fibres, prep., struct., thermal, mech. and elec. props., appls., book contrib. 8−48360
Be, neutron irradiated, annealed, tensile props. and swelling, effect of He bubbles 8−22765
C fibre, Ni coated, high-temp. compatibility 8−19829
C fibre reinforced Al, formed by ion plating and vacuum hot pressing 8−11165
C fibre reinforced epoxy, fatigue strength 8−15495
C fibre reinforced plastic, laminate, non Hookean behaviour in fibre direction, effect of fibre waviness on tensile props. 8−19804
C fibre reinforced polymer, strength props., fibre surface treatment effects 8−27636
C fibre-Kevlar 49 fibre epoxy laminate, impact props. 8−44164
C fibre-Mg matrix interaction, strength changes on heating 8−11164
C fibres, oxidation by NO_2, struct., props. modification 8−44237
C fibres with large breaking strain, prep., mech. props., struct., appl. 8−44077
CaO-MgO-Al_2O_3-SiO_2, glass ceramic, prep. by hot pressing and crystallisation, mech. props. 8−15351

tensile strength continued
Co-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Cu, thin interlayer between high-strength alloy rods *(Russian)* 8−19821
Cu, whiskers, hardening during uniaxial extension, preliminary torsion deform. *(Russian)* 8−15420
Cu-Al (10 wt.%), annealed, tensile fatigue strength at high temp. in vacuum *(Japanese)* 8−35493
Cu-Al (15 at.%), single crystal, steady state deform. with $\langle 001 \rangle$ axis at high temp. *(Japanese)* 8−6980
Cu-Al_2O_3, dispersion-strengthened, vapour-deposited, tensile creep 8−11115
Cu-Al-Fe, strength increase from intermediate annealing determ. of annealing temp. by recrystallisation 8−44136
Cu-based alloys, deposition condition relationship with struct. and props. 8−11369
Cu-Be-Co (2,0.3 wt.%) alloy, heat treatment, influence of tempering on hardness, tensile props. transform diagram *(French)* 8−31384
Cu-In, undirectionally transformed, mechanical props. 8−48492
Cu-Nb_3Sn, in situ formed multifilamentary composite, supercond. and mech. props. 8−39279
Cu-Ni-Cr (28, 2.8 wt.%), spinodal alloy, microstruct. and tensile props. 8−39858
Cu-ThO_2(ZrO_2) alloys, dispersion hardened, electrical cond. and mech. props. 8−44133
Cu-Ti (Zr), strength improvement by thermomechanical treatment *(Japanese)* 8−48426
Fe alloy MA-956E, oxide dispersion strengthened sheet, tensile and creep props. at 1365K 8−48470
Fe, cast, fracture mech. and fractography *(Japanese)* 8−7031
Fe, cast, spheroidal graphite, graphite size effect on mech. props. *(Korean)* 8−11278
α-Fe, cold rolled, hydrostatic press. effect on microstructural changes during creep 8−39871
Fe, H_2 effect on yield 8−15474
Fe, powder preforms., hot consolidated rolled strip, mech. props. 8−15338
Fe, pure, mech. props. at low temps. 8−44219
Fe, pure, tensile deform., sources of acoustic emission 8−19814
Fe-Cr-Mn (11.5, 3 wt.%), microduplex ferritic-martensitic steel, exam. 8−39862
Fe-Cr-Mo sintered, damping capacity and mech. props. 8−44161
Fe-Mn-Cr-C (20, 4, 0.5 wt.%), hyperquenched and predeformed, mech. props. *(French)* 8−23786
Fe-Mo, damping capacity *(Japanese)* 8−11259
Fe-Mo (3 wt.%), substitutional solid soln. with cubic faced symmetry, Portevin-Le Chatelier effect *(French)* 8−23785
Fe-Ni-Al(Ti)(V)(Nb), cryogenic toughness, strength, rel. to reactive metal addition 8−39885
Fe-Ni-C, martensitic, mech. charact., effect of ageing and tempering *(Slovak)* 8−19791
Fe-Ni-C (21, 0.6 wt.%), stress assited and strain induced martensite morphologies 8−3187
Fe-Si, crack propag. kinetics, effect of current pulses 8−31531
$Fe_{80}P_{16}C_3B_1$ amorphous filament, produced by glass coated melt spinning, mech. props. 8−15483
Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8−44146
Mo, exam. of H_2 embrittlement mechanisms, effect on mech. props. 8−39891
Mo, mech. props., influence of temp. on singularities of deform. *(Russian)* 8−6970
Na_2O-CaO-SiO_2, glass, surface indentation effect on mech. strength, and thermal stress resistance 8−48463
Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8−10301
Nb_3Sn superconductors, mech. behaviour, diffusion *(German)* 8−39880
Ni, oxide dispersion strengthened materials, effect of prior creep at 1365K on room temp. tensile props. 8−39857
Ni, shock loaded, work softening 8−27537
Ni-Al (14 at.%), two stage ageing effect on spatial distrib. of γ'-phase particles *(Russian)* 8−39805
Ni-Cr-(Al), oxide dispersion strengthened materials, effect of prior creep at 1365K on room temp. tensile props. 8−39857
Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
Ni-Nb-Al (21,2.5 wt.%), eutectic aligned alloy, mech. behaviour at high strain rates 8−39855
Ni_3Al, overshooting while testing in tension 8−44189
Pb-Sn, with brass insert, tensile flow and fracture 8−11290
Pd-Cd eutectic, unidirectionally solidified, tensile and compressive props. 8−27567
SiC coated B fibre Al-V-Ti, tensile and compressive strength, prior thermal treatment effect 8−11264
Si_3N_4, reaction bonded, bending strength meas., influence of loading conditions, proof testing and anal. methods *(German)* 8−31451
SiO_2, coated silica fibres, tensile strengths of 1 km lengths 8−1384
SiO_2, optical fibre, tensile strength distrib. and gauge length extrapolation 8−9434
Ti alloy, creep and long-term strength under cyclic loading 8−3191
Ti alloy, microstructure resulting from heat treatment, alloying, effect on creep, fatigue, fracture strength 8−11246
Ti alloy, VT16, decomp. of α'' martensite during continuous heating *(Russian)* 8−48370
Ti alloy RMI 38644, shock loaded, residual strength 8−27574
Ti alloy US meas., correlation with ductility and fracture detection 8−31601
Ti-Al-V-Cr-Mo-Zr (3,8,6,4,4 wt.%), beta-C, microstruct. effect on mech. props. 8−27577
Ti-Al-V-Sn(Mo-Fe), heavy section extrusion, fabrication and mech. props. 8−6985
$Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8−11292
V-H, H effect on fatigue crack propag. 8−48516
V-H, H effect on tensile props. at moderate temps. *(Japanese)* 8−19831
W fibre reinforced epoxy composite, static tensile behaviour *(Japanese)* 8−15482

tensile strength continued
- WC-Co, size factor effect on strength in complex stressed state 8−31483
- Zn, compatible bicrystal, plastic deform. *(Japanese)* 8−31460

tensimeters *see vapour pressure measurement*

tensors
- Einstein's field equations, Hilbert's metrical matter tensor, generalisation 8−21040
- Einstein linearized tensor, massive spin two fields 8−36890
- EM waves in dispersive media, energy-momentum tensors 8−17842
- field dependent, solid state physics appl. 8−31055
- general relativity, EM polarisation tensors, calc. by Fokker's method *(French)* 8−24695
- Green tensor expansions for harmonic vector wave eqn. in spheroidal coord. systems 8−41171
- Riemann curvature tensor and closed geodesic paths, for teachers 8−24600
- Riemannian manifolds, separability structures, Killing 2-tensors 8−45470
- supergravity, supersymmetric generalisation of differential geometry tensors 8−45546
- twistors and multipole moments 8−16705

terbium
- *see also nuclei with ......*
- anisotropy energy in basal plane, temp. dependence 8−2673
- glass:Tb^{3+}, polarised, luminesc. 8−48224
- magnetocrystalline anisotropy, perturbation theory 8−2675
- rare earth pentaphosphates:Ce^{3+},Tb^{3+}, energy transfer between dopants, excitation spectra, laser appls. 8−10961
- transport props., anisotropy, high temp. obs. 8−26843
- vapour, SiC cryst. growth from soln. in Si, temp. gradient method 8−35301
- CaF_2:Tb, EPR in new photoexcited centre 8−19319
- CaO-Li_2O-B_2O_3 calibo glass, diffusion limited energy transfer from Tb^{3+}→Ho^{3+} 8−31235
- $CeMgAl_{11}O_{19}$:Tb^{3+} phosphors, for low press. fluoresc. lamps, luminesc. characts. 8−10960
- Cs_2NaYCl_6:Tb^{3+}, emission spectra, mag. dipole transitions assignments 8−23505
- Gd_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
- LaOBr:Tb phosphor X-ray mottle reduction by multilayer screen construction 8−4756
- La_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
- $NaGdO_2$:Tb^{3+}, obs. of efficient luminesc., UV excitation 8−43922
- Tb^{3+} in rare earth ion cryst. field in YF_3 struct., spectra 8−19563
- Y_2O_2S:Tb, cathodoluminesc. efficiency at low electron energy 8−6790
- Y_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
- Y_2O_2S:Tb^{3+},Eu^{3+}, energy transfer mechanism 8−6793

terbium alloys
- Fe-Tb dilute alloy, amorphous, small angle mag. scatt. 8−27021
- GdTb alloy, transport props., anisotropy, high temp. obs. 8−26843
- Ho-Tb (50 wt.%) alloy, mag. phase diag. from anomalous US propag. 8−6526
- $La_{1-y}Tb_yAg$, crystal field effects, normal and superconducting states 8−2621
- $La_{1-y}Tb_yAg$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- $La_{1-y}Tb_yAl_2$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- $La_{1-y}Tb_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
- Pr-Tb, elec. resist. temp. depend. 8−2462
- Tb-Al(Ag), hyperfine field exam. by NMR spin echo 8−23365
- Tb-Gd single cryst., mag., magnetoelastic and elec. props. *(Russian)* 8−2677
- Tb-Ho, single cryst., annealed, thermal expansion 8−47541
- Tb-Ho dil. alloy, nucl. spin-lattice relax. of ^{165}Ho 8−48069
- Tb-Y, magnetostriction, mag. and elec. props. 8−27068
- $TbAg_{1-x}In_x$, mag. and transport props. 8−43572
- TbAlGa, mag. props. and struct. 8−39302
- $TbBe_{13}$, mag. struct., neutron diffr. meas., 4.2K 8−47953
- TbCoAl, mag. props. 8−2659
- $Tb_{0.24}Dy_{0.73}Fe_{1.95}$, magnetostrictive underwater sound transducer 8−13881
- $TbFe_4Al_8$, neutron diffr. exam., mag. struct. 8−10656
- $Tb_2Fe_4Si_9$ and $TbFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8−34957
- Tb_5Ge_4, mag. struct. and mag. transitions, neutron diffr. expts. 8−43564
- $TbMg_3$, antiferromagnetic struct. 8−14930
- $Tb_{1-x}Y_x$ alloy, helicoidal antiferromag. to ferromag. transition 8−10687
- $(Tb_{1-x}Y_x)_3Co$, mag. props. and transitions, conc. depend. *(Russian)* 8−10671
- TbZn, magnetoelastic consts. 8−15005

terbium compounds
- *see also terbium alloys*
- $LiTbS_2$, long and short range order 8−38667
- LuTb garnet film, scratch-modified mag. domain patterns 8−48007
- $Sm_{0.05}Tb_{0.45}FeO_3$, singularities of domain struct. in spin-flip region 8−19272
- $SrTb_2Fe_2O_7$, ferrite, Mossbauer effect study of hyperfine interactions, spin reorientation 8−19383
- TbB_{12}, nature of magnetism *(Russian)* 8−31049
- TbB_4, ferromag. ordering, neutron scatt. meas. 8−10655
- $TbCrSe_3$, prep., elec. and thermal props. 8−43390
- TbD_2, sublattice magnetisation, cryst. elec. field effects 8−39295
- TbF_3, ^{19}F NMR, ligand hyperfine interaction, shift tensor determ. 8−48056
- TbF_3, mag. phase diagram, crit. and tricrit. behaviour 8−14959
- TbF_3:Tb^{3+}, cryst. fields, luminesc. spectra 8−19563
- $Tb_2(MoO_4)_3$, hydrostatic press. effect on phase transition 8−27166
- $Tb_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
- TbO_2:Dy^{3+}, mag. hyperfine interaction, PAC expt. 8−35069
- $Tb(OH)_3$, neutron diffr. struct. exam. 8−2077
- $TbPO_4$, specific heat from 1.2 to 6K 8−14475
- Tb_xS, mag. ordering, neutron diffr. meas. 8−2649
- Tb_xTe, mag. ordering, neutron diffr. meas. 8−2649

terbium compounds continued
- $Tb_pY_{1-p}AsO_4$, crystallographic, mag. phase transition as function of temp. and Tb conc. 8−43334
- $Tb_xY_{3-x}Fe_5O_{12}$, spin reorientational phase transitions *(Russian)* 8−39349
- $Tb_xY_{3-x}Fe_5O_{12}$, spin-reorientation phase transitions, neutron depolarisation factor 8−27037
- Tb_2ZrS_5, mag. and sp. ht. meas. on polycrystalline samples 8−23253
- ZnS:TbF_3, photoelectroluminescence, effect of electron-hole pairs 8−27328

ternary semiconductors
- *for pseudobinary semiconductors, see II-VI semiconductors, III-V semiconductors, III-VI semiconductors, IV-VI semiconductors and semiconductor materials*
- *see also chalcogenide glasses*
- chalcopyrite, bibliography 8−38994
- chalcopyrite, energy band struct. 8−34767
- conference, Edinburgh, Scotland (Apr. 1977) 8−34736
- device applications, review 8−39207
- energy band structure, structural effects 8−39021
- II-IV-V_2, electronic band struct., general model pseudopot. 8−39020
- nonlinear optical materials review 8−33782
- photovoltaic devices, thin film heterojunction and homojunction, fabrication and performance 8−39208
- review of developments 8−34737
- Schottky diodes with tunnel device characts. 8−39215
- $AgGaS_2$, up-conversion of 10.6 μm radiation into visible 8−33783
- $AgGaS_2$, Raman spectrum, degenerate mods, temp. depend. 8−35150
- $AgGaSe_2$, Schottky diodes with tunnel device characts. 8−39215
- $AgGaSe_2$, seeded Bridgman growth of crack-free crysts., thermal expansion coeff. 8−11101
- $AgGaSe_2$ wavelength-modulated reflectance, optical electronic transitions, 1.5-5.5 eV 8−35170
- $AgGa(Se_{1-x}S_x)_2$, crystal growth, phase studies, optical props. 8−48305
- $AgGaTe_2$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
- $Ag_8GeS_6(Se_6)(Te_6)$, Ag_8SiSe_6, $Ag_8SnS_6(Se_6)$, absorpt. edge investigs. at phase transitions 8−35149
- Ag_8GeSe_6, polymorphic transition, absorpt. coeff. meas. 8−2257
- $AgIn_5S_8$, cryst. growth and props. 8−39677
- $AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
- $AgInSe_2$, $AgInTe_2$, $AgGaSe_2$, pressure-induced phase transformations 8−30748
- $AgInSe_2$, far IR refl. spectra, polarised light 8−43870
- n-$AgInSe_2$, press.-induced compensation, resist. expts. 8−30919
- $AgInSe_2$, reflectvvity and XPS meas. 8−35165
- $AgInTe_2$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
- $AgInTe_2$, far IR refl. spectra, polarised light 8−43870
- Ag_2S-In_2S_3-SnS_2 system quaternary and ternary sulphide spinels, solid solubility and struct. 8−35376
- $AgTlSe_2$ and AgTlSe, elec. cond. and thermoelectric power, doping effects, rel. to pseudogap model 8−2506
- BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
- $CdCr_2S_4$, hot-pressed, optical isolation appl. at 10.6 μm, intrinsic absorpt. props. 8−42368
- $CdCr_2Se_4$, crit. behaviour of optical absorption edge 8−35143
- $CdCr_2Se_4$, crit. speeding-up of spin-relax. 8−48028
- n-$CdCr_2Se_4$, current- and voltage-controlled negative resist. obs. 8−19041
- $CdCr_2Se_4$ film, absorpt. and Faraday effect 8−2936
- $CdCr_2Se_4$:Ag(Gd), doping effects on exchange interaction 8−43579
- $CdCr_2Se_4$:Ga, sp. elec. resist., temp. and mag. field depends. *(Russian)* 8−26893
- $CdCr_2Se_4$:In, influence of Se-deficiency on props. 8−30921
- $CdCr_2Se_4$:In, nondegenerate ferromagnetic semiconductor, positive magnetoresistance 8−2505
- $CdGa_2S_4$, interpretation of thermolum. and TSC meas. 8−27336
- $CdGa_2S_4$, vibr. spectra, 33-400 cm^{-1}, symm. transform. *(Russian)* 8−23465
- $CdGa_2S_4(Se_4)$, band struct., and optical spectra 8−19511
- $CdGa_2S_4(Se_4)$ film, optical absorpt., and energy gaps 8−11012
- $CdGa_2S_{4(1-x)}Se_{4x}$, solid soln., crystallographic studies 8−15301
- $CdGeAs_2$, amorphous and cryst., short-range order, Mossbauer expts. 8−22648
- $CdGeAs_2$-$ZnGeAs_2$, and $CdGeAs_2$-$GdGeP_2$, material distrib., possibility of heterostructure *(Russian)* 8−30979
- $CdGe(As_{1-x}P_x)_2$, crystal growth, phase studies, optical props. 8−48305
- $CdGe_{1-x}M_xAs_2$ (M=Si,Sn,Pb), (x=0.0,0.1,0.2), amorphous struct. 8−22651
- $CdGeP_2$, electronic struct. at cryst./vitreous transition, X-ray K-absorpt. and emission 8−15248
- $CdGeP_2$, pure and In-doped, polarisation of recombination radiation 8−19562
- $CdIn_2S_4$ cubic spinel, electronic band struct. and chem. bonds 8−34768
- $CdIn_2S_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
- $CdIn_2S_4$, impurity centres, photoluminesc. and photocapacitance data on config.-coordinate diagrams 8−10938
- $CdIn_2S_4$, photocond. and trap. distrib. 8−39164
- $CdIn_2S_4$, photoluminesc., reson. Raman scatt. 8−48179
- $CdIn_2S_4$, Raman and IR spectra 8−48181
- $CdIn_2S_4$, single cryst., oscill. behaviour of photocurrent and luminesc. 8−10501
- $CdIn_2S_4$ single crystal growth by two-zone horizontal Bridgman technique 8−27400
- $CdIn_2Se_4$, defect zincblende semicond., valence band, cryst. struct. effects 8−48278
- $CdIn_3Se_4$, cryst. growth, photoresponse and optical props. 8−39165
- $CdSiP_2$, PAC examination of deuteron irrad. damage, annealing effects 8−47446
- $CdSnAs_2$-$ZnSnAs_2$, and $CdSnAs_2$-$CdSnP_2$, material distrib., possibility of heterostructure *(Russian)* 8−30979
- $CdSnP_2$, luminescent props. *(Russian)* 8−35201
- p-$CdSnP_2$, photocond. meas., polarisation depend. 8−39157
- $CdSnP_2$-$CdSnAs_2$, and $CdSnP_2$-$CdGeP_2$, solid solution form. and elec. characterisation 8−43125
- $CoCr_2Te_4$, cryst. growth, struct., elec. props., Hall effect 8−43416

ternary semiconductors continued
Cu-In-Se system cubic ordered phase existence and characts. 8−34495
$CuAl_{1-x}Fe_xS_2$ system, delocalisation of d-electrons, mag., elec. and optical obs. 8−34804
$CuAlS_2$, reflectvvity and XPS meas. 8−35165
$CuAlS_2$, X-ray spectroscopic study 8−39626
$CuAlS_{2x}Se_{2(1-x)}$, excitonic structure, phase-shift-difference spectra 8−2872
$CuFeS_2$, X-ray spectroscopic study 8−39626
$CuGaS_2$, crystal growth and luminesc. *(Japanese)* 8−23515
$CuGaS_2$, ESR assessment of S diffusion behaviour on annealing 8−35036
$CuGaS_2$, exciton absorption energies, appl. of modulated phase-shift-difference method 8−39565
$CuGaS_2$, photoelectronic props., 77 to 300K 8−34865
$CuGaS_2$, reflectvvity and XPS meas. 8−35165
$CuGaS_2$, X-ray spectroscopic study 8−39626
$CuGaS_2$-$CuGaSe_2$ system, forbidden-band width 8−35280
$CuGaS_{2x}Se_{2(1-x)}$, excitonic structure, phase-shift-difference spectra 8−2872
$CuGa(S_xSe_{1-x})_2$, refl. spectra, comp. depend. 8−39570
CuGaSe, Schottky diodes with tunnel device characts. 8−39215
$CuGaSe_2$ film, optical props. near and above fundamental absorption edge 8−35215
$CuGaTe_2$ and $CuInTe_2$, electroreflectance data, direct gap obs., cryst. field splitting and hybridisation degree 8−39557
$CuGdTe_2$, synthesis and elec. props. 8−26529
$CuInS_2$, cathodolum. spectra, heat treatment and electron irrad. effects 8−10996
$CuInS_2$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
$CuInS_2$, homogeneity region and intrinsic dopant mechanism 8−34630
$CuInS_2$, optical and elec. phenomena 8−39605
$CuInS_2$, X-ray spectroscopic study 8−39626
$CuInS_2(Se_2)$-$GeS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
CuInSe, reflectvvity and XPS meas. 8−35165
$CuInSe_2$, large single crystals growth by iodine transport and Bridgman methods 8−35300
$CuInSe_2$, melt-grown, EPR characts. 8−35030
p-$CuInSe_2$, minority carrier lifetime and surface recomb. velocity, photoelectromag. meas. 8−19085
$CuInSe_2$, Schottky diodes with tunnel device characts. 8−39215
$CuInSe_2$ semicond. films, optical props., 1-3 eV 8−27346
n-$CuInSe_2$, single cryst., elec. props. 8−43397
$CuIn_2Se_{3.5}$, cubic ordered compound, optical gap 8−48175
$CuInSe_2(S_2)(Te_2)$, Debye temp., standard entropies and enthalpies, sp. ht. meas. 8−30769
$CuInTe_2$, direct energy band gap determ., electroreflectance meas. 8−2418
$CuInTe_2$, pressure-induced phase transformations 8−30748
$CuRTe_2$, R=Gd, Tb, Er, Tm, synthesis 8−26529
$DyCrS_3(Se_3)$, prep., elec. and thermal props. 8−43390
$EuBi_2Te_4$, elec. cond., Hall, thermo-EMF coeffs. determ., 300-1100K 8−43386
$EuSb_2S_4(Se_4)(Te_4)$ elec. cond., Hall, thermo-EMF coeffs. determ., 300-1100K 8−43386
Ge-GaP system, phase analysis 8−23674
Ge-InP system, phase analysis 8−23674
$(Ge_{1-x}Ga_x)_{1-x}Te$, rhombohedral and cubic phases, transport effects 8−2481
$(Ge_{1-x}In_x)_{1-x}Te$, rhombohedral and cubic phases, transport effects 8−2481
$HgCr_2Se_4$, initial mag. permeability freq. depend. near Curie temp. 8−10729
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunction, prep. and photovoltaic prop. *(Japanese)* 8−34889
$HgCr_2Se_4$-$CdIn_2S_4$ heterojunctions, prep. and photovoltaic prop. 8−34892
$HgCr_2Se_{4-x}S_x$, temp. depend. of EPR line intensity 8−27074
$HgGa_2Se_4$, anisotropic photocond., pleochroism, and band struct. 8−19094
$Hg_3In_2Te_6$, complex ordered-vacancy cpd., struct. and lattice dynamics 8−34496
$InSbS_3(Se_3)$, prep., polymorphism, cryst. struct. 8−44002
$Pb_{1-x}Cd_xS$, metastable epitaxial films, elec. props. 8−26979
$Pb_{1-x}Cd_xS$ metastable epitaxial films, growth and physical props. 8−27417
$Pb_{1-x}Hg_xS$ film, IR detector material, struct. and IR props. 8−26775
SbSBr, electronic and optical props. 8−34763
SbSI, electronic and optical props. 8−34763
SbSI ferroelectric, dielectric behaviour, particle-size dependence 8−2811
SbSeI, electronic and optical props. 8−34763
$TbCrSe_3$, prep., elec. and thermal props. 8−43390
$TlAsSe_2$, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8−34954
$TlGaSe_2$, impurity conductivity and TSC 8−23128
$ZnCr_2Se_4$, screw spin struct., neutron diffr. exam. 8−27019
$ZnGeP_2$, Br_2-methanol etching soln. for crystallographic axes determ. 8−35541
$ZnGeP_2$, cryst., electronic struct., X-ray K-absorpt. and emission 8−15248
$ZnGeP_2$, crystal, polarisation of recombination radiation 8−19562
$ZnGeP_2(As_2)$, reflectvvity and XPS meas. 8−35165
$ZnIn_2S_4$, fund. optical consts., Kramers-Kronig analysis, reflectivity spectra 8−39573
$ZnIn_2S_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
$ZnIn_2S_4$, photoluminesc., reson. Raman scatt. 8−48179
$ZnIn_2S_4$, Raman and IR spectra 8−48181
$ZnSiAs_2$, synthesis and layer growth by CVD in open flow system 8−15312
$ZnSiP_2$, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775
$ZnSiP_2$, first- and second-order Raman scatt. 8−35151
p-$ZnSnP_2$, photolum. anisotropy, 77K 8−19557
ZnTe-Ga_2Te_3, phase diagram 8−35360

terrestrial age *see Earth age*

terrestrial atmosphere
see also air; clouds; ozonosphere; stratosphere; troposphere; upper atmosphere
active microwave sensing *(Japanese)* 8−16213
cometary nuclei or asteroids interaction with planetary atms., rel. to 1908 Tunguska event 8−49378
evolution, computer simulation, composition and surface temp. 8−28263
evolution implications for Earth's early atmosphere 8−36285
global general circulation, 4th order model 8−11952
ice clathrate as source of atmospheres on terrestrial planets 8−28557
monitoring techniques for neutral atmosphere *(Japanese)* 8−16126
palaeoatmospheric temp. struct. 8−28264
prebiotic model atmospheres, far UV irradiation effects 8−40668
reducing to neutral biosphere, length of transition period 8−20519
remote sensing *(Japanese)* 8−16205
Standard Atmosphere, 1976, rel. to previous standards 8−11975

terrestrial composition *see Earth composition*

terrestrial electricity
active hydrothermal systems, intrinsic fluid and rock resistivity anal. 8−40480
apparent resistivity and Laterlog 7 sonde results 8−44759
apparent resistivity curves calculation, computer program *(Italian)* 8−40472
apparent resistivity data interpretation, Apodi Valley, Brazil 8−3712
apparent resistivity tensor appls. 8−28158
Bermudas, upper mantle conductivity 8−40482
bimodal Em induction in nonuniform thin sheets, N.Pyrenean induction anomaly appl. 8−11805
coal seam depth determ. by elec. method *(Spanish)* 8−45031
E.Colorado, electrical and seismic sounding of low-resistivity low-velocity materials 8−3711
conductivity anomaly, response to inducing source fields, lab. model 8−36100
conductivity irregularities in layer, effect on variable EM field 8−20354
conductivity modelling using finite element numerical technique 8−20357
crust, nonparallel stratified models, scattered EM radiation field 8−44773
crust, nonparallel stratified models, scattered surface wave 8−40489
crustal resistivity, sounding data from South Africa, ridge regression inversion appl. 8−7561
DC apparent resistivity prospecting, topographic correction *(Chinese)* 8−24375
DC resistivity sounding method, appl. to evaluation of non-uniform water-bearing formation 8−40474
deep magnetic-variation sounding, geoelectric and geothermal interpretation of results 8−44765
deep magnetotelluric sounding, model of geoelectric section 8−44768
electromechanical phenomena assoc. with earthquakes 8−36108
electrostatic field generation, Earth as unipolar generator 8−44771
EM field build-up sounding method, resolution 8−16176
EM field of infinitely long cable, diffr. over wedge-shaped conducting media *(Russian)* 8−40484
EM field variations assoc. with sea waves, possible origin 8−44834
EM frequency sounding, crustal struct. determ. 8−49167
EM induction, in rot. conductive Earth 8−44764
EM probing of permafrost terrain, theory 8−28323
EM propagation characteristics and interface aspects, Conf. Istanbul, Turkey (Oct. 1976) 8−22075
EM sounding, interpretation of transients in Laplace space representation *(Russian)* 8−40483
EM sounding methods, theoretical principles 8−49166
EM wave excitation by dipole emitters buried in stratified media 8−48966
central Europe, upper mantle conductivity anomaly rel. to geomagnetism and secular var. *(German)* 8−7565
E.European platform, peculiarities of geoelectrical section and zonation of Volyn-Podolian margin *(Russian)* 8−48964
grounded structures, induced polarization effects 8−28157
groundwater resources in Kalahari Basin, geoelec. survey 8−3830
Hawaii Island, mag. induction fields rel. to oceanic mantle elec. cond. struct. 8−40477
impedance determination, effect of field vertical components on magnetotelluric soundings results *(Russian)* 8−48963
induced polarization method, time domain and freq. domain comparative anal. 8−20351
induced polarization models, parametric study 8−7560
induction effects, simulation on mid-latitude substorm data 8−15960
layered medium, anisotropy resolution by joint inversion 8−16173
magnetotelluric analysis for layered Earth, matrix relation 8−32008
magnetotelluric and magnetic variational sounding, 3-dim. modelling 8−7563
magnetotelluric field over graben containing high-resist. intercalation, calc. and anal. *(Russian)* 8−48965
magnetotelluric resistivity and phase soundings interpretation, graphical procedure 8−40473
magnetotelluric sounding, inverse problems soln. 8−49162
magnetotelluric sounding method development in USSR 8−49169
magnetotelluric sounding over models of continuously varying conductivity 8−32009
magnetotelluric studies in USSR, review 8−49168
magnetotelluric tensor analysis, appl. to two-dimensional geological structs. 8−40471
mantle, conductivity in deep regions, geomagnetic impulses 8−28200
marine waves, nonstationary, theory of EM field 8−44833
Melendy Ranch, Calif., San Andreas fault, search for resistivity variations 8−28185
nonperiodic EM induction in conducting Earth 8−44761
prospecting equipment with focusing effect, detect. of cavity in lower half-space *(Russian)* 8−28336
region EM induction, inversion problem 8−7567
regularization method and uniqueness problems in study of regional flat-layered structs. 8−49161
resistance logging, continued fractions method appls. *(Russian)* 8−3971
resistive/conductive beds, limiting detection depth in line electrode systems 8−44760

terrestrial electricity continued
  resistivity and induced polarization, modified pseudosection 8−7562
  resistivity and induced polarization modelling using buried electrodes 8−11802
  resistivity determination, by surface meas. 8−24393
  resistivity distribution, in uppermost kilometres on continental areas 8−24219
  resistivity sounding, dipole to Schlumberger curve transformation by digital linear filters 8−45015
  resistivity sounding on multi-layered Earth with transitional layers, theory 8−40475
  resistivity soundings over horizontal strata, man/computer interpretation system 8−45014
  salt-bearing sections, vertical electric sounding *(Russian)* 8−11807
  Schlumberger line sources and three-electrode anomalies, relative sensitivities 8−7564
  soil, resistivity meas., LF electromagnetic wave method *(French)* 8−24394
  soil bulk resistivity, meas. method 8−24381
  subsurface Em response of conducting-sphere in two-layer conductor 8−15961
  tectonoelectricity, review 8−36095
  telluric and magnetotelluric methods, comparison for sedimentary structures 8−3713
  transients, from two horizontal thin conducting strata *(Russian)* 8−40485
  upper mantle, partial melting and electrical conductivity anomalies 8−28199
  vertical electric sounding for salt-bearing structures *(Russian)* 8−3714
  vertical electrical sounding dipole-dipole filter coeffs. 8−12006
  Wenner resistivity soundings, vertical contact effect 8−20541

terrestrial heat
  see also volcanology
  active hydrothermal systems, intrinsic fluid and rock resistivity anal. 8−40480
  Archaean continental geothermal gradients 8−40525
  Baikal rift zone, heat flow rel. to neotectonic activity 8−36135
  bore hole drilling effect on thermal field *(Rumanian)* 8−20372
  charnockite series, form. temp. and press., evidence for geothermal gradients 8−40553
  conductivity eqn. during formation 8−28196
  cordierite-garnet bearing assemblages as geothermometers in granulite facies terrains 8−44810
  crop rows, effect on thermal radiation from terrestrial surface 8−16016
  crust and mantle, temperature-depth profiles, Poland, from geothermal and deep seismic sounding data 8−48988
  diurnal surface temp. range sensitivity to changes in physical parameters 8−3875
  Earth interior, thermal model 8−15982
  East Pacific Rise at 21°N, hydrothermal activity and crestal struct. 8−28216
  frictional heating on fault zone with finite thickness 8−36124
  Georgia Inner Piedmont, hornblende and biotite ^{40}Ar/^{39}Ar ages, rel. to tectonothermal history 8−48990
  geothermal energy prospecting by geophys. methods, review 8−7803
  geothermal field, approx. soln. for one-phase model, appl. to Wairakei 8−11853
  geothermal models development, Tikhonov's theory 8−48994
  geothermal reservoir, effect of magma dike intrusion on free convection 8−7599
  geothermal steam, ^{222}Rn emanations, rel. to seismic activity 8−11832
  geothermal well logging using hybrid ICs operating up to 300°C 8−3976
  global heat flow map and flow pattern, plate tectonics interpretation 8−7603
  hot spring water chemical constituents, Mt. Akagi region (Japan) *(Japanese)* 8−16072
  hydrothermal systems, convective heat fluxes from cooling plutons 8−36206
  internal temperature distrib., geothermal interpretation of deep mag. var. sounding 8−44765
  Juan de Fuca ridge, heat flow meas., evidence for hydrothermal circulation 8−28197
  mantle, melting point estimation using Uffen method, remarks 8−20367
  mantle, time dependent flow model 8−20369
  ocean sedimentary basins, thermal and subsidence history 8−49010
  opaque minerals alteration states correl. with temp. in active geothermal system 8−40551
  plate tectonic driving forces, heat flow and tidal drag 8−32050
  Red Sea geothermal system, ore transport and deposition 8−32096
  seafloor surface geothermal survey, techniques and results *(Russian)* 8−40527
  Soufriere Crater Lake, use as calorimeter, erupted lava heat loss rate calc. 8−28207
  source-span-sink thermal models of arcs and ridges 8−32040
  subduction zone, ascending flow between descending lithosphere and overlying asthenosphere 8−40531
  sulphide deposits, heat flow anomalies due to groundwater flow *(Russian)* 8−15978
  surface temp. of early Earth 8−15981
  temperature meas. in shallow holes, Salton Sea geothermal field test 8−11849
  thermoelastic deformations of half-space, strains and tilts, Green's functions 8−36092
  Ukrainian Shield, comparison of gravity and heat model with deep seismic survey profile *(Russian)* 8−48991
  Ukrainian Shield, thermal model from deep seismic sounding profile *(Russian)* 8−28190
  under-surface temp. pattern estimation by dynamic remote sensing *(Japanese)* 8−36315
  upper mantle, partial melting and electrical conductivity anomalies 8−28199
  Wairakei geothermal field, lifetime estimate 8−11854
  Yellowstone hot spot, tectonics and crustal props., earthquake and aeromag. data 8−48996
  Yellowstone Lake, heat flow meas., Yellowstone caldera thermal struct. 8−48997

terrestrial heat continued
  Yellowstone thermal waters, subsurface boiling and dilution effects on isotopic comp. 8−49048
  Yellowstone volcanic plateau, conf., USA (1974) 8−49004

terrestrial magnetic field *see geomagnetism*

terrestrial magnetism *see geomagnetism*

test equipment
  see also automatic test equipment
  abrasive and impact abrasive wear testing equipment for materials at elevated temps. 8−7136
  acoustically active material, fatigue strength testing installation, electric and magnetic field effects 8−39995
  angle tearing testing appliance for rubbers 8−7140
  complex dynamic Young's modulus measurement equipment for polymers 8−1615
  controlled-current impedance meas. equipment design *(Spanish)* 8−8421
  corrosion cell construction for metal SCC obs. in boiling MgCl$_2$ 8−39962
  cylic load 18-position test unit for film and fabric materials 8−7120
  deflection measurement apparatus for bimetallic plates during high-temp. heating 8−7134
  digital test instrument survey *(German)* 8−8394
  ECG testing, digital simulator appl. *(Spanish)* 8−40359
  elastic damping properties determ. unit for shock absorbers 8−5703
  flow transducer testing appl. 8−18363
  hazardous atmospheres, max. explosion press. affected by low ambient temp. 8−44380
  high and cryogenic temperature range mech. testing devices 8−7137
  holographic interferometer, piezoceramic radiators defects visualisation *(Russian)* 8−1530
  installation for in-reactor study of creep and stress-to-rupture, plane stress mode 8−39996
  installation for testing rotating-object surface temp. transducer 8−4612
  internal friction test unit for threadlike crysts. 8−36997
  laser radiation pulse-length monitor testing, precision test system 8−45697
  linearly varying pressure rate meas., instrument design 8−8395
  microammeter testing installation adaptation for $<30\ \mu$A 8−45653
  mitral valve prosthesis in vitro tester, unique design 8−40426
  noise generator, pseudo-random for sound absorption and buildings, insulation testing *(Spanish)* 8−13861
  nuclear fuel element, post irradiation testing in resistance furnaces *(German)* 8−29632
  ocean buoy testing, radiotelemetering meas. system *(Russian)* 8−16192
  plastometer, for determ. of deform. resist. of metals 8−7121
  profilometer attachment for surface roughness parameter determ. 8−36967
  rotatable sample holder with voltage readout, for low-temp. CW US expts. 8−13873
  SEM specimen chamber use for dynamic expts., state-of-the-art review 8−23918
  servocontrolled hydraulic hot-torsion machine for hot working studies 8−27698
  static bending testing device for samples at different temps. in aggressive media 8−39972
  steel stress/deformation response meas. device *(German)* 8−3261
  tension-compression fatigue testing machines, characterisation of materials under cyclic loading at high temperature *(French)* 8−15628
  torsion deformation test apparatus for 0-1150°C range in different gaseous atm. 8−7123
  torsion pendulum oscillations recording equipment for internal friction meas. 8−36998
  tubular sample testing unit with axial force, internal and external press. and torsional moment 8−39969
  two-axis tensile test machine, for static and dynamic tests *(French)* 8−15627
  US vel. propag. meter for NDT of polymers 8−19976
  vertical test machine for tension at speeds up to 25 m/sec 8−39968

test facilities
  see also aerospace test facilities
  fast reactor, commercial, sodium test rigs, in UK 8−732
  installation for testing elec. contact transducer, using interferometer and photorecorder 8−12683
  LMFBR secondary shutdown, absorber balls test 8−41821
  nuclear safety systems, periodic testing, time dependent unavailability anal., FRANTIC computer code 8−29588
  pulsed neutron, from spallation target, Rutherford Laboratory 8−29208

testers *see test equipment*

testing
  see also automatic testing; computer testing; electron device testing; electronic equipment testing; environmental testing; impulse testing; inspection; integrated circuit testing; logic testing; materials testing; mechanical testing; nondestructive testing; optical testing; production testing; program testing
  basic metrological operations and methods 8−41263
  flow and volume meas. devices, laboratory practice *(German)* 8−32803
  geodesy, hypothesis tests for singular compensation problems *(German)* 8−44758
  hot-film anemometers, testing strategy for freq. optimisation 8−26218
  industrial ear protectors, standardisation of testing, current developments 8−22225
  LMFBR secondary shutdown, absorber balls test 8−41821
  solar materials research and collector thermal performance tests *(Japanese)* 8−46732
  standard cells, low resistance differential potentiometer appl. *(Polish)* 8−29127
  X-ray collimators, testing via parallel X-ray beam generation technique 8−28526

testing apparatus *see test equipment*

testing equipment *see test equipment*
testing machines *see test equipment*

tetramethylammonium manganese chlorides *see organic compounds*
tetraneutrons *see neutrons*
tetrodes
power capabilities for plasma heating *(French)* 8−9801
reflex tetrode with unidirectional ion flow, additional aluminised mylar anode 8−37473
textile fibres *see fibres*
textile industry
machine noise charact. meas. under production condition 8−5611
texture
see also recrystallisation texture; surface texture
analysis, numerical calc. of generalised spherical harmonic function *(French)* 8−18484
analysis by vectorial method *(French)* 8−18483
BCC metals, influence of screw dislocations on cryst. lattice rotations during deform. *(Russian)* 8−6966
boundary conditions for textures and defects 8−26561
computer calc., library program, in FORTRAN IV 8−22598
Cosserat theory of crystal plasticity, appl. to anal. of lattice rotations under constrained deform. *(Japanese)* 8−2189
crystallite deformation in rolling, computer simulation *(French)* 8−31421
crystallographic, meas. by X-ray diffr. 8−22604
electron diffraction, orientation and position accuracy 8−22606
ethylene-propylene rubber, highly deformable, fracture surface roughness 8−44197
ferrous metals, banded structure determ., automatic structure analyser 8−39973
glass porous, struct. and texture rel. to heat treatment effects *(German)* 8−44140
grain orientation nonuniformity across wire specimen sections, anal. of X-ray patterns 8−23886
graphite intercalation compound with SbF_5, texture 8−31355
liquid crystal with negative dielectric anisotropy, cholesteric planar texture EHD distortion 8−42894
Lucke goniometer with computer control, metal texture plotting appl. 8−18500
mullite, quantitative X-ray anal., standardisation, texture *(German)* 8−11176
peridotite xenoliths in S.African kimberlites, structurology, upper mantle constitution implications *(French)* 8−11889
Perspex, adhesion of silicone rubber, surface topography effects 8−15644
polyethylene, linear, cold-deformed, texture and molecular chain mobility 8−19805
polyethylene, low density, highly deformable, fracture surface roughness 8−44197
trans-1,4-polyisoprene, crystalline morphology in thin films 8−6019
PVC, highly deformable, fracture surface roughness 8−44197
rare earth cobaltide, RCo_2, 'as cast', neutron diffr. exam. 8−3117
sheet, coeff. of anisotropy calc. from pole figure *(French)* 8−15621
sheet metals, strain-induced changes in mech. props. and press formabilities 8−19781
smectic liquid crystal, homeotropic to confocal texture transformation *(Russian)* 8−18548
steel, 08Yu, annealing effect on texture, microstruct., and mech. props. 8−44138
steel, austenitic stainless, texture effects in rods, in series tests, elastic props. *(German)* 8−15439
steel, low C, containing P, Mg effect on annealing texture, mech. props. and plastic anisotropy 8−27536
steel, low C, deform. form effect on texture *(Russian)* 8−3141
steel, stainless, hot rolled texture, effect on cold rolled and annealed textures *(Japanese)* 8−48425
steel, transformer, textural barriers to grain growth after cold rolling and annealing *(Russian)* 8−39796
styrene-butadiene rubber, highly deformable, fracture surface roughness 8−44197
X-ray diffraction, energy-dispersive, preferred orientation influence 8−22603
Zircaloy, micrograin superplasticity at 850°C 8−23758
Zircaloy-2 tubing, quantitative charact. of crystallographic texture 8−21647
Ag-Cu, directionally solidified, obs. of cutting deform. zone *(Japanese)* 8−15422
Al, defect structure after plastic deformation 8−31467
Al, uniform film, on Kapton laminates, prep. and characterisation 8−11373
Al, wire, determ. of incomplete axial texture by X-ray diffr. 8−23720
Al-Mg-Si rod, extruded and cold drawn, annealing *(German)* 8−39804
Al_2O_3, translucent, fabrication by high press. sintering 8−11167
AlZnMg alloy, precipitation hardened, strength 8−39786
Be-diamond support, for high-pressure X-ray diamond-anvil cell 8−30515
$Bi_{1-x}Sb_x$ film, evaporated, cross-sectional struct., electron microscopy and replica technique study *(German)* 8−22977
Cu, plane strain deformed, electron microscope obs. of morphology 8−31424
Fe, (100) [001], texture development by recrystallisation and normal grain growth 8−27539
Fe alloys, elastic props., texture correction formulae *(German)* 8−15439
Fe films, vacuum evaporated, exam. of texture for various vapour beam incidence angles *(Japanese)* 8−48318
Fe-Si (3wt.%), quantitative determ. of grain orientation and textile by etch figure method *(Chinese)* 8−11233
Fe-Si-MnS-Al, Al effect on hot rolling struct., recrystallization, texture magnetic props. *(Chinese)* 8−11237
^{3}He, superfluid, B-phase, n-solitons, and NMR freq. calcs. 8−34670
Si, compressed, polycrystalline, deform. and recrystallisation texture 8−27538
Ti alloys, texture strengthening 8−23724
Ti-Al-V (6, 4 wt.%), texture effect on fatigue crack path 8−27633
Ti-Al-V (6,4 wt.%), improved toughness from prior β-grains 8−15522
V, polycryst., struct. changes during deform. *(Russian)* 8−48447
W, heteroepitaxial deposits with (110) orientation by molten salt electrolysis 8−47683
Zr alloys, crystallographic texture, quantitative charact., review 8−21647
Zr, cold-rolled, textural transform. *(Russian)* 8−39790
texture, surface *see surface texture*
thallium
see also nuclei with ......
alkali halide phosphors, Tl$^+$ doped, uniaxial stress effects 8−48202
atom, ground state, population 'freezing' effect in hyperfine structure *(Russian)* 8−937
atom, optics activity near suppressed M1 transition *(Russian)* 8−46292
atom, parity nonconserving effects in $6^2P_{1/2}$-$7^2P_{1/2}$ transition 8−13458
atom, photoionis. cross section, spin polaris. and ang. distrib. of photoelectrons, RPA calc. 8−13478
atom, photoionis. cross section and spin polarisation of photoelectrons 8−46307
atom, valence orbitals, Dirac-Fock scheme, direct and indirect relativistic effects 8−41969
conduction-electron elec. field gradient, probe valence effects 8−47749
magnetic breakdown, electron energy spectrum 8−10335
mitochondrial membrane monovalent Tl$^+$ ion transport 8−31787
Nernst-Ettingshausen effect in solid and liq. states *(Russian)* 8−6353
photoelectronic spectra, UV incident, polycryst. film 8−2986
quadrupole interaction of ^{69}Ge, TDPAD expts. 8−48089
vapour, electron drift vel., expt. 8−30403
vapour, electron drift vel., momentum cross-section, theory 8−30404
X-ray M_5 absorpt. limits 8−6812
CsBr:Tl$^+$, impurity induced Raman spectra, breathing shell model 8−39541
CsI(Tl) thin film detectors, light output and resolution 8−9030
KCl:Tl, 475 nm emission, attributed to Tl$^+$ dimer 8−39611
KCl:Tl and KCl, F-centre production by positive ions and X-rays 8−38760
KCl:Tl$^+$, absorpt. spectra, electrolytic coloration, migration in electric field, heat treatment 8−23504
KCl(Br)(I):Tl, emission spectra, press. effects 8−23509
KH_2PO_4;Tl, UV absorption bands obs. 8−27266
KI:T1, activated crystal, induced recombination emission *(Russian)* 8−48214
KI:Tl, triple decay-time in low-energy emission 8−43929
KI:Tl, type A long-wave luminesc., polarisation obs. 8−10944
KI:Tl$^+$ type phosphor, press. effects on triplet relaxed excited states, quadratic Jahn-Teller interaction 8−23510
β-K_2SO_4:Tl^{2+}, ESR spectra theory 8−23323
NaBr:Tl$^+$, absorption spectra meas. 8−15197
NaBr:Tl$^+$, emission spectra, excitation in A-band 8−15218
NaCl(Br):Tl, emission spectra, press. effects 8−23509
PbSe:Tl, elec. props. and IR reflection 8−6686
PbSe:Tl, impurity states, optical absorption and Hall effect meas. 8−18995
PbSe:Tl, scatt. of holes and phonons by impurities 8−19068
Se:Tl, hole drift mobility meas. by light pulse technique 8−19086
Si:Tl, electron excited, recomb. radiation, high resolution investigation 8−15233
Tl$^+$, in molten $TlNO_3$, self-diffusion coeff., 230-330°C 8−22878
Tl$^+$, in soln., luminesc., halide ion effects 8−35187
Tl:Fe, impurity recoilless fraction calc. from mean square displacements 8−2216
Tl+Ar, stimulated collision-induced fluoresc. and stimulated Raman scatt., simultaneous obs. 8−13463
thallium alloys
see also thallium compounds
Bi-Tl, complex-regular eutectics, structural modification 8−23695
Bi-Tl, thermal cond., 1.5 to 50K, temp. depend. 8−26990
Ga-Tl, liq., mag. susceptibility *(Russian)* 8−6513
Hg-Tl, liq., positron annihilation meas. 8−43955
In-Tl, crystallographic reversibility of martensitic transform. 8−6925
In-Tl alloy, FCC→FCT martensitic transformation, on cooling, enthalpy meas. and X-ray exam. 8−39773
In-Tl single crystal, phase transform. X-ray topographic study *(Japanese)* 8−31405
La_3Tl, mag. susceptibility and normal state NMR meas. 8−31118
MgTl, fermi surface exam. by de Haas-van Alphen effect 8−34752
Pb and Pb-Tl (2.5 wt.%), grain boundary sliding, grain size and stress effects 8−27571
Pb-Tl, low κ type II supercond., vortex motion anisotropy, intermediate-mixed state 8−47918
Pb-Tl, reversible surface superconducting magnetisation 8−43531
Pb-Tl, small κ type II supercond., flux line lattice, triangular/square transition 8−31025
thallium compounds
see also thallium alloys
$AgTlSe_2$ and AgTlSe, elec. cond. and thermoelectric power, doping effects, rel. to pseudogap model 8−2506
As_2S_3-Tl_2S glass, phase relns. and crystallisation 8−23675
CdTe-Tl, quasibinary cross section 8−3102
SiTe-TlTe, solid solns., mag. suscept. meas., defects 8−43552
$(Tl,NH_4)_2Cd_2(SO_4)_3$, langbeinite type mixed cryst., ferroelec. transitions, dielec. and elastic meas. 8−2810
Tl (I)-O-M cpds., M=B,Tl,C,Si,Ti,Sn,Sb,P, lone pair position, electrostatic model *(French)* 8−34462
$TlAsSe_2$, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8−34954
$Tl_2B_4O_7$, polymorphism *(French)* 8−6035
$TlBO_2.xH_2O$, x=0, 0.5, 1 and 2 cryst. chem. *(French)* 8−18606
TlBr, soft mode dielec., anomalous low temp. sp. ht. 8−14423
$TlBrO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
$TlCdF_3$, elastic consts. near phase transition by Brillouin scatt. 8−38844
TlCl, electric fields generated in rapidly rotating crystal 8−46487
TlCl, Raman spectra in melting region 8−27224
TlCl, valence band electronic struct., XPS and UPS obs. 8−6826
TlCl-TlBr solid solution, photoelastic constants obs. *(Russian)* 8−39526
Tl_2Cl_2, mol. consts., IR and Raman freqs. assignments 8−17648
$TlCl_xBr_{1-x}$, $TlBr_xI_{1-x}$, polymorphous mixed cryst. layers, opt. props. 8−23490
$TlClO_3$, polycryst., Raman and IR spectral assignments, room temp. 8−15156
TlF-F_2 recombining plasma, light amplification possibility 8−17924
TlF+Kr(Xe), collision-induced ion-pair formation 8−17749
Tl_2F_2, mol. consts., IR and Raman freqs. assignments 8−17648
Tl_2F_2+Kr(Xe), collision-induced ion-pair formation 8−17749

thallium compounds continued
$TlGaS_2$, IR refl. spectrum, Kramer-Kronig analysis, transverse optical phonons 8-19489
$TlGaS_2$, mechanism of cond., AC cond. and permittivity meas. 8-14754
$TlGaS_2(Se_2)$, Raman spectra, intralayer and interlayer modes 8-43876
$TlGaSe_2$, impurity conductivity and TSC 8-23128
$TlGaSe_2$, mechanism of cond., AC cond. and permittivity meas. 8-14754
$TlHF_2$, ^1H and ^{19}F NMR 8-2753
TlI, growth in silica hydrogels at 25°C, mechanism 8-35287
TlI, linear thermal expansion coeff., capacitance method meas. 8-16772
$TlIO_3$, polycryst., Raman and IR spectral assignments, room temp. 8-15156
β-$TlInS_2$, Raman spectra, intralayer and interlayer modes 8-43876
$Tl_{12}M_{33}O_{90}(.12H_2O)$, cation exchanger with intersecting tunnel struct. *(French)* 8-20014
$TlMnCl_3$, optical props. 8-35111
$TlMnCl_3$, weak ferromag. and mag. struct., temp. depend. 8-19219
TlN_3, press. induced phase transition, Raman scatt. meas. 8-19468
$TlNO_3$, melt, NO_3^- ion struct., pulsed neutron diffr. obs. 8-22631
$TlNO_3$, molten, Tl^+ self-diffusion coeff., 230-330°C 8-22878
$TlNO_3$-$Cd(NO_3)_2$ molten mixtures, electrical conductance, non-Arrhenian behaviour 8-43158
$TlNO_3$-$NaNO_3$, melt, cationic self-diffusion coeffs., temp. and conc. depends. 8-22879
$TlNO_3$-$RbNO_3$, melt, cationic self-diffusion coeffs., temp. and conc. depends. 8-22879
$TlR(MO_4)_2$, R=Eu, Dy, Er; M=Mo, W, luminesc. *(Russian)* 8-48229
$TlR(MoO_4)_2$ (R=La to Ho), polymorphism, X-ray diffr., thermographic anal. 8-47269
$TlSbF_6$, Raman spectra, at press. up to 25 kbar 8-6670
TlSe, vibrational spectrum, IR spectra meas. 8-35146
Tl_2Se, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8-34954
Tl_2Se_3, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8-34954
Tl_2Se_3, elec. cond. and thermoelectric power, doping effects, rel. to pseudogap model 8-2506
Tl_xSe_{1-x}, amorphous and cryst., IR transmission spectra and struct. interpret. 8-23471
p-Tl_xSe_y, IR bolometer detector performance 8-24856
Tl_2SnF_6, thermal stability and thermolysis *(French)* 8-10011
Tl_2TaO_6, Tl I lone pair stereochem. activity rel. to ferroelectricity 8-15131
Tl_3TaSe_4, new SAW zero temp. cuts 8-2351
TlTe single crystal, resistivity, Hall coeff., magnetoresistance, thermoelec. power 8-43418
$Tl_2(TeCl_6)$, IR and Raman spectra, lattice and internal modes, phase transition 8-6659
$TlVO_3$, cryst. struct. 8-6043
Tl_3VS_4, acoustic surface wave propag., temp. coeffs., piezoelectric coupling *(French)* 8-35093
Tl_2WO_4, solid-state prep., cryst. struct. and props. 8-38673

thawing *see melting*

The Galaxy
abundance gradients derived from H II regions, spectrophotometry 8-41036
anticentre direction, radial vels. of early-type stars 8-7990
Basle catalogue of 1906 blue objects at high galactic latitudes 8-32360
carbonaceous material in Galaxy, origin and nature 8-24543
centre, ang. size for compact radio source 8-28779
centre, IR obs., 1.25-12.5 μm interstellar extinction law 8-41039
centre, Ne II 12.8 micron emission obs. 8-32572
centre, radiation model, dust grains heating by O-stars and K-giants 8-36697
centre, radiosource size and struct., radiation scatt. and scintillation *(Russian)* 8-16535
centre, tidal disruption of stars and massive black hole evolution *(Russian)* 8-12371
centre, X-ray transients and burst sources 8-12425
centre direction, low-freq. radio recomb. lines studies 8-32589
centre region, 2.2 μm spectroscopy 8-36686
centre region, airborne far IR obs. 8-8110
centre region, forbidden O III 88 μm line emission obs. 8-49503
centre region, H I 21 cm line survey 8-12361
centre region, IR obs. and nature of compact IR sources 8-24551
centre region, IR polarisation obs. 8-8109
centre region, shock wave model of expanding ring 8-4365
centre region, X-ray and gamma-ray lines prod. by nonthermal ions 8-36725
chemical evolution in solar neighbourhood, time scales and nucleochronology 8-8112
coronal gas, interstellar O VI survey in OB star UV spectra 8-36679
coronal gas, statistical anal. of O VI absorpts. 8-36653
cosmic ray confinement in dynamical halo, electrons 8-4044
cosmic ray confinement in dynamical halo, nuclei 8-4043
cosmic rays, age derived from ^{10}Be abundance 8-12060
Cygnus direction, stars and dust space distrib. *(Russian)* 8-20893
Cygnus region, new optical supernovae remnant discovery 8-4330
Cygnus-Vulpecula direction, stars and dust cloud space distrib. *(Russian)* 8-20892
dark nebulae and globules, star form. regions 8-12347
density wave evolution at unstable stage *(Chinese)* 8-28787
density wave propag. through disc 8-20894
density waves amplification by nonadiabatic processes in gas 8-4364
diffuse galactic light interpretation, models 8-8118
diffuse soft X-ray emission, distrib. and energy spectrum 8-28853
diffuse soft X-ray sky, astrophysics rel. to 0.1-2.0 keV cosmic X-rays 8-16581
disc emission at 4 cm wavelength, large-scale and small-scale cloud structs. 8-28795
distant satellite galaxies, spectra of giant stars 8-40926
expanding features of galactic centre 8-12365
faint blue stars near galactic anticentre, UBV photometry 8-40932
faint red dwarfs statistics, photometric obs. at intermediate galactic latit. 8-32457
FK4/FK4 Sup stars, three-dim. kinetics anal. 8-8060

The Galaxy continued
G0.7-0.0 (Sagittarius B2), struct. and He abundance 8-45380
gamma-ray bursts, galactic origin 8-32303
gamma-ray burts, distance limit for non-relativistic source models 8-32612
gamma-ray emission, high-energy, from galactic disc, spectral characts. COS-B obs. 8-36695
gamma-ray emission, review of obs. *(Russian)* 8-41097
gamma-ray spectra, rel. to cosmic ray electrons flux and cosmic ray gradients 8-40784
gamma-rays, prod. by non-thermal electron bremsstrahlung in galactic disc 8-24414
globular clusters, expected number density near galactic centre 8-32535
globular clusters, integrated colours obs. 8-16469
globular clusters, kinematic and dynamical differences between two groups 8-8069
globular clusters, orbital evolution due to dynamical friction 8-24529
globular clusters colour excess ratio, rel. to interstellar absorpt. law 8-28797
halo, blue horizontal branch stars search on Schmidt plates 8-4362
halo, new size constraints from galactic gamma-ray data 8-12353
halo low-frequency radio emission, diffusion models 8-12433
halo mass from high-velocity stars luminosity function 8-4368
interstellar absorption revealed by Rubin et al. Sc-type galaxies sample, anal. 8-49533
interstellar local He I density from EUV obs. 8-4331
interstellar molecules, galactochemistry and origin of life 8-12338
interstellar reddening material, distrib. in solar neighbourhood from stellar colour excesses 8-49502
intertial-coordinate frame rel. to celestial reference, for starship navigation 8-49346
IR emission from galactic centre, maps at 10, 34, and 56 microns 8-41037
IR photometric obs. using balloon-borne telescope 8-36453
Lindblad's expanding H I ring, rel. to supernova hypothesis for extinctions at end of Cretaceous 8-32500
M dwarf distrib. at low z distances 8-12232
magnetic field configurations, rel. to synchrotron radiation 8-20884
magnetic field from radioastronomy obs. 8-24548
magnetic field from radiopolarisation obs. 8-24547
magnetic field scale and strength from pulsar data 8-28752
magnetic field turbulent structure, determ. from extragalactic sources Faraday rot. 8-20885
matter distrib., relation with cosmic ray dynamics and γ-ray production 8-4349
Milky Way stars, five-channel photometric obs. 8-16398
Mira variables, discovery of 123 new stars in Palomar 10 globular cluster region 8-40837
neutron stars formation rate, upper limit 8-49471
NGC 1904 (M79), UBV photometry, colour-magnitude diagram of halo globular clusters 8-32528
nonejecting novae as EUV sources 8-12238
nonthermal emission in 0.25-9.18 MHz range, RAE 2 lunar satellite obs. 8-45398
Norma spiral arm structure, influence of projected dark cloud 8-16494
North Polar Spur, as remnant of supernova or galactic nucleus explosion *(Russian)* 8-41072
north polar spur brightness distribution, interpretation *(German)* 8-12372
OB stars Local complex, kinematics 8-16396
OB-type stars in vicinity of long period Cepheid VZ Puppis, UBV β photometry 8-45339
open, places of form 8-8064
open cluster distrib. in Galactic plane *(Russian)* 8-32541
open clusters with circular orbits, galactic rot. calc. 8-8068
periodic orbits near particle resonance, numerical appls. 8-49484
Perseus Arm H II regions, high-resolution radio maps 8-32549
Perseus spiral arm, 21 cm obs. of assoc. nonplanar H I 8-16489
photographic four-colour sky atlas 8-24472
planetary nebulae, chemical abundances rel. to galactic radial abundance gradient 8-36663
pregalactic black holes in Galaxy, accretion of interstellar matter 8-8039
pulsars galactic distribution and evolution 8-4260
red dwarf stars near north galactic pole, vel. dispersion 8-7989
red stars at north galactic pole, proper motions 8-4214
Reticulum globular cluster, structure, star counts 8-12309
rotation and space velocity, determ. from solar motion rel. to Local Group centroid 8-12376
rotation constants and solar motion, from stellar proper motions 8-32440
S106 and S235, aperture synthesis of H II regions, star form. regions 8-36672
Sagittarius A, 540 μ obs. of galactic centre 8-36699
Sagittarius A region, 8.2 mm obs. 8-28794
Sagittarius A-west, IR obs. of Ne II forbidden line emission 8-36680
Sagittarius B2, He abundance problem 8-49496
satellite galaxies and globular clusters, radial vels. and galactic mass 8-49522
soft X-ray background, spatial struct., OSO-8 obs. 8-16580
soft X-ray diffuse background flux, southern galactic hemisphere 8-8170
solar absolute motion, rel. to discrete redshift 8-49530
solar motion relative to neighbouring galaxies *(Russian)* 8-24553
spectrophotometric survey of stars along Milky Way in Perseus 8-45403
star formation and large-scale phenomena 8-32583
stars near South Galactic Pole, UBV photometry of 51 stars 8-4216
stellar age and metallicity distributions, effect of crossing times through solar neighbourhood 8-12362
stellar distrib. above galactic plane 8-12375
structure around l=140°, b=0°, from stellar photographic photometry 8-24555
structure from gamma-ray data 8-16538
substructure tidal and evaporative disruption 8-12366
tidal effects and mass distrib. in Hypergalaxy *(Russian)* 8-4367
velocity relative to cosmic background radiation, determ. from anisotropy meas. 8-4415
white dwarfs formation rate 8-28674

The Galaxy continued
- X-ray burst sources, galactic distrib. rel. to accretion models 8-49566
- X-ray burst sources, positions and relation to galactic bulge sources 8-12419
- X-ray burst sources, review 8-41084
- X-ray sources, $320^\circ<l^{\mathrm{II}}<340^\circ$, positions 8-28860
- X-ray sources, distrib. in Milky Way 8-28851
- X-ray sources near galactic centre, positions meas. by Ariel-5 RMC expt. 8-4407
- C and M-type giant stars distrib. 8-32460
- CNO isotopic abundances, interpretation of obs. 8-4356
- CO and H comparative distrib. 8-16537
- CO distribution in galactic equatorial plane, 115 GHz obs. 8-36689
- CO in the inner Galaxy 8-8072
- H I absorption spectra in direction of extragalactic radiosources 8-24541
- H I distrib. small scale struct., obs. of 3C 10 and 3C 58 8-45383
- H I high velocity clouds origin *(Russian)* 8-49492
- H I in region $348^\circ \leq l \leq 12^\circ$, $+3^\circ \leq b \leq +17^\circ$, 21 cm obs. 8-45377
- H II large scale distrib., recomb. line surveys 8-16539
- H II regions, aperture synthesis obs., quick look survey 8-12329
- H II regions near galactic centre, far IR obs. 8-41012
- NH_3 emission obs. from galactic regions 8-28780
- OH large-scale sky survey at 1612 MHz 8-32358
- OH/IR unidentified Type II stars, galactic distrib. and kinematics from 1612 MHz survey 8-49450

theoretical mechanics *see mechanics*

thermal analysis
- aliphatic-aromatic block copolyamides, synthesis, struct. and dynamic viscoelasticity, DTA and X-ray anal. *(Japanese)* 8-31377
- alkali isoalkanoates, thermal behaviour, differential scanning calorimetry 8-34600
- alkanoate, Li, Na, K and Rb salt mixtures, DSC anal. 8-10192
- Arrhenius equation, pre-exponential factor temp. depend., thermogravimetric data calcs. 8-15654
- cement, hot pressed, type III, role of admixtures on pastes and H_2O cured cement, exam. 8-44073
- Cl ThO_2 glasses, thermal anal. *(French)* 8-14282
- copoly(ethylene terephthalate/5-methoxyisophthalate), isothermal crystallisation, differential scanning calorimetry 8-30546
- copoly(ethylene terephthalate/isophthalate), isothermal crystallisation, differential scanning calorimetry 8-30546
- copper phthalocyanine α-β phase transform., heat of transform., DTA investig. *(German)* 8-30754
- cryolite, hydrothermal synthesis of large synthetic single crystal, props. 8-19654
- cyclohexanone, solid, phase behaviour, at press. up to 3 kbar, DTA 8-43108
- cyclopentanol, and cyclopentanone, solid, phase behaviour, at press. up to 3 kbar, DTA 8-43108
- diemthyl sulphoxide-H_2O-NaCl system, DTA exam. of primary ice phase field 8-48382
- differential scanning calorimetry, theoretical melting curves anal. 8-16799
- 1,2-dipalmitoylglyceride, DTA and X-ray diffr., polymorphism *(French)* 8-43008
- ethanol, plural glass-transitions, thermodynamic functions 8-38820
- experimental conditions and results 8-35757
- ferrite, phase composition in magnetic field, use of DTA-TG-DTG *(Polish)* 8-31393
- finely divided solids, struct., hermal anal. methods *(French)* 8-14254
- glass fibre reinforced polymer, thermal expansion coeff. and glass transition temp., thermal stress effect 8-14484
- graphite-alkali metal-benzene ternary intercalation compounds thermal and X-ray anal. *(French)* 8-27434
- n-hexatriacontane, cryst. struct., γ-ray effects obs. 8-43048
- IC thermal analysis by IR microimager 8-45619
- lysozyme bound water, thermally-stimulated press. and current 8-15757
- mass spectroscopic techniques, comparison 8-31742
- montmorillonite, physicochemical and engineering props., k-fixation effect *(Japanese)* 8-31366
- nickeliferous limonites, pressure leaching for Ni extraction, using H_2SO_4 8-39717
- nonlinear temp.-time program using computers *(German)* 8-8406
- PAA, solid state polymorphism 8-42945
- palladium chelate, mesomorphic 8-18749
- phenolic, two-stage cured, molecular struct. of Novolac effect on thermal stability *(Japanese)* 8-3092
- p-phenylene bis (p-substituted benzoates), cryst.-nematic transition, mol. struct. effects, DTA 8-47504
- poly 2,6-dimethyl-1,4-phenylene ether, liquid-induced crystallisation 8-30551
- polydioxolan, crystallisation, morphology and melting props. 8-14297
- polyethylene, modified with phosphonate ester pendant side group, thermal and mech. props. 8-11195
- polyethylene, prediction by isothermal differential scanning calorimetry 8-11485
- polyethylene oxide, solid state relaxation, DSC study 8-9962
- polyethylene terephthalate, differential scanning calorimetry of melting, mosaic block struct. of cryst. layers 8-26452
- polystyrene, extruded, glass transition temp., melting pt., DTA 8-2235
- polytetramethyl-p-silphenylenesiloxane, degree of crystallinity determ. by DSC 8-26453
- polyvinylidene fluoride-PMMA blends, differential scanning calorimetry of cryst. melting 8-26454
- refractory materials quality control appl. *(German)* 8-35337
- satellite, gravity oriented, with thermally flexed appendages, librational dynamics 8-7868
- sorbitol, crystallisation, thermal investig. 8-47257
- β-spodumene-mica glass ceramics, phase evolution and TiO_2, MgF_2 additive effects, exam. 8-44089
- steel, nitride inclusions, identification by differential thermal anal. and evolved gas anal. 8-48721
- tetramethyl-p-silphenylenesiloxane-dimethyl siloxane copolymers, degree of crystallinity 8-26453
- thermobalance for studying high-temp. sulphidation kinetics of metals 8-23876
- thermogravimetric analyser, low cost design 8-20116
- thermogravimetric apparatus, automatic device with digital output 8-7281

thermal analysis continued
- thermogravimetric methods, review 8-3408
- vanadyl phthalocyanine-copper phthalocyanine mixed crysts., α-β phase transform., heat of transform., DTA investig. *(German)* 8-30754
- $AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8-35377
- Ag_2S-(As)(Sb)(Bi), temp.-comp. diagram 8-44105
- $AgSbS_2$, synthetic crystals, DTA and cryst. struct., phase transitions *(German)* 8-42943
- Ag_2Se-(As)(Sb)(Bi), temp.-comp. diagram 8-44105
- Ag_2Te-(As)(Sb)(Bi), temp.-comp. diagram 8-44105
- AgZn-AgMg quasibinary alloy, phase relation and superlattice form. 8-3097
- Al-Li alloy, thermal anal. of precipitation 8-15417
- Al-Si-Sr phase diagram *(Russian)* 8-15363
- $Al(OOH)_3$, formed by reaction of methyl esters and $Na_2Al_2O_2$, exam. of props. 8-48346
- Am, polymorphic transforms. obs. *(Russian)* 8-6153
- As_2Se_3-based glasses, crystallization, DTA investig. 8-22658
- AuIn-Pb pseudobinary system, DTA 8-23667
- Ba-Al-Si system, phase diagrams construction by simplex designing method 8-6899
- BaF_2-YF_3 system, phase diagram 8-35363
- $C_{12.6}AuCl_3$, intercalation compound, struct. *(French)* 8-42982
- CaF_2-AlF_3, phase equilibria, DTA and X-ray diffr. study 8-27493
- CaO-MgO-Al_2O_3-SiO_2, glass-ceramic prep. by hot pressing and crystallisation of powder 8-11192
- $CdCl_2$-$PbCl_2$, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8-19730
- $CdGe_{1-x}Sb_xAs_2$ system, amorphous and cryst. phases, DTA and microhardness obs. 8-22835
- Ce-Ga, phase diagram *(Russian)* 8-27478
- $CeNbO_{4+x}$, oxidation-reduction reactions 8-39930
- $CeTaO_{4+x}$, oxidation-reduction reactions, phase equilibrium, thermogravimetry and magnetic susceptibility meas. 8-39930
- $CoCl_2$-KCl-NaCl system, melting diagram investigation by thermographic anal. *(Russian)* 8-3111
- $Co_{75}Si_{15}B_{10}$, amorphous, crystallisation study *(Japanese)* 8-9959
- CsF-EuF_3 system, thermal anal. and X-ray diffr., phase equilibria *(French)* 8-44107
- $CuInS_2(Se_2)$-$GeS_2(Se_2)$, degree of solid solubility and phases characts. 8-35377
- (Fe, Ni, Co)-Si-B, amorphous, compositional effect on struct. changes, after heating up to 700°C, exam. *(Japanese)* 8-48433
- Fe-B metallic glasses, density, mech. and thermal props. 8-31432
- Fe-Cu-C, mixed powder compact, sintering mechanism 8-15343
- $FeBO_3$-MBO_3 solid soln., (M=Mn, Cr, Al, Ga, In), synthesis, crystal chem. and mag. props. 8-31058
- Fe_2O_3, reduction, double reaction, thermogravimetric curves, reaction kinetics exam. *(French)* 8-31705
- Fe_3O_4, reduction, double reaction, thermogravimetric curves, reaction kinetics exam. *(French)* 8-31705
- $Fe_{78}Si_{10}B_{12}$, amorphous alloy crystallisation study *(Japanese)* 8-9959
- $GeS(Se)_x$, $x=1$ or 2, ht. of transition determ. by thermography 8-22847
- H_2O-NaCl-sucrose, phase diagram determ., appls. in cryobiology 8-15777
- β-$H_2O.11Al_2O_3$, conversion from β-$Na_2O.11Al_2O_3$ and characterization 8-3069
- HfO_2-R_2O_3 solid solns., prep., crystn., R=Nd,Sm,Dy,Yb 8-42909
- In-Sb, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8-19730
- $InSbS_3(Se_3)$, prep., polymorphism, cryst. struct. 8-44002
- In_2Te_3-PbTe system, phase diagram, elec. props. 8-35361
- $K_2Cr_2O_7$, thermal props. thermal anal. and X-ray diffr. obs. 8-30752
- $KNbO_3$ powder synthesis, unit cell determ. 8-11168
- K_2O-MgO-SiO_2 glass, crystalline phase precipitation during crystallisation early stages, DTA *(Japanese)* 8-42919
- K_2SO_4-$ZnSO_4$ system, glass formation and phase diagram study, physical props. 8-27500
- Li_2CrO_4-K_2CrO_4, phase diagram determination by DTA and X-ray diffr. 8-31391
- $LiIO_3$, phase transitions obs. by DTA, heat treatment, X-ray diffr. *(Chinese)* 8-2249
- MoF_6-ZZ 8-27441
- $NaCaPO_4$-Ca_2SiO_4 partial system, phase diagram 8-35364
- $NaCaPO_4$-Ca_3SiO_5 partial system, phase diagram 8-35365
- NaF-Al_2O_3, β-Al_2O_3 form. *(Japanese)* 8-6912
- Na_2O-$GeO_2(TiO_2)(SnO_2)(ZrO_2)(ThO_2)$-$SiO_2$ glass, density, refractive index, thermal expansion, hardness IR spectra, DTA *(Japanese)* 8-15535
- NbH, internal friction 8-6962
- Nd-Ga, phase diagram *(Russian)* 8-27478
- $Ni_{75}Si_8B_{17}$, amorphous alloy, crystallisation study *(Japanese)* 8-9959
- Ni-P alloy, electrodeposited, heat induced struct. changes *(Japanese)* 8-15433
- $Ni_{1-x}S$, oxidation, TG/DTA/MS obs. 8-31745
- Pb-In-Sn system, liquidus and solidus isotherms 8-44088
- Pb-Rb, phase diagram *(Russian)* 8-19720
- Pb-Te-O, thermal stability 8-44104
- $PbCl_2$-$ZnCl_2$, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8-19730
- Pb_2NbFeO_6, form. reacts., thermogravimetric investig. 8-35340
- Pb_2TaFeO_6, form. reacts., thermogravimetric investig. 8-35340
- $Pb_3WFe_2O_9$, form. reacts., thermogravimetric investig. 8-35340
- Rb-Se system, phase equilibria 8-44079
- RbF-EuF_3 system, thermal anal. and X-ray diffr., phase equilibria *(French)* 8-44107
- Sb_2S_3 crystals, X-ray and DTA methods energy gap temp. dependence *(German)* 8-43119
- Se-Bi bilayers chemical reactions, differential scanning calorimetry technique and obs. results 8-2398
- Sm-Ga, phase diagram *(Russian)* 8-27478
- Sn-Ni electrodeposits, metastable, transform. kinetics 8-43262
- Sn-Zn, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8-19730
- Sr-Al-Nd phase diagrams *(Russian)* 8-27480
- Sr-Al-Si system, phase diagrams construction by simplex designing method 8-6899
- $SrTiO_3$, sintering kinetics rel. to added SrF_2, ZrO_2 8-44037

thermal analysis continued
Te-Ge eutectic alloy, glassy, crystn. mechanism 8−22836
Te-Sn (20 at.%), amorphous, exam. of crystallisation by DTA, X-ray diffr. and TEM 8−47242
TeO_2-CoO, phase diag. from thermographic analysis 8−23687
Tl_2WO_4, DTA and TGA 8−38673
U-O system, phase equilibrium, thermal, X-ray and cond. meas. 8−35371
V-H system, DTA, phase diagrams, low temp. phase 8−6903
V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
V_2O_5, water in noncryst. solid, quenching of molten V_2O_5 *(French)* 8−42912
V_xO_y, film, preparation by calcining vanadium naphthenate, formation process exam. *(Japanese)* 8−30849
$V_{1-x}Re_xO_2$ ($0 \leq x \leq 0.15$), insulator-metal transition, DTA, X-ray, mag. and elec. meas. 8−10353
WF_6-ZZ 8−27441
YIG, nonstoichiometry and electronic defects, thermogravimetric expts. and anal. of elec. data 8−6050
ZnTe-Ga_2Te_3, phase diagram 8−35360
ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304
ZrO_2-R_2O_3 solid solns., prep., crystn., R=Nd,Sm,Dy,Yb 8−42909
ZrO_2-Sc_2O_3, phase system, X-ray and thermal anal. 8−27494

thermal capacity *see specific heat*

thermal conductivity
see also Kapitza resistance; Lorenz number; thermal conductivity of gases; thermal conductivity of liquids; thermal conductivity of solids; thermal diffusivity; thermal insulating materials
cosmological fluid, lepton era, transport coeffs., Weinberg-Salam model 8−32623
intermediate state, thermal conductivity giant fluctuations *(Russian)* 8−34922
inverse theral conductivity problem for one-dimensional rod., rel. to optimum filtration 8−5628
lamina, heat distrib., thermal conductivity 8−22246
membranes, phenomenological coeffs., frames of reference, isothermal systems 8−38862
membranes, phenomenological coeffs., frames of reference, nonisothermal systems 8−38884
solar wind, thermally conductive flows in coronal holes 8−28614
stationary nonlinear thermal conductivity problem, least squares approach *(Russian)* 8−38172
two-dimensional transport coefficients, thermal cond., theory 8−32778

thermal conductivity measurement
comparative longit. ht. flux, use of generalised Bessel functions 8−26741
edge effects in diffusion and cond. meas. 8−32810
gas, chemically reacting, temp. jump at gas-solid boundary 8−42701
gas, molecular, kinetic coeffs. calc. from ultrasonic data 8−42703
high-temperature US apparatus for elasticity characts. and thermal cond. meas. of materials 8−5705
hot wire method of meas., temp. drift effects *(Japanese)* 8−43191
hot-wire method in nonstationary variation 8−32812
liquid, weak IR absorbing, microtransient technique 8−22904
metallic thermal connectors for use in nuclear refrigeration, elec. resist. meas. 8−224
optical method for thermal cond. determ. of birefr. $Ba_2NaNb_5O_{15}$ 8−18851
rock conductivity determ. from fragment meas. *(Rumanian)* 8−20563
semiconductor, rapid meas. method *(French)* 8−12689
solar collector thermal performance testing procedures *(Japanese)* 8−16795
thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
thermoelectric method using Peltier effect for gases and liquids 8−45615

thermal conductivity of gases
acetic acid, thermal cond. meas. using Peltier effect 8−45615
air, computation in 400 to 1600K range 8−5841
benzene, vapour, thermal conductivity, 300-700K 8−38444
chemically reacting gas, temp. jump at gas-solid boundary 8−42701
ethane, viscosity and thermal cond. of liquid and gas, correl. eqns. 8−26715
ethylbenzole, thermal cond., 30-400°C, 1-10^3 kg cm^{-2} 8−26739
fluidised bed, boiling layer, axial mixing of solid phase *(Russian)* 8−47035
gas-liquid cocurrent flow through packed beds, radial effective thermal conductivity 8−1723
hydrocarbon, internal degrees of freedom, Eucken factor, effect on transfer props. 8−22445
inert gas binary mixture, unlike mol. force consts. from viscosity data, thermal cond. 8−33565
interpolation formulae, extrapolatable, for data correlation *(Dutch)* 8−12661
molecular gas, kinetic coeffs. calc. from ultrasonic data 8−42703
olefin hydrocarbon vapour, thermal cond., 160 to 400°C 8−1783
steam-air mixture, condensation, transport and thermodynamic props. *(Japanese)* 8−34251
theory for wide press. variations 8−30402
water, vap., dimerization, from thermal cond. meas., 373K 8−44359
water/steam systems, thermodynamic data tables 8−26679
Ar, force constant props., 12-6 pot. model 8−13563
Ar, thermal cond., 90-270K, 1 atm. press. 8−42700
Ar-Kr, thermal cond., 90-270K, 1 atm. press. 8−42700
Cs vapour, thermal cond. in range 800 to 1100K 8−1782
Kr, thermal cond., 90-270K, 1 atm. press. 8−42700
N_2, thermomagnetic effect, Knudsen gas between Au surfaces, low temp. 8−30405
Ne, thermal cond. meas. using Peltier effect 8−45615
O_2, thermal cond., mag. field effects 8−34255
O_2-Ar, gas, thermal cond., mag. field effects 8−34255
toluene, vapour, thermal conductivity, 300-700K 8−38444

thermal conductivity of liquids
ethane, viscosity and thermal cond. of liquid and gas, correl. eqns. 8−26715
ethylbenzole, thermal cond., 30-400°C, 1-10^3 kg cm^{-2} 8−26739

thermal conductivity of liquids continued
gas-liquid cocurrent flow through packed beds, radial effective thermal conductivity 8−1723
inert gases, transport props. in mean spherical approx. 8−9927
inhomogeneous material, thermoelec. power and thermal cond. 8−10483
interpolation formulae, extrapolatable, for data correlation *(Dutch)* 8−12661
measuring technique, weak IR absorbing fluids 8−22904
phenomenological coeffs., frames of reference, isothermal systems 8−38862
phenomenological coeffs., frames of reference, nonisothermal systems 8−38884
polymer melts, thermal conductivity, statistical mech. calcs. 8−34661
polymethyl siloxane liquids at high pressures 8−47609
simple fluids, order-parameter fluctuations near crit. point, Ornstein-Zernike theory 8−34416
water, transport and thermodynamic props. *(Japanese)* 8−34251
water/steam systems, thermodynamic data tables 8−26679
B_2O_3-$Na_2O(K_2O)(V_2O_5)$, thermal cond. of melt in region 900 to 1100°C, effect of convection 8−2309
Cu_3AsTe_4, elec. and thermal conds., thermo-EMF, solid and liq. states, temp. depends. 8−43384
Cu_3SbTe_4, elec. and thermal conds., thermo-EMF, solid and liq. states, temp. depends. 8−43384
cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
Fe_3O_4 in kerosene, thermal and electrical cond. in mag. field *(Russian)* 8−6188
^{3}He, liq., hydrodynamic modes, macroscopic dispersion relations, two fluid model 8−10242
^{3}He, liq., hydrodynamic modes, microscopic dispersion relations, transport coeffs. 8−10243
^{3}He, liq., longitudinal zero-sound dispersion, thermal cond., and Landau F_2 8−2327
^{3}He-^{4}He mixtures, thermal transport coeffs. near lambda line 8−22926
In-Hg amalgam, thermal and electric cond., temp.-conc. depend. 8−43349
Na-K alloys, liq., thermal conductivity, NaK_2 formation 8−10416

thermal conductivity of solids
anisotropic composites, bounds and self consistent estimates for overall props. 8−5654
brass, thermal cond., effect of material on working parameters of cryosurgery instruments 8−36037
ceramics, thermal stress resistance, enhancement, for materials with thermal cond. gradient 8−48506
composite, thermal conductivity range, knowing ranges for components 8−2313
condensation heat transfer, effect of surface thermal conductivity 8−22252
contact conductance, heat transfer between solid surfaces 8−46888
crystals, track form., minimal energy loss rel. to thermal cond. 8−17525
cyclohexane, thermal cond. and sp. ht. under press. 8−22906
diamonds, thermal conductivity, 320-450K *(French)* 8−43189
dielectric phonon gas nonlocal hydrodynamics, second sound attenuation, thermal cond. *(Russian)* 8−47478
edge effects in diffusion and cond. meas. 8−32810
effect of boundary refl. and selectivity of optical characts. on radiative-conductive heat transfer 8−1554
epoxy-metal powder mixtures, cryo-tip refrigerator appl., heat transport 8−37013
ethylbenzole, thermal cond., 30-400°C, 1-10^3 kg cm^{-2} 8−26739
fibre reinforced composite, effective transverse thermal cond. 8−18146
film, galvano- and thermomag. phenomena, theory *(Russian)* 8−14743
freeze dried food, thermal cond., var. calcs. of upper and lower bounds 8−9550
frozen food, hydrostatic press. effect on phys. props. 8−26706
glass, acoustic phonons lifetime at low temps. 8−26650
granular material, thermal conductivity, wetting effect 8−47611
graphite, Poco AXM-5Q1, thermal and elec. transport props., 4-3000K 8−6375
graphite, recompressed expanded, thermal conductivity, elastic moduli, density effects *(French)* 8−26744
gypsum, thermal conductivity thermal decomposition 8−2310
heat conduction in solid containing gas-liquid inclusions *(Russian)* 8−22908
heterogeneous matrix system, thermal cond. 8−9555
homogeneous isotropic solid body, variational principles *(Hungarian)* 8−22247
hot wire method of meas., temp. drift effects *(Japanese)* 8−43191
ice, thermal conductivity of nine solid phases 8−30801
inhomogeneous material, thermoelec. power and thermal cond. 8−10483
lattice thermal conductivity, contrib. due to correction term, generalised Callaway integral 8−2318
metal cone, vaporisation, solution by wave front method 8−5640
metal fibre materials, thermal and elec. conductivities 8−10419
metal heating by laser radiation, calc. allowing for thermal props. temp. depend. 8−30770
metal-filled polymers, thermal cond., var. calcs. of upper and lower bounds 8−9550
metallic glass, phonon transport below 100K 8−14422
metallic thermal connectors for use in nuclear refrigeration, elec. resist. meas. 8−224
metallic thin films, thermal conductivity and thermal diffusivity, determ. method *(German)* 8−19165
moist porous solid, thermal cond., struct. model and computation method 8−2312
molecular dynamical studies of energy transport in crystalline solid 8−30803
monocarbides of subgroups IVa and Va, kinetic props., review 8−47613
nonmetallic crystals, at high temps. 8−26740
phonon-phonon scattering, hydrostatic deformation effect 8−18721
plastic insulating foam, thermal cond., var. calcs. of upper and lower bounds 8−9550
PMMA, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
PMMA, thermophysical props. at high hydrostatic press. 8−2317

thermal conductivity of solids continued
polyalkylmethacrylates, vitreous, thermal cond., press. and temp. depend. 8−2315
polycarbonate, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polyethylene, highly oriented 8−47614
polymers, thermal conductivity, temp. crystallinity and orientation depends., review 8−10234
polyolefines, filled, struct.-mech. props. relation *(German)* 8−35451
polyoxymethylene, low temp. thermal conductivity 8−38886
polystyrene, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polystyroles, filled, struct.-mech. props. relation *(German)* 8−35451
porous metal, thermal conductivity meas. 8−18150
powder, particle size and porosity effects *(Japanese)* 8−6191
PTFE, thermal cond., effect of material on working parameters of cryosurgery instruments 8−36037
PVC, filled, struct.-mech. props. relation *(German)* 8−35451
random two-phase material, thermal cond., var. calcs. of upper and lower bounds 8−9550
refractories, temp. and press. depend. 8−43188
refractory, thermophysical props. in rarefied gaseous medium 8−34664
rocks, thermal conductivity of granular media, results for greisen and granite *(French)* 8−11880
sapphire, heat transfer at low temps. 8−34665
sapphire, phonon cond. calc., 0.4-4K 8−18852
semiconductor, rapid meas. method *(French)* 8−12689
spherulite, two-phase, ht. cond. anisotropy 8−2316
spin-lattice relaxation measurements, field depend., influence of thermal cond. 8−15013
steel, stainless, thermal cond., effect of material on working parameters of cryosurgery instruments 8−36037
superconductor, electron-phonon thermal cond. *(Russian)* 8−26993
thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
Ag, electrical contact material with liquid lubricant, prod. and appl. 8−10559
Ag_2Te, low temp. thermal cond., thermoEMF 8−43423
Al, band struct. effects on electrical and thermal cond. 8−34820
Al, lattice thermal cond., 1.5-15K 8−30904
Al, low temp. electrical and thermal transport props., Matthiessen's rule breakdown 8−26847
Al, metal and dil. alloys, electronic thermal cond. calc. 8−47764
AlN, thermal cond. and stability at high temp. 8−47610
Al_2O_3, fibrous, thermal diffusivity and conductivity 8−10232
Al_2O_3, phonon spectra using freq. crossing techniques 8−14415
Al_2O_3:Cr, Mg, stabilisation of Cr^{5+}, thermal cond. meas. 8−22905
Al_2O_3:Ni, heat transfer at low temp. 8−38888
Al_2O_3:V^{3+}, $g_\perp/g_\parallel$ determ. by freq. crossing spectroscopy using thermal phonons 8−23055
Al_2O_3-ZrO_2, dispersion hardened, fracture toughness improvement by induced microcracking *(German)* 8−31501
Al_2O_3-ZrO_2 dispersed system, thermal diffusivity/conductivity, effect on microcracking resulting from phase transform. 8−10231
Ar solid, low temperature lattice thermal cond. 8−22910
As, electrical and thermal props. 8−14747
BN, hexagonal, parallel to basal planes, thermal conductivity 8−22907
BN-AlB, cubic phase solid soln., crystallographic and metallographic study, thermal resist. *(Russian)* 8−30599
Ba, transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
$Ba_2NaNb_5O_{15}$, birefr. material, thermal cond. determ. by optical method 8−18851
Bi, deformed cryst., phonon scatt. by lattice defects, thermal cond. calc. 8−22802
Bi-Tl alloy, 1.5 to 50K, temp. depend. 8−26990
BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
C materials, thermal insulating props., furnace appls. *(French)* 8−44345
C, vitreous, low temp. sp. ht., thermal cond. and US vel. meas. 8−47533
Ca, transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
n-$CdCr_2Se_4$, single crystal, transport props. near Curie temp. *(Japanese)* 8−6406
Ce_2Se_3-$SnSe_2$, solid-solution region, physical properties 8−43391
Cu, thermal cond., effect of material on working parameters of cryosurgery instruments 8−36037
Cu, thermal conductivity, low temp., influence of plastic deform. 8−30899
Cu, thermal conductivity under high pressure 8−30901
Cu_3AsTe_4, elec. and thermal conds., thermo-EMF, solid and liq. states, temp. depends. 8−43384
Cu_3SbTe_4, elec. and thermal conds., thermo-EMF, solid and liq. states, temp. depends. 8−43384
cyclopentane, plastic cryst. and liq. phases, thermal cond. and sp.ht., 100-300K, 0-2.1 GPa 8−34663
D_2, solid, thermal cond. *(Russian)* 8−38885
Dy_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
Eu_2O_3, mech. and physical props. rel. to reactor control rod appl. 8−21641
Fe, cast, thermal diffusivity meas. 293 to 873K, exam. of thermal cond. *(Japanese)* 8−47763
Fe-Ni alloys, lit. review *(Russian)* 8−18805
Gd_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
Ge, amorphous film, temp. thermal conductivity 8−22994
n-Ge, electron-phonon interaction, internal strain and impurity elec. field effect 8−14418
Ge, lattice thermal conductivity, contrib. due to correction term, generalised Callaway integral 8−2318
Ge, lattice thermal conductivity, effect of Debye temp. var. 8−18850
Ge, lattice thermal conductivity three phonon processes 8−34662
Ge shaped single crystal, Stepanov method growth, temp. distrib. 8−2032
Ge-In-Te system, homogeneity region, struct., electrophysical props. 8−44091
GeS_x, neutron irrad., thermal and elec. conductivity and heat capacity 8−2165
GeTe, high pressure effects on hole conc. and thermoelec. props. 8−26894
K, high-field Righi-Leduc effect lattice thermal cond. 8−34825
K, high-field thermal magnetoresist., 2.5-8K 8−23072

thermal conductivity of solids continued
K, Matthiessen's rule, low temp. deviations 8−14724
KCl, thermal cond. under press. meas. 8−30802
KI, thermal cond. under press. meas. 8−30802
La_3Te_4, thermal cond., thermoelec. power abd elec. cond. meas., 80 to 750K 8−18853
La_3Te_4, thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
Li, metal and dil. alloys, electronic thermal cond. calc. 8−47764
LiF, thermal cond. under press. meas. 8−30802
Mg_2Ge, three-phonon relaxation rate and phonon conductivity 8−14416
MgO, phonon spectra using freq. crossing techniques 8−14415
MgO:Cr^{2+}, reson. scatt. of phonons by ions 8−18716
MnF_2, mag. field effects, magnon contrib. 8−38890
MnF_2, role of reson. scatt. of phonons by OH^- defects 8−38889
Mo and Mo superalloys high temperature properties 8−44173
Mo, sintered, thermal and elec. conds., 50-800°C, microstructure 8−43352
$MoTe_2$, rapid meas. method *(French)* 8−12689
NH_4Cl, thermal conductivity, crystal transformation 8−2310
NH_4F, thermal cond. of four solid phases, rel. to H_2O 8−38887
NaCl, doped by Ca^{++} and OH^-, thermal conductivity in 5-190K range 8−14520
NaCl, thermal cond. under press. meas. 8−30802
$NaHCO_3$, thermal conductivity thermal decomposition 8−2310
Nb, 0.3-20K, temp. and impurities effects 8−14883
Nb-Ti, thermal conductivity in low temp. range 8−39259
NbC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
$Nb_{80}Mo_{20}$, $Nb_{75}Mo_{25}$, supercond., phonon cond. below 1k 8−14881
$NbSe_2$, supercond. and normal state, thermal cond., temp. and mag. field depend. 8−26992
$Nb_{80}Ta_{20}$, supercond., phonon cond. below 1k 8−14881
Nd, thermal cond., 0.5-8K 8−34819
Nd_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
$P_2Se_xS_y$ glass, thermophysical props., 303-413K, struct. interpretation 8−47615
Pb, film, polycryst. or amorphous, thermal cond., 0.5-11K 8−39260
PbCu film, amorphous supercond., phonon heat transport, thermal cond. meas. 8−19181
$Pb_{0.9}Cu_{0.1}$, film, polycryst. or amorphous, thermal cond., 0.5-11K 8−39260
PbSe:Tl, scatt. of holes and phonons by impurities 8−19068
Pd-Ru, electron transport props., 50 mK-4.2K 8−14707
Pd-Ru-W(V)(Ti), elec. resist. and thermal cond. *(Russian)* 8−19017
$PrCl_3$, cooperative Jahn-Teller ordering of elec. dipoles in non-Kramers doublets 8−15115
Pt, wire, thermal cond., 900-1800K, elec. cond., 800-1800K 8−26845
RbBr, thermal cond. under press. meas. 8−30802
$RbMgF_3$, irradiated 8−22909
$Sb_{1.5}Bi_{0.5}Te_3$ solid solution, temp. influence obs. *(Slovak)* 8−30946
n-Si, electron-phonon interaction, internal strain and impurity elec. field effect 8−14418
Si, lattice thermal cond., 2-1400K, phonon scatt. calcs. 8−2311
p-Si-Ge, heavily doped, hot pressed, high temp. phonon thermal cond. *(French)* 8−43190
β-SiC, thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
SiO_2-Al_2O_3-Fe_2O_3-CaO-MgO-Na_2O-SO_3 glass, thermophysical props. 8−18849
SnTe-In_2Te_3 system, thermoelec. props., phase diagram, transitions 8−43424
Sr, transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
Ta, 0.3-20K, temp. and impurities effects 8−14883
TaC, thermal and electrical conductivity, 1500-3000K 8−43385
$TeSe_{12.5}$, amorphous alloy, thermal and elec. cond. during devitrification 8−26922
Ti-Fe alloys, elec. and thermal props. *(Russian)* 8−19020
Ti-Mn alloys, elec. and thermal props. *(Russian)* 8−19020
TiC, high temp. thermal cond., ambipolar diffusion contrib. 8−26742
UO_2, by comparative longit. ht. flux, use of generalised Bessel functions 8−26741
W, low temp. transport props., phonon and impurity scatt. 8−10418
ZrC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
$Zr_{0.7}Pd_{0.3}$, amorphous supercond., sp. ht. and thermal cond., 0.1-10K 8−26991

thermal convection *see convection*

thermal decomposition *see pyrolysis*

thermal diffusion
see also thermal diffusion in gases; thermal diffusion in liquids
cosmological fluid, lepton era, transport coeffs., Weinberg-Salam model 8−32623
elasticity with thermodiffusion, vibr. boundary value problems 8−41164
liquid inclusion migration in solid, nonequilib. morphology 8−38882
low-aberration focusing fibre, optimum diffusion exchange and heat treatment 8−1378
semiconductor doping, thermomigration method, using molten wires, nonequilib. morphology of migrating liq. inclusions 8−38882
KCl, migration of brine inclusion, nonequilib. morphology 8−38882

thermal diffusion in gases
aerosol, spherical particle phoresis in multicomponent gas mixtures 8−22446
thermodiffusion separation column, theory according to Frazier scheme 8−5842
Ar, thermal diffusion factors, isotopic 8−22450
$^{13,14}C$, thermal diffusion separation column, effective vol. calc. *(German)* 8−42235
Kr, thermal diffusion factors, isotopic 8−22450
Xe, thermal diffusion factors, isotopic 8−22450

thermal diffusion in liquids
alkali metal chlorides, thermal diffusion in H_2O, D_2O, potentiometric calcs. 8−18807
alkali metal-molten salt mixtures, thermal EMF calcs., Rice and Pitzer models 8−20057
aqueous electrolyte solutions, thermal diffusion, Soret coeffs. meas. 8−18811

thermal diffusion in liquids continued
carbon tetrachloride-cyclohexane mixture, Dufour effect, Onsager heat-mass reciprocal relation 8−34638
ionic melts, thermal diffusion, thermoelectric power meas. 8−18810
macromolecular polydispersity by dynamic light scatt. and thermodiffusion 8−18816
nonaqueous electrolyte solutions, thermal diffusion, Soret coeffs. meas. 8−18811
nonisothermal electrochemical system, thermal diffusion, thermodynamic theory 8−20056
polymer solution, dil. buoyancy-driven instability 8−10206
Rayleigh scattering, forced appl. in method to determ. thermal diffusion ratio *(French)* 8−2271
singular perturbation problem with nearly resonant operator 8−22352
Soret-driven convective instability with rotation 8−46968
stability of flow between two rotating cylinders, effect of thermal diffusion 8−18308
tetrabutylammonium bromide, aq. soln., thermal diffusion, heat of transport *(French)* 8−18808
tetraethylammonium bromide, aq. soln., thermal diffusion, heat of transport *(French)* 8−18808
tetramethylammonium bromide, aq. soln., thermal diffusion, heat of transport *(French)* 8−18808
thermogravitation column, thermodiffusion and convection, flow distrib. and conc. profiles *(French)* 8−14493
$CuSO_4$, aq. soln., Soret coeff. and heat of transport 8−18809
^3He-^4He mixtures, thermal transport coeffs. near lambda line 8−22926
Mg, diffusion and thermal diffusion of Fe, Si and Al, obs. using unidirectional solidification 8−30772
$MgSO_4$ soln., thermal and Fickian diffusion 8−2272

thermal diffusivity
fluorophlogopite mica, glass-ceramic, thermal diffusivity, crystallisation effects 8−6190
graphite, Poco AXM-5Q1, thermal and elec. transport props., 4-3000K 8−6375
liquid, phenomenological coeffs., frames of reference, isothermal systems 8−38862
measuring technique, weak IR absorbing fluids 8−22904
membranes, phenomenological coeffs., frames of reference, isothermal systems 8−38862
metallic thin films, thermal conductivity and thermal diffusivity, determ. method *(German)* 8−19165
methane, critical region, Rayleigh scatt. obs. 8−34607
molecular dynamical studies of energy transport in crystalline solid 8−30803
monocarbides of subgroups IVa and Va, kinetic props., review 8−47613
PMMA, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
PMMA, thermophysical props. at high hydrostatic press. 8−2317
polycarbonate, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
polystyrene, amorphous, thermophysical props. depend. on hydrostatic press. 8−47612
refractory, thermophysical props. in rarefied gaseous medium 8−34664
semimetal elements of group V, laser flash technique 8−6189
surface layers and thin films, thermal diffusivity of microsections, IR and X-ray electron-probe microanal. 8−2314
TGS, deuterated and undeuterated, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
triglycine fluoberyllate, pyroelectric, dielectric and thermal props., temp. depend. 8−43809
Ag, expt. transient technique and theory for foils 8−43353
Al, expt. transient technique and theory for foils 8−43353
$AlNbO_4$, polycrystalline, thermal diffusivity, effect of microcracking 8−26743
Al_2O_3, fibrous, thermal diffusivity and conductivity 8−10232
Al_2O_3-ZrO_2 dispersed system, thermal diffusivity/conductivity, effect on microcracking resulting from phase transform. 8−10231
C, glassy, thickness imposed gradients 8−14521
Cu, expt. transient technique and theory for foils 8−43353
Cu, thermal conductivity under high pressure 8−30901
Eu_2O_3, mech. and physical props. rel. to reactor control rod appl. 8−21641
Fe, cast, thermal diffusivity meas. 293 to 873K, exam. of thermal cond. *(Japanese)* 8−47763
Fe, expt. transient technique and theory for foils 8−43353
Gd, transport props., anisotropy, high temp. obs. 8−26843
GdTb alloy, transport props., anisotropy, high temp. obs. 8−26843
$KTaO_3$:Gd semicond., temp. depend. of thermal diffusivity and Seebeck coeff. 8−10481
$MgTi_2O_5$, thermal diffusivity, grain size and microcracking effects 8−10233
Nb-Ti, thermal conductivity in low temp. range 8−39259
NbC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
Ni, expt. transient technique and theory for foils 8−43353
$RbNO_3$, single cryst., DC cond., dielec. and thermophys. props., temp. depend., transitions interpret. 8−26682
Ru, transport props., anisotropy, high temp. obs. 8−26843
SiO_2-Al_2O_3-Fe_2O_3-CaO-MgO-Na_2O-SO_3 glass, thermophysical props. 8−18849
Tb, transport props., anisotropy, high temp. obs. 8−26843
Y, transport props., anisotropy, high temp. obs. 8−26843
ZrC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141

thermal effects in magnetism *see magnetocaloric effects*

thermal expansion
see also Gruneisen coefficient
alkali hydrides, thermodynamic props. calc. using ionic pots. 8−10155
alkali metal, thermal expansion and Gruneisen parameters 8−38857
alkali metals, anharmonic effects in thermodynamics *(Russian)* 8−43145
alloy, solidus temperature determ. by method of moving specimen boundary projected on screen 8−35353
alumina film, RF sputtered, stability 8−22993
anharmonic crystal, thermal expansion contribution to free energy and heat capacity to order λ^4 8−6138
benzalazine, thermal expansion, lattice consts. meas. 8−47539

thermal expansion continued
brittle composite, local crack-driving force, elastic and thermal mismatch 8−7017
cordierite, thermal expansion 8−6165
crystallised solids, symm. of thermal expansion tensor, temp. variation *(French)* 8−34636
crystals, theory *(Russian)* 8−26701
cubic metal, elastic shear modulus, temp. depend. 8−10118
deuteromethane, solid, thermal expansion *(Russian)* 8−26698
Earth crust, anal. of thermoelastic strains and tilts 8−20346
epoxy polymer, with low thermal expansion coeff. 8−3094
fibre reinforced composites, transverse plane, elastic, failure behaviour *(Japanese)* 8−48510
glass, ternary, composition-thermal expansion relationships 8−18801
glass bead-reinforced epoxy resin composite, bulk and shear elastic props. 8−6959
glass chip, reducing agent effect on crystn. 8−46736
glass fibre reinforced epoxy resin, cryogenic tensile, compressive and shear props. 8−6983
glass fibre reinforced polymer, thermal expansion coeff. and glass transition temp., thermal stress effect 8−14484
glass-ceramic second-order microstresses 8−27468
graphite, neutron irrad., microporosity, elec. resist., length, struct. changes 8−43051
graphite, nuclear, prestressing effects 8−14482
graphite, Poco AXM-5Q1, thermal and elec. transport props., 4-3000K 8−6375
graphite, pyrolytic, thermal expansion coeff. rel. to temp. 8−43147
graphite fibre reinforced epoxy resin, cryogenic tensile, compressive and shear props. 8−6983
graphite-ICl residue compounds, struct., X-ray diffr. 8−47287
graphite-nitrate residue compounds, phys. props. 8−10199
interferometric measurement 8−45676
ionic crystal, defect formation volume, temp. and press. depend. 8−26563
isobutyric acid-H_2O, crit. mixture, partial molar vol., temp. depend. 8−18800
linear thermal expansion coeff. unit, 4.2 to 90K, USSR state standard 8−37001
LMFBR, thermal expansion worths inferred from small sample reactivity meas. 8−29596
metal, monovalent, low temp. eqn. of state 8−22820
metal, thermal expansion coeff. of defect-entropy volume 8−26707
metal, thermodynamic properties, outer electron contributions *(French)* 8−43091
metal film, effect on temp. coeff. of resist. 8−43489
methane, solid, thermal expansion coefficient and Gruneisen parameter 8−47540
microwave irradiated materials, rel. to acoustic signal generation 8−24095
molecular solids, intermol. forces and eqn. of state, pseudoharmonic approx. calcs. 8−30731
optically uniaxial and biaxial crysts., thermal strain 8−46733
polyethylene spherulites, thermal expansion 8−2268
polyolefines, filled, struct.-mech. props. relation *(German)* 8−35451
polypropylene, orientated, loose fitting tube for optical fibre packaging 8−1338
polystyroles, filled, struct.-mech. props. relation *(German)* 8−35451
PVC, filled, struct.-mech. props. relation *(German)* 8−35451
reactor fuel vapour expansion work energy calcs., effect of eqn. of state uncertainties 8−8940
refractory curvilinear lining, thermal stresses 8−5649
rocks, effect of cracks on thermal expansion 8−28218
semiconductor, diamond-like, adiabatic pot. in quasi mol. model 8−2063
silicate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
simple liquids, thermodynamic props. and solubility parameters 8−2265
sliding contact seal, thermoelastic instabilities 8−18257
steel, Ni-Cr, 36NKh, thermal expansion under stress at −253°C 8−22871
steel finite life characteristics, temperature change effects, torsion cycle tests *(German)* 8−7004
TGS, elastic vs. polarisation energy near transition 8−15118
transition metal carbides, Group IV-VI metals, thermal expansion coeff., rel. to bond energy 8−2266
Vicalloy 1, dilatometric anomalies and α to γ transform., effect of heating rates *(Russian)* 8−39762
vitreous china, crazing tendency, rel. to thermal expansion and quartz and cristobalite content *(Japanese)* 8−44243
Zerodur, glass-ceramic, thermoelastic props. 8−27550
Ag film, vacuum-deposited, removed from substrate, internal strain *(Japanese)* 8−22872
Ag-Ge, thermal expansion, X-ray determ. 8−26697
Ag-Hg amalgam, lattice const., temp. depend., explained in terms of Hg evaporation 8−26704
$AgGaSe_2$, seeded Bridgman growth of crack-free crysts., thermal expansion coeff. 8−11101
Ag_2O, thermal expansion, lattice parameter determ., 150-250K 8−2267
Ag_8SnSe_6, phase transition, thermal expansion meas. 8−14466
Al_2O_3, 20-100-1700°C, as standard samples for dilatometry 8−26699
Ar monolayer film adsorbed on graphite, thermal expansion and neutron diffr. study 8−34705
As, Debye-Waller factors and thermal expansion 8−43089
As-Se-Te glasses, glass form., charact. temp., density, thermal expansion and dynamical viscosity, struct. model 8−26672
B fibre reinforced epoxy and Al, cryogenic tensile, compressive and shear props. 8−6983
BaF_2, linear thermal expansion coeff., capacitance method meas. 8−16772
$Ba_2NaNb_5O_{15}$, Gd substitution, effect on linear thermal expansion, possible BSN replacement 8−43153
BaO single crystal, temp. depend. of bulk modulus 8−27549
$Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8−3026
Bi, Debye-Waller factors and thermal expansion 8−43089
Bi, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
$Bi_{12}GeO_{20}$, elastic and piezoelectric consts., thermal expsn. 8−31157
C fibre reinforced plastic, epoxy resin DLS 351/$BF_3$400 90-500K, fibre vol. fraction effects 8−26703

thermal expansion continued
- C-C composite material, syntactic-foam type properties 8−44169
- $C_{12.6}AuCl_3$, intercalation compound, struct. *(French)* 8−42982
- CO_2-N_2-H_2O mixture, unstable-oscillatory expansion *(Russian)* 8−1637
- CaBr(Cl)(I), Gruneisen γ and other thermodynamic props. at zero and elevated press. 8−43142
- CaF_2, optical material, 60-300K 8−33791
- CaO-Fe_2O_3-B_2O_3 glasses, phys. props. rel. to struct. and comp. 8−23331
- Cd, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- Cd-Bi, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- $CdCO_3$, thermal expansion temp. depend. 8−18803
- CeP(As), single crystals, low temp. thermal, electrical and mag. props. meas. 8−27051
- CeSb, crystal field effect in thermal expansion 8−19305
- Co, magneto-volume effects calc., rel. to itinerant electron model 8−43621
- Co-Fe (2.92 to 30.05 wt.%), determination of phase equilibrium diagram *(Japanese)* 8−48374
- CoB, thermophysical props., 296-2000K 8−14477
- $CoSiF_6.6H_2O$, anomalous thermal expansion near transition temp. 8−47516
- $Co_{2-y}Zn_yTiO_4$, cation distrib. and mag. props. 8−14939
- $CrTe_{1+x}$, thermal expansion and spontaneous magnetostriction *(Russian)* 8−48017
- Cu, 300-700K, standard material 8−43152
- Cu-Ge, thermal expansion, X-ray determ. 8−26697
- CuF_2, thermochemical props. 8−31674
- Er_2O_3-ZrO_2, subsolidus phase relations, X-ray diffr. and thermal expansion exam. 8−31382
- ErSb, crystal field effect in thermal expansion 8−19305
- Eu_2O_3, mech. and physical props. rel. to reactor control rod appl. 8−21641
- Fe, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8−27349
- Fe, magneto-volume effects calc., rel. to itinerant electron model 8−43621
- Fe-B, amorphous ferromag., Invar type, magnetisation, elec. resist. and thermal expansion meas. 8−2663
- Fe-Cr-Ni alloys, linear expansion, 4.2-300K rel. to antiferromag. rearrangement 8−43146
- Fe-Cr-Ni alloys, stable and metastable, 4.2-290K *(Russian)* 8−47537
- Fe-Ni alloys, thermal props., let. review *(Russian)* 8−18805
- Fe-Ni Invar alloys, forced and spontaneous magnetostriction 8−48019
- FeB, thermophysical props., 296-2000K 8−14477
- $(Fe_xNi_{1-x})_{0.75}P_{0.16}B_{0.06}Al_{0.03}$, metallic glass, thermal expansion 8−43151
- FeP, mag. suscept., resistivity and thermal expansion meas. 8−2661
- Gd, thermal expansion, near ferromag. transition 8−31084
- Ge, optical material, 60-300K 8−33791
- GeTe, thermal expansion meas. at phase transition 8−18771
- ^4He, superfluid, thermodynamic properties, at very low temps., rel. to interacting boson systems 8−2320
- HfO_2-TiO_2, thermal expansion coeff. and dynamic response to pulsed energy deposition 8−26705
- Hg, P-V-T relations for temperatures of 40 to 240°C and press. up to 1400 kg cm^{-2} 8−6140
- $K_2Cd_2(SO_4)_3$, melt growth and ferroelastic transition, and K_2SO_4-$CdSO_4$ phase diagram 8−31335
- KCl, optical material 60-300K 8−33791
- KH_2PO_4, optical material, 60-300K 8−33791
- K_2OsCl_6, displacive phase transitions 8−10188
- K_2ReCl_6, thermal expansion transitions 8−10188
- $LiAl_{1-x}In_x$, comp. depend. 8−22869
- $LiNH_4SO_4$, thermal props. near high temp. phase transition 8−19428
- $LiNbO_3$, optical material, 60-300K 8−33791
- $Li_{1-x}Ti_{2-x}O_4$, struct. phase transition and thermal expansion 8−14465
- MgF_2, optical material, 60-300K 8−33791
- Mn complex, $[Mn(urea)_6](UO_4)_2$, thermal expansion coeff., crystal field parameters, phosphoresc., absorv., excitation spectra 8−43932
- Mn-Ga (19 to 30 at.%), phase equilib. diagrams, X-ray diffr., thermal expansion, and mag. meas. *(Japanese)* 8−39743
- MnSe, mag. suscept., thermal expansion and elec. resist. meas. 8−34964
- Mo, 100-2000°C as standard samples for dilatometry 8−26699
- Mo alloy VN-2M vac.-melted, 971-2153°C, impurity effect 8−26700
- Mo and Mo superalloys high temperature properties 8−44173
- Mo, liquid, thermophysical measurements up to 4300K 8−43136
- Mo, MChVP, vac.-melted, 971-2153°C, impurity effect 8−26700
- Mo, single crystal, thermal expansion in magnetically ordered phases 8−2269
- MoSCl, thermal expansion and thermal transform. 8−26696
- Na_2O-$2SiO_2$ high expansion glass, chemical durability improvement by ion exchnage 8−48361
- Na_2O-$GeO_2(TiO_2)(SnO_2)(ZrO_2)(ThO_2)$-$SiO_2$ glass, density, refractive index, thermal expansion, hardness IR spectra, DTA *(Japanese)* 8−15535
- Nb, thermal expsn., 1261-2289K 8−43150
- Nb-Zr alloy, 5VMTs1, thermal expsn., 1261-2289K 8−43150
- $NbBe_{12}$, by diffusion saturation in vacuum, resistance to heat 8−44259
- Nb_3Ge film, CVD, thermal expansivity, X-ray diffr. meas. 8−6166
- $NbSe_2$, thermal expansion, lattice parameter meas. 8−18804
- Ni, 300-1000K, and power law consts. near Curie temp. 8−38858
- Ni, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8−27349
- Ni, magneto-volume effects calc., rel. to itinerant electron model 8−43621
- Ni-Al-Si, β-phase stability *(Russian)* 8−39738
- Ni-P, amorphous, reversible effects of temp. on struct. 8−34442
- Ni-Pt alloys, mag. props. under hydrostatic press. 8−6556
- $Ni_{1-x}Fe_x$, short range order exam. allowing for formation of structural domains *(Russian)* 8−6888
- NiO, thermal expansion, birefringence, AC susceptibility, temp. depend. 8−10664
- Pb, film, deposited on Si substrate, residual strains 8−18915
- PbO-B_2O_3, solder glass, thermal reduction of Cu^{2+} and Cu^+:Cu^{2+} effect on thermal props. 8−15350
- $PbSbO_2Cl$, nadorite, thermal expansion, X-ray determ. 8−18802
- $PbTiO_3$-$Pb(Ni_{1/2}W_{1/2})O_3$ system, solid soln. form., struct., dielec. props. and thermal expansion *(Japanese)* 8−27501
- phosphate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
- PrSb, crystal field effect in thermal expansion 8−19305
- Pt, 100-1000°C, as standard samples for dilatometry 8−26699
- Sb, Debye-Waller factors and thermal expansion 8−43089
- Se, trigonal or amorphous, thermal expansion and Gruneisen coeffs., 10-300K 8−22870
- Se, vitreous, time dependent thermal expansion 8−14485
- SiO_2, cryst. and vitreous, struct. sensitive expansivity 8−22873
- SiO_2 glassy-amorphous system, struct. *(German)* 8−38626
- SmSb, crystal field effect in thermal expansion 8−19305
- Sn, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- Sn-Bi, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- SrF_2, linear thermal expansion coeff., capacitance method meas. 8−16772
- $TABe_{12}$, by diffusion saturation in vacuum, resistance to heat 8−44259
- Ta, liquid, thermophysical measurements up to 7500K 8−43136
- Ta, melt, thermal expn., 1146-2288K 8−43148
- Ta-W TV-10 alloy, thermal expn., 1146-2288K 8−43148
- TaS_2, thermal expansion, lattice parameter meas. 8−18804
- Tb-Ho, single cryst., annealed, thermal expansion 8−47541
- $Tb_{1-x}Y_x$ alloy, helicoidal antiferromag. to ferromag. transition 8−10687
- Ti:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
- TiC_xO_y, cubic phase, thermal expsn., lattice consts. 8−43149
- $TiC_xO_yH_m$, cubic phase, thermal expsn., lattice consts. 8−43149
- $TlAsSe_2$, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8−34954
- TlI, linear thermal expansion coeff., capacitance method meas. 8−16772
- Tl_2Se, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8−34954
- Tl_2Se_3, diamag., thermal expansion rel. to temp. at cryst.-melt transition 8−34954
- TmSb, crystal field effect in thermal expansion 8−19305
- TmTe, crystal field effect in thermal expansion 8−19305
- $(U,Pu)O_2$, vapour press. eqn. of state, VENUS-II code studies 8−8908
- α-U, single crystal, thermal expansion coeff. and cones of zero expansion 8−34635
- $(UPu)O_{2-x}$, thermal expansion as a function of deviation from stoichiometry *(French)* 8−21645
- V, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8−27349
- V:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
- W-Nb (0-30 at.%), average thermal expansion coeff., 500-1200K 8−14483
- Zn, vacancy conc., lattice parameters meas. 8−10040
- ZnS(Se), optical material, 60-300K 8−33791
- Zr-Nb (1 and 2.5 wt.%), annealed, thermal expansion, α/β transition *(Russian)* 8−26702

thermal expansion measurement
- dilatometer, alumina, for 25°C to 1600°C 8−36965
- electrophysical information collection, recording and processing system 8−8388
- polymer, volume dilatometer design 8−5706
- solids, combined method of temp. coeff. determ. 8−167
- solid(, linear coeffs., capacitance meas. method 8−16772
- solids at high temperature, simple differential dilatometer for reduced average coeff. of linear expansion meas. 8−193
- standard samples for dilatometry 8−26699

thermal fatigue *see thermal stress cracking*

thermal insulating materials
- *see also thermal conductivity*
- corrosion behaviour, in steel-sheathed pipe system *(German)* 8−31580
- kohlestein insulation, material labelled as RUD-N *(German)* 8−26023
- plastic foam Dewar vessels for liq. N_2, manufacture, heat insulation test *(Japanese)* 8−37023
- plastic foam thermal cond., var. calcs. of upper and lower bounds 8−9550
- Space Shuttle external insulation, acoustic emission inspection 8−16276
- C materials, thermal insulating props., furnace appls. *(French)* 8−44345
- SiO_2-Al_2O_3, refractory fibrous heat insulating material 8−6990

thermal insulation
- Dewar vessels for liq. N_2, foam plastic, manufacture, heat insulation test *(Japanese)* 8−37023
- mineral fibre production with low dust and zero lubricant contents *(German)* 8−19678
- photolamps, thermal interference reduction using Therm-O-lux 85 film 8−41302

thermal noise
- artificial cold resistors, electronic feedback cct. 8−32750
- equilibrium system, temp. fluctuations and 1/f noise 8−23143
- gravitational constant, torsion balance, thermal noise limitation 8−16714
- nondegenerate semiconductor, quantum correction of Einstein reln. at high freqs. 8−19072
- strain-dependent resistors, in force meas., noise limitations 8−16771
- teaching, Campbell's theorem, use in elec. noise formulae derivation 8−24602
- temp. meas. appl. *(German)* 8−4615
- n-Ge, anisotropy of thermal and convective noise, in magnetic field 8−34873
- n-Si, bulk, hot electron noise in high fields *(Japanese)* 8−34837
- Sn, film at supercond. transition temp. thermal noise fluctuations 8−47907

thermal properties of substances
- *see also magnetocaloric effects; Scott effect; specific heat; thermal conductivity; thermal diffusivity; thermal expansion; thermal variables measurement*
- air, heating by flashlamp radiation, ballistic and calorimetric meas. *(Russian)* 8−5843

thermal properties of substances continued
boride coatings on Ni alloy, thermal stability, exam. of coating 8−44271
metal, heat resistant charact. extrapolation by temp.-time methods, creep data 8−15477
oxide, solid electrolytes, thermal and mech. props. at steelmaking temps., review *(German)* 8−15418
polyethylene, modified with phosphonate ester pendant side group, thermal and mech. props. 8−11195
steel, heat resistant charact. extrapolation by temp.-time methods, creep data 8−15477
water, transient heat transfer (0-220°C, 1-10 bars) *(Russian)* 8−38183
Fe-Ni alloys, lit. review *(Russian)* 8−18805
Ni-base alloy, heat resistant charact. extrapolation by temp.-time methods, creep data 8−15477
Zn, thermal recovery and stress-strain relations 8−11266

thermal quenching *see quenching (thermal)*

thermal radiation *see heat radiation*

thermal resistance
contact resistance, determ. for solidifying metal and mould 8−39759
metal-dielectric boundary, role of cond. electrons in form. of thermal resist. *(Russian)* 8−19149
resistor, fluctuations in resistance and enthalpy, response to current changes 8−34871
stripe geometry proton-isolated DH lasers, thermal resistance models 8−37881
Cu-epoxy-Cu sandwich, thermal boundary resist., 0.05-10K 8−14564
Mo, ionic siliciding, diffusion layer prod. 8−23855
V-Zr-N quasi-binary section, long term hardness to compare heat resistance 8−3223
ZrO_2 coatings, prod. by low-temp. oxidation, props. 8−23856

thermal resistance measurement
injection lasers, meas. technique for impedance 8−13705

thermal resistivity *see thermal conductivity*

thermal shock
corundum, thermal strength, effect of additives 8−19770
fast burst reactor, WSMR, thermal shock stress anal. for enlarged irradiation cavity 8−33242
laminated cermet coating on Cu, thermal shock performance 8−7081
MHD generator duct wall, semi-hot, thermal stress design study *(Japanese)* 8−13890
spherical body containing central inclusion, thermal stresses *(Russian)* 8−34018
Al_2O_3, coating on Cu, thermal shock performance 8−7081
C fibre reinforced composite, space appls. rel. mech. and thermal props. 8−7016
ZrO_2, coating on Cu, thermal shock performance 8−7081

thermal shock failure *see thermal stress cracking*

thermal spikes *see crystal defects; radiation effects*

thermal stress cracking
alloy, high-temperature low-cycle fatigue strength at const. and variable temps., cycle period effect 8−7127
axially symmetric body, subject to cyclic heat loading elastoplastic strain 8−5672
ceramic, thermal fatigue life prediction 8−19873
ceramics, thermal stress resistance, enhancement, for materials with thermal cond. gradient 8−48506
concrete and mortars, containing S, durability study in temp. cycles and water resistance 8−27613
in corrosive-media, electrochem. polarisation applic. *(Russian)* 8−11356
corundum single crystals, stress relax., cracking during growth 8−47263
Cr-Mo-V steel turbine rotor, fatigue tests 8−39912
extensometer design principles and props., thermal and thermomechanical cycle generation *(French)* 8−31598
fatigue testing under alternate force and thermal loading, installation 8−11481
heat resistance testing, massive sample for mech. prop. changes obs. 8−7124
heat-resisting alloys, VM-1 and VX-4, thermal fatigue rel. to struct. changes *(Russian)* 8−11302
nuclear power plants, structural materials and elements, thermal cycling strength calc. 8−31534
refractory, thermal strength, under program controlled thermal loads 8−11325
steel, Cr-Mo-V, creep fatigue interactions obs., strain controlled and load controlled tests 8−44214
steel, eutectoid and hypoeutectoid stress relaxation during rapid heating transform. *(Japanese)* 8−11258
steel, G-Mo type, welded joints, thermal fatigue testing 8−3278
steel, Ni-Cr-Mo-U, ferritic, B segregation and high temp. embrittlement 8−7040
steel, stainless, 0Kh13N7, 0Kh13AN7, thermocyclic treatment effects, on struct. phase composition and mech. props. 8−44204
steel, stainless, type 304, solution-annealed and thermally aged, correl. of high- and low-cycle fatigue data 8−15532
steel, stainless cold-worked austenitic, fatigue and creep crack growth at elevated temp. 8−48524
steels, Cr and Cr-Ni-Mo refining effect on low cycle fatigue strength, resistance to hydrogen embrittlement 8−44208
Al-Al_3Ni, eutectic composite, directionally solidified, thermal cycling induced distortion 8−39899
Al-Zn (40 wt.%), grain refinement by thermal cycling 8−3149
Al-Zn (40 wt.%), mechanical properties after thermal cycling 8−3150
B fibre reinforced Al, thermal degradation of tensile strength, due to fibre strength degradation 8−39861
C fibre reinforced composite, space appls. rel. mech. and thermal props. 8−7016
Co-Cr-Al-C eutectic alloy, thermal cyclic loading, exam. 8−48496
Co-Cr-Ni-W-TaC (15.7, 9.5, 3, 12.77 wt.%) alloy Co50B3W, temperature cycling effect on rupture strength 8−39898
CoCrAl-Y(HF), Y and HF effects on oxidative behaviour 8−44275
Cr, on Nb, prior thermal working effect on coating quality *(Russian)* 8−23820
Cr-Ni alloy NK40, thermal fatigue life *(Japanese)* 8−19880
GeTe, elec. cond. and microhardness, thermal cycling effect *(Russian)* 8−35485

thermal stress cracking continued
LiF, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
Nb-stainless steel bimetallic strip Cu interlayer struct. during thermal fatigue *(Russian)* 8−15498
Ni alloy, Numonic 80A, grain boundary crack diffusional growth, high temp. rupture possibility 8−47471
Ni-Co-Cr-Al-Y coating, electron beam deposited, for Ni-base superalloy, fatigue crack initiation and propag. 8−11438
Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8−35496
Ni-Cr alloy EhI617, thermocyclic treatment effect on struct. and thermal fatigue resistance 8−7045
Ni-Cr-Al-Cr-Hf-Zr-C, directionally solidified eutectic with (Hf,Zr)C reinforcement, precipitation, and thermal cycling 8−44057
Ni-Cr-Co, Nimocast alloy 738, γ'' precipitate morphology and creep rupture, thermal stress crack effect 8−11318
SiF_4, thermocyclic stress effects in corrosive-media, electrochem. polarization applic. *(Russian)* 8−11356
Si_3N_4, grain-boundary-crystallized, thermal shock resistance 8−11308
V-D alloys, low frequency internal friction study 8−48444
Zr-Nb (2.5 wt.%), memory effect in hydride precipitation 8−11227

thermal stresses
see also thermal stress cracking
bimetallic plates, deflection meas. during high-temp. heating 8−7134
brittle crystal grown from melt residual stress rel. to dislocation density 8−2042
ceramics, thermal stress resistance, enhancement, for materials with thermal cond. gradient 8−48506
Cosserat medium subject to thermal stresses, plane contact problem *(Polish)* 8−22268
crystals pulled from melt, thermal stresses and struct. defects 8−2041
cylinder elastic orthotropic brittle, under axisymmetric thermal and press. loading failure probability anal. 8−34078
fibre reinforced composites, transverse plane, elastic, failure behaviour *(Japanese)* 8−48510
glass fibre reinforced polymer, thermal expansion coeff. and glass transition temp., thermal stress effect 8−14484
graphite thermally stressed disc, nonlinear deformation 8−6964
heat exchanger, pebbles with periodically varying fluid temp., thermal stresses, heat storage capacity 8−26020
heat reflecting coatings, effect of thermal deformation depend. on heating rate 8−30169
laminated active laser element, thermal stresses produced by longit. nonuniform pumping *(Russian)* 8−5474
metal film, effect on temp. coeff. of resist. 8−43489
metal-silicide coating system, thermal stresses *(Russian)* 8−13891
MHD generator duct wall, semi-hot, thermal stress design study *(Japanese)* 8−13890
microplanar elastic semi-space, axially-symmetric thermal contact stress 8−30179
optimal heating of solid body and stress relax. role *(Russian)* 8−22258
oxide film, As doped, roughening during As diffusion into Si, stress effect 8−2389
plate, heated thin annular circular, of variable thickness, buckling, thermoelasticity 8−9581
plates, piecewise-constant coeff. of heat transfer, thermoelasticity, method of integral charact. *(Russian)* 8−38188
polymeric materials, stress meas., X-ray diffr. technique, review 8−5713
power plant pipelines under creep conditions, allowable thermal stresses *(Russian)* 8−13930
refractory curvilinear lining, thermal stresses 8−5649
reinforced polymer, thermal strain determ. 8−1560
rod pulled from melt, asymptotic calc. of thermoelastic stresses 8−2031
rotating circular cylinder, stresses and displacements due to axially nonsymm. heating of lateral surface *(Polish)* 8−22248
satellite, gravity oriented, with thermally flexed appendages, librational dynamics 8−7868
semitransparent shaped components, temp. and thermal stress patterns 8−2035
simulation in continuous casting, finite element method 8−30170
simulation of inelastic material behaviour in struct. anal. 8−34041
spherical thick-walled shell with filler thermal stresses 8−13909
tubular joints stress anal., finite element anal., computer programs 8−41808
welding, thermal stresses and metal movement, computer simulation 8−34002
Al alloy, residual stress relax. rel. to temp., load cycling, aircraft struct. appl. 8−7053
Al-SiO_2 interface, stress and microstruct. via TEM 8−26797
Ge, shaped crystals, grown by Stepanov method, struct. perfection 8−2123
Ge single crystal of circular cross section, thermoelastic stresses 8−2033
Ge strips grown by Stepanov method, thermoelsatic stress calc. 8−2034
InSb, dislocations due to thermal stress, single and composite crysts. 8−2124
NaCl type crystal, dislocations due to high temp. stress relax. 8−2126
Pb film, thermal strain, depend. on cryst. orientation 8−10311
Ti-$TiSi_2$, metal-silicide coating system. thermal stresses *(Russian)* 8−13891

thermal transformations *see phase transformations*

thermal variables measurement
see also bolometers; calorimeters; calorimetry; temperature measurement; thermal conductivity measurement; thermocouples; thermometers
complex heat exchange, radiant and convective components meas. method 8−32809
convective heat transfer coeff. from gas to thermocouple 8−18149
heat capacity meas. instrument for solid granular, fibrous and liquid materials *(Russian)* 8−29116
heat flow in plasma jet, calorimetric probe for *(Russian)* 8−12698
heat of evaporation of liquids, quick method for determ. in region 30-95°C 8−21138
interferometric method for thermal expansion 8−45676
IR effective emissivity meas. by natural cooling *(Japanese)* 8−29117
rotation ebulliometer, press. controlled, thermodynamic investig. of dilute solns. 8−18752

thermal variables measurement continued
- specific heat of liquids, quick method for determ. in region 30-95°C 8−21138
- surface layers and thin films, thermal diffusivity of microsections, IR and X-ray electron-probe microanal. 8−2314
- temperature cond. meas. instrument for solid materials *(Russian)* 8−29116
- thermophysical experiment, automatic information-processing system 8−196
- vapour-liquid equilibrium, ebulliometric determ. 8−18754

thermally stimulated capacitor discharge *see thermally stimulated currents*

thermally stimulated currents
- Al-SiO_x-Al structure, maxima of TSC obs. 8−23178
- alkyl halides, depolarisation thermocurrent obs. of main relax. around glass transition 8−27158
- anthracene, TSC meas. induced by Q-switched ruby laser 8−19087
- anthracene crystals, carrier trapping in deformed surface region 8−47806
- capacitor, thermally stimulated and isothermal discharges across semicond. with grain-boundary barriers 8−2582
- carnauba wax electret, electric charge studied by TSC *(Japanese)* 8−6626
- complex pattern analysis, appl. to Al anodic oxide 8−23104
- computer simulation 8−39609
- data handling, organisation and evaluation of ITC meas. by on-line use of computer 8−10832
- data processing of TSC/thermoluminescence ratio 8−10463
- deep impurities role, book contrib. 8−10403
- depolarisation current 8−10829
- dielectrics, thermally stimulated dipolar processes, simulation 8−35080
- glasses, high-resistivity, uniform and space charge polarisation, thermally stimulated depolarisation anal. 8−15085
- kinetic parameters of thermally stimulated processes 8−10460
- lysozyme bound water, thermally-stimulated press. and current 8−15757
- mathematical basis, logical anal. 8−10462
- nonDebye dielectric solid, thermally stimulated depolarisation 8−10830
- p-n junctions, thermally assisted field emission near precipitates 8−14809
- p-n junctions, TSC, impurity centre parameter determ. 8−47857
- PbI_2, trapping levels, TSC meas. 8−23107
- perovskite oxides, single cryst., photocond. and TSC meas. 8−43436
- polarisation currents in transient regime 8−43777
- polychlorotrifluoroethylene electrets, TSC profiles, poling conditions depend. 8−10835
- polyethylene, carrier traps, photostimulated detrapping currents and TSC meas. 8−10458
- polyethylene, high density corona charged, TSC, oxidation effect 8−26882
- polyethylene, oxidised and gamma-irradiated, carrier traps, thermally stimulated currents 8−19050
- polyethylene film, elongated, 20 to 60°C 8−10826
- polyethylene terephthalate, TSC in high temp. region 8−38872
- polyethylene terephthalate photoelectret, TSC and photostimulated detrapping current obs. 8−10459
- polyethylene TSC resulting from trapped carriers 8−6393
- polymer, relaxation spectra determ. from electric discharge meas. with increasing temp. *(German)* 8−31151
- polymer, thermal sampling technique for thermally stimulated discharge meas. 8−10831
- polymer, TSD and dielec. loss, comparison of activation energies 8−10834
- polyolefins, elec. cond., review 8−26867
- polyvinyl acetate:Cu, and undoped, thermally stimulated currents exam. 8−35083
- PVC, rigid, physical ageing effect on elec. props. 8−10836
- PVC electret, thermally stimulated depolarisation 8−48112
- radiation dosimetry and dating 8−11004
- semiconductor, deep trapping levels, TSC meas. *(Polish)* 8−34797
- semiconductor, interpretation of thermolum. and TSC, extensions of conventional model 8−27335
- semiinsulator, minority carrier injection effect 8−10466
- solid, conf., Montpellier, France (June 1976) 8−10827
- solid, thermally stimulated processes 8−10828
- Teflon, TSC, trap modulated electron and hole mobilities 8−10441
- TGS, conditions for electret state 8−43773
- thiourea, thermally stimulated depolarisation currents, peaks interpreted in terms of molecular relaxations 8−19407
- trap level spectroscopy by thermally stimulated release of trapped carriers 8−10461
- trap modulated electron and hole mobility meas. in insulators 8−10441
- urea, thermally stimulated depolarisation currents, peaks interpreted in terms of molecular relaxations 8−19407
- viscoelastic materials, thermally stimulated processes 8−10829
- ALF_3 film, amorphous, AC elec. props. 8−2804
- AgBr:I, refilling of recombination centres during thermal stimulation 8−10464
- Al-SiO_2-Si structure, ionic impurities motion in noncryst. SiO_2, trapping layers 8−30999
- AlF_3, localised electronic levels, thermoluminesc. and thermally stimulated current exam. 8−11001
- AlH_3, photo-and thermochem. reactions, 200-350K, UV Induced local states 8−31667
- Al_2O_3, anodic oxide, complex TSC pattern analysis 8−23104
- Al_2O_3, high purity, pot. for electrophotography in radiographic imaging 8−35936
- CdS films, photosensitive, growth by reactive RF sputtering, props. *(French)* 8−35308
- CdTe, thermostimulated capacitor discharge, trapping levels obs. *(Russian)* 8−10842
- Cu-As-Se glass, localised states exam. *(Russian)* 8−34806
- GaAs:Cr, high resist., anomalously strong elec. field induced release of carriers from traps 8−6397
- n-GaAs:Cr, semi-insulating, contact effects, trapping levels 8−10465
- p^+-Ge-n-GaAs abrupt heterojunction, reverse currents *(Russian)* 8−10542
- HgI_2 crystals grown by soln. and vapour phase techniques 8−41896
- HgI_2, photoelectronic props. 8−41897

thermally stimulated currents continued
- KCl, low temp. space charge polarisation 8−43789
- KCl:Sn^{2+}, thermally stimulated space charge decay 8−48111
- KCl:Sr^{2+}, polarisation-plastic effect 8−2794
- $KNbO_3$, photoconductivity and TSC 8−2520
- MgF_2 film, crystn., AC glec. props. 8−2804
- MgF_2, localised electronic levels, thermoluminesc. and thermally stimulated current exam. 8−11001
- NH_4ClO_4:SO_4^{2-}(CrO_4^{2-}), thermal depolarisation, relax. parameters 8−43779
- NaCl, evaluation of ionic thermocurrent technique in monitoring relaxation behaviour of impurity-vacancy dipoles 8−43778
- NaCl, low temp. space charge polarisation 8−43789
- NaCl:Cd^{2+}, superstructure obs. by ionic thermal current meas. 8−39499
- NaCl:Sn^{2+}, thermally stimulated space charge decay 8−48111
- NaCl:Sr^+, ionic thermocurrent exam. 8−10833
- $NaNbO_3$, photoconductivity and TSC 8−2520
- PbO-GeO system, pyroelec. and TSC props. 8−43798
- PbTe film, residual conductivity 8−2595
- $RbCl_2$-$NiCl_2$, impurity ion and vacancy aggregation, thermally stimulated depolarisation investigation 8−18678
- Si, deep centres, majority carrier thermal capture cross section 8−10468
- Si deep level determ. using deep depletion MOSFET test structure 8−10571
- Si, defect prod. by GeV muons, thermally stimulated current technique 8−5099
- Si p^+-n contaminated junction, precip.-induced and generation-recomb. currents 8−2555
- Si:Ni p^+n and n^+p diodes, thermally stimulated capacitance obs. of Ni acceptor levels 8−19137
- $Si_{12}Ge_{10}As_{30}Te_{48}$ glass, thermally stimulated depolarization current meas. *(Japanese)* 8−34875
- SiO_2, noncryst., in MOS struct., Na ion impurities motion 8−10223
- SiO_2, trapping level exam. by thermally stimulated discharge of capacitor *(Russian)* 8−34845
- SrF_2:Ce^{3+}, dipole reorientation, Ce^{3+} conc. effect 8−10841
- $TlGaSe_2$, impurity conductivity and TSC 8−23128

thermally stimulated depolarisation *see thermally stimulated currents*

thermally stimulated discharge *see thermally stimulated currents*

thermally stimulated ionic currents *see thermally stimulated currents*

thermally stimulated polarisation *see thermally stimulated currents*

thermally stimulated relaxation currents *see thermally stimulated currents*

thermionic cathodes
- rare earth oxide, work function, influence of surface and bulk effects 8−11065
- transition metal, 4d or 5d, work function of electropositive metal coadsorbed with O_2 8−11064
- BaO-Ba coated cathode, role of surface donor centres 8−11063
- (BaSrCa)O, cathodes, thermionic emission characts., X-ray struct. obs. 8−48270
- CeB_6, thermionic emission rel. to surface state 8−39654
- Cu, point emitter, surface microrelief under explosive electron emission 8−2973
- LaB_5 gun, optimum brightness problem 8−21298
- LaB_6 cathodes, residual gas poisoning in vac. system, thermionic emission decay 8−27364
- LaB_6 gun, Broers type, design, for SEM 8−21283
- LaB_6, single crystals, thermionic work function meas. 8−11067
- LaB_6, thermionic emission rel. to surface state 8−39654
- Mo, (110) and (111) faces, joint adsorption of Cs and O, and emission props. 8−2364
- Mo, point emitter, surface microrelief under explosive electron emission 8−2973
- Pd-Ba (1.5 wt.%), Auger spectrum fine struct. 8−2954
- Pt-Ba, vaporisation expts., heat of adsorpt. and migration of Ba on Pt 8−10272
- Pt-Ba alloy, elemental comp. and chem. state of surface during thermal activation, AES obs. 8−2345
- Ta, Cs adsorption, direct meas. of adsorpt. isobars 8−43235
- W plates, heating by DC electron bombardment 8−23578
- W, struct. transforms. in BaO coating, LEED obs. 8−11061
- W-Ba, type B impregnated cathode, operation mechanism 8−15278

thermionic conversion
- ring triode, enhanced mode thermionic convertors, expts. 8−38553

thermionic electron emission
- *see also Schottky effect; thermionic cathodes*
- angular distribution, cosine law theory 8−35233
- metal, creep-electron emission relation 8−6994
- metal, surface charge density prod. in satic electrification 8−14797
- metal surface, thermionic-field emission anal. 8−19642
- metal whisker diode, thermal field emission, nonlinearity, response time and polarity reversal 8−2579
- refractory metal, surface geometry and emission parameters, changes during directional mass transport 8−2344
- Al, laser irrad., charged particle emission from back side of target 8−2949
- CeB_6, thermionic emission rel. to surface state 8−39654
- Cs-Bi vapour saturated semiconducting film on collector, thermo-emission characts. *(Russian)* 8−23577
- Cs_2O-Al_2O_3-SiO_2, thermionic emission of ions and electrons 8−2969
- Cu, point emitter, surface microrelief under explosive electron emission 8−2973
- LaB_6 cathodes, residual gas poisoning in vac. system, thermionic emission decay 8−27364
- LaB_6, single crystals, thermionic work function meas. 8−11067
- LaB_6, thermionic emission rel. to surface state 8−39654
- LaB_6-YB_6-ScB_6, thermionic emission 8−11068
- $LiNbO_3$, effect of spontaneous polarisation on thermionic emission 8−35245
- Mo, point emitter, surface microrelief under explosive electron emission 8−2973
- Pd-Ba alloy emitter, thermionic emission props. and Auger spectrum 8−11066
- W, laser irrad., charged particle emission from back side of target 8−2949
- W-O-Cs system, 450-800K 8−2972
- Y single crystal, thermionic emission work function 8−2971

thermionic electron emission continued
ZrC, in H_2, thermionic emission, residual gas effects 8−48269
ZrC, work function, effect of H_2 adsorpt., thermionic emission expts. 8−2970
ZrC-Re, in H_2, thermionic emission residual gas effects 8−48269
thermionic emission
see also thermionic electron emission; thermionic ion emission
semiconductor, n-type, quasisteady noise effect on thermionic emission 8−2974
unified theory of electron emission, appl. 8−35256
thermionic generators *see thermionic conversion*
thermionic ion emission
Cs_2O-Al_2O_3-SiO_2, thermionic emission of ions and electrons 8−2969
Ge, work function, meas. by thermionic emission 8−19628
KF, positive ion emission from thick layers, effect of substrate metal 8−19627
Mo (100), emission and work function, K adsorption effects 8−11060
Ta (112), oxidised, emission and work function, K adsorption effects 8−11060
thermionic power generation *see thermionic conversion*
thermionic tubes
see also cathode-ray tubes; electron-wave tubes; gas-discharge tubes; rectifier tubes; vacuum tubes
No entries
thermionic valves *see thermionic tubes*
thermistors
ebullioscopes, uncertainty in sensitivity 8−12695
electronic thermometer, current bridge appl., clinical use 8−29109
fluid anemometric microthermistor sensor sensitivity curves *(Russian)* 8−34219
fluidic capillary sensor 8−24793
low temperature measurement in high mag. fields, instrumentation and methods, review 8−37003
multiple thermistor unit for use with data loggers 8−41303
Pirani gauge, constant resistance thermistor 8−45642
probe, implantable, for continuous core temp. in rats 8−3686
recording temp. monitor using thermistor sensor 8−209
sensors properties and uses *(German)* 8−36991
spectral response characteristics, ocean temp. meas. 8−20533
temperature meas., clinical appl. 8−7473
temperature measuring potentiometer appl. 8−207
$Co_{3-x}Mn_xO_4$, solid soln., synthesis, effect of Bi_2O_3 admixture upon props., thermistor appl. 8−15325
$MnCo_2O_4$ spinel, synthesis, effect of Bi_2O_3 admixture upon props., thermistor appl. 8−15325
thermo-optical effects
see also thermoreflectance
anils, cryst., high-press. optical effects 8−31170
anils, polystyrene soln., high-press. optical effects 8−31171
cabled fibre, temp. effect on transmission loss and pulse delay distortion 8−1407
cholesteric liquid crystal thermo-optical monitor, for nonionising radiation 8−11742
diamond, refr. index, temp. and press. var. 8−27174
measurements at six European laboratories compared *(French)* 8−29107
photothermal spectroscopy 8−32808
silicate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
uniaxial and biaxial optical crysts., thermal strain 8−46733
Au film, self-supporting, thermotransmission meas. 1.8 to 3.5 eV 8−27343
phosphate glass, Li_2O and Na_2O effect on thermo-optic props. 8−18029
thermochemistry
see also chemical reactions
condensed matter, orbital model, quantum mech. theory 8−31675
conference, 6th CALPHAD meeting, Harwell, England (18-21 Apr., 1977) 8−35350
data and calc. of phase diagrams, systems for storage and retrieval 8−31682
thermostimulated effects, correlations and invariants 8−31619
transition metal sulphides, liq. and solid thermochemistry 8−23962
$EuPO_4$ in Mo crucible, $EuMoO_4$ and $EuMoO_3$ atomisation energy 8−40073
O_3^-+molecule reactions, thermochemistry, electron affinity and rate consts. 8−40040
ScI_3, mass spectra and vapour press., and thermochemistry for dimerisation 8−27809
thermoclines *see temperature distribution*
thermocouples
see also thermopiles
calibrating apparatus, automatic, 4.2-300K range 8−45624
chromel-alumel, error statistical investigation 8−24794
construction method for miniature thermocouples with variable electrodes 8−24788
convective heat transfer coeff. from gas to thermocouple meas. 8−18149
crystal-melt interface temperature monitoring, thermoelec. method, appl. to Czochralski growth of InSb 8−31331
DC thermocouple, with variable cross-section, thermoelec. cooling 8−24787
digital, cold junction compensation methods *(Italian)* 8−37002
electrical shunting and leakage errors in sheathed thermocouples, model 8−4618
ferromagnetic thermoelements, meas. error due to time varying mag. fields effects 8−4617
four-wire case thermocouple elements for gas and fluid flow meas. *(German)* 8−14111
International Practical Temperature Scale 1968, fixed point determination 8−41270
low temperature measurement in high mag. fields, instrumentation and methods, review 8−37003
plated thermocouple in notched well, response time for LMFBR use 8−29546
platinorhodium-Pt type, 1000-1300°C range, cold junction electrode compensation 8−216
radiation temp. scales 630-1064°C relationship 8−37004
radiation thermocouple output signal calc. for cylindrical receiver *(German)* 8−41305
thermocouples continued
surface temp. meas. using automated zero-derivative method *(Japanese)* 8−210
surface-mounted beaded thermocouple transient response models 8−8405
temperature controller for field emitter 8−24898
temperature meas. by compensated thermocouples *(German)* 8−41304
temperature meas. in metal testing, error anal. 8−19975
temperature meas. principles, ccts., and instrum. *(Dutch)* 8−198
temperature measurement by means of thermocouple networks *(French)* 8−4613
thermocouples and resistance thermometers properties 8−199
thermoelectric effects and contact pots., general theory for teachers 8−4440
thermostatic air chamber, influence of radiation *(Japanese)* 8−37007
Au/Fe vs. chromel, He cryostat temperature controller appl. *(Czech)* 8−29120
Cu/Cu+Fe low-temp. thermocouples thermo EMF, strong magnetic field effects 8−220
Pt-Rh thermocouple, Ta-sheathed, Al_2O_3-insulated, large decalibrations above 1330°C 8−24790
thermodiffusion *see thermal diffusion*
thermodynamic changes of state *see phase transformations*
thermodynamic cooling *see cooling*
thermodynamic equations of state *see equations of state*
thermodynamic potential *see free energy*
thermodynamic properties
see also critical points; enthalpy; entropy; free energy; Gruneisen coefficient; latent heat; specific heat
AB-type compounds, high-press. and high-temp. behaviour, review 8−22850
actinide series, elements, ions in soln. 8−35716
adsorption isotherm and solute activities from spreading pressure-surface charge data 8−14576
alkali halide crystals, heat of form. for high-conc. substitutional defects, model 8−10048
alkali metals and alloys, liq., internal energy, chem. pot., critical consts. 8−34422
alloy melts, association, effect on thermodynamic behaviour *(German)* 8−20050
aqueous nonelectrolyte solutions, thermodynamic excess functions at high press. 8−18793
benzil-benzene, dil. soln., thermodynamic equilib., ebulliometric investig. 8−18752
binary liquid mixtures, nonassociated, thermodynamics 8−18797
biopolymers, in helical and coiled state, 4 to 400K, calorimetry 8−20140
black hole, surface thermodynamics *(Russian)* 8−12270
branched polymer solutions, interaction function, thermodynamics, decomposition *(German)* 8−18531
brine, Dead Sea, KCl and H_2O activities 8−31673
t-butanol-CCl_4, excess thermodynamic functions, 15, 30 and 45°C, composition depend. *(Russian)* 8−31677
caffeine in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
carbon tetrachloride, liq. and plastic cryst. phases, thermodynamic props., light scatt., US propag. 8−2863
charged hard sphere fluids, meas. spherical model 8−18524
chemical durability, thermodyn. approach 8−7063
crystal properties behaviour near structural transitions, thermodynamic theory *(German)* 8−38809
n-decanol-CCl_4, excess thermodynamic functions, 15, 30 and 45°C, composition depend. *(Russian)* 8−31677
diffusion, activation enthalpy and entropy and defect form., basic thermodynamic relation, validity limit 8−47557
diphenyl-benzene, dil. soln., thermodynamic equilib., ebulliometric investig. 8−18752
dodecan-1-ol+n-hexane, vap. press. and thermodynamic props., 298.230 to 342.824K 8−47528
electrolyte, free surface struct., single ion hydration energies 8−26752
electrolytic solution, struct. factors and thermodynamic props. 8−18533
electron liquids, two-dimens., short-range order onset, thermodynamic props. 8−43454
ethylebenzene, chem. thermodynamic props. 8−40074
ferroelectric, order-disorder model, thermodynamic props. 8−10856
ferromagnet, high frequency, kinetic and thermodynamic props. *(Russian)* 8−19340
fluid, (12-6-n), thermodynamic perturbation theory 8−26414
frozen food, hydrostatic press. effect on phys. props. 8−26706
gas-gas equilibrium, thermodynamics at high press. 8−18734
glass, refractive index during annealing, nonlinear structural relaxation model 8−44234
grain boundary cohesion, segregation effects 8−15411
graphite, in HTGR core, accident anal. *(German)* 8−25315
hard heteronuclear dumb-bell fluid, thermodynamic props., eqn. of state 8−38599
Heisenberg, ferromagnet, spin-one, uni- and biaxial anisotropy, RPA and mol. field approx. 8−34989
hexan-l-ol+n-hexane, vap. press. and thermodynamic props. 298.230 to 342.824K 8−43129
hydrocarbons, liq. mixtures, thermodynamics *(German)* 8−20047
hydrocarbons, mol. thermodynamics, information-theoretic aspects 8−13409
hydrocarbons, thermodynamic props., multiparameter conformal solution theory 8−18796
III-V semiconductor phase diagram and thermodynamic data analysis 8−6913
individual ionic activity coefficients, determination, theory 8−20059
inert gases in critical region, Ar, Kr, Xe, correlation experimental data 8−6139
intermetallic compounds, correl. between interstitial hole sizes and hydride thermodyn. props. 8−18798
ionic solute hydration, thermodynamic and transport props., review 8−27815
isoxazolines, thermodynamics charact. of phase diagrams 8−23673
IV-VI compound layered materials, prep. and growth, book contrib. 8−19651
Lennard-Jones liquid mixtures, equimolar, mol. dynamics, struct. and thermodynamic props. 8−18517

thermodynamic properties continued
Lennard-Jones liquid mixtures, mol. dynamics, particle mass and size depend. 8−22615
liquid alloys, thermodynamic properties, review *(German)* 8−18794
liquid and gas mixtures, thermodynamic props., conf., Braunschweig, Germany (May 1976) 8−20046
liquid crystal, colloid and surface chemical aspects 8−9950
liquid mixtures, activity coeffs. calcs. using struct. group contribs. *(German)* 8−18777
liquid mixtures, thermodynamic props., mol. theory 8−18515
liquid mixtures, thermodynamic props. for mixed fluid densities 8−18775
liquid-liquid phase equilibria, theory, chem. models 8−18781
macromolecular liquids and solutions, statistical thermodynamics 8−18528
macromolecular multicomponent system, phase separation, thermodynamic perturbation theory, calculus 8−18778
magnets with two-sublattices, phase diagrams *(Russian)* 8−23268
marmem engines, martensitic transform. and shape memory effect 8−6920
metal, thermodynamic properties, outer electron contributions *(French)* 8−43091
metallic soln., association 8−15373
mixture, large asymmetric mol. interaction with small mol., target factor 8−26225
mixtures, physical-chemical separation and thermodynamics, review *(German)* 8−18774
multicomponent systems, comput. techniques for thermodynamic data treatment and equil. calc. 8−10172
narrow-band s-d magnetic materials, ground state and thermodynamic parameters, cond. electron density depend. 8−47934
natural gas, liq., thermodynamic props. for mixed fluid densities 8−18775
nonideal gas, dissociating, composition and thermodynamic props., initial at. method 8−40034
nonisothermal electrochemical system, thermal diffusion, thermodynamic theory 8−20056
nonisothermal systems, individual activity coeffs., electrochem. meas. method 8−20058
nucleation of new phase, role of fluctuations *(Russian)* 8−18563
nuclei, thermodynamic functions *(Russian)* 8−539
oligomeric liquid mixtures, transition to, polymer systems, thermodynamics 8−20048
organic eutectic, heat of fusion and excess thermodynamic functions 8−3104
parchment-supported $AgPO_3$, determ. of thermodynamics of ionic diffusion processes 8−20068
petroleum gas, liq., thermodynamic props. for mixed fluid densities 8−18775
phase diagrams and synthesis of soln. thermodynamics, computer anal. 8−30739
plasticized triblock copolymers, thermodynamic theory 8−15377
PMMA and brittle materials, slow crack propagation anal. thermodynamic model 8−35488
polyethylene, uncrosslinked amorphous matrix embedded cryst. orientation distrib., strain energy and hydrodynamic pot. effects 8−9968
polymer, adsorbed, conformation, excluded vol. effects 8−2372
polymer, single ring, Lennard-Jones model, eqn. of state calcs. 8−5379
polymer gels, thermodynamic props., review *(German)* 8−20073
polymer melts, immiscible, surface and interfacial tension, thermodynamic theory *(German)* 8−26753
polymer solutions, thermodynamic props. under high press., light scatt. obs. *(German)* 8−20049
polymer solutions, thermodynamics, review *(German)* 8−18530
Principles of identification of the physical processes caused by variation of thermodynamic parameters in solids 8−22868
QED, thermodynamic potential, path integral methods 8−41459
quasi-perfect elasticity, adiabatic temp. variations 8−32675
real gases, thermodynamic props. and intermol. pots. *(German)* 8−17743
scaled particle theory results for dense mixtures of convex shaped mols. 8−1969
slag-metal equilibrium, thermodynamics 8−44108
solid under stress, nonlinear theory of thermochemical equilib. 8−18701
solute interaction energy, const. press. and const. vol. condition effects 8−38856
spinel, natural, solid soln., thermodynamic model *(French)* 8−32065
standards for single substances and mixtures 8−14481
steel, stainless, nitriding charact. at low atmos. press. of NH_3, thermodynamic *(Russian)* 8−15573
surface step, excess energy 8−47254
surface tension computation in molecular dynamics experiments 8−30815
thermophysical properties, computer based determ. system *(German)* 8−18795
trace elements, in acid solns., solvent extraction, chelation and thermodynamic activity *(French)* 8−27816
transition metal, Einstein temp. and vibr. entropy, semiquantitative calc. 8−2221
transition metal diborides, C32-type, phys., chem. props., appls., review, book contrib. 8−47308
two-component ionic mixture, eqn. of state and phase separation in uniform background 8−21058
two-phase fluid equilibrium, thermodynamic functions and surface tension 8−2262
uracil in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
vessel cooling of HTR constructed of prestressed cast steel, with 3000 MW thermal power *(German)* 8−4982
water, free surface struct., single ion hydration energies 8−26752
water, Monte Carlo simulation of isothermal-isobaric ensemble 8−30530
water, struct. changes due to hydration of monat. ions, in stoichiometric mixtures, thermodynamic props. 8−7225
water vapour, dissociating, composition and thermodynamic props., initial at. method 8−40034
water/steam systems, thermodynamic data tables 8−26679
Ag, activity determ. in molten Cu by two component method *(Japanese)* 8−11547
Ag-Se mixture, activity of Se *(German)* 8−27492

thermodynamic properties continued
Al, monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
Al-Ga, face centred cubic struct. stability, melt equilib., α-Ga effects 8−18766
Al-La, thermodynamic interaction in liquid phase *(Russian)* 8−44080
Au-Si, melt, thermodynamic study of phase diagram *(French)* 8−27482
Au-Sn liquid alloys, Sn activity *(Japanese)* 8−6901
Au-Te, thermodynamic props., calorimetric meas. 8−20051
B, CVD from BCl_3-H_2 and BBr_3-H_2 gas mixtures onto inert substrate, thermodynamic approach *(French)* 8−44020
B_2O_3 glass, nonlinear structural relaxation model for glassy state 8−26448
C_n aggregates in equilib. C vapour, MINDO/2 calc., isomerism 8−29873
$CaSO_2.2H_2O$, few thermodynamic invariants, proof from PMR 8−43657
$CdCl_2$-$PbCl_2$, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
Cd_3P_2, Cd_3As_2, sp. ht., thermodyn. props. 8−22863
Ce-Ga (Al)(In)(Sn)(Pb)(Bi)(Zn) liquid, solubility and thermodynamic props. *(Russian)* 8−19717
CeO_{2-x}, $1.5<O/Ce<2$, physicochemical equilibria, statistical thermodynamics model *(French)* 8−38688
ClNO, phys. and chem. data 8−27727
$ClNO_2$, phys. and chem. data 8−27727
$ClNO_3$, phys. and chem. data 8−27727
Co-Zn melt, Zn activity determ. *(German)* 8−19715
Cr_2O_3-Al_2O_3 solid solution, electrochemical determ. of activity 8−44391
Cu-Fe-O system, ternary phases, activities in spinel solid soln., phase equilibria and thermodynamic props. 8−6910
Cu-Ni-O, liquid alloy, thermodynamic study by EME method *(Japanese)* 8−15367
Cu-Ni-Zn alloy, at 775 degrees C, diffusional and thermodynamic interactions 8−38883
Cu-Pb-S system, at 1473K, thermodynamic anal. 8−39746
Cu-Se mixture, activity of Se *(German)* 8−27492
Fe, Armco, nitriding charact. at low atmos. press. of NH_3, thermodynamic *(Russian)* 8−15573
Fe base ternary soln., containing interstitials and substitutional solutes, thermodynamic and kinetic props. 8−2297
Fe-Al alloy, C saturated, at 1873K, activity meas. with Knudsen cell-mass spectrometer 8−39745
Fe-Mn-S, thermodynamics, activity of FeS-MnS solid soln., 1100 to 1400°C 8−6902
Fe-Ni solid soln., thermodynamic study 8−6904
Fe-Ni-C alloys, FCC, effect of two gamma states on C activity 8−6897
Fe-Ni-Ge, liquid alloy, H_2 thermodynamic interaction, solubility *(Russian)* 8−11202
Fe-Si-C, liquid alloy, activity of Si and C *(Russian)* 8−11203
$Fe(CO)_5$, chem. thermodynamics 8−18799
$FeCl_3$, matrix isolation Raman spectra, mol. config., thermodynamic props. 8−46346
Fe_2Cl_6, matrix isolation Raman spectra, mol. config., thermodynamic props. 8−46346
Fe_3O_4-$ZnFe_2O_4$, spinel type solid soln., thermodynamic study by EMF meas. 8−15379
Ga, FCC hypothetical struct., stability calcs. 8−18766
Ga-In, liq., O diffusion coeff., thermodynamic activity and solubility 8−38860
Ga-P-Bi(Sb), liquidus isotherms, GaP solubility in Sb, Bi, rel. to epitaxial growth 8−34721
Ge-Ga liq. alloys, thermodyn. props. 8−26695
GeI_x, thermodyn. props. 8−23960
H, solid polarised spin system of H atoms metastable in mag. field 8−30812
H_2, liquid, effect of ortho-para composition *(Russian)* 8−34419
H_2, liquid, perturbation theory and quantum effects, thermodynamic props. and quantum stat. corrections *(Russian)* 8−22867
He, in HTGRs, accident anal. *(German)* 8−25315
^{3}He-He II degenerate soln., kinetic coefficients, thermodynamic props., hydrodynamic, acoustic and spin wave propag. *(Russian)* 8−18867
^{4}He, superfluid, neutron scatt. and thermodynamic quantities, need for more precise data 8−22916
In-Sb, metallic soln., association 8−15373
In-Sb, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
InP, VPE, thermodynamics of transfer by water vapour 8−43260
InSb-Sn(Pb)(Bi), metallic soln., quasibinary alloy, association 8−15373
KCl molten salt, thermodynamic function, Brillouin spectroscopy, hypersonic vel. *(French)* 8−35161
N_2+methane, liquid mixture, press. effect on excess thermodynamic functions 8−47494
Na, monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
Na-NH_3, nonmetal-metal transition, thermodynamics 8−18964
NaCl, molten salt, thermodynamic function, Brillouin spectroscopy, hypersonic vel. *(French)* 8−35161
Na_2O-PbO-SiO_2, PbO activity 8−44112
Nb-Ta-O solid soln., thermodynamic props. 8−31386
$NbSe_x$, nonstoichiometric, thermodynamic props. and crystal struct. *(Japanese)* 8−11206
Ni-Ge, liq. alloy, thermodynamic activity, mass spectrometric determ. *(German)* 8−20052
Ni-Zn liquid alloys, Zn activity obs., 1100 to 1300K 8−40072
Ni-Zn melt, Zn activity determ. *(German)* 8−19715
$Os(CO)_5$, chem. thermodynamics 8−18799
Pb-Bi alloy, vapour press., meas. using transpiration method, thermodynamic props. determ. 8−3365
Pb-ZZ 8−3365
$PbCl_2$-$ZnCl_2$, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
PbO activity in ternary and binary silicates *(Japanese)* 8−6907
PbO, thermodynamic activity in liquid, PbO-$PbCl_2$ 8−7227
Pd-Ti liquid alloy, mass spectrometric study of high temp. thermodynamic stability 8−15369
$Ru(CO)_{5(g)}$, chem. thermodynamics 8−18799
ScI_3, mass spectra and vapour press., and thermochemistry for dimerisation 8−27809

thermodynamic properties continued
- Si material processing, point defect thermodynamics 8−6054
- SiO_2-Al_2O_3, calculated thermodynamic data and metastable immiscibility 8−27495
- Sn-Sb molten alloys, thermodynamic study *(Korean)* 8−31383
- Sn-Zn, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
- $SnSe_2$, rel. to p-T projection of phase diag. of SnSe-Se 8−27485
- Sr, specific heat and thermodynamic props. 5-350K 8−47534
- Ta-D system, thermodynamic stability of Ta_2D, rel. to long-range order parameters *(Japanese)* 8−15376
- Te rich ternary chalcogenides, glass transition temp. predictions 8−38823
- α-Ti-O solid soln., hexagonal, thermodynamics 8−3098
- $TiCl_3$ reduction to Ti by Mg, thermodynamics and heat physics *(Russian)* 8−15331
- UFe_2, thermodynamic props., agreement with Campbell correlation of laves phase compounds 8−15370
- XeO_2F_2, mean amplitudes of vibr. and molar thermodynamic functions 8−17649
- Zn-Cd liquid alloy, activity meas. by transportation method *(Japanese)* 8−35358
- Zn_3P_2, Zn_3As_2, sp. ht., thermodyn. props. 8−22863

thermodynamics
- *see also atmospheric thermodynamics; critical phenomena; entropy; equations of state; Joule-Thomson effect; statistical mechanics*
- adsorption and Gibbsian distance parameters in 2- and 3-phase systems 8−10282
- adsorption excess quantities, comprehensive treatment 8−10281
- adsorption of gas-mixtures on heterogeneous surfaces, stat. thermodyn. of localized monolayer adsorpt. 8−2371
- alcohol-active soln., assoc. soln. thermodynamics, H^e, V^e curves 8−31671
- n-alkane binary mixtures, infinite dilution activity coeffs. 8−15695
- binary gas mixtures, excess pots., calc. method 8−45587
- biological membranes, active transport, variational-Lagrangian thermodynamic theory 8−41255
- black hole+heat bath, thermal equilib. possibility, thermal Green functions 8−12275
- black holes, quantum processes, especially Hawking thermodynamic emission process 8−12284
- black holes, thermodynamics and space-time distortion 8−8041
- bone functional adaptation model and thermodynamic consideration *(Japanese)* 8−7316
- Caratheodory's integrating factor choice, for teaching 8−41110
- cardiac work, anal. using general energy equation of thermodynamics 8−20207
- chain molecular amorphous solids, stat. thermodynamics and mol. theory 8−26442
- chemical potential, computer simulation 8−31683
- chemical thermodynamic equilibrium in strong elec. field, and field chem. consequences 8−7224
- classical ferromagnet systems, partition functions zeros, correl. inequalities 8−27008
- cluster expansion in statistical mechanics, S-matrix formulation *(German)* 8−41256
- collective open chemical systems, variational-Lagrangian thermodynamics of evolution 8−41255
- colloidal capillary-porous body, mass transfer parameters, adsorpt., osmotic moisture 8−11563
- continuous one-dimensional many-component Gibbs system with regular two-body interaction pot., transfer matrix 8−8342
- continuum thermodynamics, functional form of eqns. 8−29075
- continuum thermodynamics, objection to entropy as primitive concept 8−12659
- correlation function derivatives, averaged over equilib. grand canonical ensemble 8−32780
- Dicke Hamiltonian, spin-spin interaction on super-radiant phase transition 8−16762
- differential geometrical methods in phenomenological thermodynamics 8−45471
- education, air conditioners, second law efficiency, energy efficiency ratio and performance coeff. 8−36742
- elastic-viscoplastic materials delayed behaviour of double shear perturbations 8−45483
- elastoplastic coupling within thermodynamic strain space formulation of plasticity 8−30189
- electrode-solution interfaces, role of water 8−40058
- energy quality, principles of exergy *(German)* 8−12662
- entropy and Einstein's theory of gravitation 8−12638
- entropy of thermodynamic processes induced by coherent radiation 8−32752
- Ettingshausen refrigerator, longit., isothermal, nonstationary regimes, theory 8−18157
- Fermi quantum crystals, melting curves low temp. anomalies rel. to neutron stars 8−24757
- fibre bundle struct. of thermodynamic states 8−8370
- fluid, dipolar and ionic, electrically neutral, correl. condits. 8−4573
- fluid mixture, unified theory of dynamics and thermodynamics *(Japanese)* 8−8244
- fundamental Earth physics appls. 8−36125
- fundamental laws of thermomechanics, constitutive eqns. *(German)* 8−24758
- in geology, proc. of NATO Advanced Study Inst. (Oxford, 17-27 Sept. 1976) 8−32103
- Ginzburg-Landau model system, quenched, fluctuations growth 8−41260
- glass, internal parameters, ordering parameters, history function, rel. to glass transition 8−30738
- glass transition interval, theory, physical meaning *(German)* 8−22834
- global thermodynanic stability and correlation inequalities 8−45560
- H function, sign of d^2H/dt^2 8−29073
- hard sphere mixture, Ornstein-Zernike eqn. with Yukawa closure 8−18513
- hydrophobic effect, dil. soln. struct. and thermodynamic props., semi-empirical model 8−20060
- Il'iushin's postulate, thermodynamic conditions on elastoplastic coupling 8−18190
- Il'iushin's postulate, thermodynamic conditions on elastoplastic coupling 8−18191

thermodynamics continued
- immiscible liquid binary cycle temp.-entropy diagrams 8−157
- infinite classical system, stability, equilib. and KMS 8−21055
- initially-stressed solids, variational-Lagrangian irreversible thermodynamics 8−29074
- ion clusters in heteromolecular nucleation, steady state thermodynamic model 8−48687
- ionic solution in molecular polar solvent, stat. mech. 8−30527
- irreversibility postulates 8−24750
- irreversible, of steady state with disequilibrium 8−4576
- irreversible, vector forces and fluxes 8−24753
- irreversible processes, preferred choice of flows and forces *(Russian)* 8−4572
- irreversible thermodynamics, review of foundations postulates and implications 8−12658
- Kirkwood-Salsburg eqns. for bounded stable Kac pot., instability and phase transitions 8−4553
- Kirkwood-Salsburg eqns. for bounded stable Kac pot. 8−4552
- Landau theory for chem. instabilities 8−16763
- lattice systems, metric space of interactions, grand canonical pressure, thermodynamic limit 8−12652
- limit cycles and multiperiodic flow bifurcation and nonequilibrium phase transitions 8−24759
- linear interacting processes in nonequilibrium statistical mechanics, thermodynamic Lagrangian formulation 8−21087
- liquid microclusters, thermodynamics, size effects, theory 8−22935
- liquid-gas phase transition, Percus-Yevick theory 8−38824
- liquid-vapour interface struct., Ar like fluid in equilib., thermodynamic states 8−10259
- liquid-vapour interface struct. and thermodynamics, density fluctuations, grand ensemble formulation 8−22932
- macroscopic system, reduction description method of nonequilib. states and fluctuations *(Russian)* 8−21089
- metal-electrolyte interface, differential capacity, thermodynamic interpretation 8−27770
- micropolar fluid, second order, fund. and constitutive eqns., thermodynamics and flow 8−20970
- mixtures, rational description, theory 8−20053
- molecular thermodynamics appl. to phase separation and critical phenomena *(German)* 8−14447
- muscle, mechanochem. contractile system as thermodynamic machine 8−20201
- negative specific heat paradox, astronomical and physical appls. 8−9557
- Nernst distribution law, use of thermodynamic excess functions 8−43123
- nerve action potential, molecular events and energy changes 8−44497
- network, complex system modelling 8−20955
- nonequilibrium, appl. to electrochem. and thermal diffusion 8−20056
- nonequilibrium systems, with multiple stationary states, stability, thermodynamic anal. 8−27734
- nonlinear irreversible processes, Fokker-Planck eqn. asymptotic solns., generalised Onsager-Machlup theory 8−36955
- nonlinear irreversible thermodynamic processes, field anal. 8−156
- nonlinear thermodynamic methods, parameters evaluation 8−41254
- nonpolar fluids, Hamaker consts. and principle of corresponding states 8−11543
- nuclear shell correction, continuum, thermodynamical calc. *(Russian)* 8−29409
- nucleation theory, fundamentals *(Spanish)* 8−43101
- one-dimensional fermion system, cluster expansion methods and thermodynamics 8−6289
- optimal control of ideal gas system 8−29071
- partition function, analytic props. of Lippman-Schwinger variational approx. *(German)* 8−36953
- passive states and KMS states for general quantum systems 8−41178
- phase equlibria, molecular thermodynamics calculations, practical appls. *(German)* 8−18733
- phenomenological eqns. for reacting fluids 8−3363
- photography, sub-image and latent image Ag specks, formation 8−16874
- plane rotators, equilibrium state uniqueness 8−8369
- polyisobutylene melt, thermodynamic constitutive eqns., adiabatic deform. expts. 8−1620
- polymer crystals, chain-folded, statistical mechs. in lattice model 8−47247
- polymeric liquids, Hamaker consts. and principle of corresponding states 8−11543
- polyvinylacetate melt, thermodynamic constitutive eqns., adiabatic deform. expts. 8−1620
- quantum dynamics, generalised, two-level, irreversible conservative motion 8−36927
- reaction kinetics and mechanisms by calorimetric methods, theory 8−27733
- relativistic thermodynamics, entropy law 8−8373
- relaxation phenomena, general treatment 8−44398
- rotationally symmetric fluid bodies in gravit. field, thermodynamic treatment of capillary phenomena 8−10262
- second principle, Clausius-Planck inequality as local formulation 8−45585
- separation, partial condensation methods, thermodynamics *(German)* 8−20054
- slag equilibria Flood-Grjotheim treatment 8−39752
- solution, binary, ion solvation *(Russian)* 8−31676
- spherical limit for n-vector correls., spin correl. functions 8−24726
- spreading from binary surfaces, thermodynamics 8−6197
- stability and critical point, ferromagnets and simple fluids 8−16766
- stability properties of equilibrium states, free Bose gas 8−8368
- subquantum thermodynamics 8−24751
- surface, and surface waves 8−6207
- teaching, 1st law, axiomatic vs. conventional formulation 8−24619
- teaching, temp. concept without zeroth law 8−24607
- temperature scales, differences between IPTS-68 and thermodynamic temp. above 0°C 8−32814
- temperature scales above 0°C, evidence of IPTS-68 departures from thermodynamic temp. 8−32813
- thermodynamic variable, nonlinear fluctuations, Onsager-Machlup function 8−36957
- thermodynamics of internal variables, rel. to absolute reaction rate theory 8−18696

thermodynamics continued
thermomechanic laws of gases and other substances *(Bulgarian)* 8−16767
thermoplasticity using thermodynamics of materials with internal state variables 8−18189
thermoviscous solids with microstructures, irreversible thermodynamics 8−34005
time asymmetry for mixing system 8−12663
two temperature theory of heat cond. fluids 8−26017
two-level quantum dynamics, representations of Kossakowski conditions 8−20989
Universe, consequences of using concept of entropy 8−4418
vapour-liquid equilibrium, high-pressure, isothermal, meas. and correl. 8−18755
viscous liquid, glass transition, mol. mechanism for thermodynamic second order transition 8−2237
vitrification, thermodynamical and model-statistical treatment 8−26661
vortices, two dimensional, statistical mechanics 8−30304
Ar, nucleation, thermodynamics 8−14454
Cu-O system, deposition by chem. transport, thermodynamic anal. *(German)* 8−31344
Eu_2O_3+$EuPO_4$ in Mo crucible, $EuMoO_4$ and $EuMoO_3$ atomisation energy 8−40073
$EuPO_4$ in Mo crucible, $EuMoO_4$ and $EuMoO_3$ atomisation energy 8−40073
$UO_2(NO_3)_2$ solutions, cryoscopy and activity coeffs. 8−11544

thermoelasticity
bonded composite hollow circular cylinder, asymmetrical transient thermoelastic problems 8−30181
boundary integral eqn. method for 3-D thermoelasticity 8−5657
concrete, unreinforced pavement slabs, environmentally induced stresses, computer experiments 8−35435
Cosserat medium subject to thermal stresses, plane contact problem *(Polish)* 8−22268
critical thermal load, for thermoelastic wave propag. 8−30228
cylinder, dynamic thermal stresses due to heating *(Polish)* 8−18183
cylinder, short, visioelastic, expt. and theoretical investigation of heat evolution in cyclic compression 8−13929
deformable solids with rough surface, stochastic problem of heat conduction and thermoelasticity *(Russian)* 8−38169
dielectrics, constitutive eqns. determ. 8−18170
dislocation motion, thermal and thermoelastic fields *(Russian)* 8−22731
Earth crust, anal. of thermoelastic strains and tilts 8−20346
fibre reinforced composites, transverse plane, elastic, failure behaviour *(Japanese)* 8−48510
finite elastic cylinders, Ritz solns. for axisymm. temp. and stress fields 8−38190
heat exchanger, pebbles with periodically varying fluid temp., thermal stresses, heat storage capacity 8−26020
hemitropic micropolar thermoelastic continuum, static and dynamic problems 8−22293
heterogeneous linear thermoelastic media, coupled mean fields 8−18171
lattice dynamics and energy channelling in thermoelastic effect 8−22786
linear thermoelasticity, domain of influence theorem 8−26042
martensitic transformation, thermoelastic, hysteresis, exothermic and endothermic effects *(Russian)* 8−19749
microplanar elastic semi-space, axially-symmetric thermal contact stress 8−30179
micropolar thermoelastic solids, entropy inequality and accel. waves 8−47538
multilayer solids, soln. of heat conduction and thermoelasticity problems *(Russian)* 8−38177
multiply connected orthotropic body, plane thermoelastic problem 8−38199
nonlinear deform. wave propagation in dissipative medium, interaction and reverse problems 8−53
nonlocal generalised thermoelasticity, thermal waves in rigid conductors 8−5656
optimal heating of solid body and stress relax. role *(Russian)* 8−22258
piecewise-uniform plane, curvilinear cracks, integral eqns. of heat conductivity and thermoelasticity *(Russian)* 8−38250
plane walls of variable thermal cond., transient temp. fields *(Polish)* 8−18155
plate, heated thin annular circular, of variable thickness, buckling, thermoelasticity 8−9581
plates, piecewise-constant coeff. of heat transfer, thermoelasticity, method of integral charact. *(Russian)* 8−38188
prismatic body for nonstationary thermal action, stress-state algorithm *(Russian)* 8−13905
recrystallisation, induced, in thin metal plates *(German)* 8−19783
rotating circular cylinder, stresses and displacements due to axially nonsymm. heating of lateral surface *(Polish)* 8−22248
sliding contact seal, thermoelastic instabilities 8−18257
spherical body containing central inclusion, thermal stresses *(Russian)* 8−34018
spherical thick-walled shell with filler thermal stresses 8−13909
thermal stresses due to moving heat sources *(Polish)* 8−18184
thermally activated crack propagation 8−18247
thermoelastic condition of a body containing a heat-evolving inclusion *(Russian)* 8−9563
thermorheological problems, numerical soln. 8−13910
thermoviscoelasticity, bound dynamical problems, approx. calc. methods for crit. thermal states *(Russian)* 8−28949
thermoviscoelasticity, variational techniques *(Russian)* 8−13922
Zerodur, glass-ceramic, thermoelastic props. 8−27550
$Ba_2TiSi_2O_8$, fresnoite, Czochralski growth and phys. props. 8−3026
Cu-Zn-Al, internally faulted martensite, TEM obs. 8−3124
Fe_3Pt, martensitic transform., change from nonthermoelastic to thermoelastic type 8−19755
Ni-Ti, working medium in heat engine, rel. to engine efficiency *(Russian)* 8−48449
Ti-Ni (51 at.%), martensitic transformation, thermoelastic, hysteresis, exothermic and endothermic effects *(Russian)* 8−19749

thermoelectrets
carnauba wax, and rosin mixtures, hetero- to homocharge transition, temp. depend. *(Japanese)* 8−35082

thermoelectrets continued
carnauba wax electret, electric charge studied by TSC *(Japanese)* 8−6626
carnauba wax thermoelectrets crystallite orientation, X-ray diffr. obs. 8−43774
PMMA thermo-electrets, temp. and field effects 8−31148
polyelectrolyte membranes, persistent polarisation in aq. environment, neural model 8−48763
PVC, thermally stimulated depolarisation 8−48112
rosin and carnauba wax mixtures, hetero- to homocharge transition, temp. depend. *(Japanese)* 8−35082

thermoelectric conversion
see also thermoelectric devices
efficiency of thermoelectric materials, new criteria 8−21130
two-stage refrigeration and power producing arrangement, with cooling tube and thermoelectric stage 8−21142
AgI-Ag oxysalt ionic solids, power conversion determ. 8−30947
Pt-Rh-W alloy corrosion by radioisotopic power system insulating and thermoelec. materials 8−7094

thermoelectric devices
see also thermocouples; thermoelectric conversion; thermopiles
anisotropic thermoelectric cooling unit, theory 8−47820
coolers, fast transient response of novel Peltier junctions 8−21141
coolers, heat load estimation curves 8−45613
coolers, numerical anal. of transient behaviour 8−21140
IR hot carrier diode mixer 8−29161
laser/component cooling appl., development trends 8−22136
resistance thermometer *(Japanese)* 8−32816
thermometer, time constant influence on temperature control circuits obs. *(Czech)* 8−29114
transistor thermometer, thermoelec. *(Japanese)* 8−45625
$NiAl_2O_4$, entropy of form. determ. using solid electrolyte twin thermocell 8−27812

thermoelectric effect *see thermoelectricity*

thermoelectric effects in metals and alloys
alkali metals, liq., optimised model pot. calcs. 8−2467
ferronickel, thermoelec. determ. of Ni content 8−40096
liquid model, resistivity, thermoelectric power, Harrison nonlocal pseudopot. calcs. 8−23069
magnetothermoelectricity, phonon-drag, semiclassical theory 8−6354
metallic thermo-electric materials, characts. *(Russian)* 8−19023
nonsimple metals, calc. of elec. resist. and thermoelec. power 8−19019
rare earth orthocobaltites, $R_{1-x}Sr_xCoO_3$ and $La_{1-x}M_xCoO_3$, itinerant electron ferromagnetism obs. 8−10660
rare earth-Al_2, cubic Laves phases, prep. and phys. props. *(German)* 8−23075
review of general theory for teachers 8−4440
superconducting state, possible existence of thermopower 8−23201
Al, cold-worked, transport props., 1.5-8.5K 8−7059
Al, low temp. electrical and thermal transport props., Matthiessen's rule breakdown 8−26847
Al, low temp. thermopower of Frenkel defects 8−19024
Al, magnetic breakdown, quantum phenomena *(Russian)* 8−43290
Al-Mg alloys, cold-worked, transport props., 1.5-8.5K 8−7059
Ba, transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
Ca, electrical resistivity and thermoelectric power 8−26846
Ca, transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
Ce, liquid, resist. and thermoelec. power, t-matrix calc. 8−26840
Cu, ageing effect of thermoelectric power 8−2584
Cu-Ni film, struct. and mag. order effects on electron transport props. 8−6460
Cu_5CdSb, electrophys. props. 8−27491
Eu, liquid, resist. and thermoelec. power, t-matrix calc. 8−26840
Fe-Ni alloys, thermal props., let. review *(Russian)* 8−18805
Fe-Ni-Mo, pre-precipitation obs., small-angle X-ray scatt. and thermoresist. meas. *(French)* 8−19757
Fe-P-Si alloys, electrothermal-grade, thermoelec. characts. in region 273 to 573K 8−23834
Gd, liquid, resist. and thermoelec. power, t-matrix calc. 8−26840
In, superconducting, thermoelec. transport effect 8−39257
In, transverse magnetothermoelec. props. 8−47768
In, type I superconductor, thermoelec. power in intermediate state 8−34935
K-Rb, dil., calc. of press. depend. of low-temp. transport props. 8−30905
La, liquid, resist. and thermoelec. power, t-matrix calc. 8−26840
Li-Mg, liq., elec. transport props. and phase diagram 8−23070
Na-Cs, liq., thermopower 8−23074
Ni foils, hydrogenated, thermoelec. and Hall effect 8−43364
Ni-Al (6.3 at.%), influence of localised order on thermo-EMF and Hall-EMF *(Russian)* 8−6951
Ni-Fe Invar alloy, thermoelectric power temp. and mag. field depend. 8−26849
Ni_3Fe, effect of alloying with Cr, Mo, W or Cu *(Russian)* 8−39095
Pd-Ni, thermopower and crit. conc., spin fluctuation system 8−30909
Pd-Ru, electron transport props., 50 mK-4.2K 8−14707
PtCo, absolute thermopower meas., 4-300K 8−10421
Ru, thermopower and magnetoresistance meas., mag. breakdown 8−47766
Sn film, thermoelec. power, 3.7-8K 8−39231
Sr, electrical resistivity and thermoelectric power 8−26846
Sr, transport properties, elec. resist., thermoelec. power, thermal cond. deviations from Matthiessen's rule 8−39086
Ti-Fe alloys, elec. and thermal props. *(Russian)* 8−19020
Ti-Mn alloys, elec. and thermal props. *(Russian)* 8−19020
TiN, highly dispersed, metallic thermo-EMF 8−43363
V_3O_5, insulator-metal phase trnasition at 450K, properties 8−39023
W, resistivity min., thermoelectric anomaly correlation 8−2468
Yb, liquid, resist. and thermoelec. power, t-matrix calc. 8−26840

thermoelectric effects in semiconductors and insulators
alkali metal-molten salt mixtures, thermal EMF calcs., Rice and Pitzer models 8−20057
amorphous, thermoelectric power and transport models 8−10482
amorphous semiconductors, classification into structurally 'soft' and 'hard', thermoelectrical approach 8−42908
amorphous semiconductors, doped, electronic props. 8−19030
biopolymers, solid, apparatus for Seebeck coeff. meas. 8−21172

thermoelectric effects in semiconductors and insulators continued
  chalcogenide solid solutions, thermoelectric materials, physico-chemical study 8−30945
  correlation effects in hopping transport theory, applic. to cond. and thermal EMF *(Russian)* 8−23079
  DC thermocouple, with variable cross-section, thermoelec. cooling 8−24787
  degenerate semiconductor, Sondheimer oscills., asymptotic behaviour 8−19059
  diamond, natural, elec. cond. and thermoelec. power 8−39115
  differential thermal EMF measurement device for solid fusion region and melt states 8−12716
  ferroelectric ceramic, elec. and thermoelec. props. of grains and grain boundaries 8−43382
  ferromagnetic semiconductor, thermoelec. amplification of magnons 8−14748
  film, galvano- and thermomag. phenomena, theory *(Russian)* 8−14743
  graphite, cryst., thermoelec. power, anomalous phonon drag effect 8−19065
  graphite, MPn-6, thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
  ionic melts, thermal diffusion, thermoelectric power meas. 8−18810
  negative effective mass carrier contribution to EMF, sign *(Russian)* 8−26886
  semiconductor, Nernst-Ettingshausen effect, thermopower, strong elec. field 8−23122
  semiconductor, thermoelectric figure of merit, direct meas. in transverse mag. field 8−10485
  semiconductor filament, phonon drag contribution 8−19069
  semiconductors, thermoelectric power meas. using analogue subtraction 8−244
  semimetal, phonon drag, role of surface in thermoEMF *(Russian)* 8−47819
  spinel ferrites, thermoelectric power, effect of exchange interactions 8−43422
  superionic conductor, ionic thermoelectric power, lattice gas model 8−26717
  wurtzite structure semiconductor, transport in longit. quantizing mag. field 8−26891
  AgI-Ag oxysalt ionic solids, power conversion determ. 8−30947
  Ag_2S, transport props., 700-1500K 8−47796
  Ag_2Te, low temp. thermal cond., thermoEMF 8−43423
  $AgTlSe_2$ and AgTlSe, elec. cond. and thermoelectric power, doping effects, rel. to pseudogap model 8−2506
  α-AlB_{12}, heavily doped, elec. props. 8−10446
  As, electrical and thermal props. 8−14747
  As_2Se_3-As_2Te_3, molten semicond., thermoelec. power and elec. cond. near metallic cond. transition 8−10486
  As_2Te_3, molten semicond., thermoelec. power and elec. cond. near metallic cond. transition 8−10486
  Bi, film, thermoelec. power in transverse mag. field *(French)* 8−23183
  Bi film, transverse mag. field depend. of thermoelec. power *(French)* 8−2587
  Bi, intervalley scatt. influence on mobilities, thermopower calc. 8−26866
  Bi-Sb solid soln., thermoelectric props., 80 to 300K *(Russian)* 8−43425
  $Bi_2TE_{3-x}Se_x$, solid solution films, prep. and props. 8−44013
  Bi_2Te_3, thermoelectric p-n junction, pulse refrigeration 8−23156
  Bi_2Te_3-Bi_2Se_3 solid solns., bladed cryst. growth, electrophysical props. 8−43387
  Bi_2Te_3-Sb_2Te_3 solid soln., deviation from stoichiometric cross section 8−35362
  BiTeI-SbTeI solid solns., form., crystn., elec., thermal props. 8−44003
  C fibres prepared from benzene, thermoelec. power meas. 8−2507
  $CaMnO_3$, microstruct., elec. cond., thermoEMF 8−23084
  $Cd_3(As_xP_{1-x})_3$, thermoelectric power and Hall effect., mag. field depend. 8−10484
  n-$CdCr_2Se_4$, single crystal, transport props. near Curie temp. *(Japanese)* 8−6406
  $Cd_xHg_{1-x}Se$, 77-400K *(Russian)* 8−2485
  CdSb-Ag, thermoelectric, thermal defect relax., elec. cond. and thermo-EMF effects *(Russian)* 8−14749
  Ce_2Se_3-$SnSe_2$, solid-solution region, physical properties 8−43391
  $CoCr_2Te_4$, cryst. growth, struct., elec. props., Hall effect 8−43416
  $Co_{1-x}Mg_xO$ ceramics as O_2 sensors, phase stability, elec. cond. and thermoelec. power meas. 8−3420
  (Cu,Ag)X, (X=Cl, Br, I), molten, thermoelec. power determ. 8−26711
  Cu_3AsTe_4, elec. and thermal conds., thermo-EMF, solid and liq. states, temp. depends. 8−43384
  $CuGdTe_2$, synthesis and elec. props. 8−26529
  $Cu_2S(Se)$-$Ge(Sn)S$, phase diagrams 8−44100
  Cu_3SbTe_4, elec. and thermal conds., thermo-EMF, solid and liq. states, temp. depends. 8−43384
  $DyCrS_3(Se_3)$, prep., elec. and thermal props. 8−43390
  Dy_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
  Er_2Te_3, films, prep., elec. props. 8−43494
  $EuBi_2Te_4$, elec. cond., Hall, thermo-EMF coeffs. determ., 300-1100K 8−43386
  $EuSb_2S_4(Se_4)(Te_4)$ elec. cond., Hall, thermo-EMF coeffs. determ., 300-1100K 8−43386
  $FeCr_2S_{4-x}Se_x$, elec. props. 8−23083
  GaAs, melted zone displacement by current *(Russian)* 8−26727
  GaAs, surface photovoltage due to photo-thermo-ionization of surface states 8−14787
  GaAs:Cu, Fe, Cr resistance thermometer expts., 0° to 200°C *(Russian)* 8−45627
  GaAs-GaAlAs heterostructures, LPE growth, Peltier effect *(Polish)* 8−6861
  $Ga_{20}Te_{80}$, amorphous, splat cooled, thermoelectric props. 8−43426
  Gd_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
  Ge, amorphous, elec. and opt. props., review 8−23094
  Ge, amorphous and polycryst. layers, sputtered, elec. cond. and thermoelec. power 8−2586
  n-Ge, elastically deformed, anisotropy of thermoelec. effect 8−19066
  Ge-In-Te system, homogeneity region, struct., electrophysical props. 8−44091
  $(Ge_{1-x}Ga_x)_{1-x}Te$, rhombohedral and cubic phases, transport effects 8−2481

thermoelectric effects in semiconductors and insulators continued
  $(Ge_{1-x}In_x)_{1-x}Te$, rhombohedral and cubic phases, transport effects 8−2481
  GeTe, high pressure effects on hole conc. and thermoelec. props. 8−26894
  GeTe, nonstoichiometric, homogenisation 8−44004
  GeTe-In, solubility, thermo-EMF coeff. meas. 8−43124
  $Ge_{15}Te_{85}$, amorphous, splat cooled, thermoelectric props. 8−43426
  $Hg_{2.86}AsF_6$, thermoelectric power 8−34852
  n-InSb, thermoelec. power in longit. quantising field, phonon drag component 8−19064
  $In_{20}Te_{80}$, amorphous, splat cooled, thermoelectric props. 8−43426
  In_2Te_3-PbTe system, phase diagram, elec. props. 8−35361
  $KNbO_3$, thermoelec. effect and phase transitions 8−48123
  $La_{1-x}Sr_xCrO_3$, x=0-0.2, AC and DC cond., 77-1300K, hopping of polarons 8−2477
  $La_{2-x}Sr_xNiO_4$, $(0 \leq x \leq 1)$, cryst. struct. and elec. props. 8−2088
  La_3Te_4, thermal cond., thermoelec. power abd elec. cond. meas., 80 to 750K 8−18853
  La_3Te_4, thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
  Li-ferrites, hopping theory 8−19039
  LiCr ferrite, elec. resist., thermoelec. power and Nernst-Ettingshausen meas. near compensation point 8−10487
  MgO, $MgCl_2$ additions effect, ionic role 8−26895
  MgO-Si_3N_4, hot-pressed, electrical props. 8−39136
  MnTe film, elec. props. 8−43498
  $NaNbO_3$, thermoelec. effect and phase transitions 8−48123
  Nd_2S_3, semimetallic, elec. and thermal transport meas. 8−10442
  $Pb_{1-x}In_xTe$, impurity-state conduction and temp. depend. of transport coeffs. 8−47795
  PbSe film, influence of pot. barrier on thermoelec. props. 8−39239
  PbSe:Tl, elec. props. and IR reflection 8−6686
  PbSe:Tl, scatt. of holes and phonons by impurities 8−190,8
  $Pb_{0.65}Sn_{0.35}Se$, solid soln., elec. props. 8−39112
  n-PbTe:Pb(Bi)(In), thermoelectric props., 300-750K 8−34851
  $PbTiO_3$, thermoelectric effect and ferroelectric transition 8−48123
  $Pb(Ti_{0.47}ZrO_{.53})O_3$, small polaron cond. mechanism, elec. cond. and thermopower meas. point defects 8−43380
  $PbZrO_3$, thermoelec. effect and phase transitions 8−48123
  $Pb(Zr_xTi_{1-x})O_3$, elec. props. temp. and composition depend. 8−47817
  Sb, thermoelectric props., press. effects up to 90 kbar 8−47818
  $Sb_{1.5}Bi_{0.5}Te_3$ solid solution, temp. influence obs. *(Slovak)* 8−30946
  Sb_2S_3, elec. and mag. props., carrier transport mechanism 8−47792
  Sb_2Te_3, mag. and elec. props., carrier excitation 8−43395
  Sb_2Te_3-Bi_2Te_3 solid solns., bladed cryst. growth, electrophysical props. 8−43387
  Si, amorphous, elec. and opt. props., review 8−23094
  Si film, sputtered amorphous, P and B doped, elec. cond. and thermopower meas. *(French)* 8−47403
  p-Si:B, thermoelec. power, 20-300K 8−19067
  Si:Li, amorphous, interstitial doping by in-diffusion and implantation and elec. characterisation 8−26585
  p-Si-Ge, heavily doped, hot pressed, high temp. phonon thermal cond. *(French)* 8−43190
  $Si_{(6-z)}Al_zO_zN_{(8-z)}$ 8−39136
  β-SiC, thermoelectric material, thermal cond. meas., 1100-2000K 8−24798
  $Si_{12}Ge_{10}As_{30}Te_{48}$, dark cond. and thermoelec. power, thermal activation energies interpret. 8−23123
  Si_3N_4, hot-pressed, electrical props. 8−39136
  SmS-based alloy, preparation and properties 8−44034
  SnTe-In, solubility, thermo-EMF coeff. meas. 8−43124
  SnTe-In_2Te_3 system, thermoelec. props., phase diagram, transitions 8−43424
  $TbCrSe_3$, prep., elec. and thermal props. 8−43390
  Th_3As_4, prep. and semicond. props. 8−23087
  TiO_2:Nb, rutile, Seebeck effect, 90-300K 8−43427
  TiO_2-P_2O_5 reduced glasses, prep., elec. transport, chem. anal., DC, AC cond., seebeck coeff. 8−30924
  Ti_2O_3, cryst. growth by chem. transport and tri-arc methods, and characterisation 8−3003
  $TiS_2(Se_2)$, modelling contrasting semimetallic characters 8−43393
  $Ti_{1-x}Ta_xO_2$, solid soln. formed in TiO_2-Ta_2O_5-Ta at 1100°C *(French)* 8−35375
  Tl_2Se_3, elec. cond. and thermoelectric power, doping effects, rel. to pseudogap model 8−2506
  TlTe single crystal, resistivity, Hall coeff., magnetoresistance, thermoelec. power 8−43418
  V_3O_5, insulator-metal phase trnasition at 450K, properties 8−39023
  $V_{2-x}Sb_xO_4$, defect struct. exam., temp. depend. 8−18635
  W, low temp. transport props., phonon and impurity scatt. 8−10418
  YIG, nonstoichiometry and electronic defects, thermogravimetric expts. and anal. of elec. data 8−6050
  Yb_2Te_3, films, prep., elec. props. 8−43494
  a-ZnSe, elec. and optical meas., Mott-type model for amorphous semicond. 8−2414
thermoelectric generators *see thermoelectric conversion*
thermoelectricity
  see also Peltier effect; Seebeck effect; thermocouples; thermoelectrets; thermoelectric effects in metals and alloys; thermoelectric effects in semiconductors and insulators; thermomagnetic effects; thermopiles; Thomson effect
  efficiency of thermoelectric materials, new criteria 8−21130
  inhomogeneous material, thermoelec. power and thermal cond. 8−10483
  metal coating stability, thermoelectric method of assessment *(Russian)* 8−11459
  ore, flotation extraction, thermoelectric power, extraction yield depdnd. 8−19686
  superconductor, surface thermoelectric effects *(Russian)* 8−34921
  TCNQ-TSeF:TCNQ-M, thermopower determ. 8−47772
  TTF-TCNQ:TCNQ-M, thermopower determ. 8−47772
  $TTT_{1.2}NiS_4C_4H_4$, quasi-one-dimensional cond., cryst., mag. and elec. props. 8−10424
thermography *see infrared imaging*
thermogravimetry *see thermal analysis*
thermoluminescence
  alkali halide:Eu^{2+} phosphor, explosive loading method form., spectra, luminesc. characts. *(Russian)* 8−35212

thermoluminescence continued
alkali halide, activated, luminesc. and stored light sum 8−6738
chert artifacts, thermolum. determ. of prehistoric heat treatment 8−24914
computer simulation 8−39609
data processing of TSC/thermoluminescence ratio 8−10463
dating of burnt flint, appl. to lower Palaeoloithic site Terra Amata 8−345
defect recombination, diffusion-controlled, incorporating Coulomb interaction and annihilation 8−23044
diamond, N9 and ND1 energy levels, electron irrad. photocond. obs., thermolum. 8−6324
diamond, natural, thermoluminescence, phosphorescence, defects, low temp. 8−11000
dosimeter, energy and directional response of Harshaw TLD-100 in diagnostic X-ray range 8−11738
dosimeter, neutron damage, displacement and ionis. fractions of fast neutron kerma 8−30669
dosimeter, thermoluminesc., response, nonlinear behaviour 8−33293
dosimeter reader TLD-04B for research and routine dosimetry appls. 8−20291
dosimetry, appl. to radioactive minerals prospecting 8−32244
entropy production 8−23539
feldspar, anomalous fading, thermolum. dating 8−10999
fluorphlogopite, synthetic, luminesc. props. 8−19579
glass, colour centre form. by UV irrad., afterglow, thermolum. and EPR obs. 8−10047
glow curve anal., temp. inhomogeneity 8−27332
glow curves, effect of temp. distrib. and trapping centre conc. 8−48241
kinetic parameters of thermally stimulated processes 8−10460
l *(German)* 8−15389
mathematical basis, logical anal. 8−10462
minerals, thermoluminesc. dating, error sources 8−11006
nonlinear effects in yields, model 8−11007
phenanthrene, mol. cryst., thermolum. build-up 8−27334
phototransfer technique for thermoluminesc. dating 8−11005
polyethylene terephthalate, photoexcited, thermoluminescence field quenching 8−43942
polymer, rel. to mol. relax. 8−11003
polystyre, irrad, thermoluminesc. 8−2931
polystyrene, electron trap depth distribs., thermolum. data 8−11002
quartz, natural, thermoluminesc. glow curves and spectral characts., γ-ray effects 8−2927
radiation dosimetry and dating by thermostimulated processes 8−11004
radiography, thermoluminescent, improved resolution image storage panel 8−16898
rapid-scanning interference spectrometer appl. to low-level thermoluminesc., use in archaeological dating 8−12773
recombination interactions, unimolecular processes, diffusion-limited kinetics 8−6794
semiconductor, interpretation of thermolum. and TSC, extensions of conventional model 8−27335
solid, thermally stimulated processes, conf., Montpellier, France (June 1976) 8−10827
solid, thermally stimulated processes 8−10828
supralinearity *(Japanese)* 8−31263
temperature exposure measured by thermolum. fading 8−24786
thermally stimulated release of trapped carriers, trap level spectroscopy 8−10461
TLD, clinical appls. *(German)* 8−15904
TLD and film badge personnel dosimeters, appl. *(Russian)* 8−20293
triboinduced luminescence 8−19581
AgBr:I, refilling of recombination centres during thermal stimulation 8−10464
AlF_3, localised electronic levels, thermoluminesc. and thermally stimulated current exam. 8−11001
Al_2O_3, thermoluminescence, optical bleaching/stimulation effects following irrad. 8−43940
Al_2O_3:Ni, γ-irrad., thermoluminesc. 8−2925
$Al_2SiO_4F_2$, topaz, dosimeter appl. 8−35957
B_2O_3 glasses, additives effect 8−27337
$BaZrO_3$, cryst. growth and thermoluminesc. *(Russian)* 8−23604
BeO discs, thermally stimulated exoelectron emission and thermolum. sensitisation 8−35277
CaF_2, doped, colour centre form. by UV irrad., afterglow, thermolum. and EPR obs. 8−10047
$Ca_{10}(PO_4)_6(OH)_2$:Mn, thermoluminesc. 77-500K, X-irrad. at 77K *(French)* 8−15234
CaS, phosphor, thermally stimulated luminescence expt. 8−10951
CaS:Zr, Gd phosphors, thermoluminesc., trap distrib., activator effects 8−2929
CaS-Bi, Mn, phosphors, thermoluminesc., phosphoresc. 8−2928
$CaSO_4$, glow curves, X-irrad. effect 8−35210
$CaSO_4$:Dy, TLD during irrad. by γ-rays, X-rays, electrons, ambient atm. effect 8−19578
$CaSO_4$:Tm composite TLD for γ-rays, X-rays, β-rays, and thermal neutrons 8−28076
CdF_2:Mn, recomb. processes 8−15237
$CdGa_2S_4$, interpretation of thermolum. and TSC meas. 8−27336
Gd_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
KBr, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KBr, thermolum. and reactions of freed interstitial and trapped hole centres 8−23538
KBr, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769
KCl, cryst., colour centres, ionic cond., X-ray effects, thermoluminesc. *(Russian)* 8−6056
KCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KCl, pure and Pb^{2+}-doped, X-irrad., quenching effects on thermal glow curves 8−27333
KCl, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769
KCl:Pb^{2+}, γ-irrad., rel. to props. 8−31262
KCl:Sr(Ca), thermoluminescence and colour centre thermal stability in irradiated sample 8−43941
KCl:Tl, 475 nm emission, attributed to Tl^+ dimer 8−39611

thermoluminescence continued
KCl-$BaTiO_3$, composite cryst., F-centres, thermoluminesc., DC field and X-irrad. effects 8−2926
KCl-KBr:Mn mixed cryst. system for thermoluminescence dosimetry, glow curves, dose response 8−24150
La_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
Li disilicate glass, radiation induced centres, EPR exam. 8−35033
$Li_2B_4O_7$:Cu, Ag, as thermoluminescence dosimeter *(Japanese)* 8−31906
LiF (TLD-100), pre-irradiated, non-irradiation induced TLD 8−48242
LiF (TLD-100), thermoluminescent glow peaks 8−35211
LiF, restored thermoluminescence mechanism 8−19580
LiF TLD phosphor, incompatibility of sensitisation and dose re-estimation 8−40340
LiF TLD response to high-energy X-rays and electrons rel. to ^{60}Co photons 8−40332
LiF TLD-100 material, long term recycling characts. 8−11737
LiF TLD-700, Harshaw, effect of sample size and batch origin on thermal neutron sensitivity 8−40342
LiF, thermolum., formulation of sensitisation based on simple two-step reaction rate model 8−39610
LiF:Mg, X-irradiated, thermoluminesc. of Z_3-centres 8−15236
LiF:Mg,Ti, thermolum. related Z-centres, optical absorpt. bands 8−23540
LiF-PTFE TLD performance, influence of heating element design 8−25333
$LiNbO_3$, optically active centres, form. by electron and γ-irrad. 8−18642
MgF_2, localised electronic levels, thermoluminesc. and thermally stimulated current exam. 8−11001
MgO, defect centres, thermolum. examination 8−15235
MgO, light emission during adsorpt. and desorpt. of O_2 8−38949
MgO, single crystal, thermolum. meas. *(Japanese)* 8−19577
MgO:Sn(Al), V centres, destruction temp. 8−10998
NO+O, in Ar matrix, chemiluminesc. 8−35688
NaBr powder coloured in electrodeless discharge, reflectance spectra, thermoluminescence props. 8−6796
NaCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
NaCl:Ag, diffusion parameters of hot holes created by ionising radiation 8−47800
NaCl:$MgCl_2$ (0.1 mol.%), thermoluminesc. glow curves, temp. distrib. and trapping centres 8−48241
$PbMoO_4$, colour study from absorption, fluorescence and thermoluminesc. exam. 8−31245
SiO_2:Ag, crystalline, fused, colour centres 8−10954
YAG:Cr^{3+}, radiation colour centres, absorpt. and thermolum. spectra 8−48206
Y_2O_3, formation and changes in point defects, EPR, optical transitions and thermolum. spectra 8−2118
Y_2O_3 sintered body, blackness study thermoluminescence anal. *(Japanese)* 8−23541
Y_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8−6797
ZnS crystals, luminescence kinetics, centre discrimination exam. 8−15215
ZnS, phosphor, thermally stimulated luminescence expt. 8−10951
ZnS:Cu, polycryst. phosphor, excitation storage, recombination barrier participation 8−27316
ZnS:Cu,Pt phosphors, photoluminesc., thermoluminesc. 8−43915
ZrO_2, thermolum., UV and γ-ray effects 8−2930
$ZrSiO_4$, zircon, (sand), thermolum., UV and γ-ray effects 8−2930
$Zr(SiO_4)_{1-x}(OH)_{4x}$, synthetic hydroxyled zircon, influence of OH^- on thermoluminescent emission *(French)* 8−6795

thermomagnetic effects
alumel, B versus H measurement from 25 to 180°C 8−23297
degenerate semiconductor, Nernst-Ettingshausen effect, Sondheimer oscills., asymptotic behaviour 8−19059
Ettingshausen refrigerator, longit., isothermal, nonstationary regimes, theory 8−18157
film, galvano- and thermomag. phenomena, theory *(Russian)* 8−14743
film, thermomagnetic effects in mag. field of arbitrary magnitude 8−47885
Invar, elec. transport props. and Invar features *(Russian)* 8−14710
metal, phonon drag magnetothermoelectricity, semiclassical theory 8−6354
semiconductor, Nernst-Ettingshausen effect, thermopower, strong elec. field 8−23122
steel, C, decomposition of supercooled austenite, exam. of carbide formation *(Russian)* 8−35388
wurtzite structure semiconductor, transport in longit. quantizing mag. field 8−26891
Al, magnetic breakdown, quantum phenomena *(Russian)* 8−43290
Al, Nernst-Ettingshausen coeff., electron-phonon Umklapp scatt. 8−26848
Bi, film, thermoelec. power in transverse mag. field *(French)* 8−23183
Bi-Sb, dil., magnetothermal oscillation and spin splitting of electrons 8−43362
$Bi_{0.91}Sb_{0.09}$, thermomag. power in strong mag. field, temp. and field depend. 8−43421
C fibres prepared from benzene, thermoelec. power, magneto-Seebeck effect 8−2507
$Cd_xHg_{1-x}Se$, 77-400K *(Russian)* 8−2485
$Cd_xHg_{1-x}Te$, disorder scatt. 8−39137
Cd_3P_2, free carrier and interband absorption 8−23446
Co-Mn alloys, Nernst-Ettinghausen effect and electrical resistivity *(Russian)* 8−14714
$(Ge_{1-x}Ga_x)_{1-x}Te$, rhombohedral and cubic phases, transport effects 8−2481
$(Ge_{1-x}In_x)_{1-x}Te$, rhombohedral and cubic phases, transport effects 8−2481
In, Nernst-Ettingshausen effect in solid and liq. states *(Russian)* 8−6353
In, transverse magnetothermoelec. props. 8−47768
n-InSb, thermoelec. power in longit. quantising field, phonon drag component 8−19064
K, high-field Righi-Leduc effect lattice thermal cond. 8−34825
LiCr ferrite, elec. resist., thermoelec. power and Nernst-Ettingshausen meas. near compensation point 8−10487
N_2, thermomagnetic effect, Knudsen gas between Au surfaces, low temp. 8−30405

- **thermomagnetic effects** continued
  - Ni-Fe Invar alloy, thermoelectric power temp. and mag. field depend. 8−26849
  - Ni_3Fe, Nernst-Ettingshausen effect, effect of alloying with Cr, Mo, W or Cu *(Russian)* 8−39095
  - $Pb_{1-x}In_xTe$, impurity-state conduction and temp. depend. of transport coeffs. 8−47795
  - PbSe film, influence of pot. barrier on thermoelec. props., elec. cond., Hall coeff. and Nernst-Ettingshausen coeff. 8−39239
  - PbSe:Tl, scatt. of holes and phonons by impurities 8−19068
  - Te, galvano- and thermomagnetic effects 8−30939
  - Tl, Nernst-Ettingshausen effect in solid and liq. states *(Russian)* 8−6353
  - W, low temp. transport props., phonon and impurity scatt. 8−10418
- **thermomagnetic recording**
  - Curie point, charact. of thermomag. recording *(Russian)* 8−23272
  - holographic recording materials and devices, book contrib. 8−25838
  - Bi garnet-MnBi film structure, thermomag. information recording appls. *(Russian)* 8−23305
  - Cr_7Te_8 film, optical and magneto-optical props., appl. as storage medium 8−23545
  - $(ErEu)_3(FeGa)_5O_{12}$ film, for mag. writing and magneto-optical displays 8−6549
  - Fe garnet epitaxial film, thermomag. data recording by electron beam heating 8−27066
  - $(Gd,Bi)_3,(Fe,Al,Ga)_50_{12}$ LPE film, 180° Bloch wall pinning at etched nucl. tracks 8−39376
  - $Mn_{0.75}Ti_{0.25}Bi$ films as magnetooptic storage medium, mag. interferogram recording 8−19288
  - $NdCo_5$, ferromag., thermomag. charact. in mag. field *(Russian)* 8−23273
- **thermomagnetic torque** *see Scott effect*
- **thermomagnetic treatment**
  - *see also magnetic annealing; magnetocaloric effects*
  - PVC, magnetoelectret form., RF thermomagnetic treatment, dielectric aftereffects 8−6625
  - Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
  - Fe-Mn base alloy, mag. preferred directions 8−39370
  - Fe-Ni-Al-Co-Cu-Ti, 38 to 40 wt.% Co, 8 to 8.5 wt.% Ti, alloy YuNDKT tempering and thermomagnetic treatments 8−3154
- **thermomechanical processing** *see thermomechanical treatment*
- **thermomechanical treatment**
  - *see also hot pressing; hot working*
  - austenitic steel, mechanical properties, effect of high temp. thermomechanical treatment and post-deform. ageing *(Russian)* 8−39809
  - bainite substructure changes during HTMTI 8−23742
  - extensometer design principles and props., thermal and thermomechanical cycle generation *(French)* 8−31598
  - Incoloy MA956E, mechanical alloying for high temp. appl. 8−44046
  - Inconel MA754, mechanical alloying for high temp. appl. 8−44046
  - metal, axisymmetric drawing simulation, numerical method development 8−30206
  - nylon 66, filament, heat setting and thermomechanical behaviour 8−15435
  - polyethylene terephthalate, filament, heat setting and thermomechanical behaviour 8−15435
  - polymer, thermally stimulated creep 8−11245
  - polystyrene, oriented amorphous, supermol. structures rel. to mech. behaviour 8−22673
  - steel, AISI 4340, sulphide inclusion behaviour during thermomechanical treatment 8−3151
  - steel, austenitic, Cr-Ni (18,12 wt.%), containing coarse grain boundary precipitates, thermomechanical treatment 8−27545
  - steel, Cr, phase transform., effect of high temp. plastic deform. *(Slovak)* 8−19837
  - steel, diffusion of C after high-temp. thermomechanical treatment *(Russian)* 8−39813
  - steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
  - steel, maraging, N12K6M5TYu, fracture, influence of high-temp. thermomechanical treatment on characts. *(Russian)* 8−27591
  - steel, silchrome, thermomech. hardening 8−23736
  - steel, stainless, 1Kh18N10T, solution annealed effect of cyclic stresses on corrosion rate in acid environments *(Russian)* 8−31577
  - steel, thermally and thermomechanically treated, struct. and decomposition of martensite 8−19784
  - steel martensitic, high-C, formed from hot-worked austenite, struct. *(Russian)* 8−6950
  - superalloy, microstructure resulting from alloying and heat treatment, effect on creep, fatigue, fracture strength 8−11246
  - VT3-1, HTMT effects on struct. and props. 8−23740
  - Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
  - Al-Mg-Si, thermomechanically treated, age-hardening 8−11236
  - Al-Zn (6.5 at.%), fatigue props., effect of ageing and thermomech. treatment 8−27620
  - Al-Zn-Mg alloy 7075, effect of thermal and mechanical pretreatments, on Guinier-Preston zone 8−39817
  - Cu-Ti (Zr), strength improvement by thermomechanical treatment *(Japanese)* 8−48426
  - Ni-Cr-Al-W-Ti alloy MA 6000E, mechanical alloying for high temp. appl. 8−44046
  - SiO_2-Al_2O_3, refractory fibrous heat insulating material 8−6990
  - Ti alloy, microstructure resulting from heat treatment, alloying, effect on creep, fatigue, fracture strength 8−11246
  - Ti alloy VT25, thermomechanical treatment effect on struct. and mech. props. 8−3152
  - Ti alloys VT23 and VT15, etching as a function of struct. *(Russian)* 8−15568
  - Ti-Al-Mo-(Cr), etching as a function of struct. *(Russian)* 8−15568
- **thermometers**
  - *see also pyrometers; resistance thermometers; temperature measurement; thermocouples; thermopiles*
  - bimetal strip based, contact, basic parameters *(Czech)* 8−12692
  - calcite crystal as radiation-stable thermometer 8−203
  - calibration, sealed metal freezing point cell 8−12696
  - calibration, triple point cell of water prep. 8−204
  - cholesteric liquid crystal film, optical rotating power near cholesteric to smectic A transition, thermometry appls. 8−10865
- **thermometers** continued
  - combined radiation/contact thermometer, −10 to 600°C range, features *(German)* 8−32815
  - differential thermometer, high sensitivity, calorimetric appls. 8−4614
  - digital quartz crystal thermometer principle and technical parameters *(Polish)* 8−24791
  - diode, varicap, sensor, differential meter and stabiliser appl. *(Czech)* 8−29115
  - education, elec. noise and Boltzmann's const. determ., absolute temp. scale noise thermometer 8−36767
  - electronic, for telemetric link, with direct reading *(Spanish)* 8−16793
  - electronic, two-digit, LED, 0 to 99°F, remote monitoring outdoor temp. appl. 8−16794
  - electronic, with direct linear indication, 0-100°C range *(German)* 8−29111
  - electronic device, using a thermistor in a current bridge for clinical use 8−29109
  - electronic sensors for clinical replacement of metethmor 8−7473
  - gamma-ray thermometer and strain gauge for remote meas. 8−12694
  - IR, digital thermometer improvement *(Japanese)* 8−41306
  - liquid crystal display, portable *(German)* 8−29112
  - low-temp., reference points based on H_2 and He 8−206
  - low-temperature thermometer characteristics in strong mag. fields 8−37005
  - microprobes, non-perturbing, based on cholesteric crystals 8−16791
  - nonperturbing dielectric microthermometer probes 8−11743
  - recording temp. monitor using thermistor sensor 8−209
  - temp. meas. by thermal noise, appl. *(German)* 8−4615
  - thermoelectric transistor thermometer *(Japanese)* 8−45625
  - thermographic camera, calibration, transmittance and emittance meas. 8−45628
  - thin-film thermometer for meas. of transient plasma heat fluxes in divertor assembly 8−18447
  - KCl:OH, mag. field-independent capacitance thermometers 8−4623
  - NaF:OH, mag. field-independent capacitance thermometers 8−4623
  - Si, commercial diodes, wide range temp. sensor, mag. field depend. 8−45623
  - Si diode, thermometric characts., 15 to 300K 8−8403
  - Si transistor type, precision, −50 to +125 deg. C at ±0.1 deg. C 8−21134
- **thermometric conductivity** *see thermal diffusivity*
- **thermonuclear devices** *see plasma devices*
- **thermonuclear reactions** *see nuclear reactions and scattering*
- **thermopiles**
  - contactless temperature measurement unit for moving surfaces 8−4616
  - radiometer/photometer appl., commercial devices survey and classification 8−16830
  - Bi-Sb film for radiation pyrometry 8−214
- **thermoreflectance**
  - anthracene, O-O exciton absorption bands, thermomodulation study 8−39563
  - polydiacetylene, reflection spectra, thermochromism, temp. hysteresis and phase transformation 8−19452
  - α-Ag-Cd, dil., electronic struct. determ. from thermoreflectance and XPS 8−39011
  - Cd_3As_2, thermoreflectance spectra 8−6702
  - $CdIn_3Se_4$, cryst. growth, photoresponse and optical props. 8−39165
  - Ga, optical properties in 0.3 to 5 eV range 8−31196
  - GaTe layer semiconductor, UV-visible wavelength derivative and thermorefl. spectra 8−6666
  - $Nb_3(AlSi)$ film, thermomodulation spectra, 1.1-2.8 eV 8−48250
  - SbSI, energy band struct. from modulation spectra 8−43892
  - Si, thermoreflectance near $L_{2,3}$ soft X-ray threshold, temp. depend. 8−35224
- **thermosphere**
  - aeronomic parameters, selection for daytime F_2-layer simulation 8−45087
  - auroral particle and Joule heating, global effects on undisturbed days 8−45069
  - charge exchange of metastable ^{2}D O ions with N_2 8−20571
  - daytime neutral winds in lower thermosphere, trace constituents sounding rocket campaign results 8−45071
  - dynamic processes from optical meas. of emissions 8−36342
  - dynamical processes in lower thermosphere, connections with processes in troposphere and stratosphere *(Russian)* 8−24401
  - gravity waves, short periodic, propag. theory, plasma line meas. and Faraday rot. expt. appl. 8−49185
  - gravity waves in lower thermosphere over S. Australia 8−36348
  - ion photochemistry, from Atmosphere Explorer C meas. 8−32261
  - Joule dissipation of elec. currents during equatorial spread-F events 8−45127
  - Lyman-α absorber in winter, satellite occultation meas. 8−36349
  - meridional wind and O depletion at high latitudes 8−28353
  - nighttime winds and temps., monthly vars. during solar min. 8−32263
  - nighttime winds from Atmosphere Explorer C 8−28354
  - predawn 630 nm airglow and conjugate photoelectrons, direct meas. 8−49196
  - semi-annual temperature variations, rel. to atmospheric circulation and mesospheric clouds 8−45061
  - solar radiation absorption change and wave generation by terminator 8−49191
  - solar X-rays, lower thermosphere attenuation meas. by rocket-borne proportional counters 8−45072
  - temperature-depend. model of odd N species 8−16226
  - thermodynamic balance at middle latitudes *(French)* 8−12029
  - travelling neutral disturbances and minor constituent particle mass 8−49189
  - vertical winds and turbulence from Ba cloud release over Thumba 8−49188
  - wind, mass spectrometric meas. 8−28359
  - wind regime of lower thermosphere, rel. to stratospheric and mesospheric processes 8−4019
  - winds, ionospheric model effects on thermospheric calcs. 8−36345
  - winds in mid-latitude lower thermosphere, meas. *(Russian)* 8−36340
  - zonal mean circulation, seasonal and solar cycle vars. 8−32262
  - zonal winds in F-region, estimation during Joule heating using incoherent scatter techniques 8−36344
  - Ar, global distrib., departures from hydrostatic equilib. 8−28358
  - NO density, high-altitude rocket meas. 8−45068

thermosphere continued
  NO in lower thermosphere, joint meas. by rocket borne UV photometer and mass spectrometer 8−40723
  O conc. at 400 km altitude, incoherent scatter obs., model construction *(French)* 8−12030
  O I 5577 Å green line, nighttime var. of 2-15 min fluctuations 8−49193
  O_2, concs. and absorpt. cross sections from EUV occultation profiles 8−28356
  O_2 density, calc. and meas. values comparison 8−28357
  O_2 density indirect determ. from AE-C satellite meas. 8−12032
  O_2 density seasonal vars. near 100 km altitude 8−12034
  O_3, 9.6 μm band radiance calc., excitation processes 8−36350
  $O^+(^2D)$ quenching by O, Atmospheric Explorer data 8−28355
thermostats
  see also cryostats; temperature control; thermistors
  coil for liquid streams, prep. by Ag electroplating 8−8402
  cosmic ray photon emission power spectra described by solns. of Kompanyets' kinetic eqn. *(Russian)* 8−152
  fuel saving by thermostat setback, teaching expt. 8−24626
  phase transition liberated heat used in laboratory thermostat 8−195
  precision thermostat, with stability of ±3.5 μK 8−21132
  thermostatic air chamber, influence of radiation *(Japanese)* 8−37007
theta pinch *see pinch effect*
thick film circuits
  hybrid ICs, geothermal well logging instrumentation appls. for 300°C operation 8−3976
thick film devices
  hybrid fabrication of pH-sensitive implantable bioelectrode *(German)* 8−40369
  Pt resistance thermometers, resistance/temp. relationship 8−37008
thick film resistors
  drift free trimming for pacemakers 8−31977
thick films
  conference, thin and thick film technology, Augsburg, Germany (1977) *(German)* 8−39685
  SnO_2, glaze, high field cond., 4.2-470K 8−23100
thickness control
  automated vapour deposition apparatus based on programmable calculator 8−44022
  ferromagnetic films, electrodeposition, thickness control, magnetisation meas. 8−23306
  film monitor, using preloaded quartz crystals 8−11116
  galvanising process, digital control system for Zn coating distrib. 8−19960
  optical film, optical thickness monitoring 8−5591
  optical film, optical thickness monitoring using quartz cryst. monitor 8−5592
  Schottky barrier solar cell, optimum thickness indicator for barrier metal 8−21120
thickness measurement
  coatings, nondestructive, by beta particles retro-dispersion *(Spanish)* 8−12672
  contact lens, soft, in-office meas. 8−7339
  contactless transducer, for thickness meas. and metal flaw detection 8−44312
  dielectric thin films, refractive index and thickness, spectrophotometric determ. 8−29144
  eddy current thickness gauge, total factor experiment exam., metrological characteristics determ. 8−39999
  electromagnetic instruments, interference factors on readings 8−48601
  ellipsometric, error estimation for water thin film on slightly rough quartz surface 8−32856
  ferromagnetic films, electrodeposition, thickness control, magnetisation meas. 8−23306
  film, dielectric, using varying gap immersion method, simultaneous determination with permittivity 8−6620
  film, low temp., quartz thickness monitor 8−41275
  film, optical characts., computer inversion method 8−11008
  film, Talbot effect applic. 8−9321
  film on nonplanar substrates, light interferometry 8−29085
  film refractive index and thickness meas., error anal. of SYNCANG and SYNCWANG methods 8−8439
  film thickness monitor, quartz crystal, based on SAW oscillator 8−3036
  films, thin, on substrate, thickness meas., electron probe anal. technique *(French)* 8−41276
  gamma-ray back scattering flaw detector and thickness gauge 8−44333
  garnet-ferrite film thickness meas. with UM-2 monochromator interference attachment 8−3035
  gauge for thin foil meas. *(Chinese)* 8−4584
  graphite foil, thickness determ. by TEM using diffr. and energy loss anal. 8−29088
  industrial thickness meas., destructive and nondestructive methods compared *(French)* 8−15611
  isotope radiometry, counting algorithm for information processing 8−44323
  LAMBDA laser distance and thickness meas. system *(German)* 8−32792
  layer, principles and methods survey *(Dutch)* 8−29087
  marine sediment particles, surface organic layer containing U and Th, thickness meas. 8−40592
  metal films, methods and instruments *(German)* 8−32787
  metal whisker thickness meas. using MII-4 microinterferometer 8−166
  metallic supported film, thickness determ. using ^{63}Ni radioactive source 8−22989
  multilayer optical film thickness analyser 8−32785
  noncontact thickness testing by US and electromagnetic waves 8−48603
  nonferromagnetic coating, stability and general serviceability of applied sensors 8−44326
  oxide film characterisation, using low energy electron induced X-ray spectroscopy *(French)* 8−41386
  oxide thickness measurements up to 120 Å on silicon and aluminium using the chemically shifted Auger spectra 8−23586
  oxides produced during Al anodisation, thickness meas. by ellipsometry 8−171
  piezoelectric transducer, aperiodic, for US radiation, design for testing applic. 8−36996
thickness measurement continued
  pipe/boiler wall, US technique, test equipment *(German)* 8−18136
  radioisotope measuring convertor, parameter calc., thickness monitoring appl. *(Russian)* 8−25403
  radioisotopic wall thickness gauge, description 8−44310
  right ventricular wall thickness meas. by echocardiography, comparison with necropsy 8−40277
  SEM appl. 8−29218
  sputtered layer on metal collector, thickness distrib. meas. by electron backscatt. 8−18927
  TEM foil thickness measurement for quantitative metallography 8−35632
  thin layer thickness measurement, US waves, phase vel. and damping *(Russian)* 8−36969
  thyroid epithelial cell, methodology of thickness determ. 8−20330
  time-interval meter for digital display pulse echo thickness gauges 8−48594
  transparent film, from zero refl.-induced ellipticity angles of incidence 8−41345
  US echo technique appl. *(French)* 8−29089
  US resonance method 8−48590
  US testing, pulsed thickness gauge, inspection of tapered profiles, error anal. 8−40007
  UT-31MTs pulsed ultrasonic thickness gauge 8−24761
  vacuum deposited films, quartz thickness monitor nonlinearity 8−29091
  AlN foil, thickness determ. by TEM using diffr. and energy loss anal. 8−29088
  Al_2O_3 anodic layer formation in H_3PO_4 solns., surface charact. 8−15603
  Au, electroplated layer, beta-ray backscattering *(Slovene)* 8−6860
  Pt film, RF sputtered, thickness distribution function 8−11083
  Si, polycrystalline, film thickness meas., visible spectral reflectance analysis 8−32786
  SiO_2, oxide growth in HCl-O_2 mixture, ellipsometric meas. 8−7073
thin film capacitors
  ion current time const. 8−23390
thin film circuits
  preferential sputtering process *(German)* 8−39691
  spark machining, with and without stencils *(Russian)* 8−27651
thin film devices
  see also magnetic thin film devices
  chalcogenide glass threshold switch response to pulse burst waveforms 8−10523
  film preparation and practical device application *(Japanese)* 8−23609
  MIM cold cathode emission density improvement, pinhole and compound insulator methods *(German)* 8−39670
  p-i-n photodiode with internal reflection 8−37059
  superconducting thin film bridges, switching process depend. on control impulse ascent time *(German)* 8−2627
  switches, electrooptic periodic waveguide switches and amplitude modulators anal. 8−22215
  temperature sensor with high temp.-resistivity 8−41308
  thermometer, resistance, Ti and Ge, for surface temperature meas., design, fabrication and appl. 8−24792
  Cu_xS chalcocite solar cell fabrication, characts. 8−39240
  ZnS:Mn AC electrolum., memory effect 8−15228
thin film resistors
  energy deposition measurement by thin film resistors 8−29719
  CdS_xSe_{1-x} thin-film position-sensitive photoresistor prod. and props. *(Russian)* 8−43503
  Ta, Ta_2N, sputtered layers, thermal oxidation, reaction kinetics 8−39959
  TiN-Nb(Ta)N, microcomposite film prod. for radio resistors 8−3052
thin film transistors
  MIMS tunnel triodes, hot electron transmission 8−6456
thin film triodes *see thin film transistors*
thin films
  see also dielectric thin films; epitaxial layers; insulating thin films; magnetic thin films; metallic thin films; semiconductor thin films; semimetallic thin films; sputtered coatings; substrates; vapour deposited coatings
  amorphous, of hard spheres, digital simulation 8−22984
  amorphous thin films, crack networks of voids 8−2399
  analysis using alpha-induced X-ray emission 8−20132
  anisotropic crystal films, surface polaritons 8−26822
  binary diffusion, effect of partial sink 8−43166
  composite (cermets and semiconductor-insulator), dielectric const. and selective solar absorption 8−2937
  conference, thin and thick film technology, Augsburg, Germany (1977) *(German)* 8−39685
  conference on metallurgical coatings, San Francisco (1977) 8−2394
  cooling by thin film coating on polymer substrate 8−197
  deposition, adatom diffusion and capture by clusters, random-walk problem 8−2385
  diffusion through surface film, into half-space, theory *(Russian)* 8−47553
  domain size and internal strain, studied by electron diffraction line broadening 8−30840
  electron interference method for particle shape determ. in films, inner pot. determ. and external field determ. *(Russian)* 8−29209
  electron microscopy technique for small voids obs. 8−34403
  electrophysical properties measurement apparatus 8−4654
  evaporation, unsteady 8−42519
  film-substrate sysem characterisation by ellipsometry 8−8436
  galvanomagnetic and thermomag. phenomena, theory *(Russian)* 8−14743
  growth modes, determined by AES experiment *(Japanese)* 8−22975
  high purity materials for thin film technology *(Japanese)* 8−22974
  inert gas refl., semiempirical analysis 8−6823
  interface reactions, $^{16}O^{2+}$ effect elimination in backscatt. 8−23575
  interferometric meas. with laser beam, thickness on nonplanar substrates 8−29085
  light reflection, transmission and scatt. effect of thin film *(French)* 8−33664
  metal oxide film, optical and diffusion consts. meas., dynamic method *(Russian)* 8−43950
  microporosity induced by nucleation and growth processes, TEM expts. 8−10303
  optical absorption, lateral waves along interface, used in detecting surface absorption 8−4707

thin films continued
organic films possible exptl. production in space 8−35304
polycrystalline film, singularities of recrystallisation *(Russian)* 8−2382
preparation and practical device application *(Japanese)* 8−23609
refractive index determ. by Nomarski differential interference contrast microscopy 8−24849
Schumann UV spectrophotometer system for absorpt. and refl. meas. on thin films and solids 8−12772
self-supporting films, method for coating substrate with parting agent 8−11112
TCNQ, energy loss spectra of low energy electrons 8−19116
theory and appl. *(Japanese)* 8−10580
thermal diffusivity of microsections, IR and X-ray electron-probe microanal. 8−2314
thermomagnetic effects in mag. field of arbitrary magnitude 8−47885
thickness meas., electron probe anal., Monte Carlo technique *(French)* 8−41276
thickness measurement, US waves, phase vel. and damping *(Russian)* 8−36969
thickness measurement using Talbot effect 8−9321
TTF, energy loss spectra of low energy electrons 8−19116
TTF-TCNQ, energy loss spectra of low energy electrons 8−19116
ultracold neutron scattering 8−9915
X-ray diffraction, used for characterisation 8−22991
X-ray standardless thin film analysis in electron microscope 8−24006
Ag_2S, optical characterisation, inversion method 8−11008
Al_2O_3, refr. index determ. by Nomarski differential interference contrast microscopy 8−24849
BaO film, depend. of struct. on thickness 8−2391
Cr_3Ge amorphous films, short range order struct. *(Russian)* 8−30841
Cu-Ni film, (001), in situ oxidation, TEM obs. 8−23874
FeTe, on amorphous substrates, Mossbauer obs. of struct. 8−27142
KBr film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
KCl film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
KCl film, porous, injection mechanism for transmission secondary electron emission 8−19643
$KMnF_3$ film, photoelec. yield spectra, rel. to band struct. 8−43980
$KZnF_3$ film, photoelec. yield spectra, rel. to band struct. 8−43980
MgO, with high secondary electron emission, growth on Al-Mg alloy 8−35590
MoS_2 film, adhesion to oxidised metal surfaces, XPS meas. 8−22972
PbI_2 film, photolyzed, refr. index change 8−11010
PtSi, growth under protective layers on Pt covered Si substrates, X-ray diffr. and Rutherford backscattering anal. 8−22965
TiN-Nb(Ta)N, microcomposite film prod. for radio resistors 8−3052
V_2O_5 film, electrochromism, X-ray electron spectra 8−48146
V_2O_5 film, optical absorption in 1.0 to 5.5 eV range 8−19586
VSi_2 thin film growth rel. to annealing environment and interposed layers 8−2395
WO_3 film, amorphous, struct. and crystallisation, high resolution electron microscopy 8−43268
WO_3 film, electrochromism, X-ray electron spectra 8−48146

third-order optical susceptibility *see nonlinear optical susceptibility*

thixotropy
No entries

Thomas-Fermi model
alkali metal diatomic ions, core-core interaction potential calc. 8−25645
anomalous nuclei, crit. charge *(Russian)* 8−8736
atom, quasiclassical corrections to Thomas-Fermi model, electron density eqns. of state 8−25404
electronic elementary excitations in far UV, core level exciton and core hole polarisation 8−39032
ion, iterative soln. of Thomas-Fermi eqn. using nonlinear eigenvalue problem 8−909
low energy heavy particles, total energy loss distribs. after penetration through matter 8−14385
metal, core overlap interaction, interatomic forces 8−47724
neutral isolated atom, iterative soln. of Thomas-Fermi eqn. using nonlinear eigenvalue problem 8−909
nuclear collective motion, fluid dynamic approach 8−17121
nuclear matter and surface, relativistic calc. 8−25142
semiconductor, Thomas-Fermi dielectric screening eqn. 8−10388
supercritical nuclei, Z>137, relativistic Thomas-Fermi eqn. soln. *(Russian)* 8−29748
π^0 condensation in finite system, extended Thomas-Fermi model 8−41645
Ar, incoherent X-ray scatt., statistical atom model 8−29747
Bi, film, quantum size effect, electric field effect, Thomas-Fermi approx. energy surfaces, cond. 8−47890

Thomson effect
Thomson scatt. from thermal plasma, intensity depend. frequency shift 8−42770

thorium
see also nuclei with ......
adsorption of O_2, and oxidation, electron-induced luminesc. expts. 8−38946
CANDU-PHW fuel cycle, study of running-in period 8−25313
Cerro Impacto, Venezuela, thermoluminescence radiation dosimetry appl. to Th prospecting 8−32244
correlation effect of crystal pot., RAPW calcs. 8−6265
dosimetry by plastic solid state nuclear track detectors 8−20556
Fermi surface press. depend., de Haas van Alphen meas. 8−39006
geological samples, f/α particle track anal. for U, Th and isotropic disequilibria 8−7799
labile component, on marine sediment particle surfaces, surface layer thickness meas. 8−40592
lattice dynamics, crystal equilib. 8−47479
phonon dispersion, one parameter model pseudopotential calc. 8−26643
phonon dispersion spectra from 5-parameter lattice dynamical model 8−10136
photoelectric cross section, total to K-shell ratios 8−5188
photoelectric cross sections of low energy photons 8−46309
photoelectric cross-section at K-edge measurements 8−2983
prospecting method, using Ra accumulation in animal thyroid glands, anal. 8−27853
separation, by column extraction chromatography 8−44421

thorium continued
^{230}Th determination in U ores, dusts and mill tailings 8−15736
^{232}Th, decay consts. for use in geochronology and cosmochronology 8−28189
$^{136}Xe+Th$, 625 MeV, probability of forming 1sσ vacancies 8−25681

thorium compounds
Cl ThO_2 glasses, thermal anal. *(French)* 8−14282
thoria effusion membrane, production techniques based on that of incandescent gas mantles 8−39724
$Ag_2Th(MoO_4)_3$, crystallographic data determ. *(French)* 8−10013
$Cu-ThO_2$, dispersion hardened, electrical cond. and mech. props. 8−44133
$Cu_2Th_4(MoO_4)_9$, crystallographic data determ. *(French)* 8−10013
$Na_2O-ThO_2-SiO_2$ glass, density, refractive index, thermal expansion, hardness, IR spectra, DTA *(Japanese)* 8−15535
$Sm_{1-x}Th_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
$(Th,U)O_2$, D_2O cooled, relative conversion ratio 8−29582
Th_3As_4, prep. and semicond. props. 8−23087
$Th_3As_4-U_3As_4$, cryst. growth by chem. vap. transport 8−23588
$Th(C_2O_4)_2.6H_2O$, 4f level XPS shake-up satellites, assignments 8−1023
$ThCl_4$, 4f level XPS shake-up satellites, assignments 8−1023
$ThCo_{5-x}Mn_x$, struct. and magnetisation exam., temp. depend. 8−2662
$Th(CrO_4)_2$, 4f level XPS shake-up satellites, assignments 8−1023
ThF_4, 4f level XPS shake-up satellites, assignments 8−1023
ThF_4 film, IR absorpt. coeffs. meas. by laser calorimetry 8−25905
ThF_4 film, refr. index, 10.6 μm ellipsometric meas. 8−24847
$Th(NO_3)_4.5H_2O$, 4f level XPS shake-up satellites, assignments 8−1023
$ThNi_{5-x}Mn_x$, struct. and magnetisation exam., temp. depend. 8−2662
ThO_2, 4f level XPS shake-up satellites, assignments 8−1023
ThO_2 and $Th_{0.81}U_{0.19}O_2$, irradiated fuel particles, meas. and interpretation of CO and Kr-Xe content 8−25287
ThO_2 ceramics, CaO and Y_2O_3 stabilised density, elec. cond., permittivity 8−47838
ThO_2 dispersed Ni, recrystallisation during annealing, O_2 partial press. effects *(Russian)* 8−3140
ThO_2, particle size of crystallites in soln. by line-broadening meas. 8−18488
ThO_2, reactor fuel, neutron multiplication factors, temp. depend. 8−29557
ThO_2 single crystals, crystal growth, using crucibleless skull melting technique 8−39681
ThO_2 sintered pellets, ^{131}I release at low temps. 8−21650
ThO_2, spherical pile, neutron spectrum meas. and analysis 8−17311
$ThO_2:Yb^{3+}$, trigonal centres, point-charge approx. 8−39072
ThO_2-Biso (mixgas), high temp. (2300-2500°C) treatment, metallographic cross sections, microradiographic anal. *(German)* 8−29586
ThO_2-Biso (propene), high temp. (2300-2500°C) treatment, metallographic cross sections, microradiographic anal. *(German)* 8−29586
$ThO_x:Y_2O_3$ solid electrolyte high-temp. vaporisation obs. 8−14456
$Th(OH)_4$, 4f level XPS shake-up satellites, assignments 8−1023
Th_3P_4 compounds, lattice instabilities in non-A15 superconductors, struct. instability temp., 8−10591
Th_3P_4, cryst. growth by chem. vap. transport 8−23588
$Th(SO_4)_2.9H_2O$, 4f level XPS shake-up satellites, assignments 8−1023
$Th(S_2O_3)_2.nH_2O$, 4f level XPS shake-up satellites, assignments 8−1023
$ThSb_2$, Th_3Sb_4, cryst. growth by chem. vap. transport 8−23588
$W-ThO_2$ filament, W, TaC and HfC CVD coatings, effect on high temp. mech. props. 8−15347

three-phase flow *see multiphase flow*

three-photon spectra *see multiphoton spectra*

threshold elements
maximum periodic sequence realisable by autonomous threshold element network 8−44489

throat microphones *see microphones*

thulium
see also nuclei with ......
atom, α-particle impact K-shell ionisation, 40 to 110 MeV 8−17752
atom, hyperfine struct. for various configs. 8−939
glass:Tm^{3+}, polarised luminesc. 8−48224
magnetic properties, para-, ferro- and ferrimag. and c-axis modulated phases 8−2660
Mossbauer effect, expt. in $^3He-^4He$ dilution refrigerator 8−27127
$BaF_2:Tm^{2+}$, trigonal centres, point-charge approx. 8−39072
CaF_2:Tm temperature dependence of V_k-centre generation efficiency *(Russian)* 8−48203
$CaF_2:Tm^{2+}$, trigonal centres, point-charge approx. 8−39072
$CaSO_4$:Tm composite TLD for γ-rays, X-rays, β-rays, and thermal neutrons 8−28076
ErAlG:Ho, Tm, Et⇄Ho and Er⇄Tm energy transfer, fluorescence meas. 8−27305
LaOBr:Tm X-ray emission spectra and screen-film system design 8−11024
$SrF_2:Tm^{2+}$, trigonal centres, point-charge approx. 8−39072
Tm^{3+}:YAG, 2.014 μm, stimulated emission, resonant pumping by Nd laser 8−17944
ZnS-CdS:Tm,Ni, recomb. centre interaction, luminesc. quenching 8−10946

thulium alloys
TmCoAl, mag. props. 8−2659
TmFe, Mossbauer expt. in $^3He-^4He$ dilution refrigerator 8−27127
$Tm_2Fe_4Si_9$ and $TmFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8−34957

thulium compounds
see also thulium alloys
domain boundary mobility, effect of easy magnetization axis inclination 8−19293
pnictides, van Vleck paramag., relax., host exchange parameters 8−2735
$Er_{0.5}Tm_{0.5}FeO_3$, mixed orthoferrite crystals, ^{57}Fe NMR in spin reorientation range 8−15039
$EuTm_2Fe_5O_{12}$ film , CaGe substituted, LPE growth kinetics 8−31349
$(Gd,Tm,Y)_3(Ga,Fe)_5O_{12}$, bubble domain gradient propag., elliptical distortion and bias compensation 8−19292
Tm monochalcogenides, valence related optical and other studies, review 8−31215
TmB_2, nature of magnetism *(Russian)* 8−31049
TmFX mixed halides, synthesis and lattice parameters 8−30594

thulium compounds continued
$TmS(Se)(Te)$, far IR refl. and DC resist., 1-300K, interconfig. fluctuation effects 8−35136
$TmS(Se)(Te)$, Mossbauer expt. in ^3He-^4He dilution refrigerator 8−27127
TmSb, crystal field effect in thermal expansion 8−19305
$TmScO_3$, synthesis and lattice const. 8−30593
TmSe, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
TmSe, electron energy loss spectroscopy and UV photoemission meas. 8−31305
TmSe, mixed-valent, field-depend. mag. phase transitions 8−10657
TmTe, crystal field effect in thermal expansion 8−19305
$Tm_2V_2O_7$, physical props. 8−39320
$Tm_{1-x}Y_xTe$, $(0 \leqslant x \leqslant 1)$, single cryst. growth and characts. 8−23603
$(Y,Gd,Tm)(Fe,Ga)_5O_{12}$, cylindrical mag. domain behaviour in external mag. field *(Russian)* 8−6553
$Y_{1.57}Eu_{0.78}Tm_{0.65}Ga_{1.05}Fe_{3.95}O_{12}$ film, gradient propagation, overshoot and creep 8−19291
$Y_{1-x-y}Tm_xEr_yAlO_3$, $Y_{1-x-y}Tm_xEr_yScO_3$, stimulated emission of Er^{3+} ions 8−6705

thunderstorms
see also lightning
aircraft EM environment meas. near thunderstorm cells 8−49180
Baghdogra, India, thunder occurrence over airport 8−20499
charging by polarization-induction mechanism 8−32166
clouds electrification rel. to sudden increases in shower intensity 8−20491
corona from chaff, microwave radiometric detect. 8−16106
distance determinations, calcs. and examples *(German)* 8−40680
electric fields produced by Florida thunderstorms 8−40621
hail producing clouds, N.E.Colorado, observed and computed microstruct. 8−7716
lidar observations of high plains thunderstorm precipitation 8−32167
nontropical storms initiation by solar activity 8−49096
Ozar airfield, India, thunderstorm occurrence 8−32159
pressure jump detector array, gust front detect. at Dulles Airport 8−32234
radar information, automated acquisition and analysis 8−7772
radiation fields, of multiple return stroke lightning 8−3885
radiowave propagation, depolarisation 8−3854
raindrop charge and assoc. electric field for different rain types 8−44933
severe storm warning using Doppler radar 8−49148
Sierra Leone, monsoon characts. 8−7693
South Africa, prefrontal squall line behaviour, radar obs. 8−3878
St. Mawgan, Cornwall, diurnal var. of thunder 8−24347
strokes to Earth per km^2 per year, CIGRE count (since 1962) *(German)* 8−40606

thyratrons
pulse generator, nanosecond pulses with sharp leading edge 8−4651

thyristor applications
current pulse formation from pulse-gas-discharge lamp using thyristor keys *(Bulgarian)* 8−33795
film sound tracks, electronic cutting *(Russian)* 8−21252
frequency difference and ratio meters using thyristors 8−4649
hartonic current AC filters at KEK accelerator 8−33333
magnetic flaw detector, thyristor magnetising current switch, exam. 8−44311
microprocessor triac interface, used to control kiln temperature 8−45632
photo flood dimming, to reduce heating and extend life of lamps *(German)* 8−29193

thyristors
Si-GaAs heterojunction photothyristor, spectral characts. 8−10546

ticking stars *see pulsars*

tides
atmosphere, thermotidal exciting function for water vapour absorption 8−28310
atmospheric high-latitude tidal forces, quasi-fortnightly rhythm, space-time characts. *(Russian)* 8−7726
atmospheric oscills. rel. to horizontal winds and temp. structure 8−20457
clinometric obs. at Khristoforov (1973-5 period) *(Russian)* 8−3704
Earth, mantle convection shaping by tidal bulge, rel. to global tectonics 8−32048
Earth, monitoring of seismic vel. variations 8−28183
Earth, ocean loading effects on tidal gravity in Australia 8−28151
Earth bodily tide and yielding due to tidal loading 8−36091
Earth gravity tide spectrum, 1 to 4 cycles/day 8−20345
Earth tide effects on flows in horizontal permeable elastic layers connected to wells 8−7666
Earth tide meas., non-linear effects in TRG-1 tide meter 8−45018
Earth tide obs., meteorological wave separation method *(Russian)* 8−4014
Earth tides, gravity and altitude vars. meas. via N.W.Europe gravity base network *(German)* 8−15948
energy dissipation in oceans, astronomical, geophys. and oceanographic consequences 8−20431
English Channel M_4 tide derived from nonlinear numerial model of M_2 tide 8−49027
estuaries, homogeneous, tidal currents calc. 8−7654
Gulf of Mexico and Caribbean Sea bottom press. obs. 8−36175
inclination records, nontidal S_1 wave effects *(Russian)* 8−3707
inclinometric obs. at Peregonovka station *(Russian)* 8−3705
N.Indian Ocean, tidal charts 8−32115
internal surface, two-layered basin *(Japanese)* 8−11912
ionosphere, solar tides and electrodynamic effects, polarisation elec. field 8−36391
Laplace's tidal eqn. soln. for standing semidiurnal oscills. 8−20456
lower thermosphere dynamics, connections with processes in troposphere and stratosphere *(Russian)* 8−24401
lunar geomagnetic tides and ocean dynamo 8−36099
mesosphere, equatorial tidal components of winds 8−36229
mesosphere, tides and gravity waves at mid and low latits. 8−36231
Miramichi estuary, New Brunswick, tidal current control of submarine morphology 8−36174
Nova Scotia crustal struct. and NW.Atlantic M_2 tide from tilt and gravity obs. 8−40464
numerical models of ocean tides 8−16049

tides continued
ocean, periodic tidal flow, anal. by finite element perturb. method 8−24290
ocean current regime in Gulf of Kutch, NW.India 8−36184
oceanic and shallow water, spectral method of computation *(French)* 8−28321
periodic Galerkin finite element method 8−28239
plate tectonic driving forces, heat flow and tidal drag 8−32050
Port of Leba, Poland, reconstructed entrance, storm tides prediction, math. modelling *(Polish)* 8−40568
river tidal computations, explicit-implicit water level model 8−44886
S_3 atmospheric tide from surface wind field over ocean 8−44911
semiclosed water basin, eigenoscillations, hydrodynamic models, appl. to Ligurian Sea 8−3782
Seto Inland Sea hydraulic model tidal flow pattern anal. *(Japanese)* 8−36314
shallow water, three-dimens. nonlinear model *(Chinese)* 8−24309
Sumy-Kherson profile, harmonic analysis of principal Earth tides *(Russian)* 8−3706
thermal wedge, effects of tidal flow on position of upper surface *(Russian)* 8−16046
Trieste horizontal pendulum obs. of 1976 Friuli earthquake precursors 8−24216
tsunami wave propagation anal., 2-step explicit finite element method 8−40503
upper atmosphere, tides rel. to non-LTE radiative transfer in CO_2 15 μm band *(Russian)* 8−36341
Weddell Sea, tidal currents in central region 8−44831

tight-binding calculations
A15 compounds, coherence length and phonon softening 8−34587
A15 compounds, high-temp. superconductors, martensitic transform., microscopic theory based on 3-dimens. band struct. 8−19752
alkali metal chemisorbed layers, changes in work function due to charge transfer 8−18900
amorphous tetrahedrally bonded solid, theory of fluctuations and localized states 8−10405
binary alloy, partially ordered, elec. resist., CPA calc. 8−43356
borate glasses, effects of clusetring and transition metal ions on electronic struct. 8−10347
Compton profiles, struct. depend. 8−35223
crystallites, finite SC and FCC, with (100) surfaces, tight binding eigenvalues 8−34745
deep impurities, large unit cell approach 8−23046
disorder at surfaces and interfaces, effect on electronic props. 8−26932
excitons, tightly- and weakly-bound, unified treatment, Wannier representation 8−43301
impurity electron states, linear chain, arbitrary number of impurities 8−2443
ionic crystals, surface electron states in continuous spectrum 8−26931
matrix components, symmetry and analytical expressions 8−30862
metal, quasi one dimens., plasmon dispersion relations, RPA and HF calcs. 8−34789
metal surface, tight-binding, dissociative chemisorption of molecule 8−2368
microclusters, electric viewpoint of morphology, energy spectrum of single electron states 8−10327
MIM junction, tunnelling, tight-binding Green function calc., disorder effect 8−10577
modified tight binding approximation, reexam. 8−43279
noncrystalline materials, optical props., lecture 8−31219
ordered overlayers, chemisorption energy, multiadatom effects 8−14581
quasi-one-dimensional conductor, high temp. struct. instability, tight-binding approx. and fluctuation model 8−6292
random lattice with off-diagonal disorder, absence of Anderson's transition 8−30889
semiconductor, electron states at planar and stepped surfaces 8−10531
semiconductor, impurity band, first and second moments of density of states calc. 8−6329
solid insulator, effective screening function 8−10383
surface density of states in tight-binding formalism 8−10530
ternary semiconductor, struct. effects on energy band struct. 8−39021
transition metal, nonmag., possibility of mag. monolayer formation 8−15009
transition metal surface electronic struct., influence of size and roughness 8−14785
AlAs-GaAs (100) superlattices, band struct. 8−30868
BaF_2, width of upper valence band, tight-binding calc. 8−26814
C_8K, K-graphite intercalation compound, electronic struct. using semi-empirical tight-binding scheme 8−6255
CaF_2, electronic energy bands calc. 8−34762
CaF_2, width of upper valence band, tight-binding calc. 8−26814
CdF_2, electronic energy bands calc. 8−34762
CdI_2, band struct., tight binding calcs. and photoemission spectra 8−23018
Co, ferromag., HCP, electronic struct. calcs., band props. 8−39012
Fe, ferromag. nonrelativistic LCAO energy band calc. 8−10343
GaAS, O_2 chemisorption on (110) surface, bonding sites 8−38938
Ge, effective screening function 8−10383
Ge, electron states associated with core region of 60° dislocation 8−39057
Ge_xSe_{1-x}, bonds and band struct. determ., tight-binding model 8−18959
H, metallic, Hartree-Fock and correlation energies 8−34674
hexamethylphosphoramide:Li glass, metallic condensation of Wannier-Mott impurity states 8−2420
InSe, two-dimensional band struct., XPS meas. and tight-binding calc. 8−2419
Mo(110), surface densities of states for normal photoemission 8−35251
NbS_2, 2H layer cpd., electronic susceptibility and CDWs 8−39040
NbS_2, 2H layer cpd., tight-binding fit to bond struct. 8−39000
$NbSe_2$, 2H layer cpd., electronic susceptibility and CDWs 8−39040
$NbSe_2$, 2H layer cpd., tight-binding fit to bond struct. 8−39000
Ni, H and O absorption, (001) surface, localised orbital approach 8−14587
Pt, H and O adsorption, (001) surface, localised orbital approach 8−14587
$(SN)_x$, tight-binding SCF MO calcs., interchain interaction 8−30859

tight-binding calculations continued
- Se, dielectric function in trigonal phase, model calc., local-field corrections 8−39045
- Se, trigonal, NMR chem. shift 8−2759
- Si, electron states associated with core region of 60° dislocation 8−39057
- Si polymorphs, optical props., orthogonalized LCAO calc. 8−10345
- SnS, tight-binding calc. of density of valence states 8−34760
- SnSe, tight-binding calc. of density of valence states 8−34760
- SnTe, tight-binding calc. of density of valence states 8−34760
- SrF_2, width of upper valence band, tight-binding calc. 8−26814
- Te, dielectric function in trigonal phase, model calc., local-field corrections 8−39045
- Te, trigonal, NMR chem. shift 8−2759
- TiO_2 single cryst., refl. and electrorefl., energy levels 8−2871
- VC, energy band struct., chem. bonding 8−18958
- VO_2, metallic, electronic struct., lattice instability 8−14664
- W (001) clean surface, spectral density of states 8−39181
- W, H and O adsorption, (001) surface, localised orbital approach 8−14587
- W(111), surface densities of states for normal photoemission 8−35251

tilting control *see attitude control*

timber *see wood*

time and latitude
- *see also Earth rotation; time measurement*
- 1977 December 31, UTC positive leap second 8−7863
- Astronomical Engelhardt Observatory, latitude obs. *(Russian)* 8−4080
- China, universal time service during 1966-75 period *(Chinese)* 8−28527
- Chinese determinations during Yuan Dynasty *(Chinese)* 8−24631
- chronometric system using punched tape for star transit obs. *(Russian)* 8−4110
- clock (equatorial) stars, R.A. corrections to Pu 60 catalogue *(Russian)* 8−28643
- continental movements and rotation determ. based on latitude meas. *(French)* 8−40529
- corrections of clock and local latit., effect of light rays bending by Sun 8−7878
- CTC right ascensions, synthetic catalogue for Chinese time service *(Chinese)* 8−28540
- Danjon astrolabe, temp. effects on focal plane position *(Russian)* 8−4112
- Gorky latitude, relativistic var. *(Russian)* 8−40462
- Greenwich Obs. Time and Latitude Service, Time Report (July-September 1976) 8−20624
- Greenwich Obs. Time and Latitude Service Time Report (October-December 1976) 8−24443
- Irkutsk prism astrolabe obs. programme *(Russian)* 8−4114
- latitude obs. at Poltava, wind effects *(Russian)* 8−3915
- local sidereal time determ. precision rel. to geographic latitude *(Russian)* 8−28647
- Merate Observatory, Italy, time and latit. astrolabe obs. for (1976) 8−12078
- nonpolar latitude var. causes *(Russian)* 8−20637
- Poltava latitude differences from obs. of bright zenith stars 8−28488
- rotational pole annual motion, vars., 1846 to 1971, and period anal. *(Russian)* 8−40461
- Santiago astrolabe, time, latit. and radius obs. (1968 to 1971) 8−12077
- Talcott photoelectric micrometer for Bamberg zenith telescope latitude obs. *(Russian)* 8−4113
- Tokyo Astronomical Obs., Time and Latitude Bulletins (April-June 1977) 8−45203
- Tokyo Astronomical Obs., Time and Latitude Bulletins (January-March 1977) 8−45202
- USSR state time and frequency standards *(Russian)* 8−161

time delays *see delays*

time division multiplexing
- optical fibre data bus systems, on board appls. electrical control *(German)* 8−25968
- optical fibre multiterminal data system for aircraft, based on time division multiplexing 8−46811
- telemetry system, seven-channel fully integrated, patient monitoring appl. 8−3634

time-domain analysis
- structural damping constant evaluation by time series analysis 8−46902

time-domain reflectometry
- HF, at high permittivity *(German)* 8−16816
- review 8−37038

time interval measurement *see time measurement*

time measurement
- *see also clocks; frequency measurement; streak photography; time and latitude; time resolved spectroscopy*
- calculator, used for measuring time, light digit, four function type 8−175
- chromosphere flares, effective time of observations *(Russian)* 8−40893
- counter design 8−8385
- digital counter and timer instruments, accurate meas. techniques 8−45605
- digital interval synthesiser, computer-controlled 8−8386
- digitiser for laser ranging, ps. resolution, built in CAMAC minicrate 8−36301
- dissemination for public requirements and communication systems, Canada 8−41284
- dropping Hg electrodes, drop times determ. using digital drop timer 8−3394
- duration subjective impression rel. to ambient noise 8−44554
- education, mass and charge meas. using electronic time counter *(Japanese)* 8−41127
- hebdomadal calendar, theory *(Danish)* 8−36440
- Hoppler viscometer ball passage time meas. digital electronic circuit *(Polish)* 8−47075
- Inca people (Peru), calendar system and astronomical knowledge *(Swedish)* 8−32640
- interval analyzer for 10^{-10} to 10^{-2} sec range 8−24764
- noninertial systems, synchronization of clocks 8−24665
- periodic event timing in student expt., half-column method 8−12516
- photosensor time characts. meas. meter 8−283

time measurement continued
- primary Cs atomic clock, time standards and scales generation 8−41283
- quadrupole CAMAC universal timer 8−9040
- rubidium clock, portable, time scale generating clock coordination appl. 8−36973
- sidereal digital clock 8−36464
- standard, precision and application *(Japanese)* 8−41282
- standards, electrically tuned far infrared lasers appl. 8−174
- time-interval series meter 8−176
- time-to-number convertor, wide-range high-resolution 8−9039
- units, rel. to angle meas., history 8−20931
- universal counted and dual-trace delayed-sweep oscilloscope used for precise timing measurements 8−24763
- USSR state time and frequency standards *(Russian)* 8−161
- USSR Time and Frequency Service collaboration with international organisations 8−41280
- UV fluorescence lifetime determ., correction of instrumental time response var. with wavelength 8−5374
- very short time interval measurements, using CRO 8−36975

time of flight mass spectra
- acetyl radical, photofragment spectroscopy, collision dynamics 8−25636
- dimethyl ether-trioxane mixtures, condensation-elimination ion-mol. reactions obs. 8−23939
- fission fragments with high KE, mass separation based on TOF spectra 8−46209
- $H(2S)+H_2(N_2)(NH_3)$(acetone)(methanol), collisional quenching, mass spectral obs. 8−25685
- H(2S)+inert gas, collisional quenching, mass spectral obs. 8−25685
- TlF+Kr(Xe), collision-induced ion-pair formation 8−17749
- Tl_2F_2+Kr(Xe), collision-induced ion-pair formation 8−17749
- ^{235}U(n,f), fission fragments with high KE, mass separation based on TOF spectra 8−46209

time of flight spectra
- *see also time of flight mass spectra*
- alkali halides, energy distrib. of electron sputtered atoms 8−48263
- cyclohexane, solid, neutron scatt. spectra using inverted geometry, white beam, t. of f. spectrometer 8−34395
- cyclopentane, solid, neutron scatt. spectra using inverted geometry, white beam, t. of f. spectrometer 8−34395
- molecular beam, velocity distribution function, and moments, from TOF meas. 8−5371
- molecular bond energies from time-of-flight chemiluminesc. 8−40051
- neutron polarisation expts., multiple scatt. effects 8−13052
- neutron time of flight meas., $\pi^-p\rightarrow\pi^0n$ investigation 8−17045
- $Ar^++H_2(D_2)(N_2)$, small angle charge exchange, 0.5 to 1.0 keV, time of flight spectra 8−33604
- $Ba+Br_2(I_2)\rightarrow BaBr(BaI)+Br(I)$, time-of-flight chemiluminesc., mol. bond energies determ. 8−40051
- $Ba+N_2O$, crossed mol. beams, BaO recoil vel. spectra 8−7184
- CdTe, high-resistivity, irradiation effects on carrier transport and trapping process 8−2164
- Cl, metastable states, form. from Cl_2 dissoc. excitation, time of flight spectra 8−1094
- Cl_2, electron impact dissoc. excitation, metastable fragment form. translational spectra 8−1094
- Cu^{18+}, Na-like, low-lying levels, radiative lifetimes, f-values obs. 8−25482
- D_2O, collisionless multiphoton ionis. energy depend. by TEA-CO_2 laser 8−46405
- $H^++Kr(Xe)$, electron capture into 3s state, cross-section meas. 8−42209
- H_2, electron impact dissociative excitation obs. 8−1090
- HD+HD, state-resolved rot. excitation differential cross sections, crossed pulsed beams techniques 8−17766
- H_2^*, predissociation of vibr. excited mols. 8−42146
- He, 2^3S_1 and 2^1S_0 metastable states, static dipole polaris. meas. 8−1098
- He+HD collisions, single quantum rot. excitation by pulsed molecular beams 8−29840
- $He^++H_2(D_2)(N_2)$, small angle charge exchange, 0.5 to 1.0 keV, time of flight spectra 8−33604
- $K+NH_3$, rot. inelastic, time-of-flight spectra 8−5325
- N, high Rydberg states, radiative decay rates, TOF meas 8−46302

time of flight spectrometers
- CERN OMEGA spectrom., slow proton trigger 8−17467
- correlation method, improvement by source pulsing 8−29699
- detectors intrinsic time resolution 8−849
- heavy ion transmission detector, TOF appl. 8−46208
- neutron, high energy, TOF high efficiency detectors, subnanosec. time resolution 8−37481
- neutron spectroscopy, pseudostatistical modulation method *(Russian)* 8−33360
- neutron TOF expts., control and data processing system 8−25385
- neutron totally absorbing TOF spectrom. 8−850
- particle guide, parameter anal. using radioactive recoil ions 8−33343
- plastic scintillation counter with air light guide 8−29713
- pulsed accelerator for neutron travel time meas. *(German)* 8−17475
- quadrupole-focusing mass spectrometer 8−21804
- recoil, use with cryogenic He jet 8−17458
- scintillation liquid (NE 224) high-efficiency time-compensated neutron spectrom. 8−17468
- thin film plastic scintillator for light ions 8−29711

time resolved spectra
- aliphatic unsaturated normal hydrocarbons, positron annihilation time spectra, polarisability depend. 8−6806
- dihalogenoacetylene radical cations, $C_2X_2^+$, emission spectra, $A^2\Pi\rightarrow X^2\Pi$ band systems 8−17679
- 9,10-dimethylanthracene derivative, intramol. fluoresc. quenching, attached CBr_3 groups 8−42113
- 2-(2′,4′-dinitrobenzyl)-pyridine, photochromism, ns laser absorption spectra 8−48138
- dye molecule relax. rates from intracavity spectroscopy *(Russian)* 8−25582
- fluoranthene, vapour, laser excited fluorescence 8−29807
- glyoxal, selected state photodissoc., vibronic effects, CO quantum yield, 1-10 torr 8−37691
- halogenoacetylene radical cations, C_2HX^+, emission spectra, $A^2\Pi\rightarrow X^2\Pi$ band systems 8−17678

time resolved spectra continued
- ion-molecule reaction rate consts., time resolved meas. in mass spectrometry 8−48614
- matrix isolated molecules, vibr. relax. 8−46425
- metal drilling with Nd lasers, absorption phenomena 8−30002
- methyl nitrite, IR multiphoton dissoc., time resolved IR emission from prods. 8−29822
- 9-methylanthracene, in acetylcellulose foil, time-depend. fluoresc. anisotropy, crit. transfer distance *(German)* 8−21964
- molecule excited state lifetimes time-resolved spectra 8−17704
- molecules, transition probability studies, review of recent advances 8−17655
- molecules (molecular ions), lifetimes and branching ratios 8−17725
- naphthylamines, excited state pK_a^* values, proton-induced fluorescence quenching 8−21958
- poly-1-vinyl napthalene, excimer dissoc., time resolved fluoresc. spectra 8−33643
- polymethine pyrylium dye, IR saturable-absorbing, transient visible absorption 8−33784
- proton transfer photoreaction kinetics, in singlet excited state 8−48671
- pyrene vapour, laser excited fluorescence 8−29807
- Raman spectroscopy, recent advances, reivew 8−41359
- rhodamine 6G+BBOT donor-acceptor system, intermol. electronic energy transfer 8−17702
- ruby, excited state spin-phonon interaction, time resolved spectroscopic exam. 8−19549
- ruby, radiative spectral transfer, time resolved fluoresc. 8−2900
- second order transient scattering, stochastic theory of intermediate state interaction 8−13756
- semiconductor, time resolved reflectivity of ps pulses 8−31217
- stilbene, trans-, cis-forms, singlet excited state, picosecond dynamics 8−17677
- trans-stilbene, fluoresc. lifetimes, 77-295K 8−1029
- Ag halide photochromic glass, darkening mechanisms under pulsed laser excitation 8−25938
- $Ar-H_2$, elec. breakdown, time and space resolved spectra 8−18470
- Ba, time-resolved saturated absorption expt., collisions effects 8−29758
- $Bi(6^4S_{3/2})$+acetylene(ethylene), absolute rate consts., time-resolved reson. fluoresc. meas. 8−27731
- $Br^*+I_2(Br_2)(Cl_2)(IBr)(ICl)(BrCl)$, deactivation rates of $Br^*(^2P_{1/2})$, collision complex form model 8−42179
- CO_2+N_2, vibr. energy transfer, time-resolved laser induced fluorescence 8−29842
- CdS(Se), ps. spectra, high density exciton system 8−19553
- CdS(Se), ps. spectra, high density exciton system 8−19554
- CuCl, ps. luminesc. spectra, resonantly excited excitonic mols. 8−19555
- D plasma, high current pulse discharge investig. *(Russian)* 8−47171
- 1,3-diphenylpropane, in isooctane soln., monomer phosphoresc., low binding energy triplet excimer not obs. 8−25597
- He_2, electronic and rot. energy relax., reactive collisions by isotope selective excitation 8−33541
- I $(5^2P_{1/2})$+HBr, reactive and inelastic channels rate, temp. depend., AAS obs. 8−35657
- $I_2(B^3\pi_o{}^+{}_u)$, ps excitation, in CCl_4 soln., ultrafast decay and spectrum 8−9184
- $IBr(B^3\pi_0{}^+)$, lifetimes determ. from time resolved fluoresc. 8−46385
- $I(5^2P_{1/2})$, time-resolved reson. fluoresc., quenching rate coeffs. 8−25466
- $I(5p^5(^2P_{1/2}))$, time-resolved kinetics, mean radiative lifetime, radiation trapping, HFS 8−5171
- Kr, $^3P_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8−33454
- Kr, fluoresc. lifetimes, time resolved VUV spectra 8−17601
- Pb, chemiexcitation of ^3P metastable states, during combustion of acetylene and C_2H_2 8−3339
- $PrCl_3$, spectral energy transfer 8−19550
- PrF_3, spectral energy transfer 8−19550
- SF_6+NO+O_3, laser sensitised reaction, time-resolved $NO_2{}^*$ emission obs. 8−20017
- $SO_3{}^-+BrO_3{}^-$, fast oxidation in acid medium, laser Raman multichannel spectroscopy 8−27754
- $Sb(5^4S_{3/2})+NO(O_2)$, rate consts., time-resolved reson. fluoresc. meas. 8−27732
- $Se(4^1D_2)$ atoms, electronically excited, direct obs., quenching by inert gases 8−25461
- $Si(3p^2(^1S_0))+He(SiCl_4)(O_2)(N_2O)$, attenuation of reson. radiation, time-resolved kinetic obs. 8−5329
- UF_6, electronically excited, laser-induced time-resolved emission, self-quenching 8−42114
- UF_6, electronically excited, emission quenching by organic mols. 8−42115
- UF_6, electronically excited, emission quenching by inorganic mols. 8−42116
- Xe, $^3P_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8−33454
- Xe, fluoresc. lifetimes, time resolved VUV spectra 8−17601

time resolved spectroscopy
- *see also streak photography*
- atomic and molecular lifetimes, distortions of decay curves in delayed coincidence techniques 8−17620
- fast fluorescence decay meas., appl. of curved microchannel plate photomultipliers 8−12743
- Intensified Silicon Intensified Target (ISIT) tubes, medium speed gating 8−12766
- laser near-reson. scatt. from collisionally perturbed mol. 8−1033
- laser time resolved spectroscopy 8−303
- luminescence measuring setup with GDM 1000 grating double monochromator for semicond. 8−21226
- metal, laser initiated combustion, time-resolved spectroscopy 8−7207
- Multipass optical cavities for laser spectroscopy 8−17982
- nuclear spectroscopy techniques in at. and mol. physics, review 8−22055
- phosphoroscope, analogue switch type 8−45725
- picosecond time correl. pulse trains for rapid optical sampling of relax. phenomena 8−12771
- ps relaxation rate determ. using ns pulses *(Russian)* 8−25582
- subnanosecond resolution using N_2 laser 8−17964

time resolved spectroscopy continued
- surface potential on small fragile specimens, nanosec. time resolved meas. technique 8−12726
- vacuum, DC breakdown, electrode vap. reson. radiation emission 8−14234
- X-ray diffraction counter and data acquisition system 8−45758

time sharing computer systems *see time-sharing systems*

time-sharing systems
- spectrometer for high resolution NMR of fluids, time sharing principles *(German)* 8−16822
- ^{13}C NMR probe for high resolution Fourier spectroscopy, cw time sharing appl. *(German)* 8−16823

time varying parameters *see time-varying systems*

time-varying systems
- articulation development, possible nonlinear time varying control in feedback path 8−35870
- stability anal. 8−37

timing *see time measurement*

timing circuits
- calculator, used for measuring time, light digit, four function type 8−175
- CAMAC standard 160-MHz decade counter with digital readout 8−9041
- constant fraction 100 MHz discriminator using hybrid microcircuit technology 8−33402
- counter-timer-frequency meter for teaching, evaluation 8−28901
- digital interval synthesiser, computer-controlled 8−8386
- digital phasemeter with indicator using seven-segment luminescent vacuum lamps, counter scheme 8−4648
- education, mass and charge meas. using electronic time counter *(Japanese)* 8−41127
- logarithmic timer, for photographic dark room applications 8−8457
- metronome, accentuated beat, ETI, using 555 timers 8−46864
- photography with repeated exposures at varying intervals, filmspeed and illumination control *(Spanish)* 8−8459
- pulsed beam time pickoff system for nanoampere beams 8−13393
- quadrupole CAMAC universal timer 8−9040
- student laboratory phototransistor timer adaptor for timing systems 8−8
- subnanosecond lifetime measurements, system using microchannel plate photomultiplier 8−37520
- synchroniser clock circuit, improves signal-to-noise quality of evoked response measurements 8−24155
- teaching apparatus, counter-timer cct. 8−28900
- time counter design 8−8385
- time-to-number convertor, wide-range high-resolution 8−9039

tin
- *see also nuclei with ......*
- aggregate film, resist., temp. depend. 8−39230
- alkali halide:Sn, excited states producing polarised type A emission from Sn centres 8−10945
- atom, K-shell ionis. by electron impact, cross-sections, 300-600 keV 8−29853
- bulk modulus from local Heine-Abarenkov model potential, for α-Sn 8−42949
- concentration in a.c. arc, during interruption, time depend. *(Russian)* 8−22597
- conduction-electron elec. field gradient, probe valence effects 8−47749
- configuration of ^{57}Fe, Mossbauer effect measurements 8−47333
- contact charge density, press. depend., trends for Ag-Te 8−39077
- determination, in beef extract, by NAA 8−27856
- diffusion in liquid Cu *(Japanese)* 8−10204
- diffusion in Pb, press. effect up to 30 kbar 8−10224
- distribution equilibrium between $FeO-Fe_2O_3-SiO_2-Al_2O_3-CuO/Cu$ slag/metal system 8−44111
- electric field gradient on Cd, press. depend., TDPAC expts. 8−48092
- film, oxidation mechanism, depth selective Mossbauer spectroscopy method 8−35549
- film, supercond., acoustic wave absorpt., quasiparticle distrib. 8−10603
- film, superconducting transition curve stepped struct. due to microwave radiation *(Russian)* 8−2610
- film, thermoelec. power, 3.7-8K 8−39231
- film, ultrathin, quench-condensed, two-dimensional elec. cond. 8−39233
- film at supercond. transition temp. thermal noise fluctuations 8−47907
- foil, irradiated by laser beam, psec optical shutter 8−1350
- gamma-ray impact, absolute pair production cross-section meas. 8−43958
- gapless semiconductor, α-phase, effect of nonlocal pot. on hole energy spectrum in mag. field 8−39017
- grey, lattice energy, strong orthogonality, requirement in calcs. dealing with crysts. by geminal method 8−14307
- grey, reson. first and second order Raman scatt. 8−35144
- ion implanted in semiconductors, Mossbauer spectroscopy exam. of radiation damage 8−2176
- ion recombination laser 8−17923
- liquid, atomic self-motions *(Rumanian)* 8−47226
- liquid, small-ang. X-ray scatt., at. microgrouping depend. *(Russian)* 8−14271
- liquid, soln. of InP, InAs, vapour phase partial press. 8−34610
- liquid, US vel. and thermophysical props. meas., 500-1000K 8−38778
- liquid, wetting of Ge surface rel. to cryst. orientation 8−43211
- liquid, wetting of Si surface in H_2+HCl 8−43210
- magnetoresistance, anomalous, in high-purity wires 8−47765
- molten gas evolution on quenching 8−39818
- monolayers on W field ion image qualities and work function 8−35272
- Mossbauer isomer shift pseudopot.-Born-Oppenheimer theory development, β-phase 8−2775
- Mossbauer spectra of Sn in $SnSO_4$ anodised Al 8−35582
- neutron activation analysis in biological samples at nanogram level by ^{121}Sn liq. scintillation counting 8−3693
- neutron radiotherapy, 14 MeV, skin-sparing, effect of metal sheets 8−35923
- photoelectric cross sections of low energy photons 8−46309
- photoelectric cross-section at K-edge measurements 8−2983
- photoelectric interaction around the K edge 8−5183
- plastic deformation, 1.6-300K, single crystal *(Russian)* 8−3179
- polymorphism, α→β transform., α-Sn nucleation and growth in β-Sn 8−38838

tin continued
  quadrupole coupling consts., search for isotopic mass effect, ^{69}Ge TDPAD expts. 8–43725
  quadrupole interaction of ^{69}Ge, TDPAD expts. 8–48089
  ribbon, penetration depth of nonequilibrium elec. field, temp. depend. *(Russian)* 8–23202
  segregation on Cu (111) and (100) surfaces 8–14554
  small particles, electron level quantisation effects, Knight shift meas. of electron spin susceptibility 8–2624
  solar abundance from Sn I line intensity profiles 8–20772
  supercond. crit. RF mag. field, rel. to superheating 8–2632
  superconducting film, A1-type, critical mag. field 8–31023
  superconducting microbridge, nonequilbrium enhanced supercurrents 8–43526
  superconducting whiskers, current induced phase transition 8–10600
  superconducting whiskers, current-carrying, mutual influence of voltage steps in V-I characts. 8–10601
  superconductor, destruction in high amplitude LF varying field *(Russian)* 8–26999
  superconductor, intermediate state structure, single and poly cryst. cylindrical samples *(Russian)* 8–43528
  UPS electron distrib. curve 8–15282
  u.s. surface generation, below 20K 8–2353
  white, configurations, formation and Burgers vector of coupled dislocations stradlling polygon wall 8–26569
  white, elastic stiffness consts. calc. 8–39825
  white, film, optical props. between 2-15 eV 8–19584
  white, US quantum oscillations exam. at 0.1K 8–47694
  Ar bubbles injected into Sn, Pb and Cu melts, under laminar flow, characts. 8–38394
  Au-Sn film, evaporated, interdiffusion and phase formation, in situ He ion backscattering meas. 8–22901
  Cd:^{116}Sn, quadrupole interaction, radiation damage effects 8–43752
  GaAs:Sn, 1.39 eV luminescence, injection level depend., freq. response and thermal quenching 8–19529
  GaAs:Sn, LPE, growth rate and temp. depend. of impurity incorporation 8–3063
  In:Sn, phonon spectrum, electron-phonon interaction *(Russian)* 8–18722
  In_2O_3:Sn, film, optical modulation effects in electroreflectance spectra 8–6800
  In_2O_3:Sn film, RF sputtered, effect of O_2 press. during deposition on props. 8–19664
  In_2O_3:Sn/n-Si heterojunction solar cell, fabrication and characts. 8–15314
  KCl:Sn^{2+}, thermally stimulated space charge decay 8–48111
  MgO:Sn, exciton, electron hole energy transfer 8–10998
  NaCl:Sn^{2+}, thermally stimulated space charge decay 8–48111
  RbBr:Ba^{2+},Sn^{2+}, thermal depolarisation meas., relax. processes 8–23389
  Sn I, Sn II, wall-stabilised arc, absolute transition probabilities, 5300-6850 Å 8–9105
  Sn VI, $4d^8 5p \rightarrow 4d^8 5s$ transitions, near IR spectra 8–13449
  Sn:^{120}Sb (^{115}Te), nuclear alignment temp. depend. 8–41720
  Sn:I, α- and β-phases, isomer shift in Mossbauer spectra of implanted ^{129}I 8–15067
  Sn-oxide-Sn Josephson tunnel junctions meas. temp. depend. of cos 0 conductance 8–10611
  Sn-Sn bridge, variable thickness, DC and AC Josephson effect 8–31016
  Sn-Sn bridge, variable thickness, static mag. field effects, Josephson effects 8–31017
  Sn_2, matrix isolation Raman spectrum, overtone bands breadth 8–33515
  YIG:Sn, IR absorpt. and MCD 8–19447

tin alloys
  see also tin compounds
  admiralty brass, stress corrosion cracking, in nonammoniacal sulphate solns. 8–27592
  alkaline earth-Sn, M_2Sn, occurrence, struct. 8–38663
  bearing and frictional material, current state of prod. and development trends review 8–19902
  bronze, shell, deposited in vacuum, elastic characts. meas. by short time static extension *(Russian)* 8–39961
  bronze, spheroidal, equivalent sphere diameter calc., Saltykov method 8–31362
  bronze 905, partially solid, die thermal behaviour in machine casting 8–6917
  bronze layered-steel composite, water lubricated bearing mat., manuf. and props. 8–11341
  bronze powders preparation by electrodeposition 8–20026
  dental amalgam, exam. of fracture toughness and critical strain energy release rate 8–48933
  dental amalgams, Cu-rich, SEM and energy dispersive X-ray analysis 8–24184
  electrospark machining, bronze, spreading and form. of surface layer, in solid-alloy-liquid-metal systems, kinetics *(Russian)* 8–27668
  Ag-Sn, dil., elec. quadrupole interactions on ^{111}Cd probe nuclei, time differential PAC meas. 8–15066
  Ag-Sn, dil., high perfection single cryst. growth, strain-anneal technique 8–44010
  Ag-Sn, dil., temp. depend. of elec. field gradient, impurity mass and conc. effects 8–48085
  Ag-Sn, HCP ξ-phase, magnetic susceptibility 8–47946
  Ag-Sn, Zener relaxation, valency and dimensional effects *(Russian)* 8–19802
  Ag-Sn (0 to 6%), equilibrium intergranular segregation and diffusion 8–43130
  Ag-Sn alloys containing Au, splat cooled ribbons, electron microscope exam. 8–39987
  Ag_3Sn, containing Au, etching technique for alloys and amalgams 8–3291
  Al bronze, superplastic low cycle fatigue 8–27632
  Al-bronze, input energy, hysteresis, and fracture in low cycle buckling fatigue, superelastic range 8–31527
  Al-bronze, single crystal rod, energy dissipation, deformed by cyclic buckling in superelastic range 8–31479
  Al-Cu-Sn (3.4, 0.28 wt.%), Mossbauer anal. of Sn behaviour during ageing 8–31431

tin alloys continued
  Al-Sn, Sn effect on electrochemical behaviour in acetate buffer 8–19927
  Au-Sn, HCP ξ-phase, magnetic susceptibility 8–47946
  Au-Sn liquid alloys, Sn activity *(Japanese)* 8–6901
  Au-SnNi-Au ohmic contacts on n-GaAs 8–35319
  AuSn, optical props., 0.5-5 eV 8–39522
  Bi-Sn, complex-regular eutectics, structural modification 8–23695
  Bi-Sn, liq., conc. and temp. depend. nucl. relax. rates meas. 8–19357
  Bi-Sn, liq., Hall coeffs. 8–14711
  $Ca_{31}Sn_{20}$, crystal struct. tetragonal phase 8–14310
  Cd-Sn, molten, EMF meas. of liquid separation 8–39747
  Cd-Sn-Bi, appl. of computational techniques for treatment of thermodynamic data, phase diagram calc. 8–10172
  Ce-Sn, liquid, solubility and thermodynamic props. *(Russian)* 8–19717
  $CeIn_{3-x}Sn_x$, conduction electrons role in valency fluctuations 8–47741
  $Co_2Mn_xFe_{1-x}Sn$ hyperfine fields of Fe impurities, Mossbauer effect meas. 8–31130
  $Co_{2-x}(Ni,Fe)_xTiSn$, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8–43654
  $Co_{2-x}Ni_xTiSn$, mag. ordering, ^{119}Sn Mossbauer spectroscopy and magnetisation meas. 8–43753
  Co_2TiSn, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8–43654
  Cu -Sn (0.05 at.%), grain boundary relax., misalignment angle effect *(Russian)* 8–3159
  Cu-Nb_3Sn, in situ formed multifilamentary composite, supercond. and mech. props. 8–39279
  Cu-Nb_3Sn composite wires, powder metallurgically produced, supercond. props. 8–31026
  Cu-Nb-Sn dil. alloys containing Nb_3Sn precipitates, superconductivity 8–43507
  Cu-Ni-Sn, thermal decomposition after prior cold work 8–15427
  Cu-Sn, dil., optical props. and electronic struct. 8–35164
  Cu-Sn, effect of Al on friction and wear 8–11348
  Cu-Sn, microconductors, cast, struct. and physical props. exam 8–44232
  Cu-Sn, wear, effect of Mn_5Si_3 content *(Japanese)* 8–35525
  Cu-Sn (8 wt.%), supercooled melt, dendrite growth morphology *(Japanese)* 8–11216
  Cu-Sn liquid alloy, surface energy meas. by const. temp. method on solid alumina 8–6208
  Cu-Sn solid soln. steady state deform. *(Japanese)* 8–19832
  Cu-Sn-Nb multifilamentary alloy, high field crit. current density 8–27004
  Cu_2MnSn, Heusler alloy, hyperfine field at ^{111}Cd, TDPAC meas. 8–43705
  CuSn, amorphous, elec. resistivity temp. depend. comparison to Einstein oscillator model 8–6342
  $EuSn_3$, hyperfine interactions, high press. Mossbauer expts. 8–43714
  Fe, cast-Mg, 8–44149
  Fe-Sn, dil., size effects on mag. hyperfine fields at non-mag. impurities 8–43586
  Fe-Sn liquid alloy, conc. depend. of enthalpy of form., conc. depend. *(Russian)* 8–44081
  $FeSn_2$, hyperfine mag. fields at ^{57}Fe, ^{119}Sn nuclei, under press. *(Russian)* 8–39486
  Fe_3Sn_2, Mossbauer effect and magnetisation meas. 8–31132
  In-Sn, liq., conc. and temp. depend. nucl. relax. rates meas. 8–19357
  In-Sn-Sb, liquid state, structure of eutectic alloy 8–42890
  InSb-Sn, metallic soln., quasibinary alloy, association 8–15373
  La_{1-x} Pr_xSn_3, Kondo effect from excited cryst. field levels, elec. resist. 8–14723
  $La(Ce)Sn_{3-x}Pb_x$ system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8–39244
  $La_{1-x}Pr_xSn_3$, singlet ground-state system, mag. susceptibility 8–19215
  $La_{1-y}Pr_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8–30894
  La_3Sn, cubic phase, high press. and high temp. synthesis, and characterisation 8–19687
  $La_{1-y}Tb_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8–30894
  Mg-Li-Sn-Al, investigation in Mg rich region *(Russian)* 8–15364
  Nb-Sn, depend. of supercond. transition temp. on composition *(Russian)* 8–19173
  $Nb_{1-x}Sn_x$, sp. ht., supercond. T_c and martensitic transform. *(French)* 8–43508
  Nb_3Sn, A15 compound, exam. of deformation processing, review 8–39864
  Nb_3Sn, crit. current density, low dose fast neutron irrad. effect 8–14910
  Nb_3Sn, effect on critical temp. for supercond. of disorder, induced by α-particles 8–47897
  Nb_3Sn, elastic instability in cubic to tetragonal phase transitions 8–39767
  Nb_3Sn, fast neutron irradiation, effect on critical current density 8–19197
  Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8–10301
  Nb_3Sn, gap anisotropy, electron irrad. effect on transition temp. 8–10599
  Nb_3Sn, grain size in A15 reaction layers 8–14911
  Nb_3Sn, irrad. effect on supercond. transition temp. 8–6472
  Nb_3Sn, low fluence alpha irradiation, behaviour of supercond. transition temp. 8–43510
  Nb_3Sn, martensitic transform. coupling with supercond. transition 8–44126
  Nb_3Sn multifilamentary conductors, enhancement of supercond. crit. current by tensile stress 8–6490
  Nb_3Sn, nonstationary Josephson effect, 13-18.3K, 9-10 GHz, 20 MW *(Russian)* 8–2631
  Nb_3Sn, phonon softening and T_c, strong electron-phonon coupling 8–31009
  Nb_3Sn, proton and γ-irradiated, lattice dynamics from ^{119}Sn Mossbauer studies 8–39458
  Nb_3Sn, proton irradiated, Mossbauer effect at 78K 8–19394
  Nb_3Sn strip, made by diffusion method, crit. curent anisotropy, Zr alloying addition effects *(Russian)* 8–47921
  Nb_3Sn, supercond., dielastic interaction of flux line lattice with internal stresses of cryst. imperfections 8–14906

tin alloys continued

Nb_3Sn superconducting bridge junction, crit. current temp. depend. *(Russian)* 8−34938
Nb_3Sn superconductors, mech. behaviour, diffusion *(German)* 8−39880
Nb_3Sn, thin film weak-links SQUIDs, localised region radiation damage, fabrication and properties 8−47912
Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
Nb_3Sn-Au, supercond. tunnel junction with microshort circuit, nonlinear phenomena 8−14898
$Nb_3(Sn_{1-x}Ga_x)$, bronze processed wires, critical current densities in fields up to 23.5 T 8−47922
Ni-Be bronze, Fe and Si alloying addition effect on phase composition *(Russian)* 8−15360
Ni_2MnSn alloy, ionic spin distribution and RKKY interactions 8−27028
Ni_2MnSn and NiMnSn, Heusler alloy, hyperfine field at ^{111}Cd, TDPAC meas. 8−43705
Pb-Ca-Sn, chill cast and wrought, cyclic voltammetry and electrochemical meas. of anodic activity, PbO_2 form. 8−31582
Pb-In-Sn system, liquidus and solidus isotherms 8−44088
Pb-Sn, ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
Pb-Sn, with brass insert, tensile flow and fracture 8−11290
Pb-Sn (62 wt.%), superplastic eutectic, exceptional ductility 8−27579
Pb-Sn eutectic, directionally solidified, periodic array of supercond.-normal contacts, supercurrent and dynamic resist. 8−34928
Pb-Sn eutectic, superplastic, anelasticity effect on stress relaxation 8−31443
Pb-Sn-Cd, eutectic and monovariant eutectic, ingot struct. 8−15388
Pb-Sn(Bi) alloys, dil., impurity effects on softening at T_c *(Russian)* 8−23220
$Pd_2Mn_{1-x}Nb_xSn$, Heusler alloy, NMR and mag. coupling 8−43676
Pd_2MnSn alloy, ionic spin distribution and RKKY interactions 8−27028
Pd_2MnSn, Cd impurities, hyperfine field meas. 8−15074
Pd_2MnSn, Heusler alloy, NMR and mag. coupling 8−43676
$PrSn_3$, inelastic neutron scatt. spectra, cryst. elec. field effects 8−43336
PtMnSn, Cd impurities, hyperfine field meas. 8−15074
Rh_2CoSn, ferromag., mag. hyperfine fields of ^{119}Sn, Mossbauer meas. 8−10816
Rh_2FeSn, ferromag., mag. hyperfine fields of ^{119}Sn, Mossbauer meas. 8−10816
Rh_2MnSn, mag. hyperfine fields at Rh and Sn sites, and their temp. depend. 8−43708
Rh_2MnSn, Rh_2NiSn, Heusler alloys, hyperfine mag. field at Sn 8−39482
SbSn, ^{120}Sb elec. quadrupole interaction, temp. depend. 8−19399
Sn-Bi, atomic self-motions *(Rumanian)* 8−47226
Sn-Bi, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
Sn-Bi alloy, splat-quenched, energy dispersive X-ray diffr. 8−23728
Sn-Cu, strong coupling superconductor, LF EM response function 8−10605
Sn-Cu(Pb), effective atomic number from β-ray produced bremsstrahlung meas. 8−22046
Sn-In, supercond. crit. RF mag. field, rel. to superheating 8−2632
Sn-Ni, electroplated, passive layer, ESCA study 8−23867
Sn-Ni electrodeposit, contact resist. corrosion effect 8−47847
Sn-Ni electrodeposit, metastable, transform. kinetics, X-ray and SEM meas. 8−38979
Sn-Ni electrodeposits, metastable, transform. kinetics 8−43262
Sn-Ni equiatomic electrodeposited alloy, surface comp. 8−47649
Sn-Ni metastable equiatomic alloy, sputter deposition 8−3043
Sn-Pb, dil., undercooled alloy, solidification 8−3120
Sn-Pb-(Bi)(Ag)(Sb) (Cu), microduplex eutectic, cavitation during superplastic flow 8−48457
Sn-rare earth , dil. liq., elec. resist. and mag. susceptibility 8−43350
Sn-Sb (0.57 at.%) solid soln., yield point for cold-worked and annealed specimens *(Russian)* 8−48448
Sn-Sb molten alloys, thermodynamic study *(Korean)* 8−31383
Sn-Se, melt, density, kinematic viscosity, struct., 900-1400K 8−14395
Sn-Zn, ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
Sn-Zn, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
Sn-Zn (0.4 at.%) solid soln., yield point for cold-worked and annealed specimens *(Russian)* 8−48448
Te-Sn (20 at.%), amorphous, exam. of crystallisation by DTA, X-ray diffr. and TEM 8−47242
TeSn, ^{115}Te elec. quadrupole interaction, temp. depend. 8−19399
Ti-Al-Mo-Sn-Si (4,4,2,0.5 wt.%), fracture toughness and crack propag. 8−39892
Ti-Al-V-Sn (5.5, 5.3, 2.3 wt.%) fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510
Ti-Al-V-Sn (6,6,2 wt.%), heavy section extrusion, fabrication and mech. props. 8−6985
Ti-Al-V-Sn-Zr alloy TS5, annealing effect on ductility and strength *(Russian)* 8−35427
Ti-bronze, friction with diamond, characts. 8−48541
Ti-Mo-Zr-Sn, alloy, βIII, struct. transform. in thermally affected zones after electron beam welding 8−23919
Ti_3Sn, oxidation *(Russian)* 8−19939
Zn-Al-Cu-Mg-Pb-Sn (12, 1, 0.02, 0.01, 0.015, wt.%), combined effects of Pb and Sn additions on corrosion, in wet steam 8−39952
Zr-Sn-Mo (6, 1 wt.%), creep and creep rupture 8−23778

tin compounds
see also tin alloys
chloromethylstannane, polycryst., proton spin-lattice relax. times meas. 8−39430
halides, matrix isolated, Mossbauer effect, isomer shift and quadrupole splittings obs. 8−46377
sulphide compounds of Si, Ge and Sn, struct. and chem. bonding *(French)* 8−30580
tetrahedral molecular solids, ^{119}Sn Mossbauer and Raman spectra 8−15070
$AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377

tin compounds continued
Ag_2S-In_2S_3-SnS_2 system quaternary and ternary sulphide spinels, solid solubility and struct. 8−35376
$Ag_8SnS_6(Se_6)$, absorpt. edge investigs. at phase transitions 8−35149
p-$CdSnP_2$, photocond. meas., polarisation depend. 8−39157
$CdSnP_2$-$CdSnAs_2$, and $CdSnP_2$-$CdGeP_2$, solid solution form. and elec. characterisation 8−43125
Ce_2Se_3-$SnSe_2$, solid-solution region, physical properties 8−43391
$Cu_2S(Se)$-SnS, phase diagrams 8−44100
$Eu_3Sn_2S_7$, cryst. struct. *(French)* 8−18597
$FeSn(OH)_6$, mag. props. 8−43574
$FeSnO(OH)_5$, mag. props. and cryst. struct. 8−43574
Fe_2SnS_4, cryst. struct. *(French)* 8−18595
$Ge_xSn_{1-x}S(Se)$, lattice parameters, optical energy gap and IR refl. 8−23021
In_2O_3-SnO_2 thin film, effects of heat treatment on resist. and optical absorpt. 8−43495
$(In_{1-x}Sn_x)_2O_{3-y}$, pyrolytic selective coating, Sn additions effect 8−43499
$(In_2SnTe)_x$-$(2InSb)_{1-x}$ system, semicond., Mossbauer absorption line of ^{119}Sn 8−27146
KCl:$SnCl_2$, action of ionising radiation on Sn aggregation processes 8−34543
$K_2SnF_6.H_2O$, crystallographic characts. *(French)* 8−10011
$MnSnO_3$, ordered ilmenite phase, cryst. struct. 8−47288
$(NH_4)_2SnF_6$, thermal study and thermolysis *(French)* 8−10011
Na_2O-SnO_2-SiO_2 glass, density, refractive index thermal expansion hardness, IR spectra, DTA *(Japanese)* 8−15535
$POCl_3$-$SnCl_4$:Nd^{3+} laser, relaxation oscillations with high power spikes obs. 8−42331
(Pb,Sn)Se IR detector diode, junction resist. comparison with (Pb,Sn)Te 8−24858
(Pb,Sn)Te IR detector diode, junction resist. comparison with (Pb,Sn)Se 8−24858
Pb-Sn-Te, microhardness meas. as function of applied load, elec. props. exam. 8−48493
$PbMo_{5.1}S_6$, high supercond. T_c, soft mode behaviour 8−14855
p-$(PbSe)_{1-x}(SnTe)_x$, absorpt. edge temp. depend. *(Russian)* 8−34765
$Pb_{1-x}Sn_xGe$:In, press.-induced transition to gapless state, galvanomag. effects 8−19108
$Pb_xSn_{1-x}I_2$, thin films, photosensitivity, ageing and annealing effects *(Russian)* 8−6804
$Pb_xSn_{1-x}O_2$ film, optical props. 8−39616
$Pb_{0.65}Sn_{0.35}Se$, solid soln., elec. props. 8−39112
n-$Pb_{0.83}Sn_{0.17}Se$, carrier mobility, 77-300K, scattering mechanism *(Russian)* 8−2486
$Pb_{1-x}Sn_xSe$, (x=0.125), pressure induced band inversion, effect on energy spectrum *(Russian)* 8−39007
$Pb_{1-x}Sn_xSe$, gapless state and phonon spectrum *(Russian)* 8−30715
$Pb_{1-x}Sn_xSe$, plasma reflection spectra, carrier effective masses and relax. times determ. 8−2858
$Pb_{1-y}Sn_ySe$, $(0 \leqslant y \leqslant 0.08)$, spontaneous emission, temp. and carrier conc. depend., cathodoluminescence 8−10990
$Pb_{1-y}Sn_ySe$-PbSe, $(0 \leqslant xy \leqslant 0.08)$, semiconductor junction laser, lasing investigation 8−10990
$Pb_{1-x}Sn_xSe(Te)$ epitaxial layers, growth, phase diagram, p-n junctions, optical, elec. props. 8−44029
PbSnTe and PbSnTe, epitaxial-substrate system, far IR transmission and refl. 8−6802
PbSnTe detector and preamplifier modules for heterodyne detection of CO_2 laser radiation 8−32875
PbSnTe film epitaxial growth on BaF_2 substrates 8−11134
$Pb_{0.8}Sn_{0.2}Te$, magnetophonon effect obs. 8−23115
n-$Pb_{0.82}Sn_{0.18}Te$, conduction band struct., determ. by Shubnikov-de Haas meas. 8−2504
$Pb_{0.83}Sn_{0.17}Te$, recomb. at high levels of optical excitation 8−10503
$Pb_{0.92}Sn_{0.08}Te$, photoelec. props. 8−6415
$Pb_{0.93}Sn_{0.07}Te$ tunable diode laser for IR spectroscopy 8−33511
$Pb_{1-x}Sn_xTe$, $(0 \leqslant x \leqslant 0.2)$, homogeneous, spontaneous emission, temp. and carrier conc. depend., cathodoluminescence 8−10990
$Pb_{1-x}Sn_xTe$, charact. of photocond., 12-130K 8−26914
$Pb_{1-x}Sn_xTe$, energy band parameters from IR Faraday rotation 8−48154
$Pb_{1-x}Sn_xTe$, energy gap of single crysts, comparison of indirect and direct determ. methods *(German)* 8−26812
$Pb_{1-x}Sn_xTe$ film, Burstein-Moss effect, absorpt. and photocond. spectra 8−18961
$Pb_{1-x}Sn_xTe$, interband absorpt. edge for single cryst. epitaxial films 8−43948
$Pb_{1-x}Sn_xTe$, large single crystal growth, on quartz surface, non-seeded 8−48293
p-$Pb_{1-x}Sn_xTe$, mobility meas., impurity and phonon scatt. mechanisms 8−23091
$Pb_{1-x}Sn_xTe$ p-n heterostructure, VPE, struct. and electrophysical characts. 8−10547
$Pb_{1-x}Sn_xTe$, temperature gradient LPE, PbTe substrate 8−3066
$Pb_{1-x}Sn_xTe$, valence band struct., Hall effect meas. 8−39016
$Pb_{1-x}Sn_xTe$:Cd, Cd diffusion obs. using Hall mobility and Cd solubility expts. 8−26584
$Pb_{1-x}Sn_xTe$:Cd, deep energy level, temp. depend. of elec. cond. 8−18994
$Pb_{1-x}Sn_xTe$:Cd, long-wavelength photosensitivity shift on annealing, Cd influence 8−26912
$Pb_{1-x}Sn_xTe$:In film, anomalous elec. props. 8−10477
$Pb_{1-x}Sn_xTe$-PbTe, $(0 \leqslant x \leqslant 0.2)$, semiconductor junction laser, lasing investigation 8−10990
$Pb_xSn_{1-x}Te$, RF sputtered films, struct., lattice parameter, stoichiometric comp., RHEED 8−38975
PbTe-$Pb_{0.82}Sn_{0.18}Te$, p-n heterojunctions, electrical and photoelectrical properties 8−39193
$PbySn_1$-$_xSe$ epitaxial film narrow band photovoltaic detectors, detection at long wavelengths 8−8443
Rb_2SnF_6, thermal stability and thermolysis *(French)* 8−10011
Sb_2O_3-SnO_2 film vapour deposition in conveyor furnaces *(French)* 8−15311
Si-SnO_2 highly photosensitive diodes, and their appl. 8−23152
SnAs, Sn_3As_2, and Sn_4As_3, mag. susceptibility components 8−43551
Sn_3BrF_5, cryst. struct. determ., environment of Sn (II) *(French)* 8−26508
$SnCl_2$, valence band electronic struct., XPS and UPS obs. 8−6826

tin compounds continued
$SnCl_2.2H_2O$, protonic order-disorder transition, H-bond vibr. Raman spectra temp. depend. 8−23437
SnF_2, valence bands, electronic struct., UPS 8−39656
SnH_4,($SnCl_4$), mol. force consts., parametric representation method 8−25503
SnH_4, tetrahedral mol., force field calcs. 8−29734
$Sn(HAsO_4)_2.H_2O$, cryst. struct. 8−26552
$Sn(HPO_4)_2.H_2O$, cryst. struct. 8−26552
SnI_2, layered cryst., photoluminesc., and reflection spectra obs. 8−6726
SnI_3^-, vibr. intensities, forms and freqs. anal. SCF MO LCAO CNDO calcs. 8−9274
$Sn_{1-x}Mn_xTe$, magnetic behaviour of Mn 8−14938
$SnMo_5S_6$, high supercond. T_c, soft mode behaviour 8−14855
$SnMo_6S_8$, crit. current density, effect of prep. technique and press. 8−14908
$SnMo_6S_8$, lattice softening, vibr. anisotropy 8−14428
$Sn_{1.2}Mo_6S_8$, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
$Sn_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$Sn_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
$SnMo_6Se_8$, anisotropy of H_{c2} 8−39274
$Sn_{1.2}Mo_6Se_8$, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
$SnNbS_2$, intercalate, cryst. struct. determ. 8−26534
SnO, population inversion of electronic levels by oxidation, visible emission 8−13697
SnO, prep. and growth, book contrib. 8−19651
SnO_2, (cassiterite), crysts., vibr. spectra, approx. calc. method *(Russian)* 8−35148
SnO_2 CVD film form. mechanism 8−38977
SnO_2, cryst. growth by chem. transport method 8−3004
SnO_2 deposition, transparent, on glass plates, in tunnel furnace *(Hungarian)* 8−35303
SnO_2, ESR of adsorbed O species *(Japanese)* 8−10750
SnO_2, film, optical characterisation, inversion method 8−11008
SnO_2 film, pure and Sb doped, transparent cond., prop., characts., stability, struct. *(Japanese)* 8−47889
SnO_2, forbidden energy gap oxide semicond. crystals, review of spectroscopic props. 8−2876
SnO_2, from rocks, quantitative determination by Mossbauer effect *(Rumanian)* 8−49178
SnO_2, glaze, high field cond., 4.2-470K 8−23100
SnO_2 layers, study using Mossbauer effect 8−31124
SnO_2, quantitative determ. by Mossbauer effect, using portable analyser 8−20131
SnO_2, sputtered film, thermal ageing, thickness dependent effects 8−6462
SnO_2, transparent conducting coatings, book contrib. 8−10587
SnO_2:Eu powder phosphor, prep., low energy electron excitation 8−39608
SnO_2:Sb, prep. and material characts. for far IR detector 8−4697
SnO_2-Ga_xSe_{1-x} heterostruct., amorphous, photovoltaic effect 8−14803
SnO_2-VO_x-PdO ceramic, switching and oscill. phenomena 8−6417
SnO_4^{4-}, normal vib. freq. and force const. calcs. *(Russian)* 8−46318
$Sn_2P_2S_6$, ferroelec. and pyroelec. props. meas. 8−35107
SnS, coupling of plasma waves with optical phonons 8−31204
SnS, dielec. function, optical and electron energy loss spectroscopy 8−15189
SnS, electron-hole interaction in d-electron excitations, photoelectron and optical spectra 8−34776
p-SnS, IR photocond., direct and indirect gaps 8−2514
SnS, tight-binding calc. of density of valence states 8−34760
SnS_2 (2H), band struct. press. depend. 8−43292
SnS_2, band struct., effect of polytypism 8−43293
SnS_2, nonlinear susceptibility, SHG 8−30019
SnS_2, optical props. and band struct. 8−2880
SnS_2, prep. and growth, book contrib. 8−19651
SnS_2-SnI_4, T-x projection of phase diag. 8−23683
SnS_xSe_{2-x}, thermal changes in optical props. 8−19504
SnSe, and $SnSe_2$, mag. susceptibility components 8−43551
SnSe, dielec. function, optical and electron energy loss spectroscopy 8−15189
SnSe, lattice refl. spectra in long-wavelength IR range 8−27236
SnSe, Raman scatt., zone centre optical phonons, layer-like struct. 8−48158
SnSe, tight-binding calc. of density of valence states 8−34760
SnSe-Se, p-T projection of phase diag. 8−27485
$SnSe_2$, optical props. and band struct. 8−2880
$SnSe_2$, prep. and growth, book contrib. 8−19651
$SnSe_2$, single crystal, reflectivity, XPS, UPS, and band struct. 8−6701
$SnTaS_2$ intercalate, cryst. struct. determ. 8−26534
SnTe, carrier density depend. of soft TO-phonon, Raman scatt. meas. 8−6684
SnTe, mag-props., effect of structure transition 8−6158
SnTe, softening of TO phonon mode *(Japanese)* 8−2225
SnTe substrate, Ag epitaxial growth and topostactic exchanges 8−14640
SnTe, thermoelectric materials, physico-chemical study 8−30945
SnTe, tight-binding calc. of density of valence states 8−34760
SnTe-In, solubility, thermo-EMF coeff. meas. 8−43124
SnTe-In_2Te_3 system, thermoelec. props., phase diagram, transitions 8−43424
SnTe-Te, contact fusion in complex metallic systems 8−26664
$(SnTe)_{1-x}(MnTe)_x$, ESR, effect of Mn ion conc. on line width and area 8−35026
SnX_2 (X=Cl, Br, I), UV absorpt. cross-sections of vapour 8−25554
$Te_{43}Se_{30}Sn_7$ in MSM struct., switching effects 8−19164
Tl_2SnF_6, thermal stability and thermolysis *(French)* 8−10011
$ZnSnCuO_4$, cryst., struct., mag. susceptibility obs. 8−2085

titanium
see also nuclei with ......
α→ω transform., pressure-induced, impurity effects and reaction kinetics 8−11220
adsorption and replacement of CH_4, CO and NO *(Japanese)* 8−22949
anodic oxide film growth kinetics *(French)* 8−23864
anodic oxide film on TA6V alloy and Ti struct. and growth 8−23861

titanium continued
anodic oxide film struct., thick *(Russian)* 8−35577
atom, ionisation potential, term value, correlation energy by vertical anal. 8−41964
atom, reson. lines relative oscill. strengths, hook technique using wall-stabilised arc 8−13628
band structure correlation with TiC, APW calc. *(Japanese)* 8−23017
casting defects, NDT 8−27690
chemisorption of N_2, O_2 and CO, secondary electron yield spectrum obs., for polycryst. surface 8−38933
conference, Rennes, France (Nov. 1976) 8−23857
corrosion by O_2 containing H_2O and gaseous NaCl, volatile products 8−27674
corrosion inhibition in acid medium, electrochem., Auger investigs. *(French)* 8−44430
corrosion resistance increase by Pd electrospark coating *(Russian)* 8−27669
corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258
CVD layers on Fe substrate *(Japanese)* 8−27415
deformation, tension, torsion compression test exam. *(Russian)* 8−31455
diffusion in $LiNbO_3$ waveguide, exam. by electron probe anal. and X-ray diffr. 8−47588
diffusion in p-Si, doping 8−18670
diffusion of H_2 *(Korean)* 8−18838
dislocation characterisation and obs. in recrystallised Ti by X-ray topography *(French)* 8−22722
efficient intensity modulator 8−22190
electrodeposition from $TiCl_4$ nonaqueous solns. *(Russian)* 8−48339
exam. of whether interstitial O can cause internal friction 8−48537
exploding wire, plasma prod., X-ray diagnostics 8−5909
fatigue damage detection in notched sample, using optical correlation technique 8−35511
fibre reinforced with B, borsic, SiC, Al_2O_3, Be, W, Mo, prep. and mech. props. *(Russian)* 8−35335
film, effect of surface and bulk oxidation on charact. electron energy loss spectra *(French)* 8−39641
film, evap., CO effect on work function 8−39188
film, reactive ion beam sputtering 8−19666
film, work function, effects of O_2 sorption 8−19125
gettering, excimer laser gas purification 8−46617
HCP, elec. field gradient 8−14698
heat capacity and electric resistivity, pulse heating method, 1500 to 1900K 8−43139
hot-rolled, anisotropy of Young's modulus calc. *(Russian)* 8−23749
implantation, biological props. and appls. 8−3678
interface with molten glass, interactions and wetting, EPR anal. 8−14542
ion plating, on ceramic substrate, and coating struct. 8−11132
low friction wear-resistant surface form. by Al ion plating 8−11442
mass transfer phenomena in aerated sulphuric solution, behaviour close to corrosion potential *(French)* 8−23862
overlaid thin films, D pumping speed 8−33286
oxidation, XPS exam. *(French)* 8−23858
oxidation behaviour in high temp. steam after heat treatments *(Japanese)* 8−48565
oxidation in acid soln., electrochem. and optical props. 8−48560
oxidation in O_2 atmosphere, role of oxide layer and mechanism of oxidation *(French)* 8−23859
oxide doped BaO-B_2O_3-SiO_2 glass system, electronic cond. of Ti ions 8−23095
oxide film characterisation, using low energy electron induced X-ray spectroscopy *(French)* 8−41386
oxidised film electrode, AES, XPS and electrochem. characterisation 8−7086
plasma, laser prod. study by UV spectroheliography 8−22529
plasma etching, for appl. to patterning of Ti-Pd-Au metallisation 8−27677
positron annihilation γ-ray ang. correl. curves, effect of deform. and H_2 inclusions 8−31273
preparation by electrolytic reduction of $TiCl_4$ *(French)* 8−23644
pump, sublimation type *(Japanese)* 8−24806
reaction with P, at high temp. 8−44260
reactive, trapping of energetic 18 keV deuterons 8−10096
sheet, texture and mechanism of primary recrystallisation 8−23721
sorption pump for molecular beam detector 8−21150
strain ageing of α-solid soln. *(Japanese)* 8−6953
structural changes during polygonization *(Russian)* 8−19779
surface, Auger electron appearance potential spectrum, elastic and inelastic contribs. 8−35231
surface analysis using digital scanning Auger electron microscope 8−12797
surface impurity segregation, quantitative AES 8−19611
surface structure, HCP to BCC type struct. transition, FEM obs. *(Japanese)* 8−22938
tensile properties and creep behaviour at high temp. 8−23773
wear at high sliding speed 8−3237
X-ray continua emission, proton and ^{14}N bombard. 8−23559
X-ray emission spectra, $K\beta_{1.3}$ line width and $K\beta_5$ band 8−2946
X-ray topography, dislocations, recrystallised crystals 8−10054
XPS, valence bands 8−35249
α-Al_2O_3:Ti, defect struct., electronic and ionic cond., optical absorption meas. 8−30603
CdTe:Ti^{2+}, Jahn-Teller effect on $^3T_1(^3F)$ state, resonance on $^3T_1(^3P)$ state 8−27271
Fe-Ni-Ti, cryogenic toughness, strength, rel. to reactive metal addition 8−39885
$KTaO_3$:Ti^{3+}, EPR meas. 8−35028
LiF:Mg,Ti, thermolum. related Z-centres, optical absorpt. bands 8−23540
LiF:Ti, EPR exam., superhyperfine interactions 8−31107
$LiNbO_3$, Ti diffused, mirror type optical branch and switch 8−33834
$LiNbO_3$:Ti, dopant conc., refr. index profile rel. to integrated optics 8−5583
$LiNbO_3$:Ti optical waveguide, technique for suppressing Li_2O out-diffusion 8−18040
$LiNbO_3$:Ti optical waveguides, fabrication and waveguiding props. 8−30091
$LiNbO_3$:Ti optical waveguide diffusion profile, AES obs. *(German)* 8−33876

titanium continued

Ni, electrolytic and carbonyl grades, sintered sheet material, stopping power and pore size relationship 8−19693
Ti I, oscillator strengths, hook and emission meas. 8−42002
Ti I, solar lines oscillator strengths and Sun Ti abundance 8−45306
Ti XIII, vacuum UV lasing action 8−1213
Ti XXI, X-ray spectra from laser plasma 8−17596
Ti:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
Ti-H, H diffusion and phase consistution, V influence, proton spin-lattice relax. meas. 8−27484
$Ti+^{28}Si^{n+}$, K-shell ionisation, projectile charge state depend., theory 8−17786
$Ti^{2+}+H(H_2)$, electron capture cross-sections, 0.5-14 keV 8−42205
TiO_2-Ti-HCl, equilibrium composition of gaseous phase and TiO_x yield 8−27393
YIG:Ti^{4+}, X-ray induced change in initial permeability 8−19280

titanium alloys

see also titanium compounds
Alnico alloys, effect of Ce addition on mag. props. 8−2699
anodic oxide film on TA6V alloy and Ti struct. and growth 8−23861
boronising, titanium alloys, effect on wear 8−19903
corrosion resistance in H_2S and NaCl, cracking tendency, strength *(Russian)* 8−31568
crack resistance, J-integral approach, crack line wedge loaded specimen 8−35513
creep, effect of environment and coating 8−31480
creep and long-term strength under cyclic loading 8−3191
cyclic loading, at high temp. *(French)* 8−15628
cyclic strength under programmed loading of VT6 8−7043
decomposition of α″ martensite during continuous heating of alloy VT16 *(Russian)* 8−48370
decomposition of metastable phases during heating of quenched VT23 *(Russian)* 8−15432
decomposition of metastable phases of VTZ-1 and VT8, effect of plastic deform. *(Russian)* 8−39770
deformation twinning effect on mech. props. at low temps. *(Japanese)* 8−6979
domain struct. of diffuse ω-phase formed in quenching, 1D model 8−27523
elemental distribution, emission microspectral anal. *(Russian)* 8−35773
etching as a function of struct. of VT23 and VT15 *(Russian)* 8−15568
fretting wear, role of adhesion and delamination 8−35533
friction with diamond characts. 8−48541
hot salt stress corrosion cracking, electrochemical model 8−7078
Inconel 750, volatilisation of oxides during oxidation at 1200°C 8−23873
Inconel X750 springs, in-reactor stress relaxation 8−11256
microstructure resulting from heat treatment, alloying, effect on creep, fatigue, fracture strength 8−11246
properties, medical equipment appl. 8−7456
Rene 41, volatilisation of oxides during oxidation at 1200°C 8−23873
residual strength of shock loaded RMI 38644 8−27574
salt-corrosion effects on long-term strength, vacuum annealing and stress concentrators effects *(Russian)* 8−11392
solution treated and aged, estimation of precipitate volume fraction using Young's modulus 8−39781
steel, austenitic, nitrided, creep, effect of N_2 and Ti and prior deform. 8−23789
steel, R6M6, micro-alloying effect 8−6939
steel, sintered, high speed, with Ti(C,N) additions 8−11160
strength characts., elastoplasticity, creep 8−6976
surface layer alloying element distrib. *(Russian)* 8−19934
surface segregation, AES exam. in TA6V alloy *(French)* 8−22941
tensile US meas., correlation with ductility and fracture detection 8−31601
texture strengthening 8−23724
thermomechanical treatment, effects on struct. and props. of alloy VT22 *(Russian)* 8−19785
thermomechanical treatment effect on struct. and mech. props. of VT25 8−3152
Ticonal with Sm, magnetic props., phase transform. after thermomagnetic treatment 8−3155
VT3-1, HTMT effects on struct. and props. 8−23740
yield strength anisotropy and durability after cyclic loading *(Russian)* 8−27565
Al-Ti, manufacture, use of Na_2TiF_6, transfer of Ti 8−27453
Al-V-Ti, SiC coated B fibre reinforced, tensile and compressive strength, prior thermal treatment effect 8−11264
Au-Ti, dil., virtual bound states, optical absorption meas. 8−2891
Co-Ti, multilayer and imperfect martensitic phases form. 8−19754
$Co_{2-x}(Ni,Fe)_xTiSn$, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8−43654
$Co_{2-x}Ni_xTiSn$, mag. ordering, ^{119}Sn Mossbauer spectroscopy and magnetisation meas. 8−43753
Co_2TiAl, ^{59}Co NMR, above and below Curie temp. 8−2760
Co_2TiSn, Heusler alloy, positive contribs. to hyperfine fields, magnetisation and NMR meas. 8−43654
Cr-Ti, cast, B additions effect on struct. and props. *(Russian)* 8−19891
Cu-Be-Ni-Ti-Mg (2, 0.3, 0.2, 0.02 to 0.4 wt.%), multiple step ageing *(Russian)* 8−19786
Cu-Ti, lattice parameter change during ageing *(Japanese)* 8−35411
Cu-Ti (Zr), strength improvement by thermomechanical treatment *(Japanese)* 8−48426
Cu-Ti (3.5 wt.%), internal friction in dissociating alloy following deform. by US *(Russian)* 8−35419
Cu-Ti (4 wt.%), lamellar multiphase, struct. and spatial comp. variation, analytical STEM 8−24011
Cu-TiC precipitation hardened composite, struct. effect on friction 8−11337
Cu-Ti(0.7 at.%), plastic deform. and precip. hardened, annealing time 8−48446
Fe-Cr-Ni-Ti-Al, superalloy, Ti, Ni, Al, H_2 variations effect on mech. props. 8−3188
Fe-Cr-Ti-Mo ferritic alloy, annealed, cold rolled, fast reactor material, mech. props. 8−21646
Fe-Ni-Al-Co-Cu-Ti, 38 to 40 wt.% Co, 8 to 8.5 wt.% Ti, alloy YuNDKT tempering and thermomagnetic treatments 8−3154

titanium alloys continued

Fe-Ni-Cr-Ti-Al, ausaging alloy, cellular precipitate indentification *(Chinese)* 8−11225
Fe-Ni-Ti, ageing mechanism, neutron diffr. expts. *(Russian)* 8−48403
Fe-Ni-Ti, ordered, low temp. α→γ transform. *(Russian)* 8−19740
Fe-Ni-Ti alloys, high pressure effect on martensite crystal nucleation and growth *(Russian)* 8−39769
Fe-Ni-Ti martensitic alloy, γ′ particle effect on crystallisation struct. *(Russian)* 8−44129
Fe-Ti, H_2 storage appl., alloy bonding theory approach 8−18786
Fe-Ti, multiphase binary diffusion couple, layer growth rate of intermediate phase, numerical calc. *(Japanese)* 8−14513
Fe-Ti, nitrided, struct. and props. 8−19950
Fe-Ti multiphase, binary diffusion couple, layer growth rate of intermediate phase *(Japanese)* 8−14514
$Fe_xCo_{1-x}Ti$, high press. mag. props. 8−23271
FeTi, dil., mag. hyperfine field, TDPAC meas. 8−43699
β-FeTiD, neutron diffr. exam. of struct. 8−47282
$Fe_{3-x}Ti_xSi$, limits of solubility, mag. props. and electron conc. 8−10670
$Mn_{0.75}Ti_{0.25}Bi$ films as magnetooptic storage medium, mag. interferogram recording 8−19288
Mo-TiC(TiN), phase diagram *(Russian)* 8−27476
$(N_{1-y}Y_y)_3Al_{1-x}Ti_x$, quarternary γ′ ($L1_2$) pseudobinary props., revealed by ionicity modified pair model 8−19725
Nb-Ti, thermal conductivity in low temp. range 8−39259
Nb-Ti, type II supercond., hysteresis losses for round cross section with collective interaction 8−43513
Nb-Ti (60 at.%), aged, TEM exam. of precipitation process *(Japanese)* 8−48409
Nb-Ti alloy strip, crit. current anisotropy 8−10624
Nb-Ti alloys, crit. current density, scaling law 8−31027
Nb-Ti superconducting alloy, critical current density, heat treatment effects *(Japanese)* 8−14909
Ni-A-Ti (6,1 wt.%), γ′ phase precip., deform. effects *(Russian)* 8−48404
Ni-Al-Cr-Mo-Ti-W-(Co) alloys EhI 826 and EhI 929, reverse elastic after effect under loading 8−39829
Ni-Al-Cr-Ti-W-Mo, US vibration applied during solidification, improved strength, corrosion resistance *(Russian)* 8−15382
Ni-Al-Ti protective coating, on Ni-Al alloy IN 100, Ti content influence, oxidation behaviour *(French)* 8−3258
Ni-Cr-Al-Ti-Mo, low temp. mech. behaviour, precipitation 8−39860
Ni-Cr-Al-W-Ti alloy MA 6000E, mechanical alloying for high temp. appl. 8−44046
Ni-Cr-Co-Mo-Al-Ti (10, 15, 3, 5.5, 4.5 wt.%), superalloy, exam. of creep and fracture behaviour 8−48464
Ni-Cr-ThO_2 (20, 2 wt.%), dispersion hardened, model for high temp. deform. based on struct. obs. 8−19809
Ni-Cr-Ti-Al/Au-Ni brazed joint, high temp., AE under elev. temp. and loading *(German)* 8−31597
Ni-Cr-Ti-Co-W-Al-Mo alloys AF-115 and AF2 1DA, superalloy powder compacts, fatigue origins 8−48521
Ni-Ti, spin polarised tunnelling expts. 8−39372
Ni-Ti, with shape memory effect, working medium in heat engine *(Russian)* 8−48449
Ni-Ti (0-1.5 at.%), elec. cond., mag. phase transition, 300-750K 8−2678
Ni-Ti (12 wt.%), dil. alloys, transform. early stages 8−3096
Ni-Ti (60 at.%) alloy, high stress effects on struct. and props. *(Russian)* 8−19838
Ni-Ti (8 and 10 wt.%) alloy, aged, precipitation behaviour at 550 to 950°C, X-ray and electron microscopy exam. 8−39785
Ni-Ti alloy, struct. and props., self-propagating high temp. synthesis *(Russian)* 8−26492
Ni-Ti-Co, Co effect on martensitic transform. temp. and low temp. props. *(Korean)* 8−11224
$Ni_3(Al, Ti)$, S segregation to grain boundaries 8−48410
NiTi, reversible martensitic transformations 8−27516
Pd-Ru-Ti, elec. resist. and thermal cond. *(Russian)* 8−19017
Pd-Ti liquid alloy, mass spectrometric study of high temp. thermodynamic stability 8−15369
Ti alloy VT30, H_2 effect on low temp. mech. props. *(Russian)* 8−35477
Ti-Ag(Au)(Si), existence of β to $α_m$ phase transformation 8−44123
α-Ti-Al, H_2 diffusion *(Korean)* 8−30794
Ti-Al, hardening of Ti by addition of Al *(French)* 8−23715
Ti-Al, surface segregation, AES exam. *(French)* 8−22941
Ti-Al alloys, Mossbauer effect, comp. depend. *(Russian)* 8−6611
Ti-Al-Cr-Mo-U, alloy VT22, phase composition and fatigue strength 8−3219
Ti-Al-Mo (31, 13 wt.%), transform. microstruct. 8−48394
Ti-Al-Mo-Sn-Si (4,4,2,0.5 wt.%), fracture toughness and crack propagation 8−39892
Ti-Al-Mo-V (8, 1, 1 wt. %), stress corrosion cracking and slow strain rate H_2 embrittlement 8−48569
Ti-Al-Mo-Zr alloy, VT9, decomp. kinetics of metastable β-phase, X-ray and mech. props. obs. *(Russian)* 8−48368
Ti-Al-Mo-Zr alloy VT9, Cu-Cr(Ni) coated, plastic deform. and diffusion annealing effect on props. *(Russian)* 8−35425
Ti-Al-Mo-(Cr), etching as a function of struct. *(Russian)* 8−15568
Ti-Al-U (6,4 wt.%), low and high cycle fatigue rupture at same load 8−3217
Ti-Al-V, (6,4 wt.%), history dependent steady state creep rate 8−39866
Ti-Al-V, (6.7, 4.3 wt.%), fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510
Ti-Al-V, long-term corrosion stability rel. to use in joint endoprostheses 8−36059
Ti-Al-V, plane strain toughness and resistance to crack propagation *(French)* 8−23813
Ti-Al-V (6, 4 wt.%), compliance calibration results 8−19798
Ti-Al-V (6, 4 wt.%), ring test, evaluation for strain rate sensitive materials 8−39991
Ti-Al-V (6, 4 wt.%), texture effect on fatigue crack path 8−27633
Ti-Al-V (6, 4 wt.%), Widmanstatten, microstructurally sensitive fatigue crack growth obs. 8−27627
Ti-Al-V (6,4 wt.%), improved toughness from prior β-grains 8−15522
Ti-Al-V (6,4 wt.%), sustained loading charact. and H_2 effects 8−48515
Ti-Al-V (6,4 wt.%) superplastic deform. 8−31471

titanium alloys continued
Ti-Al-V (6,4wt.%), galvanic couple with Al alloys, velocity effect on corrosion 8−35566
Ti-Al-V-Cr-Mo-Zr (3,8,6,4,4 wt.%), beta-C, microstruct. effect on mech. props. 8−27577
Ti-Al-V-Sn (5.5, 5.3, 2.3 wt.%) fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510
Ti-Al-V-Sn-Zr alloy TS5, annealing effect on ductility and strength *(Russian)* 8−35427
Ti-Al-V-Sn(Mo-Fe), heavy section extrusion, fabrication and mech. props. 8−6985
Ti-Al-Zr, TA6Zr5D, oxidation at high temp. *(French)* 8−23860
Ti-Al-Zr-Mo-Si (6,5,0.5,0.25 wt.%) fracture toughness and crack propag. 8−39892
Ti-B-Mo system, phase equilibria at 1400°C 8−35354
Ti-Be-(Zr), struct. and form. of metastable phase m-TiBe 8−48375
Ti-Co, X-ray emission spectra investigation of electron struct. of Laves phases *(Russian)* 8−23554
Ti-Cr disordered alloy, gap nature of electron spectrum in region of struct. instability *(Russian)* 8−18947
Ti-Cu alloys, in acidic media, electrochemical behaviour *(French)* 8−23863
Ti-Cu alloys, mag. susceptibility meas., paramagnetic susceptibility meas. Curie temp. and mag. moments calc. *(Russian)* 8−34956
Ti-Fe, diffusion of H_2 *(Korean)* 8−18838
αTi-Fe, plastically deformed, α→ω transform. 8−3095
Ti-Fe alloys, elec. and thermal props. *(Russian)* 8−19020
Ti-H, H diffusion and phase consistution, V influence, proton spin-lattice relax. meas. 8−27484
Ti-H system, cluster calc. of electronic struct. of interstitial H 8−43326
Ti-Mn, superplastic, microduplex grain struct. stabilisation 8−44058
Ti-Mn (0.4 and 12 wt.%), bonding between α-β interfaces, subsequent deform. 8−14517
Ti-Mn alloys, elec. and thermal props. *(Russian)* 8−19020
α-β Ti-Mn alloys, etching and electropolishing to reveal α and β-grain size 8−3254
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8−39791
Ti-Mo, lattice parameter and Debye temp., comp. depend. *(Russian)* 8−47280
Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8−6975
Ti-Mo-Zr-Sn, alloy, βIII, struct. transform. in thermally affected zones after electron beam welding 8−23919
Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8−3153
Ti-Ni, hysteresis-free 'memory' effects 8−35385
Ti-Ni (51 at.%), martensitic transformation, thermoelastic, hysteresis, exothermic and endothermic effects *(Russian)* 8−19749
Ti-Ni-Cu (44.5, 10 wt%), opposing stress effect on shape memory and martensitic reversion 8−44185
Ti-Ni-Cu system, phase relations at 800 and 870°C 8−27481
Ti-O, dil. HCP solid soln., O interstitial distrib. effect on lattice parameters 8−30588
Ti-O, stress corrosion crack propag. in aqueous and methanolic soln. 8−19919
Ti-O alloys+Li melt, ternary solid soln. formation *(Russian)* 8−11396
α-Ti-O solid soln., hexagonal, thermodynamics 8−3098
$Ti-TiSi_2$, metal-silicide coating system. thermal stresses *(Russian)* 8−13891
Ti-V (40 at.%), BCC, single crystal, fatigue and slip 8−19854
Ti-V-Si, equlibrium silicide, X-ray and electron diffr. obs. 8−27483
Ti-Zr, valence bands, X-ray M- and L-emission bands obs. *(Russian)* 8−19602
Ti_3Al, cyclic deform., dislocation struct. 8−7003
Ti_3Al-(Nb), ordering transform. and mech. props. 8−31402
$Ti_3Al(Sn)$, oxidation *(Russian)* 8−19939
TiB_2, electrode, hot pressed, erosion resistance, struct. and porosity effects 8−3228
TiB_2-TiSi_2 composites, high-temp. oxidation, scale comp. 8−15561
$Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8−11292
$Ti_{50}Be_{40}Zr_{10}$, Metglas 2204, stability, crystallisation, ductility meas. 8−47246
TiC-Ni-Co-Cr, sintered, mech. props. effect of processing factors 8−11159
TiCo, and TiCoSi(Ge), electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
TiCu intermetallic compounds, decomposition reaction by H_2 absorption *(Japanese)* 8−23668
TiGe, and TiCoGe, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
Ti_2Ni, determ. of H diffusion coeff., quasielastic neutron scatt. 8−30781
TiSi, and TiCoSi, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
$Ti_{1-x}Zr_xCr_{2-y}Mn_y$, C14 type alloy, hydride form. *(Japanese)* 8−19944
$Ti_{1-x}Zr_xMn_2$, hydride formation, hydriding characts. of reversible uptake 8−44402
U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8−23729
U-Ti(Q^4)(Q^5), Q^4=quad, Q^5=quint, stress corrosion cracking in moist air, salt water, salted moist air 8−35562
V-Ti, diffusion in H_2 *(Japanese)* 8−10221
V-Ti, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
V_3Ti, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
W-Ti-C, cubic solid soln., form. and props. 8−48348
WC-Co-Ta-Ti-Nb, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-TiC, powder for plasma arc spray coating appl. 8−15591
WC-TiC-Co, powder for plasma arc sprayed coating 8−15591
WC-TiC-TaC, powder for plasma arc spray coating appl. 8−15591

titanium compounds
see also titanium alloys
bonding, struct., ligand field splitting, electron gas calcs. 8−17557
cordierite glass ceramics, effect of TiO_2 and ZrO_2 content on phase sequence during heat treatment 8−48381
oxides on Ti film electrodes, AES, XPS and electrochem. charact. 8−7086

titanium compounds continued
pyrochlore, high temperature chlorination 8−11180
tetrahalide-acetyl halide adducts, coordination, IR and Raman spectra 8−42050
$Al-SiO_2-TiO_2$ interference mirror coatings, high mech. strength 8−30043
$Al_2O_3+TiO_2$, reaction on sintering in reducing media 8−27457
$BaO-TiO_2-Cr_2O_3$, new compound, phase relations *(Japanese)* 8−6911
$Ca_2Ti_{2-2x}Fe_{2x}O_{6-x}$, antiferromag. phases, Neel temp. variation, vacancy long-range order *(French)* 8−34979
$CaTiO_3-TiO_2$, ceramic, phys. props. 8−43784
CrN-TiN, rhombic distortion of cryst. lattice at low temp. 8−2253
Fe-TiC condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
$Fe_{0.2}Mg_{1.9}Ti_{0.9}O_4$, Mossbauer parameters temp. depend. 8−23381
$Fe_{0.4}Mg_{1.8}Ti_{0.8}O_4$, Mossbauer parameters temp. depend. 8−23381
α-Fe_2O_3:TiO_2 electrode, water photooxidation appl. 8−15684
β-FeTiD, neutron diffr. exam. of struct. 8−47282
$FeTiO_3$, Fe_2TiO_4, influence of cryst. struct. on photoresponse of electrodes 8−43471
$Fe_{3-x}Ti_xO_4$, Mossbauer study at low temp. 8−27133
HfC-TiC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
HfO_2-TiO_2, thermal expansion coeff. and dynamic response to pulsed energy deposition 8−26705
$K_2O-TiO_2-SiO_2$ system, vitreous, struct. obs. using neutron scatt. 8−22667
$MnO-SiO_2-TiO_2$ melt, electrical cond. meas. and electrolytic anal. *(Japanese)* 8−38861
$Na_2O-Bi_2O_3-TiO_2$, subsolidus phase equilibrium at 1000 degrees C 8−48384
$Na_2O-TiO_2-SiO_2$ glass, density, refractive index, thermal expansion hardness, IR spectra, DTA *(Japanese)* 8−15535
$Na_2O-TiO_2-SiO_2$ glass, elec. props. and energy gap 8−26921
$Na_xTi_4O_8$ type bronzes, synthesis in $NaBO_2$, growth conditions *(French)* 8−43998
Na_2TiSiO_5, cryst. struct. 8−42976
$(Nb,Ti)N_x$, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
Nb anodic oxide films, reversible optical changes 8−35580
Nd:glass:TiO_2, lasing action, stabilisation *(Russian)* 8−13715
$PbO-SiO_2-TiO_2$, molten, viscosity *(Japanese)* 8−18819
SiO_2:TiO_2, prep., amorphous struct., effect of roasting, bonds 8−44061
$Sr_nTi_{n-4}Nb_4O_{3n+2}$ layer ferroelectrics, physical props. 8−10854
Ti complex, $Ti_2Cl_8(CH_3NO_2)_2$, single cryst., struct., IR and Raman spectra, X-ray diffr. 8−43000
Ti complex with carboxylate, channel model in exchange theory 8−14950
Ti-V-C-N, solid solns., quasibinary cross sections 8−23676
TiB_2 based cermets, rel. to Ti-B-Mo phase equilibria 8−35354
TiB_2 coatings, CVD, electron microprobe, SEM, X-ray diffr. characterisation *(French)* 8−43271
Ti(C,N), hydrolysis 8−15713
TiC, ageing and ordering phenomena *(Russian)* 8−39807
TiC, band struct. correlation with Ti, APW calc. *(Japanese)* 8−23017
TiC CVD coating, W_6Co_6C cemented carbide substrate, structure, composition and hardness exam. 8−11425
TiC, CVD layers on Fe substrate *(Japanese)* 8−27415
TiC, calcs. of 2γ-ang. correlations and Compton profiles 8−39624
TiC coated high speed steel, machining of steel 4340, tool life 8−11435
TiC, cpd. form. reaction in reactive evaporation, quadrupole mass analysis *(Japanese)* 8−23628
TiC, final-state effects in C Auger spectra 8−6818
TiC, high temp. thermal cond., ambipolar diffusion contrib. 8−26742
TiC, mag. suscept. rel. to temp. in homogeneity region 8−34953
TiC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
TiC, polycrystalline, elastic props. 8−27547
TiC, RF sputtered film on steel, transition region 8−39956
TiC single crystal, micro-Vickers hardness meas. up to 1500°C *(Japanese)* 8−23804
TiC single crystal, prep. by floating zone technique *(Japanese)* 8−23607
TiC single crystal, work function, field emission characts. *(Japanese)* 8−19641
TiC-Au film, prep. by activated reactive evaporation, struct. and mech. props. *(Japanese)* 8−3252
TiC-base alloys, anomalous phase flaky precipitation *(Japanese)* 8−48401
TiC-steel composite; effect of method of Cr additions on props. 8−15341
TiC-TiN, kinetic characteristics, review 8−47613
TiC-ZrC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
TiC_x, fused material, microstruct. 8−44115
TiC_xN_y, fused material, microstruct. 8−44115
TiC_xO_y, cubic phase, thermal expsn., lattice consts. 8−43149
TiC_xO_y, lattice completeness and period 8−22706
TiC_xO_y, structural mechanism of O inclusion into lattice 8−22707
$TiC_xO_yH_m$, cubic phase, thermal expsn., lattice consts. 8−43149
$TiCl_3$ reduction to Ti by Mg, thermodynamics and heat physics *(Russian)* 8−15331
$TiCl_4$, electrolytic reduction *(French)* 8−23644
$TiCl_2(SO_3X)_2$.DMSO complex, X=F, Cl, IR spectra 8−42054
$TiCl_2(SO_3X)_2$.acetylacetone complex, X=F, Cl, IR spectra 8−42054
$TiCl_2(SO_3X)_2$.pyridine complex, X=F, Cl, IR spectra 8−42054
$TiCl_2(SO_3X)_2$.quinoline complex, X=F, Cl, IR spectra 8−42054
$(TiCl_4.POCl_3)_2$, solid, IR and Raman spectra, vibr. assignments 8−43868
TiF_2, force consts., mean amplitudes of vibr. 8−17647
$TiH_x(D_x)$ positron annihilation *(Russian)* 8−6807
TiH_3F, valence-shell MO calc. with pseudopot. 8−907
TiN, appl. of quick survey method for CVD conditions 8−44019
TiN, CVD layers on Fe substrate *(Japanese)* 8−27415
TiN coating on steel for watch part finishing, ion plating *(French)* 8−23879
TiN decorative coating, ion plating on steel and Stellite 8−11441
TiN film, struct. and elec. props. 8−26788
TiN, high dispersed superconductivity 8−43505
TiN, highly dispersed, metallic thermo-EMF 8−43363

titanium compounds continued
TiN, optical props. at 300K 8−19466
TiN, phonon dispersion curves, soft-mode behaviour, inelastic neutron diffr. 8−43083
TiN, precipitation of ordered δ'-phase *(Russian)* 8−6929
TiN, superconductivity 8−2605
TiN-AlN, composite, erosion resist. in electron stream 8−11365
TiN-$Nb(Ta)N$, microcomposite film prod. for radio resistors 8−3052
TiN-VN refractory powder composite, resistors, produced in low temp. 8−11182
TiN_x, synthesis by enhanced activated reactive evaporation 8−39705
TiN_zO_y, cubic, concentration dependence of the degree of filling of unit cell 8−44063
TiO, ($C^3\Delta$-$X^3\Delta$) system, radiative lifetimes, oscillator strengths, flame spectroscopy 8−42136
TiO, (001) surface, spectral density of states 8−39187
TiO absorption and intrinsic amplitude of Mira variables 8−36580
TiO band strengths in metal-rich globular star clusters 8−49487
TiO, $C^3\Delta$ term anomalous triplet splitting 8−13514
TiO in M-type giant stars used for temp. sequence *(Russian)* 8−20831
TiO opacity in o Ceti (Mira) and R Leonis, effects on dia. meas. 8−16429
TiO_2 (100), chemisorption of H_2, O_2, and H_2O, electron spectroscopy, evidence for Ti^{3+} photogeneration 8−38940
TiO_2 (rutile) photoanode, corrosion suppression by high-energy redox reactions 8−23163
TiO_2, adsorpt. of water, IR spectra 8−14577
TiO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
TiO_2, anatase film, intermittent CVD conditions rel. to struct. 8−11119
TiO_2 based ceramic dielec. materials, medium permittivity, elect. charact. 8−35086
TiO_2, chemisorbed phases of water, UPS meas. 8−10285
TiO_2, chemisorption of O_2 and H_2O, electron stimulated desorption, AES and charact. loss spectra 8−22963
n-TiO_2, crystal, in aqueous soln., electrochemistry and electrolum. meas. 8−48665
TiO_2, crystal growth from melts in Bi_2O_3-V_2O_5-TiO_2 system 8−19659
TiO_2, dielec. dispersion and polarisation 8−2803
TiO_2, dispersive asymmetry of elasto-optical tensor 8−35112
TiO_2 electrode, sensitised, photoelectrolysis of water in sunlight 8−19143
TiO_2, electron energy loss spectra, 0.02-2 eV 8−39642
TiO_2, etching characts. by plasma reactive sputter etching 8−27661
TiO_2, form. on Ti in acid soln., electrochem. and optical props. 8−48560
TiO_2, liq., spreading over refractory metals 8−26749
TiO_2, long-wavelength lattice vibr. modes, symmetry coordinates 8−43081
TiO_2 photoanode, water photoelectrolysis at high current density 8−15679
TiO_2, photothermal spectroscopy 8−32808
TiO_2, polycryst. film, threshold switching 8−14771
TiO_2, resolved quadrupolar transition, absorpt. spectra obs., 1.6K 8−27259
TiO_2, rutile, adsorption of acetic acid-d_4, IR obs. 8−30827
TiO_2, rutile, mass transport mech. determ. by sinusoidal profile decay method 8−6178
TiO_2, rutile and anatase, periodic bond chains, computer determ. *(French)* 8−26474
n-TiO_2, rutile anode, water photolysis 8−2563
TiO_2 rutile ceramics, capacitors, elec. cond. meas., anomalous conduction, ageing effects 8−14836
TiO_2 single cryst., refl. and electrorefl. spectra 8−2870
TiO_2 single cryst., refl. and electrorefl., energy levels 8−2871
TiO_2, sintered ceramic, props. rel. to additives, impurities 8−35329
TiO_2, slightly vacuum-reduced, {312} planar defects, TEM obs. 8−22736
TiO_2, surface coating constituent mat., adsorpt. of Cs^+ 8−23843
TiO_2, surface electronic struct. by discrete variational $X\alpha$ cluster calc. 8−43449
n-TiO_2, thermodynamic pot. for anodic dissolution, rel. to photoelectrochem. cell efficiency 8−26948
TiO_2, third order nonlinear optical difference frequency generation 8−22176
TiO_2, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
TiO_2 type compounds, system of polymorphic transitions 8−47268
TiO_2:Cr^{3+}, maser, 8 mm, 15 MHz bandwidth, 15-18 dB gain at 4.2K *(Russian)* 8−25844
TiO_2:H(D)(T), IR spectra, 300, 77 and 8K 8−35175
TiO_2:Mg, high-resolution reflex images of crystal defects 8−6073
TiO_2:Mn, ESR spectrum anal. *(French)* 8−19309
TiO_2:Mn^{2+}(Mn^{4+}), anatase single cryst., ESR spectra at 77K, 300K 8−10764
TiO_2:Nb, rutile, Seebeck effect, 90-300K 8−43427
TiO_2:Sb(Fe), Mossbauer effect exam. of impurities 8−31140
TiO_2-Fe_2O_3, comp. waves, Young's modulus minima rel. to crystallographic shear orientations 8−43034
TiO_2-Ga_2O_3 system, phase relations and microstructs. 8−3107
TiO_2-NiO-Sb_2O_3 phase equilibria 8−44098
TiO_2-P_2O_5 reduced glasses, prep., elec. transport, chem. anal , DC, AC cond., seebeck coeff. 8−30924
TiO_2-Sb_2O_3 system, phase comp. of roasted coprecipitates 8−23651
TiO_2-SiO_2, RF cosputtering optical film, prep. and props. 8−6849
TiO_2-SiO_2 fibre, prep. from metal alcoholates, prep. of spinnable soln. *(Japanese)* 8−44071
TiO_2-Ti-HCl, equilibrium composition of gaseous phase and TiO_x yield 8−27393
TiO_2-V_2O_5 interface, role of struct. props. in interfacial reactions 8−31688
TiO_2-ZrO_2-SiO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
TiO_{2-x}, slightly reduced semiconducting, channelling expts. with 6 MeV protons, defect structs. 8−2117
TiO_3, semicond.-metal transition, positron annihilation study 8−15246
TiO_3-Cl_2($SeCl_4$), equilibrium composition of gaseous phase and TiO_x yield 8−27393
TiO_x, (x=0.88, 1.27), effect of heating at high press. on struct. 8−10190

titanium compounds continued
TiO_x film, growth and struct. determ. 8−48328
TiO_X, X-ray emission spectra, $K\beta_{1.3}$ line width and $K\beta_5$ band 8−2946
Ti_2O_3, cryst. growth by chem. transport and tri-arc methods, and characterisation 8−3003
Ti_2O_3, IR refl. spectra, IR active phonons, Ti 3d electronic effects 8−35145
Ti_2O_3, semicond., effect of stress on elec. resist. 8−34832
Ti_2O_3-$MgTiO_3$, phase analysis 8−3103
Ti_4O_7, optical absorpt. and metal-insulator transitions 8−15165
Ti_5O_9, phase transitions, elec. cond., mag. susceptibility, sp. ht., EPR and struct. aspects 8−10526
Ti_nO_{2n-1}, cryst. growth and characterisation 8−31311
$TiO_2.nH_2O$, U extraction from seawater by adsorption-exchange concentration 8−36198
TiP, form. by high temp. reaction of Ti with P 8−44260
TiP, metallic, band struct., X-ray spectral obs. 8−11019
$TiS_{1.7}$, hexagonal polytypes form. mechanism 8−9990
TiS_2, semicond. charact. under press., in-plane resist. and Hall coeff. meas. 8−23086
$TiS_2(Se_2)$, modelling contrasting semimetallic characters 8−43393
$TiSe_2$, electronic instability, ^{77}Se NMR 8−10790
$TiSe_2$, mechanism for 200K transition, sp. ht. meas. 8−22853
$TiSe_2$, semimetallic charact. under press., in-plane resist. and Hall coeff. meas. 8−23086
$TiSe_2$, superlattice formation, Raman and far IR spectra 8−35135
$TiT_{1.9}$, ^3He distrib. 8−30661
$Ti_{1-x}Ta_xO_2$, solid soln. formed in TiO_2-Ta_2O_5-Ta at 1100°C *(French)* 8−35375
TiU_4, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
TiX_4, (X=Cl,Br,I), He I and He II photoelectron spectra, ionis. energy, chem. bonding 8−46394
VC-TiC coating, high rate deposition by activated reactive evaporation, and characterisation 8−11372
V_2O_3-Ti_2O_3, struct. and mag. props. 8−27041
$V_{1-x}Ti_xO_{1.75}$, synthesis and mag. susceptibility obs. 8−23243
$V_{1-x}Ti_xO_2$, metal-insulator transition, resist. meas. 8−14770

Tokamak devices
Alcator Tokamak, high-density D_2 discharge parameters obs. 8−18438
ALVAND 2 diagnostic Tokamak construction 8−14217
bifurcated equilibria, rel. to shrinking and disruption of current, kink mode 8−34359
cyclotron radiation from Tokamak plasmas, diagnostic tool *(Dutch)* 8−30472
dissipative trapped electron instability dispersion relation, ion-ion collisions 8−34290
DITE Tokamak re-cycling expts., interferometry, mass spectrometry and C thermal desorption probe 8−34356
DIVA superthermal electron behaviour in scrape-off layer 8−30495
fast electron intensive transverse migration *(Russian)* 8−18382
first-wall characterisation by in situ Auger electron spectroscopy 8−5022
fusion reactor homopolar motor-generator energy storage system 8−5044
homopolar generator, radially stacked drum type, for Tokamak Ohmic heating coils 8−13337
hydromagnetic stability, ideal and resistive, review 8−34358
ion-cyclotron instability, parametric depend., beam injection, Tokamak stability 8−47110
JT-60 Tokamak, drive characts. of fast movable limiter 8−47193
magnetic field system for reactor 8−21761
neutral low energy transport, multigroup discrete ordinate methods, ANISN simulation code 8−34269
neutron transport problems, computational method 8−22538
nuclear fusion, power supplies *(Dutch)* 8−741
ohmic heating pulsed power supply digital simulation 8−8991
ORMAK, normal discharge energy loss to wall and limiter 8−34355
plasma magnetic field meas. using laser light scattering 8−34370
power supply by 500 V homopolar generator 8−5957
power supply by homopolar generator 8−5958
radial current distrib. meas. using neutral Li beam 8−30488
scaling, empirical, energy confinement times and ignition temp. attainment 8−34354
small-scale, review 8−42831
superconducting coils, active energy transfer rate control using inductor-convertor bridges 8−13338
superconducting material and device requirements for thermonucl. fusion *(French)* 8−13322
Tokamak microwave discharges, refraction losses, from measured plasma density profiles 8−22549
toroidal inhomogeneity of vertical field 8−9816
turbulent heating of plasma, small-scale apparatus *(Japanese)* 8−1914

tool steel *see steel*

tools
see also machine tools
spherical diamond tool, durability 8−18075
US tool, radial mode, with statically loaded inner surface, anal. 8−183
US tools concentrators, wave propag. in curved rods of var. cross section 8−9484

topology
see also graph theory
black holes, exploding, instantaneous Cauchy surfaces topological change 8−12087
boundary conditions for textures and defects 8−26561
buckling, two-mode, asymptotic anal., reln. to catastrophe theory 8−34042
catastrophe theory, rel. to global behaviour of μ, ρ and T-surfaces of real fluids 8−26226
catastrophe theory as tool for physical scientists 8−41136
catastrophy theory appls., book 8−32665
continuous neural networks with analogue neurons, properties 8−48783
defect crossing in ordered media and topology of 3-manifolds 8−2108
ferromagnets, ordered, nonsingular, topology appls. 8−10166
hydrocarbons, mol. thermodynamics, information-theoretic aspects 8−13409
Lorentz and Galilei group, condition from topology and Lie group methods 8−4462
magnetic monopoles and topological lines 8−16907

topology continued
  minimal surface, asymptotic behaviour near corner 8−24641
  molecular topology description of molecular structure 8−46253
  nematic liquid crystals, ordered, nonsingular, topology appls. 8−10166
  ordered nonsingular systems, topology appls. 8−10166
  Polish groups, splitting and representation groups 8−36874
  review of interferometry, including holographic interferometry 8−37050
  surface topography as nonstationary random process 8−24739
  umbilic catastrophes, buckling mode 8−20945
  ^{3}He-A, superfluid, ordered, nonsingular, topology appls. 8−10166

torque
  see also Scott effect
  magnetic stirrer, Lenz's law and induced current expts. 8−12485
  muscle, rel. to weighted sum of EMG, human triceps surae 8−20203
  Newton's third law, teaching 8−12517
  rotating disk, in liquid surface with adsorbed film, torque 8−32685
  ventricular function quantitative meas. by torque ballistocardiography 8−44660

torque measurement
  see also dynamometers
  inline, rotating transducer appl. 8−190
  magnetocrystalline anisotropy torque in sheared crysts., meas. 8−24830

torque meters *see torquemeters*

torquemeters
  magnetic torque curve analysis, online microprocessor system 8−254

Torrey oscillations (NMR) *see double nuclear magnetic resonance*

torsion
  see also stress analysis
  Bauschinger effect estimate from reverse torsion testing results 8−7133
  bone, compact, deform. and strength 8−24087
  connected bars, torsion *(German)* 8−34024
  cracks, coplanar Griffith, in infinite elastic layer under torsion 8−1610
  creep const. determ. from stress-relaxation meas. in bending and torsion 8−9572
  creep testing machine using torsion, in radiation zone of nuclear reactor 8−11480
  curved box girders, coupled free vibrations 8−30217
  cylinder, plastic flow rules and Bauschinger effect parameters 8−6984
  cylinders, elastic doubly connected hollow, min. weight design for given torsional, flexural rigidities 8−18172
  cylinders, stiffened, subjected to pure torsion, min. weight design 8−1582
  cylinders, thin necked, thermoplastic deformations, stability analysis *(German)* 8−22281
  cylindrical shell with elliptic cross section, subject to torsion, creep buckling 8−34040
  disc, high freq. torsional oscills., Reissner Sagocci problem 8−26082
  double torsion specimen, stress analysis 8−9567
  Einstein-Cartan equations, solns., Kerr metric with torsion 8−8299
  elliptical punch, elastic contact problems 8−9613
  epoxy resins, crack propag. stability, effects of water, temp., specimen geometry, hardener 8−11324
  glass fibre reinforced, thin walled cylinder, tangential stress charact. during twisting 8−13911
  glass fibre reinforced composite, shear fatigue 8−15493
  graphite fibre reinforced epoxy, notched, biaxial fatigue loading 8−19879
  gravitational energy, torsion of spacetime included in a quadratic Lagrangian 8−8316
  hollow shaft with longitudinal slots, torsional stress state 8−30183
  internal friction test unit for threadlike crysts. 8−36997
  Kevlar 49 fibre reinforced composite, shear fatigue 8−15493
  knee joint, human, torsional load-displacement characts. in vitro 8−40235
  layered shells of revolution, torsional vibrations 8−34053
  local buckling of twisted double-symmetric rectangular box girders *(German)* 8−13939
  metal, torsional creep under accelerator irradiation, meas. instrument 8−3262
  New Zealand plate boundary distortion *(German)* 8−20382
  pendulum oscillations recording equipment for internal friction meas. 8−36998
  penny shaped crack in inhomogeneous medium high freq. torsional oscills., stress anal. 8−26086
  phenolic resin filled and unfilled, mech. relaxation behaviour, effects of temp. and time *(German)* 8−6963
  Poisson's equation solution, using curvilinear finite differences 8−28923
  polycrystalline material, plasticity analysis using stat. model *(Russian)* 8−26619
  polyethylene rod, high oriented, mech. behaviour 8−15446
  reinforced concrete, lower bound anal. for torsion 8−35436
  rod with nonlinear curvature, dynamic stability theory, lateral bending problem under torsion *(German)* 8−54
  servocontrolled hydraulic hot-torsion machine for hot working studies 8−27698
  shell, stiffened, buckling under destabilizing loads including torsion 8−26062
  shells of revolution, max. principles and pointwise error estimates for torsion 8−18180
  solid shaft, elliptic cross section, elastic torsion, polynomial soln. to approx. of any order *(Italian)* 8−13897
  steel, austenitic, martensitic transform. during low temp. alternating torsion *(Russian)* 8−23706
  steel, low C, fatigue strength under rotating bending and torsion, understressing effects *(Japanese)* 8−44201
  steel column design, I-section, braced multi-storey, torsional buckling at limit state of collapse 8−1586
  steel finite life characteristics, temperature change effects, torsion cycle tests *(German)* 8−7004
  steel rolled, low-cycle torsional and push-pull fatigue anisotropy 8−27589
  steels, C, cold worked and recrystallised, attenuation behaviour *(German)* 8−48445
  stiffened cylinders under torsion with axial compression 8−26065
  test apparatus for 0-1150°C range in different gaseous atms. 8−7123
  torsional vibration meas. with laser Doppler system 8−45612

torsion continued
  tubular sample testing unit with axial force, internal and external press. and torsional moment 8−39969
  twisted bar, elliptic, stress and deform. states produced by axisymmetric elastic torsion *(Italian)* 8−22262
  Al tube, thin-walled statically pre-tensioned, torsional impact loading 8−27557
  C fibre reinforced composite, shear fatigue 8−15493
  C fibre reinforced epoxide resin, torsion creep 8−44172
  Cu, whiskers, hardening during uniaxial extension, preliminary torsion deform. *(Russian)* 8−15420
  Cu-Al, single crystal, dislocation velocity meas. 8−3172
  Fe, cast, white, fracture toughness testing by double torsion bend test 8−27705
  Na_2O-CaO-SiO_2, double torsion specimens, compliance and fracture load as crack length function 8−48508
  steel, C, annealed S45C, multiple repeated low cycle torsion fatigue under controlled strain *(Japanese)* 8−27610
  Ti alloy, creep and long-term strength under cyclic loading 8−3191
  U-Mo (1.5 wt.%) metallurgical study of forging *(French)* 8−21737
  WC-Co, fracture toughness testing by double torsion bend test 8−27705
  WC-Co, size factor effect on strength in complex stressed state 8−31483

torsion loading *see torsion*

total energy systems
  solar concentrators, linear with fixed focal axis, appl. 8−9427

town and country planning
  meteorological and climatic information rel. to urban planning 8−3916

Townsend coefficient *see Townsend discharge*

Townsend discharge
  flash tube discharge mechanism determ. from digitisation pulse output 8−17504
  Ne, electron energy distrib., relax. process 8−30507

tracers
  see also radioactive tracers
  atmospheric precipitation systems, chem. tracer expts., review 8−24324
  biological stochastic compartmental models, parameter estimation 8−40109
  capillary permeability determ. from multiple indicator data, effects of finite red cell permeab. 8−44483
  diffusion obs., RF sputtering as microsectioning technique 8−14499
  dye dilution method for large open and closed channel flows, validation 8−30395
  heart congenital defect evaluation from dynamic tracer meas. 8−40378
  ionized air as wind tunnel tracer 8−22435
  ocean circulation studies and use of tracers 8−16053
  trichlorofluoromethane, transport processes indicator in urban atmosphere 8−36264
  3,3′,5′-triiodothyronine plasma to tissue transport rate estimation from 3-compartment model 8−31792
  SiO_2, dissolved, natural oceanic circulation tracer, Yucatan Strait 8−44830

track visualisation, particle *see particle track visualisation*

tracking
  see also radar
  Kuroshio Western Boundary Current, by Nimbus 6 satellite 8−36190
  laser lunar ranging, scientific progress, 1969-77 period 8−36476
  laser satellite-tracking, Ondrejov station site evaluation 8−36418
  luminous pointlike object, three-dimensional trajectory recording 8−12671
  ocean mooring monitoring, acoustic phase tracking technique 8−30138
  ocean pollution, industrial waste dispersion meas. technique 8−44884
  optical phase tracking, Fourier series and estimation appl. 8−25812

tracking (insulation) *see surface discharges*

tracking (sonar) *see sonar*

tracking systems
  see also ground support systems; radar systems
  cloud motions, automatic tracking system using weather satellite picture sequences 8−45022
  HEAO-B X-ray telescope orbiting observatory, aspect system providing absolute referencing to celestial sphere 8−40791
  laser beam turbulence compensating tracking system, lead angle effects 8−33763
  laser tracker, target induced pointing noise 8−5519
  manual control operator performance, gain and vibration effects interaction 8−44756
  Michelson interferometer stability improvement *(Russian)* 8−29149
  Solar Maximum Mission GSTDN/TDRSS compatible RF system 8−45198
  wind profile determ. X-band solid-state radar system 8−12028

tracks, particle *see particle tracks*

trade *see commerce*

trade fairs *see exhibitions*

trade shows *see exhibitions*

traffic
  see also rail traffic; road traffic
  1/f fluctuations *(Japanese)* 8−43448

training
  see also education; teaching
  biomedical engineers, W.Germany 8−41106
  cooperative education programs in Omaha Public Power District 8−4429
  graduate laboratory teaching assistant course 8−41105
  heart model time-position mode scanning in obstetrics, heart model practice aid 8−24111
  hybrid optical-digital radiography system for lung disease detection 8−11753
  industrial internship programme in nuclear engineering education 8−4432
  nuclear engineering, cooperative utility programs at North Carolina State University 8−4430
  nuclear engineering, graduate cooperative program with industry, experience over 3 years 8−4434
  nuclear engineering, process instrumentation meas. 8−17447
  nuclear engineering, teaching project management as part of international technology transfer 8−4428

training continued
nuclear engineering, training of existing staff for new nuclear units at university 8−4431
nuclear engineering, undergraduate cooperative industrial program at Cincinnati University 8−4433
nuclear reactors personnel, research reactors features and commercial types *(Czech)* 8−21745
ophthalmology, research and training, TV appl. *(German)* 8−24157
physics teachers, German Phys. Society report *(German)* 8−24593
prosthetic equipment and functional training *(Japanese)* 8−44701
pulmonary function testing, training course features 8−24169
pulmonary testing equipment, training and application techniques 8−24170
quantum chemistry, analogue computer appls. *(German)* 8−28903

tramcars *see road vehicles*

transceivers
fibre optic link, LED as semicond. junction transceiver 8−42410

transducers
see also accelerometers; acoustic transducers; actuators; extensometers; Hall effect transducers; piezoelectric transducers; pressure transducers; strain gauges
acceleration, design and characteristics *(Hungarian)* 8−29097
capacitive, for bulk material rigidity determ. 8−19977
capacitive transducer with superconducting resonator for mechanical vibration meas. 8−21127
carrying capacity safety factor, metrological characts., selection *(Russian)* 8−188
chemotronic, liquid flow rate meas. appl., features 8−9739
complex dynamic Young's modulus measurement equipment for polymers 8−1615
contactless displacement/vibration meas. by fibre-optic and capacitive transducers 8−8400
digital force transducer, design, features 8−21116
displacement transducer using second harmonic type magnetic modulator 8−21115
dynamic damping effect in small force measurement *(Russian)* 8−12687
eddy current transducer, electrical conductivity meas. of coatings, tuning out of gap instability 8−36994
eddy current type, calc. of response, comparison with computer results 8−36995
electro-optical transceivers, optical analogue communication systems *(German)* 8−1333
electrodynamic convertor, ring-shaped, operation and appls. *(Polish)* 8−12685
EM, for conducting liquid flow meas., testing 8−1768
EM micrometers, dynamic characs., contactless displacement meas. appl. 8−41277
error-signal transducer, for precision ang. displacement control 8−186
feeler probes for surface roughness meas., error source 8−169
FET, H^+, Ca^{++} and K^+-sensitive, biomedical appls. 8−28117
flow transducer test equipment 8−18363
gel electrocapillary type for vibration meas. *(Polish)* 8−26094
high-temperature displacement meas. using capacitive transducers 8−172
inductive bridge type, parameter anal., appl. 8−45608
inductive rod gauge for measuring long hole diameter *(Polish)* 8−29086
inline torque meas., rotating transducer appl. 8−190
magnetic core multivibrator, tensile stress measurement appl. 8−9615
magnetoacoustic rod position monitoring transducer system for nuclear power plant 8−33262
magnetoresistive, for strong mag. field meas. at 4.2-300K temp. range 8−45660
magnetostrictive transducer, wideband electrical matching 8−5626
magnetostrictive transducer terminated in arbitrary elec. impedance, elec. cct. anal. 8−5627
mechanical vibrators miniaturisation 8−18229
microdeformation transducer calibration for geodesy and instrumental geophysics *(French)* 8−12004
multi-point meas. system average meas. time reduction anal. *(Russian)* 8−159
nonlinearity error minimisation method *(Polish)* 8−41298
optical displacement type 8−24783
pneumatic force transducer, features 8−45611
point recording device realisable operations *(Polish)* 8−29099
pressure-to-pulse frequency signal type, features and performance 8−16785
reluctance, of small displacements, 'Polfer' ferrite cores appl. *(Polish)* 8−29100
resistive transducers, percentage resist-duration meas. via wide-range ohmmeter 8−239
response linearisation using programmable multifunction module 8−45604
rotating-object surface temp., test installation 8−4612
round specimen, tensile testing, at const. true strain rate simple beam diameter transducer 8−7162
signal transmission, optical slip-ring 8−13814
spring leaf mechanical type, dynamic anal. *(Polish)* 8−41297
strain gauge transducer compensation linearisation by shunt resistors 8−12688
surgical wound preoperative force meas. 8−36041
telemetric temperature measurement, using an RF transmitter 8−205
temperature sensing, cct. and characts. *(Polish)* 8−29103
testing, using test installation with interferometer and photorecorder 8−12683
thickness meas., destructive and nondestructive methods compared *(French)* 8−15611

transfer functions
see also optical transfer function
AC voltmeter, transfer function, magnitude rel. to equivalent noise bandwidth approximation 8−4662
artificial sensory feedback system, stimulation freq. discriminability 8−44714
cylindrical mirror analyser viewed in energy-angle space, transmission function 8−15745
human motion bioelectric control 8−27926
human speech generating system, transmission behaviour in vowel articulation 8−15849

transfer functions continued
hydrophysical apparatus, channels with automatic transfer function correction *(Russian)* 8−16193
image tube lens, MTF 8−9428
mechanical impulse testing techniques, computer evaluation, high-speed film recording 8−44343
middle ear systems simulation from physiological data 8−44514
nuclear reactor noise theory, adjoint space applic. 8−13202
under-surface temp. pattern estimation by dynamic remote sensing *(Japanese)* 8−36315

transferred electron devices *see Gunn devices*

transferred electron effects *see Gunn effect*

transferred electron oscillators *see Gunn oscillators*

transfluxors *see magnetic cores*

transformations, phase *see phase transformations*

transformer insulation
see also insulating oils
oil ion mobility and fluid motion, effect of additives and dissolved gases 8−47543
Fe-Si (3 wt.%) cores with insulative coatings, morphological and struct. SEM characteris. 8−23881

transformer magnetic circuits
ferromagnetic, magnetisation characts. approximation *(Russian)* 8−31094

transformer protection
hum due to magnetostriction effects, insulation coatings appl. *(German)* 8−23311

transformers
see also current transformers; potential transformers; power transformers; pulse transformers
noise reduction by acoustical compensation 8−38134

transforms
see also Fourier transforms; Laplace transforms
Abbe transform of Fraunhofer diffr. integral, Youngian boundary wave *(Czech)* 8−29893
Backlund transformation in language of jet bundles *(French)* 8−28913
chemical network, nonlinear pattern as transform. group symmetries 8−27878
computer-aided seismic analysis and discrimination 8−20530
contact conformal transformations, finite, nonrelativistic 8−36815
contact Lie algebras, contraction 8−36816
coordinate transformations and theory of meas. 8−36960
finite Haar, electrocardiogram waveform representation and recognition 8−3654
Givens transformation techniques, appl. to Kalman filtering, orbit determ. 8−4473
Hankel, inversion methods for integral transforms of class L_2 functions *(Russian)* 8−20940
heat cond. in truncated wedge of finite height 8−13884
hodographic mapping, normalised, global anal. of two-terminal Keplerian trajectories 8−4085
inverse Gaussian transforms, general props., Slater type orbitals appl., coord. and momentum representation 8−37549
inverse scattering transforms, Zakharov-Shabat and Schrodinger-type, connection 8−21006
Legendre transform notation for critical point criteria 8−12657
Legendre transformation, geometric definition 8−24640
Mellin, appl. to edge crack pair in circular disc 8−46914
nonbijective canonical transformations, representation in quantum mechanics 8−45501
nonlinear continuum theories, generalised coordinate transformation 8−36828
nuclear n-body reaction calcs., integral transform applicability 8−4920
numerical solution of problems in unbounded regions, use of coord. transforms 8−8219
projective symmetries of dynamical systems, infinitesimal symm. transforms of vector field 8−32650
Stieltjes, inversion methods for integral transforms of class L_2 functions *(Russian)* 8−20940
superluminal and subluminal causal transformations through transformations of metrics 8−28943

transient analysers
see also spectral analysers
anodic oxidation overvoltage, open-cct. technique 8−27776

transient response
see also step response
beam transient response prediction by Laplace transform techniques 8−1596
BWR-II containment vessel, soil-struct. interaction for transient loads 8−29604
DH devices, interface recomb. effects on transient response anal. 8−22127
digital oscilloscope operation *(Danish)* 8−8392
dynamic loading of thick rectangular membrane, viscous damping effect 8−46906
Earth, transients from two horizontal thin conducting strata *(Russian)* 8−40485
Earth EM sounding, interpretation of transients in Laplace space representation *(Russian)* 8−40483
Gunn domain transient behaviour and associated equivalent circuits 8−19043
HWR reboiler hybrid computer dynamic simulation 8−8949
minority carrier generation rate meas. using transient response of MOS capacitor with guard ring 8−2576
novel Peltier junctions, fast transient response 8−21141
photomultipliers, curved microchannel plate, impulse response 8−12743
surface-mounted beaded thermocouple transient response models 8−8405
thermoelectric coolers, numerical anal. of transient behaviour 8−21140
UV fluorescence lifetime determ., correction of instrumental time response var. with wavelength 8−5374
viscoelastic beam, continuous, dynamic response 8−9569
$Al_xGa_{1-x}As$-GaAs LED design and characterisation for fibre-optic communications 8−46796

transient stability *see stability*

transient voltages *see transients*

transients
  aircraft EM environment meas. near thunderstorm cells 8−49180
  arc channel transient characts. in air under impulse voltage *(Japanese)* 8−5973
  ferromagnetic material, magnetisation characts. approximation *(Russian)* 8−31094
  oscilloscope screen photography, shutter mechanism *(Danish)* 8−234
  physiological system anal. using swept sine wave 8−28133
  recorders, multichannel *(German)* 8−235
  voltage transients, defect centres emission rates and density profile 8−10467
  Si, transmutation doped, deep trap level analysis 8−10471

transistor circuits
  Used for general papers and papers where the use of transistors is significant
  see also bipolar transistor circuits; field effect transistor circuits
  avalanche transistor pulser for fast-gated operation of microchannel plate image intensifiers 8−37527
  HV transistor nanosecond amplifier for unipolar pulse signals amplification 8−12720
  linear convertor, for acoustic emission signals 8−9512
  stabilised rectifier unit 8−4643

transistor-transistor logic
  see also logic circuits
  capacitance meter, linear direct reading, cct. *(French)* 8−237
  digital universal counter, amateur constr. *(German)* 8−12727
  spot exposure meter, for colour photography, techniques and description 8−12782
  synchronous machine phase shift control cct. 8−22054

transistorised circuits *see transistor circuits*

transistors
  see also bipolar transistors; phototransistors; power transistors; thin film transistors
  1/f fluctuations *(Japanese)* 8−43448
  superconducting transistor, three-film three-terminal device, theory and construction 8−47908

transit time devices
  see also BARITT diodes; IMPATT diodes
  No entries

transit time noise *see random noise*

transition metal alloys
  see also alloys of individual transition metals e.g. nickel alloys
  see also copper alloys; gold alloys; silver alloys; transition metal compounds
  A15, band theory, semiself-consistent band calcs. 8−2406
  amorphous magnetic alloys, elec. field gradient 8−39475
  amorphous superconductor, ratio of energy to transition temp. 8−10619
  BCC magnetically ordered alloys, effects on at. ordering-spontaneous magnetisation reln. *(Russian)* 8−19261
  binary, conc., superconductivity and electron-phonon interactions, theory 8−14868
  charge transfer and heat of form. in intermetallic cpds. with CsCl struct. 8−22689
  domain struct. of diffuse ω-phase formed in quenching, 1D model 8−27523
  energy band filling *(Russian)* 8−6263
  heat of formation, model predictions 8−35351
  inter-transition metal phase constitution 8−39749
  intermetallic compounds of rare-earth and 3d transition metals, struct., props., review 8−10668
  isomer shifts, vol. corrected, charge flow and electronegativity 8−39470
  local moment formation 8−43562
  magnetic properties, alloying effects on ferro-, antiferromag. state, band theory *(Japanese)* 8−47935
  nearly magnetic, low-temp. magnetoresist. 8−39091
  noble metal alloys, superconductivity, correlations and predictions 8−23192
  noble metal-rare earth, dil., magnetotransport props., theory 8−39097
  rare earth alloys, RM_5, intermetallic compound $CaCu_5$ struct. crystal field pots. 8−43339
  resistivity anomalies 8−19018
  solid solutions, max. or min. liquidus temps. 8−39741
  spin fluctuations effect on temp. depend. of elec. resistivity 8−47776
  superconducting critical temperature, influence of s-d Coulomb interactions 8−31012
  surface magnetism 8−48025
  ternary germanides, $(M,Nb)_{11}Ge_8$, M=V, Cr, Mn *(French)* 8−38675
  ternary silicides, $(Cr, Nb \text{ or } Ta)_{11}Si_8$, $(Mn,Mo)_{11}Si_8$, cryst. struct. *(French)* 8−38675
  Al-3d transition metal alloy, dil., electronic charge density around impurities 8−34799
  CC Ni_3Al, refractory transition metal alloying effects on ht. capacity 8−26691
  Cu-3d transition metal alloy, dil., electronic charge density around impurities 8−34799
  Cu-transition metal alloy, internal adsorpt. and mag. susceptibility, grain size effects *(Russian)* 8−19759
  GdM_x, M=3d transition metal, hyperfine interactions 8−19401
  LaM_5H_4, and LaM_5H_6, H_2 storage appl., desorption isotherms dependence on d-bandfilling 8−18912
  $LaNi_4M$ (M=Pd,Ni,Ag,Cu,Co,Fe,Cr), H_2 storage appl., desorption isotherms dependence on d-bandfilling 8−18912
  M-actinides, nearly mag., low-temp. magnetoresist. 8−39091
  M-H, mag. suscept. and quasirigid model *(Russian)* 8−26805
  Mg-noble metal, sintered, superconducting for heat and H_2 gas generation, seawater reaction 8−15607
  Pt-M, dil., mag. susceptibility and NMR meas. 8−39290
  Ta, sintering with transition metal additions 8−15335

transition metal compounds
  see also compounds of individual transition metals e.g. nickel compounds
  see also copper compounds; gold compounds; silver compounds; transition metal alloys
  band structure calculation 8−18956
  bonds between metal and H, C and P 8−42947

transition metal compounds continued
  borides, charge state of B, core electron binding energies *(German)* 8−10391
  borides, cryst. struct., prep. methods, chem., elec., mag. props., appls., book contrib. 8−47307
  borides, mag. props., book contrib. 8−47978
  borides, refractory, single cryst. prep. methods and characterisation, book contrib. 8−48296
  carbide, d-band effects in lattice dynamics contrib. to acoustic phonon freqs. 8−2207
  carbide, effect of mech. props. on erosion resist. under spark machining conditions 8−11421
  carbide, supercond. transition temp. and phonon softening 8−14848
  carbides, elastic moduli, scratch geometry, micromech. tests 8−35416
  carbides of d-metals, band struct. calc., Fermi level *(Russian)* 8−39019
  carboxylates, exchange interaction mechanism 8−10411
  chalcogenide, possible anionic clusters and mixed valence effects 8−43333
  chalcogenides, Mott metal-insulator and mag. phase diagrams 8−10354
  chlorides, exchange interaction mechanism 8−10411
  complex, linear chain type, synthesis 8−6047
  complex, octahedral $(MeF_6)^4$, fluorine ion Sternheimer antishielding, PAC meas. 8−10818
  complex ions, charges in HCl aq. soln., electrophoretic meas. *(Japanese)* 8−35698
  complex ions, in HCl aq. soln., electrophoretic behaviour *(Japanese)* 8−35697
  complexes, isothiocyanates with pyridine, far IR spectra, vibr. bands 8−25535
  complexes, mag. exchange in s=1/2 systems 8−43553
  complexes, of 4-methylpyridine, IR and Raman spectra, vibr. anal. 8−25536
  complexes, proton NMR chem. shift, covalency parameters calcs. 8−42098
  diborides, C32-type, phys., chem. props., appls., review, book contrib. 8−47308
  dichalcogenides, US characts. rel. to Fermi surface geometry *(Russian)* 8−34749
  dichalcogenides, zone axis electron diffr. patterns 8−34497
  dichalcogenides prep. and growth, book contrib. 8−19650
  dioxides, electronically conducting with rutile struct., electrode material behaviour 8−31656
  electrical conductivity minimum near metal-insulator transition 8−30960
  electronic excitation energy calc. correl. energy correction 8−17576
  fluorides, potential exchange theory in mag. insulators 8−19242
  Hubbard model, two band, mag., orbital and charge ordered states 8−27012
  hydroxide layered materials, prep. and growth, book contrib. 8−19649
  layer materials, SXAPS interpret., cond. band self-convolution model, cryst. field splitting 8−23558
  layered dichalcogenides and their intercalation compounds, physical props., review 8−27443
  lower carbides, Group IV-VI metals, thermal expansion coeff., rel. to bond energy 8−2266
  magnetic oxide, polycryst., dynamic susceptibility of bulging domain wall model 8−23296
  metallic glass, mag. props., charge transfer model 8−39324
  metalloid atom solubility and electronegativity difference correl. with phase stability and d-electron/atom ratio 8−6914
  mixed valence complexes, quasi-one-dimens., elec. props. at ultrahigh press. 8−2470
  mixed valence compounds, charge-orbital ordering 8−39069
  monocarbides, Group IV-VI metals, thermal expansion coeff., rel. to bond energy 8−2266
  monocarbides of subgroups IVa and Va, kinetic props., review 8−47613
  niobates, columbite struct., IR and Raman spectra *(French)* 8−19485
  niobates, columbite struct., normal coord. anal. 8−964
  noble metal complexes, hexafluoro, review of struct. obs., pseudorot., press. effects 8−6045
  one-dimensional magnetic compounds, orbital interaction 8−6494
  oxide, tracer diffusion obs., RF sputtering as microsectioning technique 8−14499
  oxides, potential exchange theory in mag. insulators 8−19242
  paramagnetic complexes, nucl. spin-lattice relax., electron spin density matrix theory 8−13521
  phonon anomalies due to d-band effects, electron-phonon matrix elements 8−30720
  pyrites, mag. and elec. props., review *(Japanese)* 8−47941
  refractory materials, slip and microhardness 8−3211
  semiconducting glasses, containing transition metal ions, elec. props. *(Rumanian)* 8−47791
  sulphates, exchange interaction mechanism 8−10411
  sulphides, liq. and solid, thermochemistry 8−23962
  superconducting critical temperature, influence of s-d Coulomb interactions 8−31012
  superconductors for strong magnetic fields *(Czech)* 8−23213
  TCNQ salt, alkali transition metal, elec. cond. and phase transition 8−43370
  tetrahalogeno anions, ligand field spectra, MO model 8−17654
  $KM^{II}M^{III}F_6$, (M=1st row transition metal, Zn, or Mg), divalent and trivalent ion distribs., Mossbauer obs. 8−2777
  MF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
  MY_4^{n-4}, MY_6^{n-6}, alkali metals and alkaline earth outer-sphere cations, spectroscopic splitting parameters 8−39075

transition metals
  see also the individual transition metals e.g. nickel
  see also copper; gold; silver
  $3d^n$ ions, free and in crysts., Slater parameters and 3d-4s excitation energies 8−33433
  3d, superatomic relax. and positions of inner levels 8−11069
  4d, cathode, work function of electropositive metal coadsorbed with O_2, thermionic emission obs. 8−11064
  4d, energy bands, s and d contribs. to eqns. of state 8−30865
  5d, cathode, work function of electropositive metal coadsorbed with O_2, thermionic emission obs. 8−11064
  AES, high resolution LMM, first row transition elements 8−15263

transition metals continued
- Animalu transition-metal model potentials, nonlocality 8−6250
- atomic cluster total energy, diatomics-in-mol., LMTO calc. pot. curve, Lanczos eigenvalue method 8−9291
- atoms, vertical analysis, third row atoms, ionisation pot., term value, correlation energy 8−41964
- band model, mag. susceptibility of exchange-enhanced paramagnet 8−2644
- band theory, rel. to bulk props. and cryst. struct. trends 8−34757
- BCC, isothermal compression to 100 kbar 8−43069
- BCC, solubility, heat of solution calc. for H impurity 8−6160
- in borate glasses, electronic struct. 8−10347
- bulk modulus, correl. effects, equilib. lattice spacing 8−10115
- bulk modulus, effect of correlations and ferromag. order 8−34564
- chemisorbed layer of alkali metals, changes in work function due to charge transfer 8−18900
- chemisorption of H, O and CO 8−2378
- covalence of atoms in heavier transition metals 8−47274
- cubic, phonon dispersion, Fielek and extended Cheveau models 8−22801
- determination, in geological samples, by X-ray microscopic chem. microanal. 8−20527
- diffusion of H 8−47596
- Einstein temp. and vibr. entropy, semiquantitative calc. 8−2221
- elastic constants, temp. depend. rel. to conduction electron densty of states *(Russian)* 8−38769
- electronic structure and d-holes of films and surfaces 8−39180
- energy band filling *(Russian)* 8−6263
- EPR of ion complexes, mag. g-tensors, spin-orbit coupling 8−10752
- extraatomic relaxation energies *(Russian)* 8−31295
- ferromagnetism, transition metal valence electron struct. explanation 8−47932
- field emission and field ionisation, role in heterogeneous activation of gas molecules 8−35271
- field emission spectroscopy 8−35257
- film, chemical compound formation by ion bombardment 8−30846
- flooded on noble metal surface, effect on sputtered negative ion yields 8−11056
- heat of chemisorption of H_2 calc. 8−38959
- hydrocarbon catalysis 8−11550
- ion, $3d \rightarrow 4p$ transition, assignment from expts. on LiCl:Cu^+ 8−27272
- ion, impurity levels in cryst. field of semicond. 8−23059
- ion $3d \rightarrow 4s$ transitions in crystals, obs. and interpretation 8−6339
- itinerant localised electron model for magnetism 8−14918
- local pseudopotential theory 8−30863
- Lorenz number and high-temp. interband transitions 8−26844
- model surface, with adatom monolayer, densities of states, chemisorption effects 8−26769
- Mossbauer effect, change of charge radius for 2^+-0 transitions of ^{178}Hf, ^{182}W and ^{186}Os 8−25109
- multiplet splittings of s-core levels, exchange correl. 8−10407
- noble metal, electron-ion interaction, model pseudopot. 8−34785
- noble metal point contacts, direct meas. of electron-phonon coupling 8−6433
- noble metals, impurity diffusion, electrostatic interaction theory, impurity-vacancy pair 8−43181
- noble metals, Van der Waals contribution to binding energy 8−2062
- nohle metal, g-factor on the Fermi surface 8−18949
- nonmagnetic, possibility of mag. monolayer formation 8−15009
- paramagnetic, dislocation magnetism *(Russian)* 8−39379
- resistivity anomalies 8−19018
- Spreading of liquid TiO_2 over refractory metals under the influence of surface forces 8−26749
- superconducting transition temp. and phonon softening 8−14848
- superconductivity, effect of s-, d-electron hybridisation *(Russian)* 8−39243
- surface, H_2 chemisorption, Hartree-Fock-Slater model cluster calc. 8−26929
- surface electronic struct., influence of size and roughness 8−14785
- transport properties, modified tight binding approximation, reexam. 8−43279
- work functions and $2p_{3/2}$ core binding energies, APS meas. 8−15253
- Fe-group spectra, superposition configurations in semiempirical calc. 8−920
- GaAS:M, electron struct. of deep centres 8−39060
- M-H, mag. suscept. and quasirigid model *(Russian)* 8−26805
- Na_2O-WO_3:M glass, optical absorption 8−27254
- Ti:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
- V:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164

transition moments
- conjugated molecules, resonance Raman spectra calc. 8−984
- diatomic molecule, electronic transition moment, internucl. separation depend., semiempirical calc. method 8−9199
- indane, 271 nm spectrum, rot. band contour anal., puckering vibr. 8−1001
- molecules (molecular ions), excited state lifetime meas. 8−17725
- optical dipole transitions, first order model pot., appl. to Li isoelectronic sequence 8−25474
- polymer film, stretched, orientation and transition moment directions of small planar molecules 8−1015
- Ar_2^+, bound-free absorpt. cross section for Π and Σ states 8−5140
- Be, excitation energy and transition moment anal. of electronic transitions 8−25620
- CH^+, excitation energy and transition moment anal. of electronic transitions 8−25620
- DCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
- H_2, excitation energy and transition moment anal. of electronic transitions 8−25620
- HCN, electronic spectra, vibr. struct., ab initio calc. 8−9166
- MgO, $B^1\Sigma^+$-$X^1\Sigma^+$ and $B^1\Sigma^+$-$A^1\Pi$ fluoresc. 8−21963
- N_2 (C $^3\Pi_u$) vibr. levels radiative lifetime, transition moment internucl. distance depend. 8−1027
- SiO, transition moment of $A^1\Pi$-$X^1\Sigma^+$ band, 260-290 nm 8−13552

transition radiation
- gamma-ray generation of microwaves in Zn, possibly via transition radiation *(Russian)* 8−2939
- gas proportional counter, relativistic electron ionisation loss, transition radiation effect 8−25389

transition radiation continued
- immobile charge in nonstationary medium 8−31270
- mosaic crystal, ultrarelativistic charged particle-induced X-ray emission, theory *(Russian)* 8−39622
- perfect crystal, ultrarelativistic charged particle-induced X-ray emission, theory *(Russian)* 8−39622
- piezocrystal, surface acoustic waves 8−43231
- plate and stack of plates, hard transition radiation prod., absorbability depend. 8−19590
- X-ray transition radiation in stack of plates 8−9044
- X-ray transition radiation spectra from relativistic electrons passing randomly spaced polyethylene interfaces 8−21805
- Au foil, optical transition radiation, bombardment by 29 MeV protons 8−2938

translators (repeaters) *see repeaters*

transmission
- *see also acoustic wave transmission; light transmission*
- double-pendulum vibration oscillator or seismograph, transmissibility curve 8−16200

transmission electron microscope examination of materials
- *see also transmission electron microscopy*
- Al-Zn-Mg (6, 3 wt.%), water vapour embrittlement and H_2 bubble form 8−15564
- alkali feldspar, deformation, plastic defects, TEM investig. 8−32066
- alkali feldspars, TEM study of exsolutions, review *(French)* 8−28224
- Allende meteorite, occurrence of Fe-Ni-Cr-S-O compounds *(French)* 8−32411
- alloy lattice images using high resolution TEM 8−34399
- anthracene, radiation-induced topotactic conversion from di-para-anthracene, low temp. TEM obs. 8−35710
- asbestos, fibre identification, selected area electron diffr. patterns in analytical TEM, optimum procedure using tilted specimens 8−24009
- BCC crystals, atomic struct. of twin boundaries by electron microscopy 8−22735
- brass, crystal structure and morphology of thin needle-like martensite 8−31425
- brass, misfit dislocation struct. in interphase boundaries, electron microscope obs. 8−18649
- γ-brass type phases, inversion antiphase domains, formation and stabilisation, electron conc. effect 8−14363
- ceramic nuclear fuel, porosity characterization, optical and electron microscope exam. 8−44302
- ceramic science application of high-resolution TEM 8−35397
- chromate film, microporosity induced by nucleation and growth processes, TEM expt. 8−10303
- diamond, natural, defect struct., recent obs. by new methods 8−30628
- FCC materials, jogs on extended defects, weak-beam electron microscopy technique 8−38713
- foil, recrystn. during heating in column of electron microscope *(Russian)* 8−48421
- generalised routine for defect image simulation in TEM obs. 8−29220
- glass, heat treated, thin foil prep. for TEM obs. 8−7154
- graphite, CTR material, the ion injection effect 8−34557
- graphite foil, thickness determ. by TEM using diffr. and energy loss anal. 8−29088
- hexagonal networks in basal plane, TEM exam. 8−2132
- metal, atomic defect configuration from high resolution TEM 8−47324
- metal, FCC, investigation of stage-I_e interstitial nature by TEM 8−47329
- metal, point defect clusters, TEM obs., review 8−26564
- metal film, microporosity induced by nucleation and growth processes, TEM expts. 8−10303
- metal-semiconductor contacts, new phases struct. 8−34899
- organic molecular crystal, phase transforms. obs. using TEM, electron beam damage 8−34621
- perovskite type oxides, long period structures *(French)* 8−26395
- plessite structure in Carlton Fe meteorite, analytical study 8−32422
- polyethylene, high-density, lamellar sep. during deform. 8−23775
- polymer crystal growth, during annealing 8−14300
- polypropylene, isotactic, epitaxial crystn. on alkali halide surface 8−26787
- pyrene, low temp. phase transform., TEM obs. 8−22851
- pyrocarbon, microstructure of coatings on fuel particles, TEM study 8−25293
- quartz, dissociated 'a' dislocations, TEM exam. 8−47379
- quartz glass, ^{252}Cf fission fragment tracks 8−17526
- rare earth oxide, lattice images *(French)* 8−26397
- sodium acetate trihydrate, whisker growth on membrane in aq. soln. 8−30854
- specimen props., book 8−19989
- steel, austenitic, alloyed with N, decomposition of solid solution 8−23712
- steel, austenitic, martensitic transform., mechanism and kinetics, TEM, X-ray and optical obs. *(Rumanian)* 8−19746
- steel, Cr, high C, in situ transform. of cementite to M_7C_3 and internal defects of M_7C_3 by tempering 8−31412
- steel, mild, cold rolled sheets, microstruct. and strain path in deep-drawing 8−19775
- steel, pearlitic, deform. microstruct. and cementite fracture, −196 to 700°C 8−27576
- steel, Si, metallography of bainitic transform., carbide precipitation 8−27527
- steel, Si-Mn-Cr-C (1.1, 0.9, 1.0, 0.29 wt.%) 30KhGSA, heat treatment effect on strength and toughness 8−15437
- steel, stainless, 18-8 type polycrystal, strain induced γ to α′ transform. *(Japanese)* 8−11221
- steel, stainless, AISI 304, dislocation substruct. around fatigue cracks, SEM obs. 8−15516
- steel, stainless, Type 316 and 321, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
- steel, stainless 316, dislocation substruct. prod. by elev. temp. fatigue crack propag., TEM obs. 8−19863
- steel, thermally and thermomechanically treated, struct. and decomposition of martensite 8−19784
- steel-polymer wear mechanism during fretting corrosion 8−35522
- thin specimen preparation by sputter-etching 8−24893
- Zircaloy-2, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
- Ag, fatigued single crystal, annealing of deform. struct. 8−3204
- Ag, fine particles, adhesion and sintering, TEM exam. 8−44053

transmission electron microscope examination of materials continued
Ag-Cu (50 at.%), splat-cooled, struct. of γ' extended solid solution 8−3147
Al, anodic film formed in H_2SO_4, thin film TEM obs. by direct vertical sectioning 8−7106
Al coating, plasma sprayed on steel substrate, microstructural investigation and oxidation effects 8−11426
Al, computer simulation of tilt grain boundaries compared with expt. 8−30642
Al, dislocation struct. change during cyclic straining at high temps. 8−44218
Al, high temp. creep, grain boundary dislocations 8−43065
Al single crystal, high purity, unusual slip systems 8−47387
Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
Al-Al_2Cu, aligned eutectic, precipitation, TEM and microhardness meas. 8−27529
Al-Cr (0.1 wt.%), exam. of pre precip. behaviour, by elec. resistivity meas. and TEM exam. 8−48406
Al-Cu, intergranular morphology of θ' precipitates, angle between grain boundary/precipitate plane 8−48413
Al-Cu-Mn-Zr-Fe-Si (6,0.3,0.18,0.3,0.1 wt.%) experimental evidence of Mn enrichment in Al_2Cu precipitates by EDS in TEM 8−15415
Al-Cu-Zn alloy, ageing, X-ray and electron diffr. meas. *(Russian)* 8−39806
Al-Li, alloy, ageing, δ'-phase precip., effect of quenching conditions *(Russian)* 8−19761
Al-Mg-Si-Mn foil, planar defect spacing meas. by TEM 8−2135
Al-SiO_2 interface, stress and microstruct. via TEM 8−26797
Al-Zn-Mg alloys, H_2 bubbles in embrittlement 8−19868
$Al_{0.36}Ga_{0.64}As$, LPE films, Te-induced defects 8−43037
AlN film, CVD, characterisation of film props. 8−43496
AlN foil, thickness determ. by TEM using diffr. and energy loss anal. 8−29088
AlN-Si_3N_4 mixture film, CVD, characterisation of film props. 8−43496
Al_2O_3, sintered, TEM ons. of K containing β''' precipitates 8−27522
Al_2O_3-SiO_2, sillimanite, lattice defects, crystallo-chemical model, TEM obs. *(French)* 8−26570
Al_2O_3-ZrO_2, dispersion hardened, fracture toughness improvement by induced microcracking *(German)* 8−31501
Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
Au bicrystal, core structs. of misfit dislocations in grain boundaries, TEM 8−14360
Au, bicrystal, thin, tilt boundary migration and facet development 8−2379
Au film, low temp. void growth and resistivity decay 8−10302
Au film, void growth in early stages of ageing and electromigration 8−38991
Au, fine particles, adhesion and sintering, TEM exam. 8−44053
Au, growth on clean and contaminated GaAs (001) surfaces 8−26785
B_4C, effect of fast neutron irradiation on struct. 8−26597
B_2O_3-Nb_2O_5 complexes, phase equilib. high resolution TEM obs. 8−35378
B_2O_3-TeO_2 glass, TEM obs. 8−9958
Be, neutron irradiated, annealed, tensile props. and swelling, effect of He bubbles 8−22765
Be-Si-O-N system, polytype periodicities, direct obs. 8−18662
C amorphous film struct., bright field hollow cone illum. advantages 8−22609
C fibres, oxidation by NO_2, struct., props. modification 8−44237
C, morphology and growth mechanism of carbons formed by Ni-catalysed decomp. of hydrocarbons 8−35679
$CaCO_3$, calcite, sputtering behaviour, optical and electron microscopy 8−43968
$CaCO_3$, plastic deformation in compression parallel to (111) 8−38709
$CaMg(CO_3)_2$, dolomite, partial dislocations and stacking faults obs. 8−3761
$Cd(OH)_2$ decomposition, martensitic character of struct. transition, CdO crystallite shape determ. *(French)* 8−10194
CdTe, aB glide dislocations, dissociated into two Shockley partials, stacking fault energy 8−43024
Co-Cr-Nr-TaC eutectic alloys, fatigue, microstructure effects 8−23803
Co-Fe-Nb alloys, effect of cold working on mag. props., and precipitation morphology 8−39803
(Co-Ni)-$Cr_{23}C_6$ eutectic alloy, directionally soldified, microstruct. and crystallography 8−48390
CoO, polycrystalline, high temp. deform. 8−3174
CoO, pure and Li doped, dislocation spacing effect on high-temp. creep 8−35444
$Co_{75}Si_{15}B_{10}$, amorphous, crystallisation study *(Japanese)* 8−9959
Cr film, on mild steel, hardness and protective props., rel. to grain size 8−11436
Cu and Cu-Al (8 wt.%) single crystal, surface dissolution effect on fatigue damage and crack nucleation 8−39936
Cu and Cu-Si, deformation and fracture under dynamic loading 8−35442
Cu, annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
Cu, ion radiation damage 8−22773
Cu, plane strain deformed, electron microscope obs. of morphology 8−31424
Cu-Ag(Ta) metastable alloy form. by ion implantation, combined TEM and ion channelling obs. 8−34530
Cu-Fe, growth kinetics and interfacial energy of coherent γ-Fe particles *(Japanese)* 8−19765
Cu-Mn-Al, constricted hysteresis loop rel. to microstruct. 8−19273
Cu-Ni-Cr (28, 2.8 wt.%), spinodal alloy, microstruct. and tensile props. 8−39858
Cu-Ti, lattice parameter change during ageing *(Japanese)* 8−35411
Cu-Zn-Al, internally faulted martensite, TEM obs. 8−3124
β-Cu-Zn-Al, ordering, TEM obs. 8−39768
Cu-Zn-Al Marmem alloy, β_1 phase superstruct. obs., rel. to transform. mode 8−39776
Cu-Zr (50 or 54 at.%), splat-quenched, glass transition and crystn. temps. determ. 8−22659
Cu_3Au-Co, underaged, ordered and disordered single crystal, hardening mechanisms 8−3134
Cu_2AuPd, struct., TEM and electron diffr. meas. 8−38666
Cu_2O, epitaxial, on Cu (111), misfit dislocations, TEM obs. 8−14629

transmission electron microscope examination of materials continued
(Fe, Ni, Co)-Si-B, amorphous, compositional effect on struct. changes, after heating up to 700°C, exam. *(Japanese)* 8−48433
Fe, Armco, cold-rolling cavity formation, TEM study 8−6947
α-Fe, cold rolled, hydrostatic press. effect on microstructural changes during creep 8−39871
α-Fe, creep life, meas. by microstruct. changes 8−35443
Fe-Cr-Ni (18, 14 wt.%), single strain induced γ to α' cryst. transform. *(Japanese)* 8−11221
$\alpha+\beta$-Fe-Cr-Ni (23.19, 4.91 wt.%), orientation relationship between austenite and lath martensite 8−39775
Fe-Mo (3at.%), internally nitrided, precipitate, morphology and chemistry 8−44128
Fe-Ni-C (19.5, 0.73 wt.%), banded struct. formed by deform., TEM and optical obs. 8−39869
Fe-Ni-Cr austenitic alloy, homogeneous and dispersion strengthened, internal stresses and high temp. creep 8−19841
Fe-Ni-Cr-P-B, Metglas 2826A, TEM of shear bands 8−48483
FeAl single crystal, compressed, dislocation arrangement 8−14354
FeCoC, unidirectionally transformed eutectoid, crystallography of herringbone pearlite, TEM obs. 8−31399
α-Fe_2O_3, crystalline grain growth during heat treatment 8−11252
$Fe_{78}Si_{10}B_{12}$, amorphous alloy crystallisation study *(Japanese)* 8−9959
$Ga_{1-x}Al_xAs$, rapidly degraded LED, defect struct. of ⟨100⟩ dark lines 8−10052
GaAs degraded heterojunction lasers, TEM obs. of dark defects 8−14355
GaAs:Te, LPE, Te induced defects, rel. to growth conditions 8−6067
GaAs-GaAlAs DH lasers, optical studies of defects and degradation 8−18654
GaAs-GaAlAs LPE layers, DH material, TEM obs. of crystal defects 8−6241
$Ga_xIn_{1-x}P$, real struct. exam. by electron microscopy and channelling 8−2143
GaP, LEC growth of dislocation-free crysts., microdefects and striations 8−9974
GdCo amorphous film, O_2 contaminated, TEM obs. of source of perpendicular anisotropy 8−14993
Ge, crystalline, high resolution image interpretation 8−14259
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
n-InP, defects in homoepitaxial layers, on p-type substrate, accurate lattice parameters 8−47675
$(Mg_{0.88}Fe_{0.12})_2SiO_4$, natural peridot shock-prod. olivine glass 8−10178
MgO, a⟨100⟩ dislocation loops, TEM obs. 8−38710
$Mg(OH)_2$, and calcination product, relations between particle size, shape and surface area 8−48355
Mo, damage profile resulting from Ni^{2+} and He^+ ion bombardment 8−10100
Mo, ion bombardment, damage profile, void size and density 8−47451
Mo, ion bombardment by Ni^{2+}, TEM study of damage depth distrib. 8−10101
Mo, mech. props., influence of temp. on singularities of deform. *(Russian)* 8−6970
Mo, strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
Mo, structural singularities of plastic deform. at localised flow stage, TEM obs. *(Russian)* 8−6968
NaCl, evaporation coeff. meas. by TEM 8−18909
Nb:He, implant saturation and annealing, effect on struct. and supercond. props. *(Russian)* 8−43538
Nb-Ge film, supercond., TEM expts., correl. of struct. and elec. props. 8−14628
Nb-Ti (60 at.%), aged, TEM exam. of precipitation process *(Japanese)* 8−48409
Nb-Zr-N, deformed and annealed, internal friction, rel. to structural state *(Russian)* 8−6957
Nb_3Al superconductors, sputter deposited, BCC to A15 transition, microstruct. investig. 8−27512
NbH, internal friction 8−6962
Nb_3Sn, grain size in A15 reaction layers 8−14911
Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
Ni $_{75}Si_8B_{17}$, amorphous alloy, crystallisation study *(Japanese)* 8−9959
Ni, annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
Ni, grain boundary ledge density, effect on flow stress 8−48465
Ni, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
Ni monocrystals, struct., effect of stress applied during electrodeposition 8−26777
Ni, pure, heavy ion irradiated, dendritic void growth 8−14386
Ni, self-ion irradiated, defect clusters, annealing 8−18687
Ni, structural singularities of plastic deform. at localised flow stage, TEM obs. *(Russian)* 8−6968
Ni superalloy, cast, microstruct. and microanalysis 8−35393
Ni, void swelling caused by neutron and self-ion bombardment, 573 to 873K 8−14387
Ni-Al (6.35 wt.%) precipitate coarsening, redistribution and renucleation during ion irradiation 8−23709
Ni-base superalloy, IN-738, microstruct. changes during isochronal heat treatment, 773-1467K 8−27531
Ni-Cu-Si, Si effect on structural changes during ageing, TEM and X-ray obs. 8−15438
Ni-Mo-Al and Ni-Mo-Al-V, high-resist., struct. transforms., TEM *(Russian)* 8−19762
Ni-P alloy, electrodeposited, heat induced struct. changes *(Japanese)* 8−15433
Ni-Ti (12 wt.%), dil. alloys, transform. early stages 8−3096
Ni-Ti (60 at.%) alloy, high stress effects on struct. and props. *(Russian)* 8−19838
Ni-Ti (8 and 10 wt.%) alloy, aged, precipitation behaviour at 550 to 950°C, X-ray and electron microscopy exam. 8−39785
NiAl-Cr, eutectic, directionally solidified, temp. behaviour of misfit dislocations *(German)* 8−3119
NiO, polycrystalline, high temp. deform. 8−3174
NiSe, thin film phases, struct. and resist. 8−39236
$Pb_{1-x}Cd_xS$ metastable epitaxial films, growth and physical props. 8−27417
Pd_2Si film on Si, substrate temp. effect on microstruct., TEM obs. 8−14621

transmission electron microscope examination of materials continued
Pt-Au, amorphous struct. produced by Au implantation, spinodal decomp. TEM obs. 8−31379
Si, CVD epitaxial film, stacking fault nucleation and growth 8−10064
Si, deformed, faulted dipole, TEM obs. 8−38712
Si, devices and starting material, high voltage TEM obs. 8−10037
Si, dislocation free, O_2 precipitation, stacking fault form. 8−38731
Si dislocation-free crystal O precipitation obs. 8−6095
Si, heavily implanted, lattice defects and strains after high temp. annealing 8−10077
Si ion damage critical gettering microstructures 8−6098
Si, ion implanted, structural and elec. profiles for double damage layers 8−2169
Si layers, solid phase epitaxial growth, crystalline qualities, ^{4}He backscatt. and TEM exam. 8−10306
Si, polycryst. film on Si, disloc. config. obs. 8−10312
Si, self-implanted, ⟨100⟩ and ⟨111⟩, crystallised layers by laser annealing, struct. 8−47644
Si, surface layer defects, influence of multiple oxidation *(Russian)* 8−47650
Si, wafer, suppression of oxidation stacking fault generation by preannealing in N_2 atm. 8−30648
Si:As, implanted, residual defects after one- and two-step annealing 8−6083
Si:As, ion implanted, two-step annealing 8−18664
Si:B, implanted, oxidation induced precipitate defects, TEM 8−31556
Si:B, implanted, oxidation-induced stacking faults, EBIC and TEM expts. 8−39923
Si:B, implanted, shrinkage of rod shaped defects 8−6061
Si:B, ion implanted, laser annealing 8−34525
Si:B, ion-implanted, dislocation climb, TEM obs. 8−6062
Si:B, solubility and precip., and supersat. resulting by thermal predeposition 8−11232
n-Si:Cs, ion implanted, minority carrier lifetime and defect struct., annealing effect 8−6395
p-Si:P, random and aligned implants, damage form. and annealing exam. 8−47454
Si:P spherical defect cluster and dislocation loop analysis 8−14356
Si:Pb, He^+ Rutherford backscatt. and TEM exam., implant species effect on recrystn. 8−47452
SiC, engng. ceramic, lattice resolution studies 8−27510
SiC, pyrolytic particles for high temp. reactor fuel, X-ray and SEM study *(French)* 8−22734
SiC, reaction bonded, microstruct. characterisation 8−48353
Si_3N_4, α to β transform., TEM and electron diffr. obs. 8−27507
Si_3N_4, engng. ceramic, lattice resolution studies 8−27510
SiO obliquely evaporated film topography, effect on liq. cryst. orientation 8−38987
SiO_2 film, Ge substrate, structure investigation 8−10297
SiO_2-Al_2O_3, calculated thermodynamic data and metastable immiscibility 8−27495
Ta_2O_5 doped systems, struct. and ordering, high resolution TEM obs. 8−35378
Te-Pb (20 at.%) alloy, amorphous, obtained by rapid cooling from liq. state, crystn. behaviour 8−26445
Te-Sn (20 at.%), amorphous, exam. of crystallisation by DTA, X-ray diffr. and TEM 8−47242
Ti-Ag(Au)(Si), existence of β to α_m phase transformation 8−44123
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8−39791
TiC, RF sputtered film on steel, transition region 8−39956
TiO_2, slightly vacuum-reduced, {312} planar defects, TEM obs. 8−22736
V, electropolishing for TEM obs. 8−31605
V, void formation from 200 to 700°C following heavy-ion irradiation 8−10104
V_3Ga, grain size in A-15 reaction layers 8−14911
V_3Si, grain size in A-15 reaction layers 8−14911
V_3Si, phase transition and transition temp., chemical comp. effects, defect struct. exam. 8−18651
W, strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
W, vacancy-defect clustering, due to annealing and quenching, TEM and elec. cond. exam. 8−47344
Y_2O_3 film in Y-Y_2O_3-Au junction, defect struct. and local conduction 8−26970
Zr neutron irradiated, faulted loops 8−10094
Zr-Nb alloy, isothermal decomposition at elevated temp. 8−27470
Zr-Sn-Mo (6, 1 wt.%), creep and creep rupture 8−23778
Zr_3Al, irradiation 8−6111
ZrO_2 film, CVD from organometallic cpds. and characterisation 8−23626

transmission electron microscopes
see also transmission electron microscopy
half-plane and topographical contrast 8−32958
high resolution, 600 kV Cambridge Univ., condenser-objective lens design and construction 8−32938
high resolution, 600 kV Cambridge Univ., engng. design and construction features 8−32937
high resolution, electronic control systems 8−32939
magnetic energy filter optics 8−32944
review, TEM, STEM, and SEM: microscopy to microfabrication 8−32936
spiral distortion correction 8−32942
viewing arrangement improvements 8−32941
X-ray analysis in the TEM/STEM, review 8−24014

transmission electron microscopy
see also transmission electron microscope examination of materials; transmission electron microscopes
1000 kV, appl. to metallurgy 8−8472
amorphous materials, bright field hollow cone illum. advantages 8−22609
biological materials, unmodified, transmission microscopy radiation dose with electrons vs. ultrasoft X-rays 8−11788
biological specimen-conductivity problem in electron microscopy, review 8−24206
bright field hollow cone illumination advantages, appl. to amorphous C film 8−22609
computer aided indexing, of transmission electron diffr. patterns 8−38595

transmission electron microscopy continued
correlative SEM-TEM of primate infundibular recess 8−20336
critical voltage effect, many beam systems 8−14260
cultured cell preparation for electron microscopy, ethanol and chem. dehydration methods comparison 8−24208
dark-field image contrast and resolution improvement by subtraction anal. 8−338
defects in crystals, high-resolution imaging techniques 8−34400
dislocation distribution, distances between parallel dislocations determ. 8−34514
energy dispersive X-ray analysis in TEM/STEM, sensitivity limits for thin specimen analysis 8−24007
energy loss spectra, direct display using Si self scanned photodiode array 8−45753
energy loss spectrometry, use in microanalysis and errors involved 8−35785
energy loss spectrometry use in microanalysis 8−35784
energy loss spectroscopy and microanalysis, instrumentation developments, review 8−35783
evaporation coeff. meas. 8−18909
FCC materials, dissociated dislocation dipoles, weak-beam electron microscopy technique 8−34516
foil thickness measurement for quantitative metallography 8−35632
III-V semiconductors, film, sample preparation for TEM studies 8−14258
image analysis and beam damage, instrumental aspects 8−32954
imaging code for long period struct. obs. in perovskite crysts. *(French)* 8−26395
Lorentz microscopy, thin film and bulk specimen, recent advances 8−35002
metal point defects, computer simulation of dark field electron micrographs 8−47219
photomacrography and photomicrography, oblique transmitted light techniques 8−306
review, TEM, STEM, and SEM: microscopy to microfabrication 8−32936
semiconductor, TEM/SEM observations comparing diffr., elec. and luminesc. contrast from dislocations 8−38714
specimen preparation ion beam techniques 8−24778
stacking fault contrast using weak-beam imaging conditions 8−34401
thin specimens, X-ray spectra characteris. in TEM 8−35788
X-ray analysis in the TEM/STEM, review 8−24014
X-ray microanalysis, in TEM at high accelerating voltages 8−36078
X-ray standardless thin film analysis in electron microscope 8−24006
Si wafers, preparation of preselected areas for TEM 8−24887
W support film for high resoln. electron microscopy, phase contrast, computer modelling 8−1144
transmission line theory
book *(French)* 8−13640
Earth-ionosphere transmission line, ELF propag. rel. to ionospheric profiles 8−36234
EM field energy calc., using surface integral 8−5394
mechnical coupled-transmission lines 8−52
Space Shuttle lightning current distrib., circuit modelling and exptl. verification 8−49293
transmission wavemeters *see wavemeters*
transmitters
see also radio transmitters; transceivers; transponders
FM-AM miniaturised transmitter for EEG and EMG, for sleep telemetry in rat 8−48947
linearised LED and laser transmitters, for analogue fibre optical systems 8−46818
optical fibre communication for military appls., review and assessment 8−42438
transmitting *see transmission*
transonic flow
aerofoil, thin, near-inviscid supercritical flow, numerical soln. 8−14038
aft-loaded airfoil, boundary layer displacement effect and wake near trailing edge 8−22366
airfoil, finite-difference calc., computer code 8−26147
airfoil problem, variational principles 8−42626
axisymmetric inlets and bodies at angle of attack, 3-D computation 8−9648
backward facing step, viscid-inviscid interaction model 8−9649
compressible flow around an aerofoil or a cascade, up to shockfree transonic range 8−22365
discontinuous, shock wave 8−38362
far-field matching method 8−26146
integral eqn. formulation for lifting profiles and wings 8−38363
least squares approx. for partial differential eqns. of mixed type, indefinite problems 8−36807
nacelle flow fields, accelerated iterative calc. 8−26145
nozzle, rotational, relaxation solution 8−30312
nozzle, square, transonic flow, 3-dimens. density field meas., holographic technique 8−47080
nozzles, gases with rate process 8−14058
parabolic spindles, flow field determ. by method of characteristics 8−14039
perturbations, high and low freq., growth calc. for perfect inviscid gas *(Russian)* 8−46992
shock wave solns., weak 8−38364
supersonic-transonic flow, thin airfoil in stratified atmosphere 8−5764
thin finite wedge in parallel channel, drag and sonic line shape 8−26148
turblent boundary layer, shock penetration 8−14044
turbulent boundary layer-shock wave interaction *(French)* 8−34163
viscous transonic cascade flows around airfoil, coord. system for numerical calcs. 8−42627
weak shock wave and sound wave refl. at shallow incidence, boundary layer effects 8−22373
wing, unsteady lift and pitching moment at Mach no. 0.38-1.28 8−34151
transparence *see transparency*
transparency
see also light transmission; optical constants; self-induced transparency
absorption coefficients meas. of transparent materials, interf. effects 8−46699
aerosol, moving droplet, bleaching kinetics by CO_2 laser radiation 8−13743
alkali metal ternary chlorides, $ABCl_3$ type, optical props. 8−35111

transparency continued
atmosphere, absorpt. in 8-12 μm transparency window by fine aerosol particles *(Russian)* 8−16159
atmosphere, transparency meas. in Uzhgorod *(Russian)* 8−40656
cholesterilcinamate, low press. phase transition temp. change, relative transparency *(Russian)* 8−2242
cholesteryl esters, liq. crysts., P-T diagrams up to 5000 kg/cm^2 8−2003
dental material transparency meas. device 8−31975
glass fibres as optical waveguides 8−1332
impact of transparent material by small particles, high speed photomicrographic recording 8−44342
paradiheptyoxyazoxybenzol, low press. phase transition temp. change, relative transparency *(Russian)* 8−2242
paste, direct tensile tests and tied crack model 8−11178
polaritons, molecular thin plate, with near-surface polariton transition layer, reflection and transmission spectra *(Russian)* 8−14677
polymer system, two-phase, transparency conditions, interparticle interference effects 8−23428
porcelain, equipment for translucency testing *(Polish)* 8−19985
seawater in Pacific equatorial zone *(Russian)* 8−16043
$CdCr_2S_4$, hot-pressed, optical isolation appl. at 10.6 μm, intrinsic absorpt. props. 8−42368
Cd_2SnO_4, $CdSnO_3$ electrodes, spray coatings, elec. sheet resist. and optical transparency 8−27401
GaAs oxide, anodic, heat treatment temp. effects, optical props. obs. 8−27658
Hg_2Cl_2, cryst., birefringence and dichroism, 200-500 nm and far IR 8−27257
p-InSb, elec. instability and oscills. of transparency in transverse mag. field 8−6407
Te, acoustoelec. domain induced transparency at 11 μm 8−27182
$TlMnCl_3$, optical props. 8−35111
$ZnGeP_2$, single cryst., polarised light photocond., optical transparency anisotropy *(Russian)* 8−2518

transpiration
canopy interception, measure of loss from hydrologic budget 8−11928
Pb, vapour press., meas. using transpiration method, thermodynamic props. determ. 8−3365
Pb-Bi alloy, vapour press., meas. using transpiration method, thermodynamic props. determ. 8−3365

transponders
weather radar data transmission using VHF satellite links, expt. 8−20569

transport *see transportation*

transport equation *see Boltzmann equation*

transport phenomena *see transport processes*

transport processes
see also biotransport; Boltzmann equation; cellular transport and dynamics; cosmic ray propagation; diffusion; electrical conductivity; Liouville equation; master equation; neutron transport theory; photon transport theory; plasma transport processes; Senftleben-Beenakker effect; thermal conductivity; thermal diffusivity; viscosity
Abel integral function, numerical inversion using least-squares splines 8−16753
accretion discs in close binary systems, ang. momentum transport and tidal torques 8−12296
atmosphere, O_3 fluxes from zonal mean circulation model *(Russian)* 8−36224
binary gas mixtures, excess pots., calc. method 8−45587
black box approach to general systems theory 8−45583
Boltzmann-Enskog equation, nonlinear, acoustical approx. for elastic sphere system 8−41252
channelling, quantum theory, generated transport eqns. 8−10110
collision probability integrals in annular geometry 8−29067
combustion, turbulent, implications of probability eqns. 8−14098
continuity eqn., boundary conditions for integration 8−3342
convective heat transfer intensification and comparative heat transfer surface evaluation 8−30151
cosmic ray steady-state eqn., similarity solns. 8−16254
dense gas, transport coeffs. density expsn., logarithmic terms 8−34250
dispersion corrected numerical schemes 8−36946
electron transport eqn., with random impurities 8−33654
fluid, classical, transport coeffs. computation by cell hydrodynamics 8−38600
fluid, dense, square-well pot. mols., struct. factor, transport props. 8−22620
fluid transport properties *(Japanese)* 8−21085
Fokker Planck eqn., system in periodic pot., 1-D, elec. field perturbed, mobility 8−32776
force-free magnetic flux tubes, twist transport 8−40813
fusion reactor breeders, models for T_2 and ^4He transport 8−17424
generalised Langevin eqn. with Gaussian fluctuations 8−32760
hard sphere gas, three-particle collision effects 8−38442
hard sphere relativistic gas transport coeffs. 8−30401
hydrothermal systems, nature of porosity rel. to transport phenomena 8−36205
hydrothermal systems, transport phenomena assoc. with cooling plutons 8−36206
inhomogeneous medium with cavity, transport operator spectrum *(Chinese)* 8−16756
ionic solute hydration, thermodynamic and transport props., review 8−27815
ionosphere, ionisation transport effects on total electron content 8−45089
irreversible transport processes, noncoupled, nonstationary, classical variational principles 8−4567
linear transport theory, point spectrum, generalisation 8−41251
membrane transport matrix, relation between conc. depend., matrix transformation and flux representation 8−20069
molten salts, transport processes by ionic dynamics, mass depend. 8−22616
momentum balance of continuous media, correction based on Ott's transformation 8−41249
multiple integrals of transfer theory 8−4568
multispecies gas flows, transport eqns. mathematical struct. 8−47084
nonlinear convective problems, stable explicit finite difference scheme 8−151
numerical simulation of transport coeff. meas. by correlation method 8−8364

transport processes continued
one velocity transport theory, scatt. function, specified density distrib. 8−24749
Pacific Ocean, T transport models source function 8−32122
parallelepiped, linear transport generalised boundary conditions 8−16757
particle transport theory, fluctuation problem 8−8363
potential scatt., classical and quantum transport theories 8−16603
quadratic finite element schemes for 2-D convective transport 8−21084
scalar wave propagation, coherent scalar field in pair correlated random distribs. of aligned scatterers 8−32690
steady state one dimensional transport in prism with partially absorptive walls and fixed scatt. centres 8−41248
stochastic theory of particle transport, appl. to radiation damage cascades 8−153
strong quantised EM field, statistical description 8−16961
track distribution through spherical shell 8−8365
two-dimensional transport coefficients, self-diffusion, theory 8−32777
two-dimensional transport coefficients, thermal cond., theory 8−32778
two-group problems with anisotropic scatt., closed-form solns. 8−4569
variational principle, time-depend., and reciprocity theorem for transport-relax. eqns. 8−12655
Au foil, relativistic electron beam deposition, field-enhanced, bremsstrahlung prod. 8−29677
H-He fluid planets, phase diagram and transport props. 8−28554
LiBr, liq., transport processes by ionic dynamics, isotope substitution, mass enhancement 8−22616
^{222}Rn in Hudson River estuary, distrib. and transport across sediment-water interface 8−16064
^{90}Sr, leaching behaviour in cement composites 8−37416

transport properties *see transport processes*

transport theory *see transport processes*

transport theory of neutrons *see neutron transport theory*

transport through biomembranes *see biomembrane transport*

transportation
see also aircraft; lifts; marine systems; rail traffic; road traffic
nuclear vessels, probabilistic model for assessment of collision likelihood 8−5063
nuclear waste material, risk anal. 8−17357
radioactive, low- and intermediate-level waste, risk anal. of road transport in Netherlands 8−17359
radioactive calcined waste solid spillage, recovery of U, erosion in solids transport system 8−13264
vitrified high-level radioactive waste, rail transportation, fault tree anal. and accidental release 8−17358

transportation networks *see transportation*

transportation services *see transportation*

transportation systems *see transportation*

trapped electron centres *see F-centres*

trapped free radicals *see free radicals*

trapped hole centres *see V-centres*

traps, electron *see electron traps*

travelling-wave-tubes
see also backward-wave tubes
power capabilities for plasma heating *(French)* 8−9801

treatment, heat *see heat treatment*

treatment, patient *see patient treatment*

treatment, surface *see surface treatment*

treatment, water *see water treatment*

trees (mathematics)
Bethe lattice, random ordered phase and glasslike phase 8−29060
event tree construction by AUTOET 1 computer code 8−17379
fault tree analysis, development of DICOMICS-TWIN self-adaptive algorithm for minimal cut sets determ. 8−17380
fault tree and reliability analysis, modular decomp., PL/1 program 8−17381
fault trees, methodology for computer-aided construction, nuclear system appl. 8−37412
rotation matrix, finite, in space of trees 8−36792

triboelectric emission *see electron emission*

triboelectricity
see also static electrification
electrophotographic developer neutralisation mechanisms 8−16863
electrophotography, electrostatic aspects, review 8−25768
polyolefins, triboelectric charging, linear free energy relationships 8−6431
powder-bead mixture, triboelec. charging, incremental charge-mass characterisation 8−17833
NaCl-metal system, sliding and rolling electrification 8−14796

tribology
see also friction; lubrication; wear
friction surfaces microstructure, during tribotechnical processes *(German)* 8−15540
general theory 8−11345
sliding contact, stress conc. on rough surfaces determ. by polarisation-optical method *(Russian)* 8−30244
technical systems reliability 8−39918

triboluminescence
crushing and high stress appl. device, for triboluminesc. meas. 8−27338
crystals, fracture in air and liq. anhydrous diethylether, triboluminescent intensity 8−19582
glass fibre reinforced plastics, stress luminescence, volume resistivity effects *(Japanese)* 8−43943
review 8−19581
sugar, fracture in air and liq. anhydrous diethylether, triboluminescent intensity 8−19582
tartaric acid, fracture in air and liq. anhydrous diethylether, triboluminescent intensity 8−19582
Al, oxide covered, tensile deform. in high vac., particle and photon emission 8−39672
Ni, oxide covered, tensile deform. in high vac., particle and photon emission 8−39672
SiC, grey, green and black, Mn impurities role 8−39612

trigger circuits
see also multivibrators
photographic multimode flash trigger cct. 8−21248
programmable trigger logic 8−17533
Schmidtt, for timing control appl. 8−8
track-finding trigger processor for mag. detector 8−46244
triode sputtering
euglenoid flagellates, sputter and vacuum evap. coating, comparative effects on delicate features 8−24205
In, reactive sputtering in DC triode config. 8−23618
triodes
activation efficiency of single crystal whisker field effect cathodes, improvement methods 8−27377
electron gun, keV anode-controlled telefocus, focusing props. 8−342
nonisochronic reflecting electron system, high power microwave emission 8−1140
plasma, reflex, anode design for ion beam impedance collapse 8−9862
power capabilities for plasma heating *(French)* 8−9801
ring triode, enhanced mode thermionic convertors, expts. 8−38553
triple point *see critical points*
triplet absorption detection of magnetic resonance *see microwave-optical double resonance*
triplet state
acetaldehyde+CO$_2$, vibr. relax., search for unquenchable species, room temp., 5-2200 torr 8−9229
acetophenone, triplet-triplet energy transfer, naphthalene-d$_8$, in EPA rigid soln., donor phorphoresc. decay 8−10971
acridine, T-T absorpt. build-up, following picosec. pulse singlet excitation, in gas phase 8−9161
acrolein, triplet state vertical and adiabatic excitation energies, CI calcs. 8−9083
alkaline earth fluoride, EPR of triplet state of self-trapped excitons 8−43684
anthracene, α-particle tracks, excited states, creation and evolution 8−43934
anthracene, carbonyl derivatives, triplet state population, picosec. laser obs. 8−13544
anthracene, pure and d$_n$, PMMA soln., triplet lifetimes, 77-300K 8−25594
anthracene, singlet-triplet absorpt. spectra, 2-300K, photoexcitation spectra 8−43890
anthracene-dimethylpyromellitimide CCT crystals, mutual annihilation of triplet excitons 8−19543
anthracene-TCNB charge transfer crystal, EPR spectra of triplet excitons, and Raman spectra 8−26817
anthracene-tetracyanobenzene, triplet exciton annihilation, mag. double reson. *(Russian)* 8−19380
anthracene-tetracyanobenzene cryst., triplet excitons, zero-field EPR splitting temp. depend. 8−10748
anthracene/TCNB, charge-transfer cryst., fluoresc., 1.2-300K, mobile triplet excitons 8−43913
anthracenes, nonradiative relax. of higher excited triplet states, double excitation obs. 8−29805
anthraquinone, in Shpolskii matrices, triplet state spin-lattice relax. rates 8−21952
anthrone, 533 nm excited state absorpt. kinetic, triplet quenching solvent, internal conversion, vibr. relax. 8−21935
p-(9-anthryl)-N,N-dimethylaniline derivatives, excited emitting states in polar solvents, fluoresc. 8−5263
aromatic hydrocarbon crystals, model for fission of singlet excitons into triplet-exciton pairs 8−14672
aromatic hydrocarbons, aqueous micellar soln., triplet state room temp. phosphoresc., hydrophillic quenchers 8−9181
aromatic hydrocarbons, nitroxyl radicals, energy transfer, quenching 8−35651
9-aza-bicyclo (3,3,1)nonan-3-one-9-oxyl, dimerisation, ESR, NO radical pair exchange 8−19330
bacteria, photosynthetic, triplet-state EPR spin polaris., intramol. model 8−44469
benzaldehyde, and deuterated forms, in p-xylene, 4.2K, nπ^* phosphoresc. assignments 8−9197
benzene, isotropically mixed crysts., singlet and triplet exciton percolation theory 8−26818
benzene triplet state, self quenching, effect on naphthalene internal conversion rate estimate 8−25586
benzil triplet-anisole, reversible exciplex form., phosphorescence, photostationary and transient obs., simulation 8−9182
benzophenone $^3(n,\pi^*)$, and isotopic forms, in 4,4′-dibromodiphenylether, level anticrossings, ODMR obs. 8−2772
benzophenone-d$_{10}$, $^3(n,\pi^*)$ state, containing ^{13}C, in 4,4′-dibromodiphenylether, hyperfine ENDOR spectrum 8−42102
calorimetric techniques for excited states detection 8−32847
carbazole, crystalline, room temp. afterglow 8−27314
carbene in polydiacetylene, zero field splitting parameter 8−27075
carbocyanine dyes, triplet state quenching by nitroxyl radical, charge transfer complexing 8−25585
charge ordered crystals, mag. props., energy spectrum, triplet excitations 8−18979
p-chlorobenzene, and deuterated forms, in p-dibromobenzene and p-dimethoxybenzene, 4.2K, $\pi\pi^*$ phosphoresc. assignments 8−9197
chlorophyll, photooxidation, triplet state mechanism 8−27791
chlorophyll, photosynthesis mechanism, upconversion, EPR and O$_2$ evolution data anal. 8−35811
chlorophylls, luminesc. analysis of triplet states *(Russian)* 8−27288
chlorophylls, triplet state ESR, fine struct. and rate consts. determ. 8−25574
chlorophylls, triplet state ESR, fine structs. and rate consts. determ. 8−25575
collision free triplets, spectrum, temporal evolution 8−33441
conference on optical techniques in mag. reson. spectroscopy, Dublin, Ireland (Aug. 1977). 8−43683
configuration interaction method formulation for triplet states 8−37536
coronene, fluorescence spectra, zero field line splitting *(Russian)* 8−17604
coronene, triplet mol. in n-heptane Shpol'skii sites, distortion and orientation meas. by MIDP 8−37668
cubic crystal, multimode Jahn-Teller coupling, orbital triplet 8−23062
cyclobutadiene(-d$_1$), singlet and triplet ground states, vibr. freqs., MINDO/3 and ab initio SCF calcs. 8−13429
triplet state continued
1,3,5-cycloheptatriene, singlet→singlet (triplet) excitation, electron impact energy loss spectra 8−46451
diarylalkane, in isooctane soln. triplet excimer form., phosphoresc., delayed fluoresc., triplet-triplet absorption 8−25597
1,4-diazaphenanthrene, zero-field splitting, basic triplet states, H bond effects 8−5366
1,4-diazatriphenylene, zero field splitting, basic triplet states, H bond effects 8−5366
(1,4)-dibromonaphthalene, triplet exciton scatt., absorpt. spectra 8−6696
1,4-dibromonaphthalene, triplet-triplet exciton annihilation in quasi-1-dimens. cryst. 8−27297
6,6′-diethoxy-thioindigo, cis$\rightleftharpoons$trans isomerisation, nanosecond flash photolysis and steady state methods, triplet state 8−35648
dihydroporphin free base, in n-octane cryst., zero-field optically detected mag. reson., triplet state kinetics 8−42103
diphenyl:(benzophenone, naphthalene), triplet exciton diffusion, phosphoresc. obs. 8−10964
2,5-diphenyloxazole, phosphoresc., 77K, solvent effect 8−42118
electron spin coherence in nonphosphoresc. triplet states, optical detect. meas., TADMR and FMDR 8−25578
ethyltoluenes, fluoresc. and triplet state quantum yields, biacetyl method 8−37671
excimer, fluorescence, relative yield following triplet-triplet annihilation, re-encounter effects 8−33538
excitons, quasi-coherent, in pairs of differently oriented mols., EPR line shape 8−43631
glyoxal, lowest triplet state, excitation energies, electron correl. effects 8−5147
glyoxal, triplet state excitation energy calc., modifed CI method 8−37536
Josephson effect between superconductors in singlet and triplet spin-pairing states 8−14896
methylene, photoelectron spectra, singlet and triplet state calcs. 8−42127
methylene, singlet-triplet splitting, ab initio calc. 8−5128
molecular crystal, singlet and triplet biexciton spectra 8−10366
naphthalene:2-fluoronaphthalene, photoexcited triplet state X-traps, ENDOR meas. 8−39444
naphthalene, anion, cation and triplet, GO LCAO MO calcs. of electronic struct. 8−25416
naphthalene, in durene, photoexcited triplet state spin-lattice relax., local phonons effects 8−6605
naphthalene, isotopic mixed cryst., phospheresc., photoselection of pure initial triplet states 8−35189
naphthalene-d$_8$, metastable triplet states, spin-lattice relax. at high mag. fields, phosphoresc. meas. 8−15063
3-nitropyrene, triplet state, absorption spectra in soln. 8−33440
organic molecular cryst., singlet-triplet-triplet triexciton bound states 8−2426
organic molecular solid, space group C_{2h}^5, triplet excitons energy band struct. 8−6276
organic solid, exciton motion effect on proton relax. 8−14671
phenanthrene-d$_{10}$, oriented in biphenyl, triplet zero-field splittings, conc. depend. 8−2773
phenazine: azulene, EPR, azulene triplet state 8−35024
phenazine, T-T absorpt. build-up, following picosec. pulse singlet excitation, in gas phase 8−9161
phenylcarbene, singlet and triplet ground states, rearrangement to cycloheptatrienacarbene, MINDO/3 calc. 8−13430
pheophytins, lowest triplet state, zero field splitting consts., decay rate consts., EPR determ. 8−27896
phthalic anhydride and halogen derivatives, phosphorescence spectra *(Japanese)* 8−48217
platinum phthalocyanine single cryst., triplet state Zeeman effect, phosphoresc. 8−6747
poly-N-vinylcarbazole film, triplet-triplet energy transfer, chemiluminesc. 8−43944
POPOP, vap., electron energy loss spectra rel. to lasing 8−29947
porphyrin, triplet-state EPR spin polaris., intramol. model for photosynthetic bacteria 8−44469
porphyrin solns., quenching of excited states by nitro-cpds., donor-acceptor interactions 8−2899
proteins, triplet state energy transfer 8−20143
pyrazine, lowest triplet state, phosphoresc., intersystem crossing 8−5269
pyrene, crystalline, EPR spectrum of triplet excitons 8−27076
pyrimidine, and derivatives, intersystem crossing rates, triplet sublevel decay, vibronic coupling 8−5271
quinoxaline, zero-field splitting, basic triplet states, H bond effects 8−5366
rare earth phthalocyanine solutions, rel. to bleaching by ruby laser beam 8−30030
reaction yield detected mag. reson. spectra, evolution, degenerate energy levels, triplet excitons 8−19378
11-cis-retinal, donor energy effects on triplet-sensitized isomerization 8−3353
rhodamine 6G, delayed fluoresc. of simple associates in polar and non-polar solvent mixtures *(Russian)* 8−48185
rhodamine 6G, soln., triplet state lifetime determ., solvent effect 8−1225
Rydberg INDO method, mol. Rydberg S←S and T←S transitions and oscill. strengths 8−17572
six-level model, triplet-triplet pumping 8−25870
superconductor, triplet pairing, strong Kohn anomaly *(Russian)* 8−19179
TCNQ salts, simple, triplet exciton obs. by ESR 8−10373
p-terphenyl, cryst., highly excited states decay, mag. field effects 8−10962
p-terphenyl, vap., electron energy loss spectra rel. to lasing 8−29947
1,2,4,5-tetrachlorobenzene, in durene host, phosphoresc., cross-relax. between spin levels 8−9186
tetrachlorobenzene, triplet exciton spectral line shape, 2-45K 8−19498
1,2,4,5-tetrachlorobenzene, triplet excitons, ESR and ODMR 8−43681
thioindigo, cis$\rightleftharpoons$trans isomerisation, nanosecond flash photolysis and steady state methods, triplet state 8−35648
tryptophan, triplet state, zero-field splittings, wavelength depend. 8−43680
N-vinylcarbazole-1-vinylnaphthalene copolymer, triplet-triplet annihilation carrier photocurrent, delay fluoresc. 8−2513

triplet state continued
xanthione, solns., triplet state quenching by ground state xanthione 8−42180
xanthone in n-hexane, 77 and 4.2K, phosphoresc. spectra, triplet lifetime 8−21957
xylenes, fluoresc. and triplet state quantum yields, biacetyl method 8−37671
Ag halide, EPR of triplet state of self-trapped excitons 8−43684
AgBr, decay of proposed Bose-Einstein condensed excitons 8−15221
AgBr, radiative recomb. of indirect excitons at high concs. 8−6732
AlH, (1,1)-band emission of $b^3\Sigma$-$a^3\Pi$ system 8−42092
CdTe:Ti^{2+}, Jahn-Teller effect on $^3T_1(^3F)$ state, resonance on $^3T_1(^3P)$ state 8−27271
D_2, $G(3d)^1\Sigma_g^+$ and $g(3d)^3\Sigma_g^+$ singlet-triplet anticrossing 8−42138
1,6-di-(N-carbazolyl)-2,4 hexadiin, cryst. struct., luminesc., γ-ray polymerisation 8−18629
F^++H_2, empirical and ab initio correlation diagrams, pot. energy surfaces 8−40041
Ge:As, far IR transmission spectra, singlet-triplet optical transitions in ground states of donors 8−2887
H_4, triplet state, instability of restricted Hartree-Fock, orbital degeneracy 8−25457
H_2O^-, in γ-irrad. Y-type zeolite, alternative EPR triplet assignment to NO_3^{2-} 8−11534
He-Cd hollow cathode laser, He singlet and triplet metastable number densities 8−29938
I_2, $(B^3\pi_{0+u})$, dissoc. reaction, computer simulation 8−48639
KCl(Br), triplet state lifetime of F_2 centre, mag. field effect 8−35177
KI:Tl^+ type phosphor, press. effects on triplet relaxed excited states, quadratic Jahn-Teller interaction 8−23510
Mo complex, μ-oxo bridged oxomolybdenum(V) dimers, conform. anal. by ang. overlap method, triplet ground states 8−5119
N_2 $(C\ ^3\Pi_u)$ vibr. levels radiative lifetime, transition moment internucl. distance depend. 8−1027
NO_2^-, microwave transition probability in zero field, spin-orbit interaction 8−25518
NO_3^{2-}, in γ-irrad. Y-type zeolite, EPR triplet assignment, instead of H_2O^- 8−11534
$NaNO_2$, cryst., delayed fluoresc., triplet excitons, dopant effects 8−10963
$NaNO_2$, cryst., Stark shift of visible absorpt. of NO_2^- 8−19499
$NaNO_2$, cryst., triplet excitons, localised states, zero-field ODMR, dopant effects 8−15062
$Ne^{2+}(2s2p^5\ ^1P,^3P)$, singlet/triplet population ratio, in 100 keV ion impact excitation, ion Z depend. 8−37733
$O_2(^3\Sigma^-)$, geometry optimisation, using bond function augmented basis sets 8−905
Pd, triplet pairing, spin fluctuation contrib. 8−10711
PrSb, mag. excitations, press. depend., inelastic neutron scatt. meas. 8−10699
S_2N_2, $(SN)_x$, (x=2 or 3), minimal STO-3G basis HF ab initio LCAO SCF MOC, geometry 8−903
SO_2 $(^3B_1)$, phosphorescent lifetimes, press. saturation effect on quenching by CO_2, CO, N_2 8−1017
TiO, $C^3\Delta$ term anomalous triplet splitting 8−13514
YF, $^3\Phi-^3\Delta$ system, rot. anal. 8−9149
Zn etioporphyrin, excited triplet states absolute rate consts., ODMR meas. 8−33533
Zn, triplet state lifetimes, (4s6s), (4s5d), (4s6d) configs. *(French)* 8−5175

tritium
airborne short-lived radionuclides of unknown origin in Sweden (1976) 8−32219
atom, hyperfine quadratic shift in electric field, pressure dependence 8−13442
CANDU, energy, water, tritium budgets for Perch Lake 1975 8−29563
concentration in water, meas. with electrolytic enrichment cell and reduction systems 8−20128
control by glove box containment at fusion reactor plant 8−46169
diffusion in niobium 8−6182
distribution in glycogen, haemoglobin and chromatin of mice drinking tritiated water 8−31910
electrolytic enrichment in environmental samples, using controlled power supply 8−21173
enrichment in water by electrolysis for low-level T activity meas. 8−17536
environmental transport from atm. release of mol. ^3H 8−11987
fallout in S.Australia rainfall and wine samples 8−11960
freshwater marsh, simulation model of freshwater kinetics 8−24318
fusion reactor breeders, models for T_2 and ^4He transport 8−17424
fusion reactor T systems test assembly, containment and cleanup technology 8−767
fusion reactor with injection of deuterium and tritium ions, calc. of characts. 8−37447
fusion reactors, scoping studies on T permeation 8−769
measurement, in aqueous samples, single solvent cocktail for liq. scintillation counting 8−856
migration from low-level waste burial site 8−21671
Pacific Ocean, T transport models source function 8−32122
permeability of heat exchange material, oxide protective layer formation meas. 8−8895
permeation eccentricities of He, Ne, and D-T, from SiO_2-CaO-Na_2O glass microbubbles 8−47598
recoil tritium reactions with cis- and trans-1, 2-dichloroethylene 8−3360
release behaviour and chem. forms on heating neutron irradiated UO_2(Li) pellets 8−40071
removal from flowing Ar, U and Ce as hydriding materials 8−17438
seawater, ^3H vertical profile meas. in North Sea *(German)* 8−3814
sputter cone ion source for Minnesota MP Tandem, installation 8−29683
troposphere, in water vapour, rel. to reactor release detect. 8−11988
water, low-level meas., inter-laboratory comparison 8−44888
wells of Greater Chicago area, dead water, ^3H anal. 8−16062
yeast, ^3H induced lethal and genetic changes 8−28015
Ce adsorption, getter beds, T removal from inert gases, CTR appl. 8−41861
D-T compression, explosion-induced, thermonuclear avalanche reaction 8−47144
D-T filled glass microshell, laser-irrad., plasma electron energy profile steepening, polarimetry obs. 8−34349
D-T fusion reactor, tritium recovery using Zr, Y *(Japanese)* 8−29646
D-T linear mag. fusion device, particle end loss reduction 8−33289
D-T microsphere, concentric cumulation of laser generated fast ions 8−30456
D-T plasma, hot, dense, alpha-particle transport calc., moment method 8−22458
HF+T hot atoms, energy loss 8−15691
HT, interhemispheric transport, atm. H_2 residence time estimation 8−32182
T+chloroethane(cyclobutane), recoil reaction, 5×10^{-2} torr 8−44389
T+F_2, exothermic triatomic exchange reactions, dynamics, anal. theory 8−3322
$T+F_2\rightarrow TF+F$, isotope effects, quantum mech. and information theoretic calcs. 8−44360
TiO_2:T, IR spectra, 300, 77, and 8K 8−35175

tritium compounds
No entries

triton interactions *see triton-nucleus reactions*

triton-nucleus reactions
for inelastic triton-nucleus scattering, see "triton-nucleus scattering"
see also nuclear fusion
Pt(t,α), A=194, 196, population of Ir, A=193, 195, proton states 8−33123
(t,p) two-nucleon stripping reactions with Tabakin pot. 8−21570
$^{10}B(t,\alpha)^{10}B$, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−17216
$^{10}B(t,\alpha)^9Be$, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−17216
$^{10}B(t,p)^{12}B$, 0.5 to 1.25 MeV, excitation functions and ang. distribs. 8−13109
$^{12}C(t,p)^{14}C$, spin and parity of states near 10 MeV excitation in ^{14}C 8−37263
$^{14}C(t,p)^{16}C$, 3.02-6.1 MeV, spectroscopy of ^{16}C 8−613
$^{14}C(t,p\gamma)$, 12 MeV, ang. correls., ^{16}C levels, spin assignments 8−8830
$^{40}Ca(t,p)^{42}Ca$, two-nucleon stripping process with effective interactions 8−610
$^{19}F(t,p)^{21}F$, 0.9 and 1.1 MeV, proton ang. distribs., possible compound nucl. form. 8−17218
Ge(t,p), shape transition obs. 8−25190
$^3H(t,2n)^4He$, 30-160 keV, differential cross section measurement 8−17223
$^3He(t,d)^4He$, 9-17 MeV, polarised tritons, analysing-power ang. distrib. meas. 8−29481
$^4He(t,n)^6Li$, cross section using var. calcs. in generator coordinate method 8−13122
$^6Li(t,d)^7Li$, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
$^6Li(t,\gamma)^9Be$, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
$^6Li(t,p)^8Li$, 0.35 to 1 MeV, resonance struct. in compound nucl. excitation curves 8−17217
$^7Li(t,\alpha)^6He$, possible resonant struct. in excitation functions 8−13110
$^7Li(t,\gamma)^{10}Be$, excitation functions and resonant struct. for 17.79 MeV state 8−13110
$^{16}O(t,p)^{18}O$, excitation curve meas., 500-1250 keV 8−37359
$^{210}Pb(t,d)$, Pauli principle effects in ^{211}Pb levels 8−17108
Sm(t,p), SU(6) boson model for two-nucleon transfer intensities 8−25206
Te(t,p), SU(6) boson model for two-nucleon transfer intensities 8−25206
$^{96}Zr(t,p)$, 20 MeV, short range correlations with Tabakin pot. 8−13115

triton-nucleus scattering
$^9Be(t,t)^9Be$, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8−41730
$^{12}C(t,t)^{12}C$, 15, 17 MeV, polarised t, differential cross sections and optical model fits 8−41730
$^4He(t,t)^4He$, cross section using var. calcs. in generator coordinate method 8−13122
$^4He(t,t)^4He$, elastic cross section from two-centre generator coordinate model functions 8−12994

triton scattering *see triton-nucleus scattering*

tritons
binding energy *(Russian)* 8−29376
coupling constants of dN and d*N three-body vertices, spectator functions 8−46011
fast stable particles from light emulsions nuclei following 1.5 GeV/c K^- interactions 8−17245
momentum space calculations, Faddeev bound-state eqns., binding energy 8−25122
nonlocal separable interactions in the study of nucl. props. *(French)* 8−33115

trolleybuses *see road vehicles*

troposphere
see also tropospheric electromagnetic wave propagation
aerosol conc. statistics for N. tropical Atlantic region 8−32188
aerosol in lower troposphere, seasonal vars. in vertical profiles *(Russian)* 8−16092
E.African low level jet stream, theory 8−40632
Antarctica, winter, Nimbus-5 atmospheric temp. fields deviation from radiosonde data 8−32138
Asian summer monsoon, simulation by general circulation models 8−40637
Atmosat balloon for tropospheric research, flight history and appls. 8−7775
baroclinic instability max., wavelength, quasigeostrophic model 8−44926
barotropic-baroclinic instability of mean zonal wind during summer monsoon 8−40638
boundary layer, quantitative bistatic acoustic sounding 8−49176
boundary layer, spectral scale of wind fluctuations 8−20481
boundary layer, turbulent heat and moisture fluxes, field study, S.England 8−20477
canopy flow, higher order closure model 8−44944
composition, natural and effects of pollution 8−28262
convection initiation and development in temperate latits. 8−20480

troposphere continued
convective clouds and rain showers form. over Indian Ocean 8–7735
convective plumes detect. by Doppler acoustic sounding *(French)* 8–40603
desert region, surface albedo and vertical vel. relations 8–11953
dust, planetary radiation balance, climatological consequences 8–36242
electric fields and currents, origin and structure *(German)* 8–32196
energy dispersion in barotropic atm. 8–20473
equatorial vortices over South China Sea and Malaysia during winter monsoon 8–40633
gaeous and particulate pollutants transport, interconversion and removal, model, urban plume appl. 8–44984
gaseous pollutants mesoscale transport, math. modelling 8–44986
general circulation, anal. of rocket soundings on Kerguelen Island (February-May, 1973) 8–20489
general circulation model of atm. without clouds 8–49110
global vorticity budget over tropics and subtropics at 200 mb during northern summer 8–40640
halocarbons, identification and meas. 8–32186
impact ejecta trajectories, drag and gravity effects, analytic solns. 8–40854
W.Indian Ocean, low-level cross-equatorial jet stream 8–44959
kinetic photochemistry downwind over water from urban areas 8–28278
large-amplitude standing planetary waves, induced in troposphere by Sun 8–36236
lower, solar flare effects on temp. and press. 8–40615
marine aerosols, organic and inorganic Cl gas concs. and particulate Cl size distrib. 8–32187
mean zonal wind in upper troposphere, determ. with allowance for turbulent heat fluxes *(German)* 8–32137
mesoscale divergence of horizontal vel. field and press. gradient force, rel. to momentum transport 8–11954
mesoscale flow over complex terrain during Eastern Tennessee Trajectory Expt. (ETTEX) 8–49101
mesoscale turbulence in upper troposphere, experimental studies *(Russian)* 8–16090
methane, tropospheric abundance and flux from Earth surface *(Russian)* 8–36223
methane and ethane conc. meas. in nonurban area 8–32184
midlatitude synoptic scale disturbances, energy sources 8–32162
momentum horizontal transport, cumulus-scale, in monsoon depression over India 8–44961
SW.monsoon, orographic effects, review 8–44962
monsoon circulation and rainfall S.Asia 8–44958
monsoon depressions, life history, struct. and movements 8–44963
monsoonal quasistationary ultralong waves, real data numerical prediction over global tropical belt 8–40631
nonurban, oxidation of NH_3, H_2S and methane 8–32183
nonurban composition, conf., Hollywood, Florida (Nov. 1976) 8–32174
N.Pacific, South China Sea and Indonesian Seas, regional energetics during winter 8–44960
particulate thermal coagulation and downstream transport from urban area source, math. model 8–44985
penetrative cumulus convection, assoc. with travelling disturbances in equatorial ionosphere 8–36361
photochemical mechanisms, computational methods 8–49084
sea-air CO_2 flux meas., eddy correl. method 8–32191
solar radiation absorption by water vapour, thermotidal exciting function 8–28310
solar radiation distribution in cloudy atmosphere 8–3955
solar radiation input in tropical ocean regions, influence of clouds 8–3956
spherical model, zero-gravity, thermo/hydrodynamic characts. 8–24351
stationary planetary waves and zonal wind, southern hemisphere 8–28276
summer monsoon, mid-tropospheric cyclones 8–40636
summer monsoon over S. Asia, break and active phases 8–3912
surface layer temperature extremes, probability determ. method 8–45020
temperature determ. by satellite, sensitivity due to water vapour estimates 8–3874
terpenes, conc. meas. in Adirondack Mountains pine forest 8–32185
thermal structure, sodar obs. at Delhi 8–32151
trace gases and free radicals, chemistry, two-dimens. model 8–32214
trichlorofluoromethane, tropospheric lifetime 8–3920
tropopause, O_3 vertical and horizontal fluxes, GASP data 8–7720
Tsinghai-Tibetan high movement, annulus simulation, summer flow pattern forecast of high troposphere 8–32211
two-layer atmosphere, orographic perturbations *(Russian)* 8–16136
urban photochemistry, computer simulation 8–49085
VHF coherent radar sounding, wind and refractivity turbulence struct. 8–28281
vorticity and vertical motions over E.Asia, AMTEX 75 8–20492
water vapour in troposphere under stable anticyclonal conditions, CO_2 laser radiation absorpt 8–20515
wind, strong shear obs. using pulse compression radar 8–32193
wind measurements by radar in Arctic region 8–49172
winds in troposphere and stratosphere, connections with dynamical processes in lower thermosphere *(Russian)* 8–24401
CO_2 conc. meas., comparability 8–20495
CO_2, in troposphere under stable anticyclonal conditions, CO_2 laser radiation absorpt. 8–20515
H_2 latitudinal and vertical distrib. 8–49089
H_2 mixing ratio vertical profiles 8–32181
H_2 residence time from interhemispheric HT transport meas. 8–32182
HO, average tropospheric concs. in northern and southern hemispheres 8–32140
H_2O vapour large-scale irregularities, effects on radioastronomical seeing 8–24339
H_2O_2 vapour, UV absorpt. cross sections, photodissoc. rate 8–32222
H_2S role in S cycle 8–49123
^3H in water vapour, rel. to reactor release detect. 8–11988
N oxides, photochemistry 8–44914
NH_4^+, mutual neutralisation, with simple and clustered positive (negative) ions 8–44372
NO, NO_2, O_3 conc. meas. at ground level at unpolluted maritime site 8–3951
NO_2 photodissociation rate constant depend. on altitude 8–11949
NO_x chemistry, significance of HO_2NO_2 8–11971

troposphere continued
N_2O, distrib., mixing ratio 8–32175
N_2O mixing ratio meas. and residence time 8–49088
O_3 and mass transport, stratosphere to troposphere, Project Dustorm, tropopause folding 8–32177
O_3 background mean. conc., balloon obs. 8–32189
O_3 budget, one-dimens. photochem. model 8–32180
O_3 column, increase rel. to NO_x emission from SST and subsonic aircraft 8–11979
O_3 conc., effects of NO_x emissions of high-altitude aircraft 8–32176
O_3, ground level conc., rel. to regional transport of pollutants 8–44990
O_3 meas. in Boston metropolitan area, mesoscale anal. 8–32178
O_3 meas. in rural areas 8–32179
O_3 monitoring with IR heterodyne radiometer 8–16216
O_3 transport from stratosphere to troposphere 8–7687
O_3 variations along meridional band 8–32190
O_3 vertical distrib. over Aspendale, Australia, climatology 8–20475
OCS, atmospheric concs. in S.W. and E.United States 8–20466
Pb baseline, anthropogenic sources effects 8–7757
S compounds, homogeneous chemistry 8–49119

tropospheric electromagnetic wave propagation
11 GHz rain attenuation distribution, from 5-min. rain rate statistics, calc. 8–24326
20 GHz multi relay links, simultaneous probability of rain attenuation 8–3898
140 GHz atmospheric attenuation by rain, obs. 8–3914
copolar and cross-polar signals rain attenuation meas. at 30 GHz using ATS-6 satellite *(French)* 8–49064
differential attenuation and phase shift meas. for 36.5 GHz polarised waves rel. to raindrops 8–3856
Earth-space paths, rel. between rain depolarisation and attenuation 8–3858
fading at low elevation angles, meas. of satellite signals *(French)* 8–49069
joint Gaussian statistics 8–42265
Kanpur-Nainital troposcatter link, radio signal characts., simulation and obs. 8–40614
laser radiation absorpt. by water vapour and CO_2, stable anticyclonal conditions 8–20515
microwave attenuation, in rain, UK rainfall data 8–11965
microwave attenuation by salt water droplets 8–7725
microwave attenuation from rainfall rates, 10-40 GHz 8–40607
microwave links, short and long term rainfall rates, link design implications *(German)* 8–49082
microwave radiation from clouds meas. by Nimbus 6 for rainfall distrib. determ. 8–3981
microwave radio links, data meas. over 10 years rel. to radiowave propag. 8–3857
microwave radiometry in O_2 5 mm absorpt. band, appl. to temp. inversion detect. *(Russian)* 8–11963
microwave rainfall attenuation, 680 m vertically polarized link invest. 8–36238
microwaves, satellite-borne monitoring of atmospheric and surface characteristics 8–24353
microwaves near horizon meas. over water at 30 GHz, ATS-6 to ground link 8–24345
multiple atmospheric parameter meas. laser radar system 8–4009
multiple scatt. effects from stochastic medium 8–44941
pulse propagation over smooth irregular terrain 8–20458
radio beam curvature effect on phase meas. 8–49118
radio refractivity diurnal variation up to 3 km over India 8–40627
radiowave attenuation by rain, calc. 8–44919
rain attenuation data, appl. to path engineering 8–24327
rain attenuation for Earth-space links, comparison between radar- and radiometer-derived data 8–24343
rain attenuation on satellite-Earth path at 11.4 and 14 GHz by radiometric meas. *(French)* 8–49066
rain depolarisation and attenuation meas. at 11.7, 19.04 and 28.56 GHz *(French)* 8–49067
rain depolarisation using INTELSAT-IV satellite in 4 GHz band at low elevation angle *(French)* 8–49068
rain slant path attenuation statistics prediction at various locations 8–24344
rainfall prediction for attenuation prediction in Earth-space paths *(French)* 8–49062
satellite loss angle transmission effects, VHF and UHF 8–7747
scintillation effects at 30 GHz on ATS-6 geostationary satellite *(French)* 8–49065
SHF, ATS-6 satellite 20 GHz carrier, attenuation and depopolarisation meas. *(French)* 8–49063
spot dancing in inhomogeneous random media 8–46496
transhorizon radiowave propag. rel. to remote sensing 8–44921
ultrashort radio waves, refr. index vertical struct. at subfreezing temps. 8–16128
VHF coherent radar sounding, wind and refractivity turbulence struct. 8–28281
water vapour dielectric constant, rotational part, engineering method of calc. 8–40717
H_2O vapour absorpt. in 10-12 μm atm. window 8–20513

truth tables *see logic design*

TSC *see thermally stimulated currents*

TSCD *see thermally stimulated currents*

TSD *see thermally stimulated currents*

TTL *see transistor-transistor logic*

tubes (electronic) *see electron tubes*

tuners *see tuning*

tungsten
see also nuclei with ......
adsorbed K layer on (112) planes, temp. depend. of noise spectral density functions 8–2992
adsorbed layers of K on (112) planes, flicker noise field emission obs. 8–26774
adsorption, of Na, on (110) plane, ordering, theoretical anal. 8–18892
adsorption, of O, order-disorder transition, theory 8–38811
adsorption, potential of He atom above field adsorbed He or Ne atoms 8–35267
adsorption and early stages of condensation of Ag and Au on single cryst. surface 8–6212

tungsten continued
adsorption and replacement of CH_4, CO and NO *(Japanese)* 8−22949
adsorption of Au, field emission microscopy exam. of work function, correlation with LEED and RHEED meas. 8−35276
adsorption of B and La, field emission meas. 8−47662
adsorption of CO, FEM expt., pseudoclean pattern *(Japanese)* 8−34701
adsorption of CO on polycryst., SIMS 8−14585
adsorption of Cu, FIM and FEM obs. of nucleation, epitaxial growth and interface form. 8−26800
adsorption of Cu on single crysts. 8−14612
adsorption of H_2, FEM study of binding states *(Japanese)* 8−2370
adsorption of H, PMR meas. of adsorption state, surface migration 8−10275
adsorption of K, field emission flicker noise, coverage depend. 8−35262
adsorption of methane, on (100) and (111), work function meas. 8−38963
adsorption of O_2, (110), electron impact and thermal desorption at high temp. 8−30821
anode, dendritic growths during prebreakdown conditions in organic residual gas, electron microscope obs. 8−44383
anodisation, oxide struct., electronic current, and const. current efficiency 8−15575
atom, α-particle impact K-shell ionisation, 40 to 110 MeV 8−17752
atom, magnetic hyperfine struct. 8−934
backscattering energy spectra, channelling proton energy loss determ. 8−2181
bombardment with Na and K ions, neutral component of scatt. 8−11047
cathode, BaO-coated, struct. transforms. in coating, LEED obs. 8−11061
cathode, multicavity, Ar discharge, V-I and power characts. 8−26360
cathodes, heating by DC electron bombardment 8−23578
chemisorbed CO and acetylene, IR vibration spectroscopy using refl. inelastic electron scatt. 8−14603
chemisorption of acetylene, rehybridization, electron energy loss spectra 8−31289
chemisorption of Ba, inelastic tunnelling spectra 8−47664
chemisorption of H and O, (001) surface, localised orbital approach 8−14587
chemisorption of O_2, initial oxidation, reaction probability 8−15700
chemisorption of O_2 on surface (100), SIMS spectrum 8−34712
in chondritic meteorites abundance and distrib. 8−32412
CVD coating, on W-ThO_2 and SiC filaments, effect on high temp. mech. props. 8−15347
desorption of Cl(Br)(I), field ion microscope exam. 8−35270
determination, in Mg alloy, emission spectrographic DC arc-powder technique 8−48713
diffusion interaction with liquid Al *(Russian)* 8−26735
diffusion into liquid Al, under low gravity *(Russian)* 8−22875
diffusion of P, 1880-2180°C *(Russian)* 8−43182
doped wire, textural aspects of recrystallization 8−11239
edge dislocation interaction with interstitial atoms, influence on Peierls stress 8−34537
electron channelling in (111) direction, 1000 to 2000 eV energy range 8−38763
electron channelling in (111) direction, 200 to 1000 keV 8−2182
electron emission spectra, transmission induced struct. 8−43965
emissivity, integral hemispherical degree of blackness, 1200-3000K 8−43154
emitter tip, surface shape changes, field ion microscopy meas. 8−26754
evaporated film production, notched wire flashing method 8−35309
excess edge and screw dislocation density calc. *(Russian)* 8−34519
fibre, spiral, brittle, densification of particulate materials, general law 8−19692
fibre reinforced Cu composite, temp.-load depend. of time-to-rupture *(Russian)* 8−11299
fibre reinforced epoxy composite, static tensile behaviour *(Japanese)* 8−15482
fibre reinforced Ni composite, prep. by hot isotactic pressing, mech. props. *(Slovak)* 8−19694
fibre reinforced Ni-Cr (20 wt.%), hot pressing kinetics 8−35334
fibre reinforced Ni-Cu composite, liquid phase sintering under press. 8−19695
field desorption of K, from (001), (011) and (112) planes 8−34715
field emission tip, (310)-oriented with high brightness, appls. 8−27382
field emission tip, microscopic protuberance formation, min. elec. field and temp. 8−6835
field emitter, adsorption of Te on single cryst. faces 8−34714
field emitter, current fluctuations from cryst. faces 8−35263
field emitter, field-induced stresses, numerical analysis 8−35274
field emitter, periodic field-dependent photocurrent 8−35260
field emitter, substrate for K, emission from individual K planes 8−27385
field emitter, work function determ. for Bi and Bi_2S_3 8−6834
field emitter tip, condensation remoulding, field emission microscopy 8−2995
field ion (emission) microscope tip prep. from sheet and block metal 8−7155
field ion image, stripe contrast form., dislocations role 8−18652
field ionisation, photon assisted 8−3000
filament, coated with thin Ni film, creep and recrystn. *(Russian)* 8−19822
filaments, as electrothermal atomisers in at. absorpt. spectrophotometry 8−44432
filaments, as electrothermal atomisers in at. absorpt. spectrophotometry 8−44433
filaments as electrothermal atomisers in at. absorpt. spectrophotometry 8−27860
fine tip microcrystal, microscopic protuberance form., crit. remoulding obs. 8−27380
fine tip microcrystal, thermal smoothing after critical remoulding 8−27381
fine tip microcrystal, vertex remoulding, effects on field emission 8−27379
flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
heater for leucosapphire synthesis, recrystallisation 8−2151

tungsten continued
heteroepitaxial deposits with (110) orientation by molten salt electrolysis 8−47683
hydrometallurgical plant effluent waters, Mo and W determ. by activation analysis with low-power neutron sources 8−7279
impedance oscillations in mag. field 8−39140
internal friction and elastic constants, reson. vibrs. of metal spheres 8−15443
ions, fractionally charged, search 8−29083
laser irradiated, charged particle emission from back side of target 8−2949
lattice frequency spectra, sp. ht., Debye temp. 8−22799
metal, optical props., high-temp., from emissivity ang. depend. data 8−39519
monolayer of Ga(In)(Sn), field ion image qualities and work function 8−35272
Mossbauer effect, Debye temp. *(Russian)* 8−23383
Mossbauer recoilless fractions, temp. depend. 8−15076
neutron irrad., at thermal energies, annealing exam. of recovery 8−47355
oxidation, staged flow of O_2 interaction process, secondary ion emission obs. 8−11386
oxidation in flow conditions at 1000 to 6000K 8−11445
photo field-emission, periodic current deviation, wavelength depend. *(German)* 8−23579
photoemission, angle-resolved, from clean surface 8−15294
photoemission anisotropy from core levels, W (100) surface with adsorbed Cs 8−11076
photoemission of spin polarised electrons 8−35248
plasma, Tokamak-produced, W radiation obs. 8−9835
plasma impurity, radiation loss effects on Tokamak expts. 8−22465
plate, oscillations of surface impedance in circularly polarised RF fields *(Russian)* 8−39144
porous, variation of open and closed porosity during sintering 8−15342
powder, hydrostatic pressing 8−11161
powder, produced by plasma regeneration *(Russian)* 8−31360
proton integral dechannelling functions for single cryst. *(Russian)* 8−10111
reinforced Al, melting under weightlessness *(Russian)* 8−23691
resistivity min., thermoelectric anomaly correlation 8−2468
rigid collar, for sensitivity enhancement in flameless atomisation systems 8−35770
secondary electron yields from ion impacts, stopping power calcs. 8−11053
self-diffusion 8−47565
single crystal wire fabrication using electron beam zone-refining system modification 8−6845
solar absorbing surfaces, dendritic, anodised interference coatings 8−13815
spectral emissivity, 4.2-2800K 8−2874
sputtered film, compressive stress transition 8−10310
stepped surface, edge atom dipole moments 8−14791
strain induced damping, micro- and macro-, and dislocation structures in single crystals 8−19797
structural defeat recovery after irradiation and cold work 8−47429
support film for high resoln. electron microscopy, phase contrast, computer modelling 8−1144
surface, {100}, co-adsorption of Cu and O_2, AES, thermal desorption, LEED and work function meas. 8−38950
surface, (001), relax. determ. using LEED rot. diagrams 8−38917
surface, (001), spin polarisation and temp. effects in refl. diffr. 8−18881
surface, (001), surface CDW phase transitions 8−43455
surface, (100), angle-resolved photoemission from surface states, refraction effects 8−48279
surface, (110), adsorption of O_2, LEED, AES and thermal desorption meas. 8−38957
surface, (111), surface densities of states for normal photoemission 8−35251
surface, (112), adsorption of La, coating growth and struct. obs. *(Russian)* 8−14618
surface, (112), diffr. intensities in He scatt., topographic curves 8−15274
surface, chemisorbed H layer, modulation spectroscopy, anal. of Kramers-Kronig relations 8−23423
surface, Cu covered, field ion microscopy study 8−23587
surface, interaction with F_2 and fluorides at low temp. and high press. 8−39700
surface, mirror electron microscopy for total electron refl. coeff. determ. 8−5994
surface, spectral density of states 8−39181
surface, with adsorbed Pd, field emission obs. of adsorpt., diffusion and self-diffusion 8−38945
surface {001}-(1×1), struct. determ., dynamical and exptl. LEED results 8−14560
surface (001), spin-depend. features in LEED intensity curves, model calcs. 8−34685
surface (100), chemisorption of Hg, AES, LEED, work function and thermal desorption expts. 8−34709
surface (100), electron-stimulated desorpt. of O 8−2363
surface (112), He scattering, theoretical interpretation of data 8−35241
surface (310), field emission current instability induced by migrating atoms 8−35254
surface geometry and emission parameters, changes during directional mass transport 8−2344
surface reflection of conduction electrons *(Russian)* 8−43373
surface resonance band fine struct. in LEED 8−47844
surface resonance bands 8−47843
surface self-diffusion, anisotropy 8−34689
surface state resonance exam. above vacuum level 8−30965
surface structure, LEED anal. 8−38919
thin wire, negative longit. magnetoresist., kinetic theory 8−34821
thoriated hairpin filament electron source for high brightness appl. 8−341
Tokamak reactor ISSEC 8−41860
transport properties at low temp., electron and impurity scatt. 8−10418
twin boundary and twinning dislocation struct., computer simulation 8−30644

tungsten continued
UPS, angle-resolved, surface resonances on (100) face 8−2987
vacancy annealing stage after heavy ion implantation, Mossbauer meas. 8−39463
vacancy-defect clustering, due to annealing and quenching, TEM and elec. cond. exam. 8−47344
vapour press. above different crystallographic planes *(Russian)* 8−18762
whisker fabrication, AC and DC electrochem. etching 8−43278
wire reinforced Cu, microfield, flow stress 8−27575
wires, KSiAl doped cavity formation *(German)* 8−31524
work function, field emission meas., Te and Cs surface film effects 8−19645
Al_2O_3-W cermet, sintered pressed compact, compressive and transverse rupture strength 8−19850
Pt-W interface, contaminated, contact adhesion, deform. and interfacial energy 8−22306
VO_2:W, thin layer prep. by reactive DC sputtering, doping effectiveness *(German)* 8−6847
W glass, laser-irrad., plasma electron energy profile steepening, polarimetry obs. 8−34349
W:H, correlations between elastic energy transferred by implanted H ions and H trapping 8−14370
W-Ba, type B impregnated cathode, operation mechanism 8−15278
W-EuS interface, electron spin polarisation in field emission 8−35265
W-GaAs contact, Schottky barrier 8−39213
W-Ge whisker diode, 337 μm IR detector *(French)* 8−8445
W-MgO cermet film, dielectric const. and selective solar absorption 8−2937
W-Mo-Co high-speed cutting steels, Co determ. 8−3416
W-Ni point contact diode detectors at 10.6 μm, mech. and props. 8−24861
W-O-Cs system, thermionic emission, 450-800K 8−2972
W-Pt mechanical contact, FIM obs. of contact area 8−35527
W-ThO_2 filament, W, TaC and HfC CVD coatings, effect on high temp. mech. props. 8−15347
(W-Au)-SiO_2-Si:B MOS transistor, ion implantation effect on threshold voltage 8−34903
ZrO_2-W, eutectic microstruct. 8−27499

tungsten alloys
see also tungsten compounds
steel electrode, erosion resist., influence of C and carbide-forming elements *(Russian)* 8−11389
Stellite 6B, volatilisation of oxides during oxidation at 1200°C 8−23873
Co-Cr-Ni-W-TaC (15.7, 9.5, 3, 12.77 wt.%) alloy Co50B3W, temperature cycling effect on rupture strength 8−39898
Co-W-C system at 1150°C, phase equilibria, isothermal reactions and thermodynamic study 8−31385
Co-WC, protective coatings by B diffusion, microstruct. and mech. props. 8−11427
Cu-Ni-W melt, solubility of W, primary solidification 8−19726
Fe-W, recrystallisation under laser irradiation *(Russian)* 8−35396
Fe-W (5%), internal friction, mag. and nonmag. components *(Russian)* 8−48018
Mo-W, integral hemispherical degree of blackness, 1200-3000K 8−43154
Mo-W (50 wt.%), emissivity, 1200-3000K, effects of annealing and surface treatment 8−43154
Nb-W, cold plastic deform., oriented microdistortions *(Russian)* 8−39840
Ni-Al-Cr-Mo-Ti-W-(Co) alloys EhI 826 and EhI 929, reverse elastic after effect under loading 8−39829
Ni-Al-Cr-Ti-W-Mo, US vibration applied during solidification, improved strength, corrosion resistance *(Russian)* 8−15382
Ni-Cr-Al-W-Ti alloy MA 6000E, mechanical alloying for high temp. appl. 8−44046
Ni-Cr-Ti-Co-W-Al-Mo alloys AF-115 and AF2 1DA, superalloy powder compacts, fatigue origins 8−48521
Ni-W melt, N_2 diffusion *(Russian)* 8−18812
Ni-W-B, superalloy, M_5B_3 type boride 8−44131
Ni-W-Co-Cr, superalloy MAR 200, with Hf, cellular composite prod. by isothermal dendrite ripening 8−44150
Ni_3(Al,W), yield stress, orientation depend. 8−39830
Ni_3Fe-W, transport props. and magnetisation, effect of W alloying *(Russian)* 8−39095
Pd-Ru-W, elec. resist. and thermal cond. *(Russian)* 8−19017
Pt-Rh-W alloy corrosion by radioisotopic power system insulating and thermoelec. materials 8−7094
Ta-W optical props., temp. depend., 4.2-1100K 8−2874
Ta-W TV-10 alloy, thermal expn., 1146-2288K 8−43148
Ti-W, dilute, superconducting transition temp. and mag. susceptibility 8−47899
W/Cu powder with varying W particle size, burning behaviour and crack form. tests *(German)* 8−7005
W-C-(Zr)(Hf)(Nb)(Ta)(Re) alloys, vacuum melted, phase composition, struct. and props. 8−31403
W-Cu, electrical erosion resistance during electrospark machining 8−35531
W-Cu sintered alloy, produced from coreduced powders, densification 8−11154
W-Cu-Co(Ni) electrical contact material, comparison of Co and Ni effects *(Korean)* 8−10539
W-Ir (1 wt.%), positron annihilation, photon ang. distrib. meas. effect of deformation, annealing temp. *(Russian)* 8−35220
W-Nb (0-30 at.%), average thermal expansion coeff., 500-1200K 8−14483
W-Ni, liquid phase sintering, microstruct. meas. 8−44054
W-Re, integral hemispherical degree of blackness, 1200-3000K 8−43154
W-Re, optical props., temp. depend., 4.2-300K 8−2874
W-Re, phase form. and diffusion interaction with liquid Al, under weightlessness *(Russian)* 8−22876
W-Re, sigma phase stability and irrad. effect 8−11200
W-Re alloy, effect of thermal prehistory on resistivity meas. 8−3241
W-Re wire, CVD coatings of SiO_2 and Mo, for neurological electrode, elec. cond. and bending props. 8−11752
W-Ti(Zr)(Hf)-C, cubic solid soln., form. and props. 8−48348
WC, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854

tungsten alloys continued
WC, plasma sprayed coating 8−35592
WC-Co, cemented carbide sintered, appl. of dihedral angle meas. to microstruct. 8−39716
WC-Co, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-Co, creep rupture strength meas. 8−31475
WC-Co, evidence for H embrittlement 8−48530
WC-Co, fracture toughness testing by double torsion bend test 8−27705
WC-Co, size factor effect on strength in complex stressed state 8−31483
WC-Co, time-depend. strength params. 8−31516
WC-Co (10 wt.%), vacuum sintered, short-time bending creep rupture strength *(Japanese)* 8−15508
WC-Co alloy, short-time creep rupture strength, C content effect 400° to 900°C *(Japanese)* 8−48487
WC-Co alloy, transverse rupture strength rel. to grain size and strain rate, 400° to 900°C *(Japanese)* 8−48486
WC-Co alloys, P additions, effect on hot pressing, hardness and wear resist. 8−11162
WC-Co cemented carbides, effect of Co form and distrib. in prep. starting mixture 8−44072
WC-Co hard metal, stress conc. factor and stress intensity factor, rel. to wear *(German)* 8−11335
WC-Co hardmetal, defect initiated fracture and bond strength 8−11319
WC-Co sintered carbide tips, microscopic stress anal. 8−5663
WC-Co-Cu, interdiffusion up to 1120°C 8−11492
WC-Co-Ta(Ta-Ti-Nb), cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
WC-Ni detonation sprayed coating, wear resistant 8−35594
WC-Ni hard alloys, sintered, with uneven binder metal distrib., molten Ni migration 8−35336
WC-TiC, powder for plasma arc spray coating appl. 8−15591
WC-TiC-Co, powder for plasma arc sprayed coating 8−15591
WC-TiC-TaC, powder for plasma arc spray coating appl. 8−15591
W_6Co_6C cemented carbide substrate, TiC CVD coating, structure, composition and hardness exam. 8−11425

tungsten compounds
see also tungsten alloys
alkali metal tungsten bronzes, enhanced supercond. T_c, possible explanation 8−14850
complex, $WOCl_4.Ph_3SO$, prep. and characterisation 8−30592
dichalcogenide, valence band nature, elec. and mag. props. 8−39014
metatungstate mixed valence anions, XPS spectra, oxidation states 8−6824
triphenylphosphine compounds, $(C_6H_5)_3PM_xM'_{1-x}(CO)_5$, M,M'=Cr, Mo, W, mixed cryst., CO vibr. spectra, modal anal. 8−35128
Fe-WO_3 system, struct. phase exam. by optical microscopy and X-ray diffr. 8−31389
H_xWO_3, amorphous, Anderson transition, disorder depend. and optical detection 8−47840
$K_{0.33}WO_3$, hexagonal, phonon dispersion curves, neutron scatt. obs. 8−14411
Na_2O-WO_3 glass containing transition metal ions optical absorption 8−27254
Na_xWO_3, $(0.22 \leqslant x \leqslant 0.84)$, ^{183}W NMR, electronic struct. near metal-semicond. transition, Knight shift 8−48063
Na_xWO_3, cubic single cryst., LEED/Auger obs. 8−19614
Na_xWO_3, supercond. crit. temp., semiempirical model lor lattice instabilities in nonstoichiometric materials 8−14442
$Nb_{1-x}W_xSe_2$ $x=0$ to 0.15, elec. resist., mag. suscept., heat capacity, structural, supercond. transition *(Russian)* 8−31006
NiO-WO_3, phase relns. 8−3106
Pb_xWO_3 $(0.01 \leqslant x \leqslant 0.28)$, tetragonal and orthorhombic bronzes, cryst. chem. data 8−42997
$PbZrO_3$-$PbCd_{0.5}W_{0.5}O_3$, phase transitions 8−43817
$TlR(MO_4)_2$, R=Eu, Dy, Er; M=Mo, W, luminesc. *(Russian)* 8−48229
W_2B_5, sintering rel. to prod. by boron carbide process 8−11184
W_aBr_b, enthalpy determ. by mass spectroscopy 8−11584
WC, crystallite size distrib. of powder, SEM method *(German)* 8−47218
WC, friction against FeO compacted powder, effect of wall groove orientation and wall lubricants 8−23831
WC, hexagonal, meas. of mean square shift of atoms in micron powders *(German)* 8−47313
$W(CO)_6$, bonding, IR intensity anal. 8−25526
WCl_5, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
WF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
WF_6-ZZ 8−27441
WO_3 electrochromic cell, deposited Cr_2O_3 as barrier 8−15147
WO_3 electrodes, electrochem. and photoelectrochem. behaviour 8−26949
WO_3 film, amorphous, struct. and crystallisation, high resolution electron microscopy 8−43268
WO_3 film, electrochromism, X-ray electron spectra 8−48146
WO_3, force field, normal coord. anal., kinetic consts. method, thermodynamic props. 8−25504
WO_3, polar, electrochromic absorpt. bands, small polaron theory 8−39528
WO_3, single cryst. and amorphous film, ESR of defects 8−10770
WO_3, smoke particles, coalescence growth by gas-evaporation 8−47256
WO_3, strain energy, between parallel {001} shear planes 8−34523
WO_3, surface pot. between ferroelec. domains 8−15132
WO_3-MoO_3 film, amorphous, electrochromic optical absorpt., expt. results and model 8−27341
WO_3-P_2O_5, glass, DC cond. meas. high temp. range 8−6376
WO_3-P_2O_5 glass, DC elec. cond., 100-400K 8−39106
WO_6^{6-}, in lattice electronic struct., luminesc. ab initio calcs. 8−6337
WO_x-MO_y system, (M=Mn, Fe, Co, Ni), phase relations in dioxide-trioxide region, 1373K 8−11212
W_2O_{5-x} current noise due to adsorption of water 8−6421
WO_aBr_b, enthalpy determ. by mass spectroscopy 8−11584
$WO_{2.7}H_y$ film, colouring, comp. depend. 8−15239
W_2OsB_2, cryst. chem. and struct. 8−42995
WSe_2 (2H), elec. cond. press. depend. 8−43394

tungsten compounds continued
  2H-WSe_2, layered cpd., anisotropic X-ray absorption 8−39629
  WSe_2, lubricant, prep. by self-propagating high-temp. synthesis, technological characts. 8−35338
  WSe_2, single cryst. growth by sublimation method 8−11091

tuning
  see also laser tuning; receivers; resonance
  holographic grating monochromator for 5 to 1000 eV synchrotron radiation 8−18049
  optical directional coupler phase tuning by chalcogenide glass film loading 8−1373
  waveguide reflection maser, 9 to 10 GHz tuning 8−5443

tuning forks *see vibrating bodies*

tunnel diode oscillators
  No entries

tunnel diode storage devices *see semiconductor storage devices; tunnel diodes*

tunnel diodes
  see also tunnelling
  Esaki junctions, tunnelling and negative resistance phenomena, book 8−26947
  ternary semiconductor based Schottky diodes with tunnel device characts. 8−39215

tunnel effect *see tunnelling*

tunnel triodes *see thin film transistors*

tunnelling
  see also superconductive tunnelling; tunnelling spectra; tunnelling spectroscopy
  alkali halides, off to on centre defect transitions under hydrostatic press. 8−15199
  band theory, cryst. with arbitrary band widths ratio *(Russian)* 8−14650
  benzene, isotropically mixed crysts., singlet and triplet exciton percolation theory 8−26818
  CL Al_2O_3, film, dielec. const. and resist., thickness depend. 8−39502
  classically stable state, local potential minimum, decay 8−16693
  clathrate deuterohydrates, ^1H NMR lineshape of tunnelling methyl group, <5K 8−46370
  cytochrome c-$Fe(CN)_6$ electron transfer, verification of vibronically coupled electron tunnelling 8−48750
  decaying states, using Kapur-Peierls and Siegert resonant states and extended Hellmann-Feynman theorem 8−4503
  defect tunnelling, phonon assisted, in-band defect-induced phonon reson. modes effect 8−14419
  diffusion-controlled defect recombination, incorporating Coulomb interaction and annihilation 8−23044
  discontinuous metal films, elec. cond., review 8−19167
  doped electrode junction, tunnelling, Kondo scatt., coherence distance 8−31001
  double potential wells, tunnelling and over-barrier decay rates, method of beats calcs. 8−44363
  double well anharmonic oscillator, 1-d system, effect of fermions upon tunnelling 8−16689
  electroluminescence excitation, tunnelling theory 8−43936
  electron scattering, influence on current-voltage characts. of tunnel contacts 8−14798
  exciplex gas lasers, pumping by barrier tunnelling 8−17908
  ferroelectric H bonded crystals, linear response function for tunnelling systems in polariton region 8−43799
  glass, ultrasonic spectral diffusion, low temp. 8−18709
  heterojunction, composite barrier, thermally assisted tunnelling 8−19136
  2,4-hexadiyne, solid, methyl group tunnelling and torsion, neutron scatt. 8−18560
  hydrogen bond, quantum tunnelling of proton and activated complex theory 8−17586
  Jahn-Teller problem, $T \times \varepsilon_g$, spin-orbit allowed tunnelling splitting, zero-phonon line splitting 8−19006
  layered crystal, three-dimens. ordering of CDWs *(Russian)* 8−2439
  MAOS capacitor, cond. and charging behaviour 8−26963
  MAS capacitor, cond. and charging behaviour 8−26963
  metal films, quench-condensed, two-dimensional elec. cond. 8−39233
  metal whisker diode, thermal field emission, nonlinearity, response time and polarity reversal 8−2579
  metal-metal contact, electron tunnelling stimulated by surface plasmons *(Russian)* 8−30974
  metallic fine particles, tunnelling effects on props. 8−14704
  metallic point contact diodes, tunnelling props., geometrical asymmetry effects 8−10576
  methyl (CH_3D) group tunnelling in solids, quantum model rel. to two T_1 temp. depend. minima 8−2028
  methyl groups, detection of proton NMR at arbitrary temps. of tunnelling system 8−39432
  methyl-containing mol. solids, proton NMR line shape, methyl group tunnelling 8−6588
  MIM, open system normal tunnelling Hamiltonian, stationary state 8−39190
  MIM diode, elastic tunnelling current, phenomenological theory 8−19159
  MIM junction, tight-binding Green function calc., disorder effect 8−10577
  MIM structures nonlinear properties, EM signals detect. appl. *(Russian)* 8−34912
  MIM tunnel junction, direct calc. of resonance tunnelling 8−14837
  MOS tunnel structure, Si-SiO_2 barrier height, SiO_2 thickness depend. 8−14831
  Multiphonon effects in the theory of electron tunelling between deep impurity levels and the conduction band in strong electric fields 8−2447
  multiphoton processes, in homogeneous electric field *(Russian)* 8−39607
  negative ion formation, by sputtering, work function depend. 8−39645
  nuclear relaxation in symm. groups, phonon-induced transition model 8−38635
  oxide glasses with Bi or Se granules, elec. props. and microstructure 8−2490
  polyethylene, thermally oxidised, low-temp. dielec. relax., dipolar tunnel states 8−2797

tunnelling continued
  potential barrier, tunnelling probability spectrum and tunnelling time 8−79
  prelumirhodopsin, psec. kinetics, primary photochem. event in vision, proton translocation 8−44508
  1-propanol, electron traps, prestabilised electron relax. model 8−27803
  quantum crystal, model of tunnelling point defect at finite temp. 8−38907
  quasi-one-dimensional conductors, order in coupled metallic chains problem 8−6358
  quasi-one-dimensional cryst., three-dimens. ordering of CDWs *(Russian)* 8−2439
  resonance tunnelling of electrons in Bloch wave representation 8−11088
  resonant optical orientation, tunnel centres, kinetic eqn. *(Russian)* 8−43911
  rigid rotor, asymmetric, semiclassical energy levels determ., tunnelling 8−37624
  Schottky barriers, resonant tunnelling through traps, theory 8−10553
  semiconductor in constant elec. and mag. fields, interband tunnelling 8−43405
  semiconductor tunnelling and negative resistance phenomena, book 8−26947
  stochastic quantisation theory of time dependent tunnelling effects 8−41197
  TCNQ salts, electron tunnelling 8−47769
  vacuum tunnelling of gauge theory in Minkowski space 8−41425
  vibronic ferroelectric semiconductor, tunnel effect 8−10853
  wave mechanics and tunnel effect, internal energy storage 8−36857
  Al-Al_2O_3 triple-barrier structure, negative resist. caused by resonant tunnelling 8−14819
  Bi-Bi_2S_3 superlattice, elec. props. 8−10558
  CsH_2PO_4, ferroelec. transition, deuteration and press. effects 8−35101
  D_2O, isolated in glassy H_2O, IR spectrum, deuteron tunnelling 8−27207
  GaAs-$Ga_{1-x}Al_x$GaAs heterostructure, electron tunnelling theory 8−47861
  GaAs-$Ga_{1-x}In_xAs$ heterojunction, thermally assisted tunnelling 8−19136
  GaP:N, temp.-modulated photoluminesc., phonon assisted tunnelling process 8−23511
  ^3He-^4He solid mixture, ^3He-^3He and ^3He-^4He tunnelling motions, NMR meas. 8−38908
  ^4He film, superflow onset, 2-dimens. XY model 8−47623
  ^4He, solid BCC, vacancy tunnelling at finite temp. 8−38907
  ^4He, superfluid, tunnelling effect and vacancy wave 8−47618
  In:Sn, phonon spectrum, electron-phonon interaction *(Russian)* 8−18722
  $In_{1-x}Ga_xP_{1-z}As_z$ DH laser diode, defect and phonon assisted tunnelling 8−13708
  $In_{1-x}Ga_xP_{1-z}As_z$ well in InP, tunnel injection into confined particle states 8−19130
  KCl:Li, ⟨111⟩ off centre Li^+ under biaxial stress, bistable tunnelling 8−15090
  KH_2PO_4-type ferroelectrics, inelastic neutron scatt. theory 8−48122
  $KTaO_3$, electromech. props. and electron tunnelling 8−23403
  $LiH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8−43853
  MgO:Fe^{2+}, Jahn-Teller effect in ^5E_g state, tunnelling splitting obs. 8−19517
  MnF_2, thermal cond., temp. depend., role of reson. scatt. of phonons by OH^- defects 8−38889
  $Mu+F_2 \rightarrow MuF+F$, 300 to 400K in N_2 moderator, reaction rate determ., tunnelling 8−48682
  NH_4 compounds, tunnelling frequency of NH_4 ion in crystals, cubic and noncubic 8−38633
  NH_4^+, NMR line shapes at low temp., composite tunnelling, reorientation 8−48054
  $(NH_4)_2Ce(NO_3)_6$, proton relax. by tunnelling at low temp. 8−43666
  NH_4ClO_4, proton relax. by tunnelling at low temp. 8−43666
  NH_4ReO_4, PMR, NH_4^+ tunnelling, ground torsional level struct. 8−27097
  $(NH_4)_2SiF_6$, proton relax. by tunnelling at low temp. 8−43666
  $(NH_4)_2SnCl_6$, proton relax. by tunnelling at low temp. 8−43666
  $NaH_3(SeO_3)_2$, IR and Raman spectra, internal modes, intra- and inter-H-bond tunnelling 8−43853
  Nb:N, H, atomic tunnelling of interstitial pair, specific heat meas. 8−47600
  Ni, and its alloys, spin polarised tunnelling expts. 8−39372
  Ni complex, $[Ni(OCH_3)\ (acac)\ (CH_3OH)]_4$, sp. ht., 0.4-285K, methyl group internal rotation 8−47531
  $Ni(NH_3)_6X_2$, X=Cl,Br,I, rotational tunnelling by inelastic neutron scatt. 8−30553
  OH, $A^2\Sigma^+$ state, predissociation and tunnelling 8−29823
  OH, $A^2\Sigma^+$ state, predissociation, tunnelling 8−29824
  Pb-SiO_2-Au tunnel junction, obs. of conductance anomalies 8−26968
  $PbHAsO_4$, ($PbDAsO_4$), Raman spectra of ferroelec. transition proton tunnelling 8−23410
  $PbHAsO_4$, hydrostatic press. effect on ferroelec. transition 8−35102
  $PbHPO_4$, hydrostatic press. effect on ferroelec. transition 8−35102
  $PbHPO_4$, Raman spectra study of ferroelec. transition, proton tunnelling 8−23410
  $(SN)_x$, electron tunnelling, absence of supercond. energy gap 8−47769
  Si, amorphous presence of acceptor states around Fermi level 8−2445
  Si_3N_4, amorphous, in MIS struct., high field conductivity 8−23101
  SiO_2 based glasses, highly absorbing anomalous IR absorption at low temps. 8−43871
  SnO_2, glaze, high field cond., 4.2-470K 8−23100
  $Sr(NH_3)_6$, PMR linewidth, proton tunnelling and NH_3 rot., rapid NH_3 diffusion 8−35045
  V, phonon assisted tunnelling in impurity induced lattice strains 8−47601

tunnelling spectra
  chemisorbed atoms, inelastic tunnelling spectra 8−47664
  inelastic electron tunnelling structure, cover electrode metal effects 8−19127
  phenol, adsorbed layer, inelastic electron tunnelling spectral lineshapes below 100 mK 8−31000

tunnelling spectra continued
sulphonic acids, adsorption and orientation on Al_2O_3, tunnelling spectroscopy obs. 8−34707
W (100), chemisorbed Ba, inelastic tunnelling spectra 8−47664
tunnelling spectroscopy
differential tunnelling spectroscopy, bridge design 8−5309
Al/formvar/Al(Sn) structures, low frequency phonon spectroscopy by tunnel effect 8−23206
tunnels, wind *see wind tunnels*
turbidimeters *see turbidimetry*
turbidimetry
crystallisation kinetics study of sparingly soluble salts 8−26471
Freon-12(22), gas, Rayleigh vol. scatt. coeffs., spectronephelometric meas. 8−14127
immunochemical analysis, standardisation of light scatt. meas. 8−36081
photometer, MEX2, construction and operation *(Dutch)* 8−21203
water quality meas., continuous, in tubular columns, probes utilisation *(French)* 8−3836
zinc oxalate crystallisation kinetics determ. by turbidimetry method 8−30569
SF_6, gas, Rayleigh vol. scatt. coeffs., spectronephelometric meas. 8−14127
turbidity
see also turbidimetry
atmosphere, effects on classification of remotely sensed Earth surface features 8−16204
atmosphere, ideal Rayleigh, direct solar radiation at Earth's surface calc. 8−36274
atmosphere, radiation scatt. role of spatial inhomogeneities *(Russian)* 8−7765
atmosphere, turbidity meas. via polarisation of UV light of daytime sky 8−20517
atmosphere at Athens Observatory, solar radiation meas. 8−7768
atmosphere boundary layer, turbidity rel. to spectral struct. of radiation attenuation *(Russian)* 8−44997
auroral ionosphere, radio turbidity coeff. 8−45112
disperse systems, turbidity spectrum, wave exponent, spherical particle size depend. 8−46514
disperse systems, turbidity-spectrum method, scatt. functions for non-spherical particle systems 8−20078
dispersed random prolate spheroids, light scatt. characts., for turbidity spectrum calcs. 8−25801
EM infinite plane wave, mutual coherence function propag. 8−1163
Lorenz-Mie light scatt. fine struct. 8−7242
macromolecules, mol. wt. meas., light transmission meas. 8−17828
ocean, turbidity current flow, computer simulation 8−15997
phosphatidylcholine dispersion, phase transitions obs. with interference refractometer 8−44459
reservoir, stratified layer turbidity *(Japanese)* 8−20455
suspension, light scatt., turbidity 8−44407
turbine generators *see turbogenerators*
turbines
see also compressors; gas turbines; steam turbines; turbogenerators
blade, rotating, vibr. analysis using holographic interferometry 8−32807
turboalternators *see turbogenerators*
turbogenerators
short circuits, stator end windings deformation *(Japanese)* 8−11465
turbulence
see also atmospheric turbulence; boundary layer turbulence; cavitation; laminar to turbulent transitions; plasma turbulence; shear turbulence; turbulent diffusion; vortices
acoustic, in gas, heat transfer, mean internal energy and oscill. absorpt. *(Russian)* 8−46962
active ocean layer, numerical modelling *(Russian)* 8−32110
aerodynamic architectural and industrial testing, Oxford University 4×2 m wind tunnel 8−22443
aerodynamically generated noise, especially jet noise *(French)* 8−14002
amplitude equation anal. of two-dimens. flow fields 8−5731
anemometer, cond.-type, with external mag. field, turbulence spectrum correction 8−1766
annular conduit, wall suction, turbulent flow *(French)* 8−18343
atmosphere, vertical heat flux determ. on basis of semiempirical turbulence theory 8−3907
axisymmetric, rapid distortion 8−30271
black holes, spherical turbulent accretion rel. to gamma rays emission spectrum 8−32504
bluff body, turbulent near wake, vel. correlation struct. 8−30298
bubbly, laser meas. of local liquid velocity and void fraction *(Japanese)* 8−9693
Burgers' turbulence, similarity law and renormalisation 8−46994
channel flow, meas. of vorticity and turbulence prod., pattern recognition method 8−26194
channels, energy aspects of turbulent flow 8−7677
chemical reaction at wall, turbulent mass transfer at $Pr \gg 1$, first order 8−18357
coaxial jet, Raman scattering diagnostics of turbulent flow field 8−18328
combustion, turbulent, implications of probability eqns. 8−14098
compressible gases interface, turbulent mixing 8−1683
conference, drag reduction and turbulence struct., Washington, USA (June 1976) 8−22329
constant isotropic kinematic thermal turbulence, constant gravity effects *(French)* 8−30269
convection in fluid layer, turbulence from Rayleigh-Bernard instability 8−42605
convection in vertical layer, numerical modelling *(Russian)* 8−9636
convective plume in uniform isothermal atmosphere *(Russian)* 8−5738
cylinder heat transfer to turbulent cross-flow of water at critical Re *(Russian)* 8−34132
decaying isotropic turbulence, Wiener-Hermite expansion, renormalised time-depend. base 8−38299
discrete model exhibiting successive bifurcations leading to onset of turbulence 8−13996
dissipation in incompressible fluid 8−1647
drag reducing flow, mean vel. and turbulent energy closures 8−22331
drag reduction, dilute polymer soln., wall roughness effective slip depend., turbulence model 8−26162

turbulence continued
drag reduction and burst cycle mechanism, dil. polymer soln. 8−26164
drag reduction scale-up criteria 8−22330
droplets in turbulent flow, heat and mass transfer 8−22410
duct, smooth or rough, laws of turbulent motion *(French)* 8−34196
duct, triangular, fully developed flow 8−38298
dynamic methods appl. 8−1640
eccentric rotating cylinders, flow where clearance is relatively large 8−1667
energy transformation, models 8−1641
entrance flow, circular pipe, kinetic energy dissipation rate two eqn. model 8−47039
Eulerian and Lagrangian renormalization in turbulence theory 8−9629
fibre suspension, rheology, rel. to turbulent drag reduction 8−22315
fibre suspension in water, turbulent jet, analogous behaviour to polymer solns. 8−1732
flame, premixed, variable density effects 8−5824
flame, turbulent mixed gases, thermal exchange effect on reaction rate 8−7205
flame, turbulent premixed with sequential chemistry, closure model 8−35683
flame quenching, by narrow cylindrical passage 8−15674
flow fields measurement, evaluation of stereoscopic trace particle records 8−1648
flow through bends and diffusers, pressure losses, component interactions influence 8−42665
fluctuations, turbulent, amplitude scale characteristic 8−18273
Fokker-Planck dynamics, homogeneous hydromag. turbulence 8−45566
fractal approach, attractors and dispersion 8−46943
free-stream, effect on heat transfer and skin friction 8−30276
freezing of turbulently flowing liq. in tube, steady state 8−33998
Galaxy magnetic field, turbulent struct. from extragalactic sources Faraday rot. 8−20885
gas flow in annular channels, heat transfer apparatus and technique *(Russian)* 8−34199
gas flow turbulent press. and vel. fluctuations meas. by condensation method 8−34217
gas jet, transient section and position of turbulent zone *(Russian)* 8−47010
heat transfer between successive cylinders in liquid crossflow, expts. *(Russian)* 8−46967
heat transfer in circular tube during turbulent flow *(Russian)* 8−38175
heat transfer of plate, to accelerated liquid flow *(Russian)* 8−18299
heated turbulent flows, cct. for instantaneous temp. meas. 8−21137
homogeneous, anisotropic, statistical coeffs. of velocity and temp. fields 8−18274
homogeneous, three-point method 8−13995
homogeneous isotropic turbulence, Heisenberg's decay eqn., stability anal. 8−30272
homogeneous isotropic turbulence energy, spectral density, wave number vector modulus anal. *(Russian)* 8−46946
homogeneous isotropic turbulence in final period of decay, triple vel. correl. *(Chinese)* 8−18277
hot turbulent flow, temp. fluctuations, hot-wire anemometer *(French)* 8−42684
hot-wire probe, simultaneous, instantaneous, temp. and vol. component meas. in turbulent flow 8−34236
Hurst phenomena in grid turbulence 8−46947
inclined hot-wire response equations, for flow field having dominant tangential velocity component 8−14105
incompressible conducting fluid, homogeneous turbulence, functional charact. 8−18355
infinite-dimensional turbulence, short-time and renormalised expansions 8−24670
intermittency determination from passive scalar probability density function 8−42611
ion-selective membrane, flicker noise and turbulent convection in depleted layer 8−48692
isotropic, in entrained air bubble channel flow, spectral struct. 8−34112
isotropic, multiple-scale cumulant expsn. 8−34111
isotropic, response to change in principal aces of strain tensor *(French)* 8−18276
isotropic, theory rel. to expt. data 8−1646
isotropic time depend. turbulence, theory 8−32682
jet, drop motion 8−5789
jet, dye-dilution laser induced fluoresc. meas. 8−30397
jet, heat transfer during impingement on sphere or cylinder rel. to turbulence *(Russian)* 8−38327
jet, impinging on curved plate, surface press. fluctuations 8−9666
jet, large scale struct. and vortices, linear stability theory 8−26179
jet, noise modelling by geometrical acoustics, outside silence cone 8−34177
jet, three dimens., expt. 8−1702
jet, turbulent, deflected, 3-dimens. vel. field, finite-difference soln. 8−47009
jet diffuser efficiency, fine turbulent jet injection at outlet sections 8−1707
jet flow, moderate Reynolds no., time domain analysis 8−18329
jet flow mixing length calc., two-equation model solution, using finite element method 8−38295
jet mixing noise, aircraft, in-flight simulation expt. 8−1501
jet mixing rates with self-excited acoustic oscills. 8−47008
jets, behaviour in presence of body forces and non-self-similarity 8−1706
jets, free, turbulent, acoustic effect, dual nature 8−18325
jets, velocity and concentration profiles in core and transition regions *(German)* 8−34172
Kolmogoroff's $-5/3$ power law, statistical approach 8−1644
Kolmogorov turbulent spectrum, direct interaction model 8−18275
large eddy simulation, numerical technique 8−9628
laser Doppler velocimeter, for turbulent flow velocity meas., redesign 8−1245
liquid crystals, bubble domains, generated by electrohydrodynamic turbulence *(Japanese)* 8−22413
liquid metal in periodic EM field, mean MHD flow, turbulent stresses calc. *(Russian)* 8−47056
liquid metals, turbulent heat transfer characts. 8−42602
liquid motion in channels with permeable walls, hydraulic resistance 8−5797

turbulence continued
liquid pipe flow, heat transfer, thermoacoustic oscills. 8−9635
liquid-liquid mass transfer in systems agitated by submerged jets 8−22393
Lorenz attractor, origin and struct., appl. to specific model systems 8−29054
Lorenz attractor struct. 8−46944
lung and vascular tree structs., optimisation of diameters and bifurcation angles 8−11683
magnetic energy transfer in weak mag. fields 8−18350
mass transfer from rotating cylinders 8−42613
mean flow near-wake characts., two-dimens. bluff models 8−42609
methane-air flame, Raman scattering diagnostics of turbulent flow field 8−18328
MHD channel flows, asymptotic theory 8−30368
MHD effects in turbulent medium with density gradient, appl. solar convection *(Russian)* 8−47055
MHD turbulence, gyrator effects 8−42670
MHD turbulence, helical, numerical simulation 8−38415
microjet noise and micropore diffuser-muffler design 8−30335
mixing layer, vel. and temp. distribs., conditional averaging *(Russian)* 8−38296
models, two-dimens., vortex and Fourier mode 8−46945
natural convection effect on heat transfer 8−5739
Navier-Stokes equations, averaged, closure, dynamical system approach 8−46941
Navier-Stokes equations, comparison of models 8−46939
Navier-Stokes equations, dynamical systems approach, strange attractor 8−46942
near wake of disc, annular jet, vel. characts. 8−38336
near wall vel. meas. for wall shear inference in turbulent flow 8−34234
nomogram for heat transfer coefficient determ., water flowing in pipes or tubes 8−9641
non-Newtonian flow in noncircular pipes 8−18315
noncircular pipes, laminar and turbulent flow 8−18315
nonequilibrium fluctuations at onset of turbulence 8−18272
nonlinear wave modulation in strongly dispersive systems with random field 8−36840
W.North Atlantic Ocean, mesoscale motion space and time scales 8−49035
nozzles, quarter circle and combined, investigation *(Russian)* 8−42689
nuclear reactor turbulent flow in fuel rod bundles 8−37400
nuclear reactor turbulent flow through wall subchannel of rod bundle 8−41802
ocean, small-scale, statistical patterns 8−3802
ocean, turbulence rel. to model of annual temp. var. and climatology 8−20433
ocean, turbulent spot in stably stratified fluid, dynamics *(Russian)* 8−40558
ocean current structure function for intermittent turbulence *(Russian)* 8−32109
ocean horizontal turbulence, spectral struct. 8−3790
ocean reverberation spectra rel. to remote detect. of turbulence 8−38124
oceanic turbulence, generation *(Russian)* 8−16022
one-exponent scaling for very high Reynolds no. turbulence 8−42592
optical crossed beam correlation method, localised turbulence props 8−34223
optical phase fluctuations in turbulent medium 8−33668
optical plane wave intensity fluctuations in turbulent medium *(Russian)* 8−1156
oscillating jet in moving air stream, vel. meas. 8−22396
over-wing-blowing configurations, aerodynamic characts. determ. 8−5774
particles, falling under gravity, in rot. drying drum, turbulent gas flow 8−1728
particles suspended in turbulent fluid, dispersion 8−14073
pipe, entrance region, meas. and prediction 8−42666
pipe flow, numerical anal. by finite element method 8−18341
pipe flow, response to change in roughness 8−47040
pipe flow, wall region mass transfer 8−1638
pipe flow turbulence struct. drag reduction with PEO 301 dilute soln. 8−26196
plane turbulent wakes, intermittent bulges, spanwise struct. 8−42610
plume, axisymmetric, buoyant, turbulence meas. 8−9637
polyethylenoxide additive mixing, turbulent drag reduction, schlieren obs. 8−26163
polymer additive effects on turbulent cloud spreading 8−22383
polymer solution, channel flow, drag reduction, viscous sublayer struct. 8−22385
polymer solution, drag reduction in pipe flow, flow time scales 8−22386
polymer solution, drag reduction in turbulent flow 8−26159
polymer solution, pipe flow, early turbulence 8−22380
polymer solution, rheology, rel. to turbulent drag reduction 8−22315
polymer solution, turbulence structure, drag reduction 8−22381
polymer solution, turbulent jet behaviour 8−1732
polymer solution, turbulent mass transfer to pipe flow 8−1695
polymer solution pipe flow, drag reduction 8−42631
pressure nonuniformities, compact heat transfer surface development for heat exchangers with gaseous carriers 8−30296
probabilistic nature, closure of Navier-Stokes eqns. 8−1643
pulsatile duct flow in presence of orifice plate, discharge and press. drop coeffs. eval. 8−30306
Raman scattering and laser Doppler velocimetry techniques for turbulent flow field investigs. 8−34224
random advection of chemically reacting species, probability density method 8−38418
random vortex methods for two dimens. large Reynolds number flow, errors 8−42614
recirculating flow in enclosure, heat transfer rates 8−38315
recirculating flows in general orthogonal coordinates 8−38297
rotating and curved flow, press. gradient-vel. correls. 8−26128
rotating fluid, turbulent transport coeff., rel. to stellar interiors 8−36452
rotating short radial blade, laminar and turbulent flow, heat transfer 8−18294
rotational Couette flow, power spectra of nonlinearly coupled waves 8−30261

turbulence continued
Ruelle-Takens picture, bifurcations, semiflows and Navier-Stokes eqns. 8−46940
salt-brine interface, natural convection mass transport 8−30291
seminar, theoretical descriptions 8−46938
single and twophase flow over rough surfaces, heat transfer effects 8−30297
solar photosphere, improved values for microturbulent and macroturbulent filter functions 8−20796
solar wind, small-scale inhomogeneities spectrum rel. to whistlers 8−45173
solidification of liquid at its freezing temp. flowing into a convectively cooled tube 8−34001
spot, entrainment behaviour, flow visualisation and laser Doppler velocimetry 8−26102
stably stratified fluid, turbulent spot, dynamics *(Russian)* 8−40558
statistical irreversibility, spectral energy distrib. 8−1642
stenosis model, turbulence development in pulsatile flow through partially occluded tubes 8−44531
stenosis model, turbulence in water flow system 8−44530
stratified flow, turbulence, mixing 8−22400
stratified fluid, turbulence and mixed layer deepening rate *(Russian)* 8−24292
subsonic jet noise, prediction method for flight effects 8−1502
supersonic, near wake flow 8−22368
supersonic axisymmetric near wake behind bluff-base bodies 8−1665
supersonic jet, turbulent wake, laser velocimeter meas. 8−26173
supersonic thin turbulent layer, hot-wire anemometry, error reduction 8−34235
surface renewal principle ε_m and ε_h formulation 8−42591
suspended particle motion in homogeneous turbulence 8−22408
suspension, combined radiative and convective heat transfer 8−9724
suspension, heat transfer and struct. 8−9683
suspension, solid separation at wall, heat transfer 8−9685
suspension in stirred tanks, complete particle suspension conditions 8−27824
suspension of asbestos fibres, heat transfer and friction coeffs. for tubular flow 8−22405
theory, expectation of an exponential function of an integral 8−32686
thermal, temp. field meas., buoyant vortex bubbles and turbulent thermals 8−34232
thermal exchange between sensor and supports, temp. fluctuation meas. in turbulent airflow 8−21135
thin orifice plate, turbulent flow numerical modelling 8−34229
throttle flow characts., approx. equation 8−18362
toothlike wave dispersion due to turbulent viscosity *(Russian)* 8−1676
transonic flow, hot-wire anemometry and boundary layer turbulence 8−14103
transport coefficients, derivation from turbulent parameters in isotropic turbulence 8−46948
tube entrance velocity and temp. distrib. with turbulent hot air flow *(Russian)* 8−14087
tube flow, heat carrier with near-critical parameters 8−42600
turbulent circular jet, in presence of co-flowing free stream 8−1704
turbulent pipe flow, vertical cond. distrib. 8−1714
two-dimensional turbulence in square region, inviscid Navier-Stokes eqn. calcs. 8−16656
two-dimensional turbulent flow past rectangular cylinder 8−1645
two-dimensional unsteady stream function equation, similarity transformations 8−38302
two-layered co-current flow, in open channel, turbulence *(Japanese)* 8−38393
two-phase disperse-annular flow, vel. profile calc. 8−1720
two-phase systems, ion Karman's constant variation in turbulent motion *(Italian)* 8−14062
uniform fluid flow, general nondimensional relationship *(Bulgarian)* 8−12571
universal velocity profile 8−1639
unsteady aerofoil theory, small perturbation expns. 8−14037
viscous incompressible fluid, two-dimensional turbulence in bounded region 8−30270
vortex pair, interaction with ground plane 8−1669
vortex pairs, turbulent, neutral surroundings, verification of similarity soln. 8−26127
wake, behind slender propeller-driven bodies 8−38335
wake, vel. and temp. distribs., conditional averaging *(Russian)* 8−38296
D_2-HCl electric discharge gasdynamic laser, turbulent mixing characts. 8−9366
He, supercritical, correlation for heat transfer in turbulent flow in small channels 8−18871
He, supercritical, heat transfer in turbulent tube flow 8−30287

turbulence, atmospheric *see atmospheric turbulence*

turbulence in shear flow *see shear turbulence*

turbulent diffusion
advection-diffusion equation, weighted-mean schemes for finite-difference approx. 8−34103
aerosol particle diffusivity in turbulent pipe flow 8−1731
air, turbulent diffusion of particles, analytical numerical method 8−32257
air pollutants dispersion from area sources in convective turbulence, model 8−28303
atmosphere, boundary layer, Gaussian plume and spectral solns. 8−24328
atmosphere, coeff. determ. from meteor trail photographs 8−45073
atmosphere, pollutant dispersion in horizontally-homogeneous boundary layer 8−36263
boundary layer 8−38305
bubble diffusion in two-phase flow 8−18332
bubbles in turbulent flow 8−22412
combustion, turbulent premixed and diffusion, engineering flow modelling computation 8−1756
convection-diffusion problem, singular perturbation problem with nearly resonant operator 8−22352
diffusion-convection equations, finite difference scheme 8−42596
eddy diffusivity, effect on heat transfer and skin friction 8−30276
eddy diffusivity, near open channel free surface, heat transfer expt. 8−5798
finite-rate turbulent diffusion 8−46956

turbulent diffusion continued
fire plume, turbulent, reaction rate, air entrainment, radiation 8−35682
flame, combustion model and calc. 8−35684
flame, turbulent diffusion, mean flow props. 8−1753
fluid eddy viscosity and thermal diffusivity model *(Russian)* 8−46957
forced plume characteristics 8−18286
free diffusion flame, length *(Russian)* 8−3334
homogeneous stationary turbulence, diffusion of scalar and vector fields 8−5736
ionisation wave propag. in gas, turbulent diffusion effect 8−42704
jet, free, heated, turbulent, high temp., eddy diffusion, methane combustion obs. 8−30329
MHD, root mean square mag. field on turbulent diffusion 8−36449
nonlinear integrodifferential eqn., numerical soln. 8−38306
nuclear reactor, fuel element array, temp. distrib. for turbulent liq. metal flow 8−13203
ocean surface layer, dye plumes diffusion, expt. 8−44871
one dimensional turbulence problem, equivalence to one dimens. Coulomb gas 8−5735
particle convective diffusion to rot. disc surface 8−18334
particles suspended in turbulent fluid, dispersion 8−14073
suspension, turbulent and pseudo-turbulent transport 8−14068
transport coefficients, derivation from turbulent parameters in isotropic turbulence 8−46948
type transport in inhomogeneous turbulence 8−18285
urban planetary boundary layer, pollution effects on thermal struct. and dispersion 8−11986
viscoelastic flow in tube, eddy diffusion reduction for heat and momentum transfer 8−22382
UO_2, condensed vapour following core disruptive accident, particle-size distribs. using first-generation model 8−13295
turbulent flow *see turbulence*
Turing machines
cerebellar function, molecular information processing model 8−31759
twilight
see also night sky
atmospheric NO_2, tangent ray meas. technique, effects of NO_2 conc. vars. at twilight 8−32141
stratosphere, aerosol conc. using iterative method from twilight polarization meas. 8−20464
Na I D-line profiles, interferometric studies 8−36353
twin boundaries
BCC crystals, atomic struct. of twin boundaries by electron microscopy 8−22735
martensite, habit plane 8−18572
metal, BCC, computer simulation of twin boundary and twinning dislocation struct. 8−30644
polyethylene crystal, computer simulation of {110} twin boundary 8−30646
quartz, phase transformations and domain structures *(French)* 8−27509
rare earth oxide, lattice images *(French)* 8−26397
sapphire, shaped single crystals, porosity, microstruct. 8−2125
steel, interface model of (3, 15, 10) martensite 8−31408
steel, stainless, electrohydraulic effect and struct. changes *(Russian)* 8−23783
Bi, deformed cryst., phonon scatt. by lattice defects, thermal cond. calc. 8−22802
Cu, annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
Cu film, on (001) Ag, FCC and BCC metal-on-metal epitaxy, geometric factors, electron microscopy 8−22980
α-Fe, exam. of structural defects due to shock waves, and induced hardness 8−48427
Fe-Ni (32 wt.%), electrohydraulic effect and struct. changes *(Russian)* 8−23783
Fe-Ni-C (19.5, 0.73 wt.%), banded struct. formed by deform., TEM and optical obs. 8−39869
Fe-Ni-C (21, 0.6 wt.%), stress assited and strain induced martensite morphologies 8−3187
GaSb pulled crystal, wavy impurity patterns beside twin boundary 8−18674
GeTe, low temp. alloys, microstruct. obs. *(Russian)* 8−19768
In-Tl single crystal, phase transform. X-ray topographic study *(Japanese)* 8−31405
$NH_4H_2PO_4$, defects, X-ray topographic study 8−26580
$NH_4H_2PO_4$, X-ray interference fringes due to diffraction effect at grown-in twin boundary 8−38728
Ni, annealing twins, density, effect of recrystallisation temp. and electron microscope resolution *(French)* 8−31423
Ni, computer simulation of point defects and planar defects 8−43013
Ni-Cr-ThO_2 (20, 2 wt.%), dispersion hardened, model for high temp. deform. based on struct. obs. 8−19809
Pb, estimation of stacking fault and twin boundary energies using phonon dispersion curve 8−43031
Si, ribbons produced through capillary action shaping, elec. and struct. characts. 8−47804
SiC, pyrolytic particles for high temp. reactor fuel, X-ray and SEM study *(French)* 8−22734
twinning
see also twin boundaries
alloy, thermodynamic and structural changes in deform. twinning 8−2139
brass, shear band development during rolling, twinning, metallographic obs. *(Japanese)* 8−39849
brass single crystal, martensite form. and shape memory effect mech. 8−19744
dislocation pile-up dynamics, planar 8−6058
electron microscope images of twin boundaries, contrast mechanism 8−30640
electron microscopy images of coincidence grain boundaries 8−30639
graphite, CTR material, the ion injection effect 8−34557
magnetic reversals, role of magnetostatic interaction *(Russian)* 8−39361
metal, BCC, computer simulation of twin boundary and twinning dislocation struct. 8−30644
metal, BCC, struct. of twinning dislocations, computer simulation 8−2140
polydiacetylene single crysts., twinning 8−23777
twinning continued
polyethylene, anisotropic surface stress 8−14562
polyethylene, high-density, semicryst., fold-surface morphology effect on deform. processes 8−34447
sodium acetate trihydrate, whisker growth on membrane in aq. soln. 8−30854
steel, α-martensite formation in crossing range of ε-martensite platelets *(German)* 8−3126
steel, Al, relax. twins in martensite, electron diffr. and electron microscopy *(Russian)* 8−47391
steel, thermally and thermomechanically treated, struct. and decomposition of martensite 8−19784
steel, U15 and 130 Gz, upper bainite, relation between cementite and ferrite lattice orientations *(Russian)* 8−23663
steel martensitic, high-C, formed from hot-worked austenite, struct. *(Russian)* 8−6950
Al-alloy ingots, crystallisation condition effects on fan-shaped zone struct. *(Russian)* 8−3114
Al_2O_3, unflawed polycryst., tensile failure, SEM and acoustic emission expts. 8−27598
Au films, condensation on alkali halides, growth, struct., stability *(French)* 8−38989
Au-Cd (47.5 at.%), modified 2H and 9R martensites 8−14366
BN, artificial production of growth twins 8−30641
BP, epitaxial, CVD on Si substrate, cryst. imperfections 8−10294
$BaCl_2.2H_2O$, artificial production of growth twins 8−30641
$BaTiO_3$, effect of phase transformation on fracture behaviour 8−48507
Ca-Nb-O perovskites, struct. characterisation *(French)* 8−10021
Cd_3As_2, vapour phase single cryst. growth, X-ray topographic obs. of perfection 8−9976
$CdCO_3$, three-fold transformation twin in topotactic decompositon 8−44078
Cu-Al-Ni alloys, deformed, fine struct. of martensite *(Russian)* 8−6923
Fe, α-, γ-, crysts., twinning, martensitic transforms., correspondence matrices *(German)* 8−31406
FeAl single crystal, compressed, dislocation arrangement 8−14354
$Fe_3B_7O_{13}I$, twinning in orthorhombic phase, ferroelec. domain struct. with switching 8−19434
FeCoC, unidirectionally transformed eutectoid, crystallography of herringbone pearlite, TEM obs. 8−31399
GaAs, defect revealing etchant, electrochem. process in $NH_4OH:H_2O$ 8−6060
Ge, twin lamellas formation due to deposition of metal contacts 8−10060
Mn-Ni, single cryst. or polycryst., elastic anomalies at antiferromag. transition 8−14972
Ni/Ni_3Al-Ni_3Nb eutectic, directionally solidified, plastic deformation *(Russian)* 8−39843
Ni_3V, deform. propag., electron microscopy obs. 8−6070
PbS, film condensation on amorphous substrate, struct. and growth 8−38981
$Pr_{24}O_{44}$, beta phase, high resolution cryst. struct. images 8−42991
Si, dechannelling by twins, ^4He backscatt. spectra 8−18691
Si layers, solid phase epitaxial growth, crystalline qualities, ^4He backscatt. and TEM exam. 8−10306
Si, twinned, neutron diffr. topographic obs. 8−38727
α-Ti based alloys, deform. twinning effect on mech. props. at low temps. *(Japanese)* 8−6979
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8−39791
Ti-Mo (15 wt.%) alloy, metastable β-phase, deform. characts. 8−6975
$TlMnCl_3$, weak ferromag. and mag. struct., temp. depend. 8−19219
U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8−23729
V, impact deform., influence of previous static loading *(Russian)* 8−6972
V-Nb, mech. props., −196-1000°C, comp. depend. 8−39847
Zn, incompatible bicrystals, effect of grain boundaries on mech. props. *(Japanese)* 8−39798
Zn monocrystal, cavitation induced multiple slip, twinning and fracture 8−39872
Zn, shaped single crystal prod. from melt 8−2040
Zn, single crystal, acoustic emission during twinning 8−11468
ZnO-Bi_2O_3-Sb_2O_3-Co_2O_3-MnO_2-Cr_2O_3, nonohmic ceramic, microstruct. exam. 8−47292
ZnS, crystal, layered struct. microscopic observations *(Japanese)* 8−38725

two-phase flow
aerosol, particle fallout rate under nonisothermal conditions 8−7238
aerosol, spherical, binary gas mixture thermal slip along surface 8−34168
aerosol in continuum, eqn. of motion 8−3895
aerosol particle, in slightly rarefied gas, thermal force effects 8−1724
aerosol particle deposition in flow through model filters 8−1740
aerosol particle diffusivity in turbulent pipe flow 8−1731
aerosol pipe flow, heat transfer 8−9684
air bubbles entrained in channel flow, isotropic turbulence spectral struct. 8−34112
air-bubble two dimens. plume, anal. 8−1715
air-solid mixture, behaviour in pipeline of varying cross-section 8−9673
air-solid mixtures, pressure drop in pipe elbow *(German)* 8−5790
air-water bubbly mixtures, press. wave propag. *(French)* 8−22402
air-water flow, periodic instability related to continuity waves 8−1716
air-water separated critical flow *(Japanese)* 8−42650
atomisation as nonequilibrium process, doplet disintegration distrib. function 8−38387
atomisation of high-viscosity liqs. by parallel flow air-liq. nozzle *(Japanese)* 8−38385
axisymmetrical two-phase jet, integral method for calculation *(Russian)* 8−47023
boiler plate restriction, hydraulic resistance calc. by energy equation 8−1734
boiling, expt. study of outflow from accelerating two-phase nozzle 8−1721
boiling, nucleation centres interaction, obs. technique 8−14065
boundary vapour contents for critical state of heat transfer of second kind 8−1722

two-phase flow continued

- bubble ageing and bursting in trace-contaminated water, rise speeds 8−26184
- bubble collapsing near free surface, cavitation 8−47026
- bubble diffusion in two-phase flow 8−18332
- bubble motion in an incompressible viscous liquid 8−34190
- bubbles diffusion in turbulent flow 8−22412
- bubbles in fluidised beds, light probe detector 8−30376
- bubbly, two-phase mixtures, numerical anal. of press. transients by explicit-implicit method 8−34185
- bubbly flow, hot-wire and hot-film probes, response to passage through air-water interface 8−22438
- bubbly liquid, nozzle flow based on Wijngaarden's model 8−26182
- bubbly mixtures, shock wave form. by compression wave steepening 8−38390
- BWR, Tarapur, one-loop model, dynamics anal., power transient response 8−46131
- channel with falling liq. film and two-phase flow, heat transfer 8−30337
- charged droplets evaporation and motion in electric field 8−42669
- chemically active gas flow, heat exchange of small metallic bodies *(Russian)* 8−47068
- chemically reactive, dynamic stability, mathematical model *(Russian)* 8−47069
- colloidal dispersions, stability in flow fields, trajectory anal. 8−5782
- concentrated dispersion media, associated mass of discrete phase element *(Ukrainian)* 8−1719
- condensation of laminar film on helical elliptical cylinders, governing eqns. soln. 8−9689
- condensing flow, thermally governed transient flow surges 8−30346
- counter-current two-phase flow in tube, liq. film waves and flooding 8−18345
- counterflow with freely-falling dispersed material, heat and mass transfer 8−30340
- creeping flow, in cloud of round drops of arbitrary size distribution 8−9677
- critical flow, disperse annular flow 8−42645
- cyclone, reverse flow, efficiency anal., using monodisperse methylene blue-uranine 8−34142
- detonation front compression waves, solid particle oxidation reaction *(Russian)* 8−34207
- disperse-annular flow, vel. profile calc. 8−1720
- drop, diffusional evap. in EM radiation field 8−43112
- drop motion in free turbulent jet 8−5789
- droplets, vaporising, in gas stream in channel laminar entry region 8−30347
- droplets in turbulent flow, heat and mass transfer 8−22410
- drops submerged in unbounded arbitrary vel. field, low Reynolds no. motion 8−42646
- dumbbell shaped particles in power-law liq., struct.-phenomenological theory 8−1730
- dust erosion by shock wave in air 8−42648
- dust-laden gas flow, heat transfer 8−14067
- dusty gas flow in horiz. and vertical tubes, heat transfer 8−22409
- dusty viscous conducting liquid, unsteady flow in annulus in mag. field 8−38412
- Ekman boundary layer, suspended particles effect 8−24349
- elastic spheres in oscill. linear flow, Frolich-Sack result, inertial effects 8−34184
- electrostatic precipitator, re-entrainment, particle trajectories and gas flow 8−13642
- ellipsoid freely suspended, rotation about a slow viscous flow's vorticity axis 8−38386
- energy separation in high vel. flows 8−9691
- equation systems, characteristics, stability and short wavelength phenomena 8−38395
- evaporating and condensing flows, system mean void fraction model 8−42520
- falling film flow, spatially growing three dimens. wave, annular-froth flow transition 8−14071
- ferrosuspension, MHD flow, heat transfer *(Russian)* 8−26203
- fibre orientation in viscous liquid flow *(Japanese)* 8−34189
- fibre suspension, rheology, rel. to turbulent drag reduction 8−22315
- fibre suspension in water, turbulent jet, analogous behaviour to polymer solns. 8−1732
- fission reactor safety, two-phase flow, analytical simulations for safeguards design 8−46143
- fluid spheres in viscoelastic fluid, drag coeff., low Reynolds number *(Japanese)* 8−9694
- gas and vapour bubbles in gas/liquid solutions, growth and collapse *(Italian)* 8−22403
- gas bubble collapse in viscoelastic fluid, elongational flow 8−14060
- gas bubble collapse in viscoelastic fluid, elongational flow and viscosity 8−14061
- gas bubble plumes in stratified environments, vertical fluid transport, double plume model 8−47019
- gas bubble suspensions, incompressible nonNewtonian and Newtonian fluids, dilatational props. 8−30343
- gas bubble-water mixture with polymer additive, shock wave propag. 8−47021
- gas bubbles in liq., controlled vibratory movement under near-zero gravity conditions 8−14119
- gas emitting from liquid, model *(Russian)* 8−26187
- gas flow dust content, temp. and speed meas. method 8−34216
- gas injection into liquid stream, heat transfer rates 8−14075
- gas-liquid boundary layer, droplet precipitation enhancement 8−1735
- gas-liquid flow, drop size spectrum 8−34187
- gas-liquid flow, holdup, expt. results 8−14063
- gas-liquid flow, holdup, theoretical aspects 8−9674
- gas-liquid flow in granular layer, hydrodynamic modes 8−9712
- gas-liquid medium, standing waves 8−9474
- gas-liquid mixture, acoustic disturbance propag. 8−9473
- gas-liquid mixture, press. perturbations propag. 8−34186
- gas-liquid moving interface diffusion 8−22404
- gas-liquid slug flow, liq. vol. fraction correlation 8−38389
- gas-liquid system, unsteady state determination of mass transfer coefficients 8−14106
- gas-liquid upward flow, effect of tube size on liq. side mass transfer 8−9682
- gas-liquid upward flow in granular layer, hydrodynamic conditions 8−34188

two-phase flow continued

- gas-particle flow, optical fibre sensors, appls. *(German)* 8−26215
- gas-particle mixture, shock wave structs., particle specific heat effect 8−14072
- gas-particle plumes from finite-size combustion sources, dynamics 8−30341
- gas-solid flow local heat transfer, particles distrib. 8−9686
- gas-solid mixture, pulsating flow, hydraulic resistance, heat transfer 8−38392
- gas-solid suspension flow in tube, press. drop, entry length 8−42647
- granular material, double sliding free rotating model 8−38384
- granular media and powders model laws, especially for silo models 8−38383
- hot-film anemometer for cylinder wake pattern with spray cooling 8−34238
- hydrodynamic crisis, in two-phase channel flow 8−14066
- hydrodynamic suspensions, physical property variations *(Russian)* 8−47022
- incompressible, through sharp-edged orifices, pressure-drop study 8−1726
- interface of spherical particles, unsteady state mass transfer 8−47017
- interface of spherical particles, unsteady state mass transfer 8−47018
- ion Karman's constant variation in turbulent motion *(Italian)* 8−14062
- jet, discrete phase penetration into constant cross flow *(Russian)* 8−47024
- Lagrangian hydrodynamics meshes, discrete rezoning algorithm, hot interacting bubbles calcs. 8−42628
- laminar boundary layer, forced convection condensation *(Japanese)* 8−34191
- laminar flow in channel, vel. profile 8−9675
- liquid drop coalescence, effect on disperse-phase-controlled mass transfer rates 8−26185
- liquid drops, colliding in free fall 8−38396
- liquid with bubbles, small perturbations propag. 8−42651
- liquid with gas bubbles, steady-state perturbations, wave propag. 8−5788
- liquid-gas bubble mixtures, shock wave disturbances 8−22411
- liquid-gas interface, heat and mass transfer 8−30338
- liquid-vapor system, shock compression, equilib. states *(Russian)* 8−9687
- LMFBR, local boiling calculations in subchannel geometry, feasibility study using CLAYMORE code 8−25280
- meas. using sharp edge orifices, correlations evaluation 8−26223
- measurement, indirect, methodological error anal. and reduction 8−34241
- MHD coal slag particles deposition rate on channel wall, theoretical and expt. studies review *(Japanese)* 8−38413
- MHD flow through cracked porous media, imbibition 8−34200
- mixing and condensation in high-speed flow, review 8−47014
- model eqns., interfacial press. forces 8−14069
- molten reactor core debris pool, hydrodynamic instabilities and convective mixing 8−8931
- nonequilibrium subsonic/supersonic flow, acoustic vel. obs. 8−42642
- nonstationary velocity tracking by adaptive cross-correl. algorithm 8−14074
- nozzle design for gas-liquid flow, inverse problem formulation 8−47015
- nuclear reactor, method of characteristics anal. 8−21628
- nuclear reactor LOCA reflood phase, hydrodynamics, moving control vol. method 8−704
- packed-bed particle-to-fluid heat transfer coefficient, determination from radial heat transfer measurements 8−9699
- particle convective diffusion to rot. disc surface 8−18334
- particle deposition, onto rot. disc, convective diffusion, external force field 8−40081
- particle drag and induced mass, particle conc. effect 8−47016
- particle flow meas. by microwave Doppler-effect flowmeter 8−9732
- particle motion in gas stream, motion parameters determ. with photographic system 8−5837
- particle swarm moving in viscous fluid 8−26186
- particles, falling under gravity, in rot. drying drum, turbulent gas flow 8−1728
- particles suspended in turbulent fluid, dispersion 8−14073
- pipeline break, unsteady-state outflow 8−42658
- polymer melts, bubbles formation, non-coalescing bubbles theory appl. 8−42640
- polymer solution one- and two-phase flow through porous media 8−42659
- porous medium, starting algorithm for numerical simulation 8−38388
- PWR core thermal hydraulic calculation *(Hungarian)* 8−25282
- reactive particle flow through normal shock waves 8−42676
- ripple, annular, two phase flow, statistical characteristics 8−9672
- rivers, sand-wave motion of sediment along nonerodible bottom in open channel flow 8−16074
- rod bundle dryout, liq. film, droplet entrainment and deposition 8−13204
- rods falling near vertical wall 8−9690
- rough pipe, gas-liq. flow pattern transition model 8−14084
- over rough surfaces, heat transfer effects 8−30297
- sedimentation, settling instability, horizontally homogeneous suspension 8−42652
- sedimentation, three-parameter Markov model 8−34183
- sedimentation Markov model for very slow settling of dilute suspension 8−22406
- semi-implicit differencing method for two-phase fluid dynamics 8−42649
- silt suspension turbulent boundary layer, steady state model 8−28242
- slug formation, horizontal and inclined pipes, gas-liq. flow model 8−14083
- slug formation, wave instability effects 8−14085
- solids, pneumatic transport, flow, friction effects *(German)* 8−34181
- spheres, strongly interacting, numerical soln., Stokes flow 8−22407
- spherical agglomeration in conical drum 8−14064
- spherical condensed phase, motion in uniform vapour gas flow, kinetic theory 8−1725
- stability conditions and wave speeds 8−30344
- stationary sphere on boundary of similar spheres, drag coeff. function extension *(French)* 8−36211
- steam-generating channel, heat exchange in transcritical region 8−42644

two-phase flow continued
steam-water two phase mixture, relative vel. of vapour phase, determ. of void fraction 8−5791
stratified flow through fractures in porous media 8−5792
subcooled liquid boiling in duct, vapour voids size distrib. 8−5783
suspended particle motion in homogeneous turbulence 8−22408
suspended sediments in translational flow, vertical distrib. 8−3841
suspension, dilute, arbitrary-shape particles, time-depend. flow, Brownian rot. effect 8−26188
suspension, hydrodynamic screening and viscous drag at finite conc. 8−35725
suspension, macroscopic transport coefficients, flow instability *(French)* 8−35729
suspension, particle interactions, averaged-equation approach 8−23972
suspension, random behaviour simulation, interval of quiescence method 8−31708
suspension, solid separation at wall, heat transfer 8−9685
suspension, stirred, suspended particles absorpt. of solute molecules 8−30342
suspension, turbulent, heat transfer and struct. 8−9683
suspension, turbulent and pseudo-turbulent transport 8−14068
suspension, turbulent pipe flow, vertical cond. distrib. 8−1714
suspension channel flow, particle-wall interactions, heat transfer 8−5787
suspension in stirred tanks, complete particle suspension conditions 8−27824
suspension of asbestos fibres, heat transfer and friction coeffs. for tubular flow 8−22405
suspension of spherical particles, Brownian motion effect on bulk stress 8−7246
swirling one- and two-phase liq.-gas flow in tube, heat and mass transfer 8−30339
terminal velocity of a chain of drops of bubbles in a liquid 8−9692
transpiration cooling system 8−22418
turbulent boundary layer, drag reduction 8−22414
turbulent bubbly flow, laser meas. of local liquid velocity and void fraction *(Japanese)* 8−9693
turbulent fluidised fine particles, ascending gas flow in cylindrical channel, review 8−42643
two immiscible liquids, mass transfer into laminar fluid stream from moving interface 8−1717
two-layered co-current flow, in open channel, turbulence *(Japanese)* 8−38393
underground porous medium, similarity anal. of fingero-imbibition 8−18338
unstable heat transfer conditions, free convection-film boiling transition 8−14006
vapour bubble collapse with translatory motion, general and quasi-steady solns. 8−18333
vapour bubble-liquid slug heat transfer, Taylor instability mechanism for LMFBR HCDA 8−8939
vertical annular laminar flow, of immiscible liqs., heat transfer 8−14082
vertical density surges, rel. to sound vel. *(German)* 8−42641
water critical flow states through pipe, modified Bernoulli theory 8−30345
Ar bubbles injected into Sn, Pb and Cu melts, under laminar flow, characts. 8−38394
NH_3 aqueous soln., stripping by sieve plate column without downcomers 8−22430

two-photon spectra
absorption, time varying perturbation theory *(Rumanian)* 8−46311
alkali metal atoms, two-photon ionisation, polarisation effects 8−1039
amines, caged, multiphoton ionisation, two-photon transition resons. 8−33558
atom, Doppler-free two-photon absorpt. of coherent beams 8−33490
atom, effect of laser linewidth on two-photon absorption 8−46310
atom, photon statistics and time depend. of two photon absorption 8−13480
coherent optical spectroscopy 8−1112
p-difluorobenzene, $^1B_{2u}$-^1A_g transition, two-photon spectra 8−46408
diphenyloctatetraene, two-photon spectra, ^1A_g state confirmation 8−17736
Doppler free resonances, power broadening 8−5308
electro-optic level-crossing effect 8−37608
erythrosine dye, vibrational decay and fluoresc. in S_1 excited state 8−25605
7-hydroxycoumarine, one- and two-photon absorption, fluoresc. obs. 8−46407
7-hydroxycoumarine, two-photon visible absorpt. spectra, fluoresc. obs. 8−42147
microwave-optical double resonance, off-reson. optical radiation theory 8−25579
molecular gas, three-wave mixing method 8−29826
naphthalene, in benzene, using flashlamp-pumped dye laser spectrometer 8−16860
naphthalene, vap., Doppler free two-photon absorption spectra 8−5307
polydiacetylenes, reversible creation of defects by laser pulses 8−23480
reson. Raman scatt. by excitons via intermediate excitonic mol., polarisation and polariton effects 8−10880
resonant Rayleigh-type optical mixing and relax. 8−42380
resonant three level spin system 8−30017
semiconductor, impurity-level assisted two-photon interband absorption of laser radiation 8−23464
semiconductor, radiative spectra from hot photocarriers 8−31249
split spectra, in Doppler-free two-photon spectroscopy 8−292
three-level atom, strong-field aspects and steady-state response 8−960
two-photon absorption with coherent and partially coherent driving fields 8−5191
Ba, isotope shift and hyperfine splitting 8−33491
CO $A^1\Pi$, Doppler free two-photon excitation 8−17641
CO, two-photon excited vac. UV fluoresc. 8−5264
CdP_2, two-photon light absorpt. dispersion, allowed-forbidden transition *(Russian)* 8−15193
CdS, creation of 2P excitons by two photon magneto-absorption 8−2432
CdS, two-photon absorpt., excitons *(Russian)* 8−39571

two-photon spectra continued
CdS, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
Cs, 8S hyperfine splitting, two-photon transition and fluoresc. meas. 8−37585
Cs, elec. dipole approx. and elec. quadrupole resons. allowed in multiphoton absorpt. *(French)* 8−5190
Cs, fine structure splittings of $n^2D_{5/2,3/2}$ levels ($18<n<23$) 8−46465
CuBr, multiplet struct. of P-excitons due to valence band degeneracy 8−39035
CuCl, biexciton resonant two-photon absorption 8−23491
CuCl, giant two-photon absorption into excitonic mol., anomalous dispersion of excitonic polariton 8−27211
CuCl, luminesc. spectra, excitonic mol. reson. two phonon excitation 8−19514
CuCl, ps. luminesc. spectra, resonantly excited excitonic mols. 8−19555
CuCl, two-photon reson. Raman scatt., recoil of upper-branch excitonic polariton 8−27212
GaAs, epitaxial layer, 1.06 μm two-photon absorption coeff., guided wave meas. 8−46707
GaAs, optical absorption near fundamental edge due to CO_2 laser pulses 8−39569
GaAs, two-photon 1.06 μm absorption coeff., absolute meas. 8−19527
GaP, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
Ge, exciton mol. by phonon-assisted two-photon absorpt., theory 8−48197
H, nonresonant two-photon absorption, gauge interaction calcs. 8−37617
H, two-photon 1s-2s transition rate and absorption coeff. freq. depend., choice of gauge 8−9132
H, two-photon transition, $3^2S_{1/2}$-$3^2D_{5/2}$, precision meas. 8−17642
H, two-photon transitions, parity nonconservation effects *(Russian)* 8−21892
$H_2(E,F^1\Sigma_g^+)$, two-photon excitation, cross section, radiative lifetime, quenching rate, IR fluoresc. obs. 8−37698
Hg_2, absorpt., fluoresc. and two-photon spectroscopy 8−998
I_2, energy levels near B-state dissoc. limit, two-photon spectra 8−9210
$LiNbO_3$, pure, two-photon photorefractive recording 8−31220
N_2, $a^1\Pi_g$, Doppler free two-photon excitation 8−17641
NH_3, IR-microwave two-photon spectra using CO_2 lasers 8−37664
NO, two-photon spectra by three-wave mixing 8−29826
Na, (3s-4d), Doppler free spectra, 4d fine struct. splitting=1028±0.4 MHz 8−41356
Na, Doppler-free two-photon linewidths, 3S-4D press. broadening coeffs. 8−25481
Na, hyperfine interaction in $4D_{3/2}$ and $4D_{5/2}$ levels 8−37616
Na, two-photon absorption reson. in spatially separated fields 8−21890
Na vapour, two-photon reson. four-wave mixing 8−46716
SO_2, two-photon spectra by three-wave mixing 8−29826
Si, exciton mol. by phonon-assisted two-photon absorpt., theory 8−48197
$SrTiO_3$ 8−6678
TiO_2, two-photon absorption coefficient rel. to inverse Raman cross section 8−6678
ZnP_2, two-photon light absorpt. dispersion, allowed-forbidden transition *(Russian)* 8−15193

two-photon spectroscopy
Doppler free, high resolution spectra from actively mode-locked CW dye laser, feasibility 8−41356
Doppler free intracavity two-photon absorption 8−5307
Doppler free two photon resonances, optical Ramsey fringes 8−29167
Doppler-free, occurrence of split spectra 8−292
Doppler-free laser spectroscopy seminar 8−302
Doppler-free two photon and saturation spectroscopy, using thermionic detector 8−46465
laser spectroscopy, review of new techniques 8−32893
molecule, IR-microwave two-photon spectra using CO_2 lasers, appl. 8−37664
nonlinear high resolution laser spectroscopy, review of techniques 8−29171
spectrometer, based on flashlamp-pumped dye lasers 8−16860

two-term control
Pu fuel research facility for advanced LMFBR fuel *(Japanese)* 8−29624

TWT *see travelling-wave-tubes*

Tyndallometry *see turbidimetry*

type fonts *see character sets*

type I superconductors
see also intermediate state
critical current measurement, metastable current states *(Russian)* 8−43529
Landau's laminar structure under inclined mag. field 8−39271
local magnetic field, penetration through large sheets 8−23211
two dimensional mixed state *(Russian)* 8−19193
Al, superconducting and normal state, anisotropic impurity scatt. and EM surface resist. 8−30970
Al, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
In, crit. RF mag. field, rel. to superheating 8−2632
In, destruction in high amplitude LF varying field *(Russian)* 8−26999
In film, metastable states supercond. parameters 8−47903
In, superconducting, thermoelec. transport effect 8−39257
In, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
In, type I superconductor, thermoelec. power in intermediate state 8−34935
Mg, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
Nb, energy gap determ. by pt. contact tunnelling 8−19185
Pb, crit. RF mag. field, rel. to superheating 8−2632
Pb, fatigue testing in normal and supercond. state 8−19959
Pb, film, first order transition due to quasiparticle injection 8−23208
Pb film, flux nucleation in current-induced resistive state 8−23210
Pb film, ultrathin quench-condensed, two-dimensional elec. cond., onset of supercond. 8−39233
Pb, friction, wear in supercond., normal states *(Russian)* 8−39914
Pb, plastic deform. rate rel. to supercond. transition, temp. depend. *(Russian)* 8−31015

type I superconductors continued
Pb single crystal, normal-superconducting transition and plastic flow 8−3166
Pb, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604
Pb-Al_2O_3-Al tunnel junction, Pb supercond. film behaviour in mag. field 8−14894
Pb-Pb bridge, variable thickness, DC and AC Josephson effect 8−31016
Pb-Pb bridge, variable thickness, static mag. field effects, Josephson effects 8−31017
$PdH_x(D_x)$, band struct., supercond. props., APW calcs. and neutron scatt. 8−43511
Sn, crit. RF mag. field, rel. to superheating 8−2632
Sn, destruction in high amplitude LF varying field *(Russian)* 8−26999
Sn ribbon, penetration depth of nonequilibrium elec. field, temp. depend. *(Russian)* 8−23202
Sn small particles, electron level quantisation effects, Knight shift meas. of electron spin susceptibility 8−2624
Sn, thin film, supercond., acoustic wave absorpt., quasiparticle distrib. 8−10603
Sn whiskers, current induced phase transition 8−10600
Sn, whiskers, current-carrying, mutual influence of votlage steps in V-I characts. 8−10601
Sn-Sn bridge, variable thickness, DC and AC Josephson effect 8−31016
Sn-Sn bridge, variable thickness, static mag. field effects, Josephson effects 8−31017
Ta, flow stress at superconducting transition, temp. and strain rate depend. 8−2617
Zn, superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604

type II superconductors
see also mixed state
A15 compounds, coherence length and phonon softening 8−34587
A15 compounds, elec. struct., 3-D k.p model 8−2405
A15 compounds, high-temp. superconductors, martensitic transform., microscopic theory based on 3-dimens. band struct. 8−19752
A15 compounds, local lattice instabilities 8−19178
A15 compounds, martensitic and supercond. transition models, anisotropy of vortices and US anomaly, review *(Japanese)* 8−23216
A15 compounds, mode softening and high supercond. crit. temp. 8−14851
A15 compounds, supercond. rel. to struct. transform. 8−14873
A-15, A_3B type, cryst. chemical laws 8−34914
A-15 compounds, effect on critical temp. for supercond. of disorder, induced by α-particles 8−47897
A-15 compounds, irrad. effect on supercond. transition temp. 8−6472
A-15 compounds, X-point model for mag. susceptibility 8−23014
A-15 superconductors with defects, transition temp. 8−14857
alkali metal tungsten bronzes, enhanced supercond. T_c, possible explanation 8−14850
alkali tungsten bronzes, dynamic fluctuations between local struct. states in supercond. Tl phase 8−26981
alloys, Kondo effect, specific heat jump at transition temp. 8−6479
Bi-Ni base alloys, heterogeneous, supercond., magnetisation meas. *(French)* 8−6477
critical current, peak effect in mag. field depend. *(Russian)* 8−47924
critical fields, materials developments *(Czech)* 8−23213
dirty, mixed state, vortices, transport entropy theory 8−43534
dynamic instabilities in high T_c materials 8−10607
electronic component and material improvement, ion implantation techniques *(French)* 8−18667
film, stripline, propag. const., attenuation and phase vel. expressions, pulse propag. 8−43524
flux-line lattice instability due to planar imperfections 8−23218
fluxon pinning, in supercond. with regularly spaced defects 8−39276
gapless, localised mag. moments, EPR *(Russian)* 8−34920
graphite intercalation compounds with alkali metals and halogens, physical props. 8−31050
high-current superconductors, low-freq. losses, phenomenological model 8−6486
high-temperature superconductors, clustering hypothesis 8−26984
hysteresis losses for round cross section with collective interaction 8−43513
inductive response to trapezoidal magnetic field 8−39277
inhomogeneous, impedance in Shubnikov phase *(Russian)* 8−23212
intermetallic phases, technical superconductor applications *(German)* 8−27005
Kondo effect in type II superconductors, upper critical field and Ginzburg-Landau parameter 8−14874
Kondo superconductor, self-consistent theory of pairbreaking 8−26989
layered compounds, surface supercond. *(Russian)* 8−31018
low temperature depend. of elec. resist., mag. suscept., heat capacity, Hall const. *(Russian)* 8−30900
magnetically impure superconductors, finite relax. time at zero field transition point, exptl. obs. 8−23219
magnetisation curves, boson method calcs. 8−39258
metallic glasses, structure and properties, review 8−47245
noble metal alloys, superconductivity, correlations and predictions 8−23192
nonideal slab, AC losses in small AC mag. field of trapezoidal wave form 8−39272
power apparatus appls., research study *(Japanese)* 8−19192
rare earth compounds, phenomenological study of supercond. 8−43512
rare earth compounds, $R_xMo_6S_8$ mag. susceptibility meas., 1.3-300K 8−14936
rare earth compounds, $R(Rh_{0.85}Ru_{0.15})_4B_4$, mag. ordering and supercond. 8−14861
slab, AC losses in small mag. field of sinusoidal wave form 8−47920
spin diffusion in inhomogeneous mag. fields 8−2618
stress tensor of cosmic and lab. type-II superconductors 8−6485
Tokamak requirements for supercond. materials and devices w.r.t. thermonucl. fusion *(French)* 8−13322
transition element cpds. and their dil. alloys, supercond. crit. temp., s-d Coulomb interaction 8−31012
transition metal alloy, binary, conc., superconductivity and electron-phonon interactions, theory 8−14868
transition metal compounds, phonon anomalies due to d-band effects, electron-phonon matrix elements 8−30720

type II superconductors continued
transition metal pyrites, mag. and elec. props., review *(Japanese)* 8−47941
transition metals, and their carbides high temp. superconductivity and phonon softening 8−14848
transition metals, supercond., effect of s-, d-electron hybridisation *(Russian)* 8−39243
$Ag_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$Ag_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
Al film, granular, crit. field anisotropy and fluctuation cond. 8−26994
Al film, perforated, crit. currents associated with interaction of commensurate flux-line sublattices 8−34937
Al-Cu, dil. alloy, quench condensed thin films, supercond. and struct. from electron diffr. patterns 8−47901
Al-Si(Ge) film, ion-implanted, percolation and superconductivity 8−26982
Au-Ga, resist. and supercond. meas., electron-phonon interaction and Coulomb pseudopot. determ. 8−43358
$AuGa_2$ type supercond., mag. impurity and press. effect on crit. temp. *(Russian)* 8−23189
Ba, BCC, superconductivity under press. 8−14858
Be-Zr alloy, glassy, quenched from melt, supercond. props. 8−26983
Bi, amorphous film, supercond. fluctuation effects in resist. transition 8−10609
Bi-Tl alloy, thermal cond., 1.5 to 50K, temp. depend. 8−26990
Cd-Cr, dil., estimates of s-d interaction from supercond. transition temp. and mag. susceptibility 8−43561
Ce, high press. superconductivity, phonon softening 8−14852
Cu-Nb-Sn dil. alloys containing Nb_3Sn precipitates, superconductivity 8−43507
Cu-Sn-Nb multifilamentary alloy, high field crit. current density 8−27004
Cu-V-Ga dil. alloys with V_3Ga particles, supercond. props. and microstruct. 8−39278
$Cu_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$Cu_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
$Cu_xMo_6S_8$, evap. film prep., supercond. props., lattice parameters 8−23195
$Cu_xMo_6S_8$, sintered and sputtered, supercond. upper crit. field 8−23215
$Cu_xMo_6S_8$, sputtered, supercond. crit. currents and scaling laws 8−47923
$Dy_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
$Er_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
$Er_xMo_6Se_8$, long-range antiferromag. order and supercond. coexistence 8−10715
$ErRh_4B_4$, reentrant supercond., mag ordering, neutron diffr. obs. 8−14879
$ErRh_4B_4$, supercond., electronic struct. and reentrant magnetism 8−10340
Ga, films, distorted, crit. mag. fields *(Russian)* 8−39273
$Gd_xCe_{1-x}Ru_2$, magnetic ordering by ^{155}Gd Mossbauer spectroscopy 8−27139
$Gd_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
HfV_2, C15 Laves phase, supercond. and stoichiometry 8−39245
In-Bi, crit. RF mag. field, rel. to superheating 8−2632
In_2Bi, magnetisation curve, interpretation using boson formulation of supercond. 8−2619
In_2Bi-In(Bi) laminar eutectic alloy, SNS struct., Josephson behaviour *(French)* 8−26996
$In_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$In_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
(La,Ce)Ru_2, supercond. transition temp., its press. depend., and structural phase transform. 8−6473
La, transition temp., press. depend., mode softening 8−14847
LaAg, under hydrostatic press., supercond. and phase transform, elec. resist., 1-300K 8−10595
$La_{1x}Au_x$, splat cooled amorphous alloy, sp. ht. 8−19182
$La_{1-n}Ce_n$, supercond. mag. alloy, effect of interconfigurational fluctuations 8−19175
$La_{1-c}Ce_cAl_2$, Kondo superconductor, self-consistent theory of pairbreaking 8−26989
$(La_{1-n}Ce_n)_3Al$, mag. impurity effects in normal and supercond. state, NMR 8−2622
$(La_{1-x}Ce_x)Al_2$, Kondo supercond., tunnelling density of states 8−14900
$(La_{1-x}Ce_x)Al_2$, Kondo supercond., tunnel junction fabrication with wax barriers, tunnelling meas. 8−19191
La(Ce)$Sn_{3-x}Pb_x$ system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
LaCeY, three normal supercond. transitions 8−26989
$(La_{1-n}Gd_n)_3Al$, mag. impurity effects in normal and supercond. state, NMR 8−2622
$(La_{1-x}Gd_x)_{1.0}Mo_6Se_8$, Gd-rich, supercond. state, phase transition, lambda-type sp. ht. anomaly obs. 8−6480
$LaGe_x$, specific heat in range $0.07 \leqslant T \leqslant 10K$, comp. depend. 8−43517
$La_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
$La_{1-y}Pr_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
La_3Sn, cubic phase, high press. and high temp. synthesis, and characterisation 8−19687
$La_{1-y}Tb_yAg$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
$La_{1-y}Tb_yAl_2$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
$La_{1-y}Tb_ySn_3$, neutron spectroscopy of 0.6 meV cryst. field transitions 8−30894
$(La_{1-x}Th_x)_{1-n}Ce_n$, supercond. mag. alloy, effect of interconfigurational fluctuations 8−19175
$(La_{0.80}Y_{0.20})Ce$, three superconducting crit. point behaviour 8−10625

type II superconductors continued
$La_{1-y}Y_y$(Ce) system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
Mo and Nb-Mo alloys, superconductivity and phonon softening, between electron bands and phonons 8−14859
Mo selenides, ternary, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
Mo sulphides, ternary, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
Mo:N film, high T_c amorphous phase stabilisation by interstitial nitrogen 8−23622
Mo-chalcogenides, crit. mag. fields *(Russian)* 8−34936
Mo-Re (5 at.%), enhanced lattice sp. ht. due to LF reson. modes 8−14882
Mo_3Ge, RF sputtered, crit. temp. 8−14853
MoS_2 intercalation compounds, reaction with alkali and alkali earth metals, band struct., superconductivity 8−26541
$Mo_5SnGa_xS_6$ heat capacity from 2 to 25K 8−43518
Na_xWO_3, crit. temp., semiempirical model for lattice instabilities in nonstoichiometric materials 8−14442
Na_xWO_3, dynamic fluctuations between local struct. states in supercond. TI phase 8−26981
$(Nb,Ti)N_x$, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
Nb and Nb-Mo alloys, superconductivity and phonon softening, between electron bands and phonons 8−14859
Nb, bulk granular supercond., thermal fluctuations compared to Josephson weak link array 8−43520
Nb, cylindrical and ellipsoidal, rotational magnetisation and torque meas. in mag. field 8−43515
Nb, electron-phonon contrib. to phonon linewidth determ. 8−10146
Nb electron-phonon interaction, calc. using APW band struct. calcs. and measured phonon spectra 8−14869
Nb, electron-phonon spectral function and mass enhancement 8−26988
Nb, fabrication of supercond. weak links, electron beam lithography and ion implantation 8−47913
Nb, impurity conc. monitoring during single cryst. production, use of nuclear phys. methods 8−31337
Nb, O enrichment of surface layers, penetration depth and resist. meas. 8−19180
Nb, single cryst., anomalous US attenuation at low temps. 8−43076
Nb slab, inductive response to trapezoidal magnetic field 8−39277
Nb, strong-coupling microscopic parameters, electron tunnelling obs. 8−14888
Nb, supercond. crit. temp. enhancement by radiation damage 8−2609
Nb, superconducting film, thickness depend. of electrophys. parameter *(Russian)* 8−10590
Nb superconducting film prod. by electron beam sputtering *(Russian)* 8−15308
Nb, T_c control by N ion implantation 8−2606
Nb, thermal cond., 0.3-20K, temp. and impurities effects 8−14883
Nb wire, helical propag. of flux jumps 8−14901
Nb:He, implant saturation and annealing, effect on struct. and supercond. props. *(Russian)* 8−43538
Nb:N, H, atomic tunnelling of interstitial pair, specific heat meas. 8−47600
Nb-Ga alloy, A15 type, melt produces specimens, supecond., homogeneity, transition temp. *(German)* 8−2608
Nb-Ge film, TEM expts., correl. of struct. and elec. props. 8−14628
Nb-Ge superconducting film, prod. by electron beam sputtering *(Russian)* 8−15308
Nb-Ge-Si, Si effect on raising superconducting transition temp. in pelicular specimens *(Russian)* 8−23188
Nb-Ir-O, phase struct., supercond. H-phase 8−39246
Nb-N system, ion-implanted, supercond. crit. temp., effect of implantation conditions 8−19176
Nb-Nb_xO_y-Pb Josephson tunnel junction form. and ageing, adsorbed gas effect *(Russian)* 8−14899
Nb-Pt alloy, superconducting parameters of A15- and σ-phases 8−39242
Nb-Sn, depend. of supercond. transition temp. on composition *(Russian)* 8−19173
Nb-Ta fibre reinforced Cu, fatigue testing in normal and superconducting states 8−19959
Nb-Ti, thermal conductivity in low temp. range 8−39259
Nb-Ti alloy strip, crit. current anisotropy 8−10624
Nb-Ti superconducting alloy, critical current density, heat treatment effects *(Japanese)* 8−14909
Nb_3Al superconductors, sputter deposited, BCC to A15 transition, microstruct. investig. 8−27512
Nb_3Al:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8−19369
Nb_3(AlSi) film, thermomodulation spectra, 1.1-2.8 eV 8−48250
NbC, C implanted, channelling crit. angle and min. yields 8−47458
NbC, phonon anomalies, microscopic theory 8−14867
NbC_x, reactor irrad. effects on elec. resist. and supercond. props. *(Russian)* 8−47895
NbC_xN_{1-x}, s.p. ht., 4.2-100K, phonon anomaly rel. to supercond. transition 8−14880
Nb_3Ga:^{93}Nb, NQR spectra, NQR signal disappearance in supercond. state 8−19369
Nb_3Ge, α-particle irrad., supercond. transition width 8−23193
Nb_3Ge film, crit. temp., resist., and struct., comp. depend. 8−6470
Nb_3Ge film, electron beam co-deposited, prep. and supercond. crit. temp. 8−15310
Nb_3Ge film, low temp. sputter deposition 8−48315
Nb_3Ge, low fluence alpha irradiation, behaviour of supercond. transition temp. 8−43510
Nb_3Ge, superconducting hybridisation and bonding, XPS exam. 8−2988
Nb_3Ge, superconducting transition temp. 8−47898
Nb_3Ge tape, prep. by continuous CVD process 8−11121
Nb_3Ge:H film, sensitivity of supercond. transition temp. to H content 8−47894
Nb_3Ge-based superconducting alloys, upper critical field temp. depend. *(Russian)* 8−10622
Nb_5Ge_3, 0.30K T_c meas. with 0.14K transition width 8−6468
$Nb_{80}Mo_{20}$, $Nb_{75}Mo_{25}$, phonon cond. below 1k 8−14881
NbN film, ultrathin granular, zero dimensionality and Josephson coupling 8−10612

type II superconductors continued
$NbS(Se)_2$, polymorphism at high press. and temps., T_c and band struct. 8−26528
$NbSe_2$ nonstoichiometry, electrical props. *(Japanese)* 8−10593
$NbSe_2$, supercond. and normal state, thermal cond., temp. and mag. field depend. 8−26992
Nb_3Si film, supercond., obtained by vaporisation in vacuum, props. 8−14865
Nb_3Si, superconducting, high transition temp., sputtering 8−15309
$Nb_{1-x}Sn_x$, sp. ht., supercond. T_c and martensitic transform. *(French)* 8−43508
Nb_3Sn, A15 compound, exam. of deformation processing, review 8−39864
Nb_3Sn, crit. current density, low dose fast neutron irrad. effect 8−14910
Nb_3Sn, effect on critical temp. for supercond. of disorder, induced by α-particles 8−47897
Nb_3Sn, fast neutron irradiation, effect on critical current density 8−19197
Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8−10301
Nb_3Sn, gap anisotropy, electron irrad. effect on transition temp. 8−10599
Nb_3Sn, grain size in A15 reaction layers 8−14911
Nb_3Sn, low fluence alpha irradiation, behaviour of supercond. transition temp. 8−43510
Nb_3Sn, martensitic transform. coupling with supercond. transition 8−44126
Nb_3Sn multifilamentary conductors, enhancement of supercond. crit. current by tensile stress 8−6490
Nb_3Sn, nonstationary Josephson effect, 13-18.3K, 9-10 GHz, 20 MW *(Russian)* 8−2631
Nb_3Sn, phonon softening and T_c, strong electron-phonon coupling 8−31009
Nb_3Sn strip, made by diffusion method, crit. curent anisotropy, Zr alloying addition effects *(Russian)* 8−47921
Nb_3Sn superconducting bridge junction, crit. current temp. depend. *(Russian)* 8−34938
Nb_3Sn superconductors, mech. behaviour, diffusion *(German)* 8−39880
Nb_3Sn, thin film weak-links SQUIDs, localised region radiation damage, fabrication and properties 8−47912
Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
Nb_3Sn-Au, supercond. tunnel junction with microshort circuit, nonlinear phenomena 8−14898
$Nb_3(Sn_{1-x}Ga_x)$, bronze processed wires, critical current densities in fields up to 23.5 T 8−47922
$Nb_{80}Ta_{20}$, phonon cond. below 1k 8−14881
$Nb_{1-x}W_xSe_2$ x=0 to 0.15, elec. resist., mag. suscept., heat capacity, structural, supercond. transition *(Russian)* 8−31006
Ni-Nb(-Cu)-C, NbC dispersed supercond. tapes, fabrication and characts. 8−19773
Pb-Cd, supercond. proximity effect, electron tunnelling study 8−10616
Pb-In, series-connected Josephson tunnel junctions, fabrication procedure diagnostics 8−47909
Pb-In, viscous drag on mobile dislocations, plastic deformation, critical temp. magnetic data 8−43514
Pb-In alloys, energy gap determ. by pt. contact tunnelling 8−19185
Pb-In-Au, series-connected Josephson tunnel junctions, fabrication procedure diagnostics 8−47909
Pb-M, M=Bi, La, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
Pb-Sn eutectic, directionally solidified, periodic array of supercond.-normal contacts, supercurrent and dynamic resist. 8−34928
Pb-Sn(Bi) alloys, dil., impurity effects on softening at T_c *(Russian)* 8−23220
Pb-Tl, reversible surface superconducting magnetisation 8−43531
$Pb_{55}Bi_{45}$ film, amorphous, supercond. energy gap and transition temp. 8−14866
PbCu film, amorphous supercond., phonon heat transport, thermal cond. meas. 8−19181
PbIn-oxide-Pb junction, two-particle tunnelling and microwave effects 8−43527
$PbMo_{5.1}S_6$, high supercond. T_c, soft mode behaviour 8−14855
$PbMo_6S_6$, cold-worked core-wires, supercond. transition temp. and lattice instability 8−6469
$PbMo_6S_8$, crit. current density, effect of prep. technique and press. 8−14908
$Pb_xMo_6S_{8-y}$, phase relns., stoichiometry, T_c 8−15378
$PbMo_6Se_8(S_8)$, anisotropy of H_{c2} 8−39274
PbNa, type-II superconductor, regularly ordered precipitates, peak effect, crit. current meas. *(German)* 8−19196
Pd-Ag-D system, instability and superconductivity 8−39248
Pd-H system, instability and superconductivity 8−39248
Pd-H(D), isotope effects in supercond. properties 8−6471
PdH, role of optic phonons in superconductivity 8−39251
PdH, supercond., simple scaling theory of isotope effect 8−14878
PdH_x, upper crit. field determ. 8−47919
PdH(D), superconducting, electronic spin density, isotope effects 8−39262
Re, plastic deform. rel. to low temp. sp. ht., supercond. *(Russian)* 8−31005
Re_5Fe_3, RF sputtered, crit. temp. 8−14853
$(SN)_x$, preparation and properties 8−27389
$(SN)_x$, supercond. at high press. 8−23194
$(SN)_x$, supercond. props., press. and field depend. 8−14903
Sn, film, superconducting transition curve stepped struct. due to microwave radiation *(Russian)* 8−2610
Sn-In, crit. RF mag. field, rel. to superheating 8−2632
$SnMo_5S_6$, high supercond. T_c, soft mode behaviour 8−14855
$SnMo_6S_8$, crit. current density, effect of prep. technique and press. 8−14908
$SnMo_6S_8$, lattice softening, vibr. anisotropy 8−14428
$Sn_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$Sn_xMo_6S_8$, Chevrel phase, lattice instabilities, X-ray diffr. meas. 8−34491
$SnMo_6Se_8$, anisotropy of H_{c2} 8−39274
Ta, electron-phonon interaction, calc. using APW band struct. calcs. and measured phonon spectra 8−14869

type II superconductors continued
Ta, thermal cond., 0.3-20K, temp. and impurities effects 8−14883
Ta_3Ge, superconducting transition temp. 8−47898
TaS_2 (2H) single crystal, specific heat meas. in mag. field, 0.3 to 3K, AC calorimetry technique 8−43516
TaS_2 intercalates with alkali metals, prep., X-ray anal. and supercond. transition temp. 8−31007
$TaSe_3$, superconducting transition *(Japanese)* 8−30880
$Tb_{1.2}Mo_6S_8$, mag. ordering in supercond. state, resist. and AC susceptibility meas. 8−19194
Th-Y-Ce, supercond., magnetisation of Ce impurities, sp. ht. meas. 8−47904
$Th_{65}Sc_{35}Ce$, supercond., magnetisation of Ce impurities, sp. ht. meas. 8−47904
Ti-U(Cr)(Mo)(W), dilute, superconducting transition temp. and mag. suscept. 8−47899
TiN, high dispersed superconductivity 8−43505
TiN, phonon dispersion curves, soft-mode behaviour, inelastic neutron diffr. 8−43083
TiN, superconductivity 8−2605
U, supercond., phonon-softening 8−10592
V, electron-phonon interaction, calc. using APW band struct. calcs. and measured phonon spectra 8−14869
V, electronic density of states, effective mass, electron-phonon interaction, Coulomb pseudopot. *(Russian)* 8−26804
V, soft modes, d-electron localisation 8−14872
V wire, helical propag. of flux jumps 8−14901
V-M, M=Ti, Nb, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
V-Nb-Ta, elec. resist. and electron-phonon interaction parameters, comp. depend. 8−14862
V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8−10594
V_1 single cryst., supercond., Ginzburg-Landau parameters, magnetisation meas. 8−2620
V_3 Ga, high T_c supercond., electron-phonon coupling, effect of electronic density of states sharp struct. 8−14877
VC, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
V_3GaZ A15 compound, exam. of deformation processing, review 8−39864
V_3Ga, crit. temp. and field, prep. from V-Al and Cu-Ga 8−43506
V_3Ga, grain size in A-15 reaction layers 8−14911
V_3Ga, single crystal prep. by iodine transport, supercond. T_c meas. 8−48294
V_3Ge, low temp. props., mag. suscept. and resistance 8−19213
V_3Ge, superconducting, high transition temp., sputtering 8−15309
V_3P, superconducting transition temp. 8−47898
$V_{1-x}Pt_x$, A-15 struct., Knight shift in normal state, upper crit. field curves *(French)* 8−43519
V_3Si, A15 compound, exam. of deformation processing, review 8−39864
V_3Si, chemical composition effect on phase transition and transition temp. 8−14860
V_3Si, elec. resist. below 77K, phonon assisted interband scatt. 8−14703
V_3Si, electronic struct., electron-phonon interaction and high temp. superconductivity, APW calc. 8−14871
V_3Si, grain size in A-15 reaction layers 8−14911
V_3Si, Hall effect, 77K to superconducting transition temp. 8−43359
V_3Si, high T_c supercond., electron-phonon coupling, effect of electronic density of states sharp struct. 8−14877
V_3Si, low fluence neutron irradiation, behaviour of supercond. transition temp. 8−43509
V_3Si, martensitic transform. coupling with supercond. transition 8−44126
V_3Si, phys. props., appl. of new three-dimens. k.p model for A-15 cpds. 8−23015
V_3Si, soft mode sound vel. in mag. field rel. to density of states 8−14647
V_3Si, sp. ht. anomaly at struct. transform. 8−14426
V_3Ti, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
YRh_4B_4, supercond., electronic struct. and reentrant magnetism 8−10340
$Y(Rh_{0.85}Ru_{0.15})_4B_4$, mag. ordering and supercond. 8−14861
YS, soft-mode behaviour in phonon dispersion, inelastic neutron scatt. meas. 8−38807
$YbMo_6S_8$, supercond., low temp. thermal and mag. props. 8−14904
Zn-Mn, dil., Kondo effect and impurity interactions in resist., transition to supercond., 0.05-14K 8−14721
ZrC_x, x=0.99 to 0.13, elec. cond., supercond. state 8−43504
$ZrGe_2$, RF sputtered, crit. temp. 8−14853
$Zr_3Ge(P)(Sb)(Si)$, superconducting transition temp. 8−47898
ZrN, plasma-formed, ESCA and supercond. transition temp. 8−19697
$Zr_{0.7}Pd_{0.3}$, amorphous supercond., sp. ht. and thermal cond., 0.1-10K 8−26991
ZrV_2, supercond. rel. to struct. instability *(Russian)* 8−23196

U-centres
CaF_2, localised vibrs. due to substitutional impurities 8−22803
RbCl containing K additive impurity, local modes due to U-centres 8−22805

UBV photometry *see stellar photometry*

u.h.f. tubes *see ultra-high-frequency tubes*

ultimate tensile strength *see tensile strength*

ultra-high-frequency tubes
see also microwave tubes
No entries

ultracentrifuges *see centrifuges*

ultrasonic absorption
acetic acid, effect of impurities on US relaxation 8−10130
adhesive bonds, physical modelling, US attenuation effects 8−7141
air, HF sound absorpt. meas. 8−1475
n-alcohols, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
alkali halides, aq. solns., hypersonic sound vel. and absorpt. meas. 8−30699
associated liq., US absorpt. and hole theory 8−10124
attenuation meas. using quartz transducer transmitter-receiver 8−30139

ultrasonic absorption continued
attenuation/backscattering, by mammalian organ as function of time after excision 8−7412
blood, sickle cell, effect of deoxygenation on US absorpt. coeff. 8−44477
blood, US propag., effects of red cell shape and orientation 8−24104
carbon tetrachloride, liq. and plastic cryst. phases, thermodynamic props., light scatt., US propag. 8−2863
cholesteric liquid crystal, mag. aligned, anisotropic US propag. 8−42895
condensed systems, vibrational relaxation times calc. from low-freq. mol. spectrum 8−2205
continuous and simultaneous recording of changes in US attenuation and vel. 8−46875
critical fluid, dynamic droplet model, freq. and temp. scaling 8−26625
cyclohexanal, liq., viscoelastic and structural relax., US rel. and absorption meas. 8−26634
n-decane-nitrobenzene critical system, US absorpt. meas. 8−6126
decibel meter, for US pulse echo attenuation meas. 8−1520
dibenzyl, diphenyl, near melting point 8−6127
edge reflection SAW absorber, FM discriminator appls. 8−1517
electron-hole drops, mobility and US absorption, effect of fluctuation pairing 8−2434
ethanol, US studies of mol. relax. 8−22790
ethyl formate, liquid, temp. depend. of US absorpt. and volume viscosity 8−38776
ethyl lactate, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
gas, molecular, kinetic coeffs. calc. from ultrasonic data 8−42703
glasses, acoustic and dielec. props. at low temps., review 8−6128
heptanoic acid, soln., US relax. *(German)* 8−22792
isopropanol, US studies of mol. relax. 8−22790
Kneser liquids, vibrational energy exchange probabilities 8−38780
liquid, UHF interferometer appl. 8−22234
MBBA, nematic, US attenuation anisotropy, temp. depend. 8−43071
MBBA, nematic liq. cryst., anisotropy of US attenuation 8−43070
MBBA film, nematic liq. cryst., visible interaction of low-intensity US waves 8−10126
metal, nonlinear EM absorption of short-wave sound *(Russian)* 8−43446
methanol, US studies of mol. relax. 8−22790
methyl formate, liquid, temp. depend. of US absorpt. and volume viscosity 8−38776
myocardial tissue, US attenuation depend. on time after excision and temp. 8−11711
nematic liquid crystal, isotropic phase, light scatt., ultrasonic vel. and absorpt. meas. 8−48189
nonanoic acid, soln., US relax. *(German)* 8−22792
orthoferrites near spin-flip temp., magnetoelastic waves 8−19301
PAA, nematic liq. cryst., effect of magnetic field on US vel. and absorpt. 8−18707
phase velocity and absorpt. coeff. meas. incorporating exact diffr. corrections 8−26010
polypropylene, drawn fibres, SEM and US study 8−47249
n-propanol, US studies of mol. relax. 8−22790
propylene, liquid, effect of libration transitions on sound absorpt. 8−2203
quartz shear wave attenuation, 9.4 GHz, AC-,BC-cut, 15-35K 8−26627
semiconductor, absorption of EM and sound waves in strong coupling case, effect of acoustic superlattice 8−26630
solids meas., by acoustooptical method, losses in boundary layer evaluation *(Polish)* 8−30701
steel, US attenuation, defect effects in US inspection *(Italian)* 8−48609
superconducting intermediate state, obliquely incident sound absorption *(Russian)* 8−39263
superconductor, US attenuation and Fermi surface topology *(Russian)* 8−23203
transition metal dichalcogenides, US characts. rel. to Fermi surface geometry *(Russian)* 8−34749
transverse hypersonic waves at 9.4 GHz appl. to APR and attenuation meas. 8−33970
uniaxial ferroelectrics, static and dynamic crit. behaviour, elastic and electrostrictive consts., US attenuation 8−35103
Ag^+ superionic conductors, US attenuation due to hopping of Ag^+ ions 8−22890
Bi, US attenuation, annealed sample, 0.6 kbar, 25-120°C 8−47474
Gd-Y (40 wt.%) alloy, magnetic phase transitions, elastic consts. meas. 8−14957
Ge, US attenuation and nonlinearity const., temp. depend. 8−43075
^3He, US dispersion and attenuation near liq.-gas crit. point 8−38897
^4He, solid BCC, plastic deform., stress-strain relations and US attenuation 8−38909
^4He, solid HCP, US attenuation 8−47634
KH_2PO_4, central peak susceptibility and US propag. near T_c 8−15125
$K_2Pt(CN)_4Br_{0.3}.3H_2O$, lattice softening, temp. depend. of elastic consts., US meas. 8−14432
$KTa_xNb_{1-x}O_3$, ferroelectric transition, US attenuation, elastic consts., soft modes 8−23411
$LiNbO_3$, hypersonic wave attenuation, temp. depend. long wavelength phonons 8−18710
MnP, US vel. and crit. attenuation, longit. waves, external mag. field 8−27035
$NH_4Cl_{1-x}Br_x$, US exam. of order-disorder phase transform. 8−38841
Nb, single cryst., anomalous US attenuation at low temps. 8−43076
Ni, single cryst., magnetisation and US attenuation, mag. field depend. *(Russian)* 8−6559
$RbAg_4I_5$, superionic cond., US absorpt., ionic cond., relaxing sp. ht. 8−14505
RbH_2PO_4, ferroelectric, US propag. near ferroelectric phase transition temp. 8−23417
$RbHSO_4$, ferroelec. phase transition, US attenuation and velocity 8−39511
Sb_2S_3, dielec. and acoustic nonlinearity 8−15107
Se, liquid, US absorpt. meas. 8−2202
SiO_2, amorphous, low temp. acoustic absorpt., 9 to 20K and 15 to 65 MHz, Anderson model interpret. 8−26633

ultrasonic applications
see also biomedical ultrasonics; ultrasonic materials testing
cast stoneware, quality control, use of US methods 8−11490
characteristics and appl. patient diagnosis appl. *(German)* 8−1527
cleaning of optical fibres, deleterious effect 8−33821
cubic single crystals, rapid crystallographic orientation determ. method using US vel. anisotropy 8−6027
density meas., online system 8−718
electrolytes, US determ. of hydration numbers 8−20027
fish finder, with colour TV display 8−38159
flowmeter, computer interface development 8−38426
flowmeter, open channel acoustic flowmeter, error sources and calibration 8−30389
flowmeter, ultrasonic cross correl. flowmeter 8−30393
flowmeter for natural gas industry 8−30392
glass workpiece, US drilling, structural alterations 8−48555
graphite impregnation by low melting point metals using ultrasound *(Russian)* 8−46876
hollow drop production by injection of gas bubbles into liquid jet and US excitation 8−1710
ice detection using surface acoustic waves 8−18129
interface erosion rate meas. using pulse-echo US method 8−182
internal friction meas. instrument for use at high temps. 8−13977
lapping of conical surfaces 8−44235
microscopy, principles and appls. 8−18133
pipe/boiler wall thickness meas., test equipment *(German)* 8−18136
rock sample compressional and shear wave vel. meas. by profiling 8−44786
switch, two-board design, alarm and data transmission systems appl. 8−46870
temperature meas. using US resonance method 8−16792
thickness meas., precision, echo technique appl. *(French)* 8−29089
thin layer thickness measurement, US waves, phase vel. and damping *(Russian)* 8−36969
welding of Ag metal oxide contact materials 8−29095
wire drawing, anal. of radial-mode US tool with statically loaded inner surface 8−183
Al surface cleaning process 8−11417
LaB_6, US comminution of refractory compound powders 8−23656
Ni-Al-Cr-Ti-W-Mo, US vibration applied during solidification, improved strength, corrosion resistance *(Russian)* 8−15382
Si wafers, preparation of preselected areas for TEM 8−24887
SiC, US comminution of refractory compound powders 8−23656
$SrO.HfO_2(ZrO_2)$, US comminution of refractory compound powders 8−23656
Y_2O_3, US comminution of refractory compound powders 8−23656
ZrC, US comminution of refractory compound powders 8−23656

ultrasonic delay lines
broadband SAW delay lines using weakly piezoelectric substrates 8−22230
capillary and clad acoustic fibre delay line storage 8−9504
composite strip piezoceramic US receiving array 8−42511
SAW CdS delay lines, electronic control for optical image scanning 8−26006
surface wave recirculation loops, for signal processing 8−22228
transverse surface waves, on cylindrical surfaces of anisotropic solid 8−10270

ultrasonic devices
see also ultrasonic delay lines; ultrasonic transducers
acoustic strip surface waveguide, diffr. and guidance anal. 8−13828
characteristics and appl. *(German)* 8−1527
concentrators for US tools, wave propag. in curved rods of var. cross section 8−9484
Doppler alarm systems, piezoelectric transducers appl. *(Italian)* 8−42508
EM generation of US guided waves in ferromag. metal polycrysts., model 8−22236
flowmeter, non-intrusive, theoretical and expt. uncertainty determ. 8−30391
flowmeter, time differential clamp on ultrasonic flowmeter, performance and appls. 8−30390
flowmeter output characteristic linearity 8−42685
focusing probe selection criteria, NDT appl. *(German)* 8−7147
high-temperature US apparatus for elasticity characts. and thermal cond. meas. of materials 8−5705
leak detection systems, piezoelectric transducers appl. *(Italian)* 8−42508
mechanical waveguide using circular cylindrical rod for HF intense US production *(Japanese)* 8−33983
scanning high resolution microscope 8−1529
standing wave US Bragg cell, appl. to laser communication system, theory 8−25958
standing wave US Bragg cell, appl. to laser communication system, expt. results 8−25959
switch, two-board design, alarm and data transmission systems appl. 8−46870
trapped-energy ceramic resonator with improved response characts. *(Japanese)* 8−9522
underwater US image convertor optimal working frequency estimation *(Russian)* 8−30111
UT-31MTs pulsed ultrasonic thickness gauge 8−24761
ZnO piezoelec. film, fabrication and appl. *(Japanese)* 8−23616

ultrasonic diffraction
interaction of two diffracting sound beams and directional US radiators 8−38121
phase velocity and absorpt. coeff. meas. incorporating exact diffr. corrections 8−26010

ultrasonic dispersion
curved rods of variable cross section, wave dispersion and amplitude conc. 8−9484
ethanol, US studies of mol. relax. 8−22790
isopropanol, US studies of mol. relax. 8−22790
methanol, US studies of mol. relax. 8−22790
n-propanol, US studies of mol. relax. 8−22790
transition metal dichalcogenides, US characts. rel. to Fermi surface geometry *(Russian)* 8−34749
$BF_3+BF_3(D_2)$ (inert gas), US dispersion meas. 8−17758
CdS, US dispersion of high intensity waves, nonlinear electron absorpt. *(Russian)* 8−26916
^3He, US dispersion and attenuation near liq.-gas crit. point 8−38897

ultrasonic effects
binary liquid mixtures, excess internal press. and intermolecular interaction 8−35640
Chinese hamster ovary cell colony size and giant cell form. after 1 MHz US irrad. 8−28000
chromosome aberrations in vivo effect of US alone and in combination with X-rays 8−20210
E. coli B, combined US and gamma irrad. 8−20211
liquid surface relief prod. by US field, holographic interferometry meas. 8−1519
liquids, US induced birefringence, temp. depend. study by optical farfield method 8−16826
mammalian cells and chromosomes in vitro, 65 kHz 8−40240
organic molecules in solution 8−31260
Pisum sativum roots, 2 MHz US effects on growth and mitotic index 8−7385
pregnant mice and embryos in utero 8−35880
PVC, mechanochemical degradation in primary struct., mech. vibration effects, IR spectra *(German)* 8−19769
Fe, under US vibrs., initial struct. effect on C diffusion *(Russian)* 8−38876
Fe-Si (3 wt.%), deform., effect of superimposed US oscillatory stress *(Japanese)* 8−31461
$FeCO_3$, siderite, powder, Mossbauer spectra, acoustic-excitation-induced asymmetry of quadrupole splitting 8−27145
^4He, superfluid, US generated quantised vorticity 8−38893
$Na_2[Fe(CN)_5NO].2H_2O$, powder, Mossbauer spectra, acoustic-excitation-induced asymmetry of quadrupole splitting 8−27145
Ni, US deform., electron microscope exam. *(Russian)* 8−35447
Ni-base alloys, US vibration during crystallisation, effect on mech. props. *(Russian)* 8−19827
Ni-Cr (Mo), solid soln., US deform., electron microscope exam. *(Russian)* 8−35447
Ni-Cr (33 at.%), US deform. effect on short range order form. *(Russian)* 8−39839
Ni-Cr(Mo), solid soln., US effect on mech. props. *(Russian)* 8−23819

ultrasonic equipment
cross correlation flowmeter, HWR appl. 8−25283
direct and angled text fixtures *(German)* 8−44298
disperser for powder, suspension and emulsion production 8−23636
Doppler US equipment design and biological applications *(Spanish)* 8−7409
echoencephaloscope, two-probe three-mode design 8−44567
lung tissue characterisation by US, instrumentation, model and results, book 8−44575
radial-mode tool with statically loaded inner surface, anal. 8−183
schlieren quantitative visualization, using closed circuit TV system 8−46867
spectrometer, double-pulse comparison technique for meas. US vel. changes 8−1526
storage oscilloscope system for US grey scale display 8−3569

ultrasonic materials testing
acoustic, stress determ. improvement of accuracy 8−15631
acoustic emission, digital memory storage and source isolation 8−27712
acoustic emission, structural calibration technique for quantitative appl. 8−9509
acoustic emission detection technique, industrial NDT appl. *(Japanese)* 8−27721
acoustic emission leak detection, attenuation of elastic waves in pipelines 8−27711
acoustic emission pulses evaluation, freq. anal. appl. 8−18126
acoustic surface waves, studies via broadband probe 8−23904
acoustically active material, fatigue strength testing installation, electric and magnetic field effects 8−39995
adhesive bonds, physical modelling, US attenuation effects 8−7141
adhesive disband detection, US impulse induced resonance utilizing damping 8−44287
austenitic stainless steel weld metal defect detection, shear-wave polarisation effect 8−44337
automatic acoustic emission analysis system with programmed control *(Russian)* 8−46866
bond US inspection, aspects of model anal. and pattern recognition 8−31611
bone, tibia, human, physical stress effect on state, US meas. 8−24088
bone, US propag. 8−24105
ceramic, automatic US defect detection for tile grading and packing processes 8−23885
composite strip piezoceramic US receiving array 8−42511
concrete, acoustic emission at prior loading meas. method 8−27703
critical evaluation of test results, representation, processing *(German)* 8−7145
curved surfaces calibration 8−39977
defect reconstruction, from US methods, mathematical model *(German)* 8−44295
defect scanning method for metal *(German)* 8−15620
direct and angled text fixtures *(German)* 8−44298
echo method of inspection for complicated shapes 8−44317
electrodynamic transducers, US wave generation, material testing *(German)* 8−44294
electroslag welds, using tandem probe techniques 8−27692
EM ultrasonic flaw detection *(Chinese)* 8−11452
energy measurement and significance in acoustic emission testing 8−31594
fatigue crack growth, AE monitoring 8−27706
fibreglass rings, ultimate load determ. by AE method 8−48604
flaw detection, structural products and structures, restricting portion of signal analysis 8−44318
focused sound field appl. to NDT 8−7105
fracture surface by replicas, determ. of reflector size by scanning 8−27689
GFRP laminate, damage assessment by stress wave emission and dynamic mech. meas. 8−11461
graphite composite aircraft structures, flaw detection by US methods 8−44288
graphite fibre reinforced polyimide, correl. of US attenuation and shear strength 8−19968
gray tone display processor for CRT display, cct. 8−44284
imaging applications of US and acoustic methods *(Dutch)* 8−27719
inspection of cast explosive billets for air voids 8−3287

ultrasonic materials testing continued
inspection of large diameter pipe and stock 8−48593
inspection of rails for flakes, mechanised US unit 8−44330
instrument limitation, flaw detection instruments, programmed automatic corrections 8−7103
laminate, bonding inspection, by acoustic amplitude method 8−48591
LWR pressure vessels, inspection of spherically shaped perforated areas 8−17339
metal flat plate, electromagnetic-acoustic conversion 8−44320
metals, contactless transducer, for thickness meas. and flaw detection 8−44312
metrological defectoscopy, US materials testing refinements *(German)* 8−15638
monitoring heated components, probes and contact fluids 8−44316
monolithic cascade CCD ultrasonic lens applications 8−22231
multichannel shadow flaw detectors, accuracy and reliability of inspection 8−44306
noncontact thickness testing by US and electromagnetic waves 8−48603
nuclear power station, US metalwork flaw detection system *(Russian)* 8−25302
oblique entry inspection, random error of defect coord. meas., anal. 8−40006
oblique entry US inspection of welds, defect coord. meas., error anal. 8−40008
offshore structures 8−27691
piezoelectric transducer, aperiodic, for US radiation, design for testing applic. 8−36996
piezoelectric transducers, for AE signal investigation 8−42507
pipeline inspection, welding flaw detect. 8−19984
pipes, large-diameter, US testing of welds 8−3267
plastic elasticity, hardness, creep, and relaxation meas. with Vickers indenter by electroacoustic method *(German)* 8−48584
polymer, oriented, dynamic shear modulus determ. by acoustic method 8−23911
polymers, velocity-of-propagation meter 8−19976
pressure vessel of PWR reactor, in-service inspection *(Czech)* 8−29658
protective coating on steel, US testing 8−23908
pulse echo method, CRT displays *(German)* 8−7153
pulsed thickness gauge, inspection of tapered profiles, error anal. 8−40007
reflecting echo method and single-stage monitoring 8−23890
resonance method for accurate thickness meas. 8−48590
rig for testing effect of stress on cavitation erosion 8−15545
scanning laser acoustic microscope, biomedical research and materials science appls. 8−46878
schlieren quantitative visualization, using closed circuit TV system 8−46867
selection of focusing US probe *(German)* 8−7147
sensitivity adjustment for focusing probes, testing of planar and curves surfaces *(German)* 8−7152
shadow immersion exam. of defects, dimension determ., error anal. 8−44305
shadow immersion flaw detector, pulsed, operating characts. for multiple shadow mode 8−44304
soldering fusion instant recording by US method 8−44319
solid solution breakup, anal. by meas. US wave vel. 8−23887
sound field corrected US indications display *(German)* 8−27714
spectroscopy, impulse response eval. of US echoes *(German)* 8−26012
spherical material parts, defect coordinates, location via acoustic emission method 8−35626
spot welding process, acoustic emission signals, anal. *(German)* 8−44296
steel, austenite, pipe, ultrasonic testing of grain size 8−44313
steel, austenitic, weld, with natural flaws, US test techniques *(German)* 8−27713
steel, austenitic stainless, microstructural effects on US attenuation 8−11455
steel, austenitic stainless, welds, false indications, cause and influence 8−31599
steel, coarse grained Kh18N9T, US amplitude inspection, efficiency estimation 8−48592
steel, ferritic weldment, US testing of defects, charact. and size 8−7104
steel, flocculation detectability factor in US inspection in quality control 8−3268
steel, fracture ductility, determ. in bending tests and US emission 8−23899
steel, grain size determ. 8−40015
steel, nitride coated, brittleness eval. by AE *(Chinese)* 8−11453
steel, possibilities and limitations 8−19979
steel, pressure vessel, acoustic emission during loading by pulsating internal press. *(German)* 8−19973
steel, sheet, cold-rolled, US inspection for mech. prop. anisotropy 8−23750
steel, tubes, helical welded, computerised US quality control 8−35601
steel, US attenuation, defect effects in US inspection *(Italian)* 8−48609
steel, US characts., change with stress appl., exam. 8−48579
steel, US testing, sensitivity adjustment for focusing probes, testing of planar and curves surfaces *(German)* 8−7152
steel, welded specimen AE testing by external static loading of cold cracking susceptibility 8−40013
steel Cr-Mo (2.25, 1 wt.%), duplex LMFBR steam generator tubing, US equipment for NDT 8−11469
steel EhI415, US attenuation, heat treatment effects 8−44315
temperature investigation of AE 8−44336
thickness meas., destructive and nondestructive methods compared *(French)* 8−15611
time-interval meter for digital display pulse echo thickness gauges 8−48594
wave refraction/reflection phenomena appl., transducers *(German)* 8−35615
weld joint, fatigue crack progress, acoustic emission frequency determ. *(German)* 8−19971
welds examination, book 8−48608
wrap-soldered tubing, inspection using UDT-6Sm us apparatus 8−3276
Al alloy, 2124-T851, fracture toughness via acoustic emission 8−7109
Al alloy, US characts., with stress appl., exam. 8−48579

ultrasonic materials testing continued
Al alloy, US testing of cold worked surface, quality evaluation 8−48602
Be, welded acoustic emission 8−39976
C fibre reinforced plastic aircraft structural appl., non destructive testing 8−35599
Ni-Cr-Ti-Al/Au-Ni brazed joint, high temp., AE under elev. temp. and loading *(German)* 8−31597
Ni-Cu-Al(Si), spinodal decomposition, morphology of microstructure, elastic strain energy anisotropy effect 8−15354
Ni-Si melt, ultra acoustic study *(Russian)* 8−15613
Ti alloy tensile strength, correlation with ductility and fracture detection 8−31601
Zn, single crystal, acoustic emission during twinning 8−11468

ultrasonic measurement
see also ultrasonic velocity measurement
absorption in solids, by acoustooptical method, losses in boundary layer evaluation *(Polish)* 8−30701
acoustic surface waves, broadband probe for materials testing 8−23904
automatic meas. method of US transducer constants *(Japanese)* 8−33972
decibel meter, for US pulse echo attenuation meas. 8−1520
gas, molecular, kinetic coeffs. calc. from ultrasonic data 8−42703
glass, US detector applications 8−33974
low-temperature CW US expts., appl. of rotatable sample holder with voltage readout 8−13873
phase velocity and absorpt. coeff. meas. incorporating exact. diffr. corrections 8−26010
pulse excitation method for solids 8−5624
pulse selector, linear, for US investigs. 8−5623
SAW standing waves, heterodyne optical probing of partial standing waves 8−13870
Stonely waves, direct meas. at Ni-Pyrex rel. to crustal seismic waves 8−10268
thickness, precision, echo technique appl. *(French)* 8−29089
transducer characterisation using cholesteric liquid crystals 8−42512
transducers, variable-angle, qualitative evaluation by photoelastic visualisation method 8−18143
transverse hypersonic waves at 9.4 GHz appl. to APR and attenuation meas. 8−33970
US fields investigation, appl. of holographic interferometry 8−1519
US magnetostriction vibrator efficiency meas. *(Japanese)* 8−9523
vibration visualization in piezoelectric ceramics using IR telethermography 8−33966
visualization using small Al flakes *(Japanese)* 8−33973

ultrasonic paramagnetic resonance *see acoustic paramagnetic resonance*

ultrasonic propagation
see also ultrasonic diffraction; ultrasonic dispersion; ultrasonic reflection; ultrasonic refraction; ultrasonic relaxation; ultrasonic scattering; ultrasonic transmission
benzene, hypersound propagation temp. depend., Mandelshtam-Brillouin spectra meas. 8−31210
cholesteric liquid crystal, mag. aligned, anisotropic US propag. 8−42895
curved rods of variable cross section, wave propag. 8−9484
ferromagnetic metal, EM generation of US guided waves, model 8−22236
gas, molecular, kinetic coeffs. calc. from ultrasonic data 8−42703
interaction of two diffracting sound beams and directional US radiators 8−38121
magnetic metals, crit. transverse US attenuation, spin fluctuations 8−48022
MBBA film, nematic liq. cryst., visible interaction of low-intensity US waves 8−10126
metal, superconducting and normal, attenuation, EM generation and detection of US shear waves 8−39261
phase velocity and absorpt. coeff. meas. incorporating exact diffr. corrections 8−26010
semiconductor, absorpt. and amplification of US at moderate freq. 8−19102
smectic liquid crystal, shear wave attenuation 8−9944
Stonely waves, direct meas. at Ni-Pyrex rel. to crustal seismic waves 8−10268
As_2S_3, amorphous, low temp. US meas., two-level systems role 8−30703
BaO, NaCl struct., elastic props., US meas. 8−18697
CaO, NaCl struct., elastic props., US meas. 8−18697
Ho-Tb (50 wt.%) alloy, mag. phase diag. from anomalous US propag. 8−6526
$LiNbO_3$ $\Delta V/V$ waveguide SAW propagation obs. and modal analysis 8−38128
MnSi, crit. transverse US attenuation, spin fluctuations 8−48022
NbO_2, low temp. elastic consts. and Debye temp. 8−47463
SiO_2, vitreous, fast neutron irrad., low temp. US meas., two-level systems role 8−30703
SrO, NaCl struct., elastic props., US meas. 8−18697

ultrasonic radiation *see ultrasonic waves*

ultrasonic reflection
austenitic stainless steel weld metal defect detection, shear-wave polarisation effect 8−44337
echo pulse shape improvement in low impedance materials 8−1489
elastic rod on viscoelastic half-space, forced longit. vibr., appl. to muscle study 8−44538
glass, two pulse echo, low temp. 8−18709
layered media, US transmission and refl. coeffs. 8−13827
solid plates and half-spaces, non-specular reflection 8−1464
spatial echo distrib. processing for interface props. determ. 8−1490
$LiNbO_3$:Fe, polarization echo signals amplification *(Russian)* 8−43780

ultrasonic refraction
No entries

ultrasonic relaxation
acetic acid, effect of impurities on US relaxation 8−10130
air, HF sound absorpt. meas. 8−1475
associated liq., US absorpt. and hole theory 8−10124
associated liquids, correl. between dielec. and acoustic relax. times 8−9925
t-butyl alcohol, aq. solns., US relax. freqs., clathrate-hydrate model 8−30704
condensed systems, vibrational relaxation times calc. from low-freq. mol. spectrum 8−2205

ultrasonic relaxation continued
- cyclohexanal, liq., viscoelastic and structural relax., US rel. and absorption meas. 8−26634
- elastic moduli in ferroelectric transition region 8−6646
- ethanol, US studies of mol. relax. 8−22790
- glass, spectral diffusion, phonon echoes and US saturation recovery 8−10149
- heptanoic acid, soln., US relax. *(German)* 8−22792
- isopropanol, US studies of mol. relax. 8−22790
- Kneser liquids, vibrational energy exchange probabilities 8−38780
- methanol, US studies of mol. relax. 8−22790
- nematic liquid crystals, US relaxation time, temp. depend. 8−18712
- nonanoic acid, soln., US relax. *(German)* 8−22792
- PAA, nematic liq. cryst., effect of magnetic field on US vel. and absorpt. 8−18707
- n-propanol, US studies of mol. relax. 8−22790
- propylene, liquid, effect of libration transitions on sound absorpt. 8−2203
- smectic liquid crystal, shear wave attenuation 8−9944
- Co, US damping temp. and mag. field depend. *(Russian)* 8−23313
- Fe tourmaline, microwave acoustic relax. absorpt. 8−22791
- Ge, US attenuation and nonlinearity const., temp. depend. 8−43075
- KH_2PO_4, central peak susceptibility and US propag. near T_c 8−15125
- Mn-Cu alloys, mechanical damping at 40 kHz 8−23755
- MnP, US vel. and crit. attenuation, longit. waves, external mag. field 8−27035
- N_2, moist, relaxation freq., sound tube meas. 8−1058
- $NH_4H_2PO_4$, phase transition, phonon echo method *(French)* 8−6640
- $Pb_5Ge_3O_{11}$ acoustic relaxation near ferroelectric transition 8−2814
- $RbAg_4I_5$, superionic cond., US absorpt., ionic cond., relaxing sp. ht. 8−14505
- Se, amorphous, relax of sound velocity, struct. determ. 8−38786
- Se, liquid, US absorpt. meas. 8−2202

ultrasonic scattering
- backscattering by mammalian organ as function of time after excision 8−7412
- blood, US propag., effects of red cell shape and orientation 8−24104
- Doppler spectra, transit time and geometrical broadening 8−44576
- human tissues, theoretical models 8−7411
- inertial transducer, rotational perturbation detection appl. 8−9524
- lung tissue characterisation by US, instrumentation, model and results, book 8−44575
- plane axial-shear wave, scatt. by circular semiconducting piezoelectric cylinder 8−2806
- spherical cavity in metallic solid, longitudinal acoustic wave scatt. 8−38108

ultrasonic transducers
- annular, for focusing field upon transmission 8−44574
- automatic meas. method of US transducer constants *(Japanese)* 8−33972
- biomedical low-loss wideband for noninvasive appls., characts. 8−48846
- cellophane film condenser transducer, operation in air, 0-100 kHz 8−42509
- characterisation using cholesteric liquid crystals 8−42512
- coaxial circular spherical array for US imaging 8−9513
- composite strip piezoceramic US receiving array 8−42511
- concave, confocal pair, appl. of polyvinylidene fluoride piezoelec. film 8−22241
- contactless transducer, for thickness meas. and metal flaw detection 8−44312
- dielectric acoustoelectric transducer, freq. characts. 8−38167
- digital gauge, for ventricular dimension meas. 8−20238
- electrodynamic transducers, US wave generation, material testing *(German)* 8−44294
- EM periodic SAW transducers 8−13880
- eye movement non-contacting recording appl. 8−7414
- flowmeter appl., computer interface development 8−38426
- HF Lorentz force hydrophone theory and practice 8−42510
- inertial, based on dynamic scattering, rotational perturbation detection appl. 8−9524
- inspection apparatus for warp-soldered tubing 8−3276
- interdigital transducer and 1.1 GHz SAW oscillator, photolithographic contact printing *(Japanese)* 8−33981
- materials testing appl., wave refraction/reflection phenomena *(German)* 8−35615
- medical US imaging technology status 8−24174
- metal defect scanning method for metal *(German)* 8−15620
- metal flat plate, electromagnetic-acoustic conversion 8−44320
- microwave ultrasound in liquid generation, piezoelectric film transducer of λ/4 operation, effective attenuation analysis *(Japanese)* 8−30145
- multicomponent ring transducers, mechanical loss resistance calc. technique 8−38166
- ophthalmological, with controlled weight, eye axial length meas. appl. 8−20239
- opto-acoustic transducers for sensitive US imaging 8−5625
- piezoelectric, design US imaging equipment appl. 8−9525
- piezoelectric transducer, aperiodic, for US radiation, design for testing applic. 8−36996
- probe for measuring US energy density in liquids *(Polish)* 8−5617
- pulse excitation method for solids 8−5624
- quartz crystal, influence of tabs thickness and resonating props. 8−18140
- rotatable sample holder with voltage readout, angle sensing mechanism 8−13873
- SAW, on Si substrate with nonzero conductivity, calcs. of fractional velocity 8−1533
- SAW, surface to bulk wave conversion at local surface defects 8−38165
- SAW filter with low insertion loss using group-type unidirectional interdigital transducer *(Japanese)* 8−33980
- SAW interdigital transducers, finger withdrawal admittance eval. by normal mode anal. 8−33978
- SAW two dimensionally periodic transducer *(Japanese)* 8−33984
- SAW two-port resonator using long interdigital transducers *(Japanese)* 8−33982
- sonar transducer arrays, image prod., signal processing methods comparison 8−18122
- thickness mode design, computer simulation using Thevenin equivalent ccts. 8−30143

ultrasonic transducers continued
- underwater US magnetostriction vibrator efficiency meas. *(Japanese)* 8−9523
- US Doppler flowmeter spectra for asymm. transducers 8−31880
- variable-angle, qualitative evaluation by photoelastic visualisation method 8−18143

ultrasonic transmission
- erythrocyte-rouleaux formation, US detect. by spectral anal. 8−40280
- layered media, US transmission and refl. coeffs. 8−13827
- liquid-metal interface, surface wave generation by US wave *(French)* 8−18885
- tissue, time post-mortem effects 8−28025
- tissue characteristics, swept freq. meas. of US attenuation and vel. 8−40278

ultrasonic velocity
- *see also ultrasonic dispersion*
- acetonitrile-carbon tetrachloride-n-butanol, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
- acetonitrile-toluene-n-butanol, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
- n-alcohols, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
- alkali halides, aq. solns., hypersonic sound vel. and absorpt. meas. 8−30699
- amine solutions, US analysis method 8−7277
- associated liquids, US vel. and absorpt. rel. to hole theory 8−10124
- blood, US propag., effects of red cell shape and orientation 8−24104
- bone, surface wave propag. 8−44578
- carbon tetrachloride, liq. and plastic cryst. phases, thermodynamic props., light scatt., US propag. 8−2863
- cholesteric liquid crystal, mag. aligned, anisotropic US propag. 8−42895
- cubic single crystals, rapid crystallographic orientation determ. method using US vel. anisotropy 8−6027
- cyclohexanal, liq., viscoelastic and structural relax., US rel. and absorption meas. 8−26634
- dibenzyl, diphenyl, near melting point 8−6127
- dioxan-cyclohexane-chloroform, mixtures, compressibility, free length, molar and available vol., US meas. 8−2200
- elastic constant determ. for low trigonal symmetry cryst. 8−2187
- electrolytic aqueous solution, US study of apparent molar compressibility 8−10125
- ethyl lactate, sound vel. and absorpt. meas. at hypersonic freqs. 8−18708
- glasses, acoustic and dielec. props. at low temps., review 8−6128
- n-hexane, superheated liq., US wave vel., adiabatic compressibility, heat capacity 8−2198
- Kneser liquids, vibrational energy exchange probabilities 8−38780
- liquids, hole theory rel. to US propag. 8−38775
- metal, degree of deform. effect on thermophys. props. at high temps. 8−26694
- metal, US velocity, effects of deform. and high temps. 8−26626
- metallic glass, phonon transport below 100K 8−14422
- nematic liquid crystal, isotropic phase, light scatt., ultrasonic vel. and absorpt. meas. 8−48189
- nylon 6, stress depend. of US velocity *(Japanese)* 8−26629
- orthoferrites near spin-flip temp., magnetoelastic waves 8−19301
- PAA, nematic liq. cryst., effect of magnetic field on US vel. and absorpt. 8−18707
- polypropylene, drawn fibres, SEM and US study 8−47249
- propylene, liquid, sound vel. and absorpt. rel. to libration transitions 8−2203
- quartz, synthetic piezoelectric, US vel. meas. rel. to elastic characts. 8−6638
- sample chamber for ultrasonic vels. and elastic consts. meas. *(German)* 8−46868
- steel, C, stress depend. of US velocity *(Japanese)* 8−26629
- steel, sheet, cold-rolled, US inspection for mech. prop. anisotropy 8−23750
- steel cone, phase velocity of longit. impact wave *(Japanese)* 8−9600
- tissue characteristics, swept freq. meas. of US attenuation and vel. 8−40278
- water, supercooled, Brillouin scatt. 8−43884
- water-2-propanol, density, US vel. meas. 8−18529
- Zerodur, glass-ceramic, thermoelastic props. 8−27550
- Ag_2HgI_4, order-disorder transform. at 51°C, sound vels. and dielec. losses 8−10129
- Al alloy A3B2, stress depend. of US velocity *(Japanese)* 8−26629
- Al-Mg, single crystal elastic consts., ultrasonic meas. during ageing 8−11263
- As_2Ge_2SeTe, semiconducting glass, elastic props., US vel. meas. 8−26628
- $As_2Ge_3T_{15}$, semiconducting glass, elastic props., US vel. meas. 8−26628
- AsGeTe, semiconducting glass, elastic props., US vel. meas. 8−26628
- As_2S_3, amorphous, low temp. US meas., two-level systems role 8−30703
- As_2S_3, semiconducting glass, elastic props., US vel. meas. 8−26628
- As_2Se_3, semiconducting glass, elastic props., US vel. meas. 8−26628
- $BaTiO_3$, isotropic dielectric, US vel. and longit. elec. field *(Russian)* 8−38785
- Bi, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- C, vitreous, low temp. sp. ht., thermal cond. and US vel. meas. 8−47533
- Cd, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- Cd-Bi, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
- $Cd_6Ge_3As_4$, semiconducting glass, elastic props., US vel. meas. 8−26628
- Cu, stress depend. of US velocity *(Japanese)* 8−26629
- Cu, ultrasonic velocity meas., mag. field depend. 8−19104
- β-Cu-Zn-Al, US elastic const. meas. near martensitic transform. temp. 8−39827
- D_2O-H_2O mixtures, US vel. at 298.15K, adiabatic compressibility 8−10127
- Ge-Al (1.15 wt.%), US wave vel. meas. for anal. of solid soln. breakup 8−23887
- Ge-As-Se glasses, elastic moduli, US vel. and reson. freq. meas. 8−23756

ultrasonic velocity continued
  Ge-Ga (1.13 wt.%), US wave vel. meas. for anal. of solid soln. breakup 8−23887
  Hg, liquid, velocity depend. on density 8−43073
  In-Cd alloys, elastic-phase transition, US study 8−6919
  KCl molten salt, thermodynamic function, Brillouin spectroscopy, hypersonic vel. *(French)* 8−35161
  $KD_3(SeO_3)_2$, acoustic phonon softening and spontaneous strains 8−26652
  $KH_3(SeO_3)_2$, acoustic phonon softening, US vel. meas. 8−14429
  K_2NiF_4, 2D antiferromag., volume depend. of superexchange, US velocity meas. of T_n 8−19237
  $K_2Pt(CN)_4Br_{0.3}.3H_2O$, lattice softening, temp. depend. of elastic consts., US meas. 8−14432
  ^{6}Li, and natural Li, elastic consts., temp. and press. depend. 8−30692
  $Mg(Al,Cr,Fe)_2O_4$, spinel, elastic moduli calc. 8−6960
  MnP, US vel. and crit. attenuation, longit. waves, external mag. field 8−27035
  MnSi, US velocity anomalies near mag. transition 8−19302
  NaCl, molten salt, thermodynamic function, Brillouin spectroscopy, hypersonic vel. *(French)* 8−35161
  RbH_2PO_4, ferroelectric, US propag. near ferroelectric phase transition temp. 8−23417
  $RbHSO_4$, ferroelec. phase transition, US attenuation and velocity 8−39511
  Se, amorphous, relax of sound velocity, struct. determ. 8−38786
  Se, liq., US rel. temp. depend., melting effects 8−38782
  SiO_2, vitreous, fast neutron irrad., low temp. US meas., two-level systems role 8−30703
  Sn, liq., US vel. and thermophysical props. meas., 500-1000K 8−38778
  Sn-Bi, liq. US vel. and thermophysical props. meas., 500-1000K 8−38778
  Te, liq., US rel. temp. depend., melting effects 8−38782
  V, ultrasonic velocity meas., mag. field depend. 8−19104
  V_3Si, soft mode sound vel. in mag. field rel. to density of states 8−14647
  ZnF_2, elastic props., 4.2-300K, incipient ferroelec. transition 8−30691
ultrasonic velocity measurement
  acoustooptically active solids, laser beam probing of standing wave 8−33965
  continuous and simultaneous recording of changes in US attenuation and vel. 8−46875
  correlation method using quartz transducer transmitter-receiver 8−30139
  flowmeter, non-intrusive, theoretical and expt. uncertainty determ. 8−30391
  flowmeter, open channel acoustic flowmeter, error sources and calibration 8−30389
  flowmeter, time differential clamp on ultrasonic flowmeter, performance and appls. 8−30390
  liquid, UHF interferometer appl. 8−22234
  pulse velocity meas. by time selector and frequency counter *(German)* 8−13876
  solid solution breakup, anal. by meas. US wave vel. 8−23887
  spectrometer, double-pulse comparison technique for meas. US vel. changes 8−1526
  three-dimens. fluid vel. vector and temp. fields from acoustic transmission meas. 8−30394
  tissue, temp. depend., appl. to noninvasive temp. monitoring 8−40281
  vibration propag. vel. meas. in solids using broadband amplifier 8−1521
ultrasonic wave propagation *see ultrasonic propagation*
ultrasonic waves
  see also acoustic surface waves; ultrasonic propagation
  visualization using schlieren technique 8−30118
  Fe-Ni, mechanisms of EM generation and detection of US Lamb waves 8−39382
  Sn, u.s. surface generation, below 20K 8−2353
ultrasonics
  see also acousto-optical effects; ultrasonic applications; ultrasonic devices; ultrasonic equipment; ultrasonic waves
  trends in research work *(Japanese)* 8−33946
ultraviolet astronomical observations
  A-type stars, predicted and observed spectral energy distribs. 8−4208
  active nuclei of galaxies and quasars, role of UV obs. *(Italian)* 8−32577
  AGK2+81°266, hot subdwarf, spectral type 8−45323
  Ap stars, heavy element abundances from Copernicus UV data, reference stars α Lyrae and α Canis Majoris A 8−28688
  Ap stars, photoelec. obs. of light vars. *(German)* 8−20841
  Ap stars, summary of physical and chemical props. from UV obs. *(Italian)* 8−32479
  Ap-stars, UV spectra in 1350-2550 Å range, TD1 satellite obs. 8−36581
  SX Arietis, He spectrum variable, UV photometry with ANS 8−36585
  α Aurigae (Capella), Mg II lines obs. rel. to chromosphere model 8−40931
  B2 1652+39, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
  Basle catalogue of 1906 blue objects at high galactic latitudes 8−32360
  BD+39°3226, BD+34°1543, hot subdwarfs, spectral types 8−45323
  Be stars, evidence for mass loss in mid-UV spectra 8−8010
  α Bootis (Arcturus), far UV spectrum, coronal temp. determ. 8−16407
  3C 273, quasar, UV spectrophotometry 8−12401
  3C 273, UV spectrum, 1200-1700 Å, cosmological implications 8−45425
  3C 371, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
  3C 66 A, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
  UW Canis Majoris, eclipsing binary, UV photometry and primary component shape and atmospheric struct. 8−40992
  α Canis Majoris (Sirius B), EUV obs., evidence against photospheric origin of 0.25 keV flux 8−49481
  β Canis Majoris stars, UV obs. by TD-1A satellite 8−20839
  β Canis Majoris stars in southern hemisphere, photometric search 8−12243
ultraviolet astronomical observations continued
  DO Cassiopeiae, eclipsing binary, three-colour photoelectric investigation 8−16462
  T Cephei, Me variable, Tc discovery 8−32483
  VV Cephei, UBV photometry during ingress phase of 1976-78 eclipse 8−20862
  Cepheid variables, VBLUW photometry rel. to intrinsic colours and physical props. 8−28696
  CoD−38°10980, white dwarf, photometry and spectroscopy rel. to gravit. redshift 8−24511
  CoD −35° 10525, bright YY Orionis star, spectrum and UBV photometry 8−36566
  Collinder 132a, b, UBVβ photometry of two sparse open clusters 8−32540
  14 Comae, A-type shell star, spectroscopic obs. 8−7992
  Comet Tago-Sato-Kosaka (1969 IX), H and OH prod. rates 8−28580
  compact nebulae, very-low-excitation, in Magellanic Clouds, spectra 8−32556
  Crab Nebula outskirts, remarkable spectra and element abundances 8−36662
  α Cygni, supergiant, near UV spectrum 8−7991
  α Cygni (Deneb), Copernicus obs. of UV spectrum 8−45330
  V1500 Cygni (Nova 1975), line spectrum evolution 8−32493
  V1500 Cygni (Nova 1975), linear polarization obs. 8−36601
  V1500 Cygni (Nova 1975), photometric and spectroscopic obs. 8−36604
  V1500 Cygni (Nova 1975), polarimetric and photometric obs. 8−36612
  V1500 Cygni (Nova 1975), small amplitude light var. 8−36608
  V1500 Cygni (Nova 1975), spectral energy distrib. 8−36605
  V1500 Cygni (Nova 1975), UBVR Hα photometry and polarimetry 8−36611
  V1500 Cygni (Nova 1975), UBVRI photometry and polarimetry 8−36614
  V1500 Cygni (Nova 1975), visible and near UV photoelec. photometry 8−36610
  V1500 Cygni (Nova 1975), visible and near UV spectrophotometric obs. 8−32492
  V1500 Cygni (Nova 1975), visible and near UV spectrophotometry 8−32494
  V1500 Cygni (Nova 1975), visible-band linear polarimetry 8−36621
  V1500 Cygni (Nova 1975) photometric obs. at Skalnate Pleso Observatory 8−36617
  Cygnus Loop, supernova remnant, UV spectral obs. of bright filament 8−45387
  Cygnus X-1, discovery of synchronous binary polarization 8−41087
  Cygnus X-1, evidence for 39 day period 8−8165
  D and cD galaxies in poor clusters, struct. and photometry 8−32580
  DA 240, radio galaxy, high-vel. gas in jet 8−28773
  diffuse interstellar bands at far UV wavelengths, obs. 8−32554
  distant cluster of galaxies, photometry and red shift 8−12377
  30 Doradus region, far UV extinction anomaly 8−45386
  early Be stars, macroscopic radial atmospheric motions 8−8009
  early type stars, Mg II lines near 2800 Å 8−12229
  early-type stars, near UV obs. of line blocking factors 8−45329
  early-type stars, Skylab UV obs., MK spectral types 8−40933
  early-type stars, spectral classification from TD1 satellite low dispersion UV spectra 8−16421
  early-type stars in southern hemisphere, four colour photometry and spectral types 8−40945
  early-type stars with six degrees of galactic anticentre direction, radial vels. 8−7990
  early-type supergiants, spectrum variability, UV obs. *(Italian)* 8−32458
  eruptive blue variables at high galactic latit., spectrophotometry 8−32482
  ESO 113-IG45, galaxy and/or quasar, spectrum, photometry and struct. 8−28782
  EUV source detect. in Pavo region at 500 Å 8−28675
  extragalactic emission line objects, third list from Curtis Schmidt thin prism survey 8−28538
  extragalactic emission-line objects, second list from Curtis Schmidt thin prism survey 8−28537
  faint blue stars near galactic anticentre, UBV photometry 8−40932
  faint quasars, spectroscopy and props. of CTIO 4 metre survey 8−32592
  faint red stars at intermediate galactic latit., UBVR photometric obs. 8−32457
  Feige 24, EUV obs. of hot white dwarf, temp. determ., interstellar H I density calc. 8−16422
  galactic bright nuclei, survey of 448 galaxies 8−32569
  galactic globular clusters colour excess ratio, rel. to interstellar absorpt. law 8−28797
  galactic structure around l=140°, b=0°results from stellar UBV photometry 8−24555
  galaxies, elliptical and S0 colour-absolute magnitude relation 8−8108
  galaxies, interacting, with compact components, UBV photometry 8−20888
  galaxies, southern, with broad emission lines 8−20891
  GD 90, magnetic white dwarf, circular polarisation obs. 8−16409
  β Geminorum (Pollux), Mg II lines obs. rel. to chromosphere model 8−40931
  globular clusters, evidence for H II in cores 8−8065
  globular clusters, UBV photometry 8−16468
  GX 17+2 (3U 1813−14), photometry of optical candidate 8−28849
  h 4866 B, vars. in spectral type and radial vel. 8−32518
  HBV 475 (V1329 Cygni), high-excitation emission lines obs. 8−40955
  HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
  HD 153919 (3U 1700-37), binary X-ray source, radial vels. in blue spectral region 8−49556
  HD 215038, Ap star, line identification list 8−32484
  HD 77581 (3U 0900-40), X-ray binary, spectroscopic orbit and masses of components 8−16461
  HD 87892, central star of NGC 3132, obs. of visual companion 8−20859
  HD 91805, spectrum anal. rel. to nature of Bidelman-MacConnell weak G-band stars 8−49432
  HDE 245770 (Ariel 0535+26), photoelectric UBV photometry 8−36592
  HDE 283048, hot subluminous star, spectrum 8−20823

ultraviolet astronomical observations continued
- HEAO-1 spacecraft pointing and scanning obs. 8−45185
- α^2 Herculis, circumstellar absorpt. lines rel. to absolute mass loss scale for red giants 8−7997
- AM Herculis, multicolour photometry, slow optical pulsar 8−28693
- HR 3413, Ap star, photometric vars. and period *(French)* 8−32471
- HR 5999, variable shell star, VBLUW photometry 8−28701
- HZ 43, EUV obs. of hot white dwarf. temp. determ., interstellar H I density calc. 8−16422
- International UV Explorer satellite, obs. of sample targets 8−32315
- interplanetary H, Lyman α radiation meas. with absorpt. cell spectrophotometer 8−28519
- interstellar Cl and P abundances towards 10 stars, Copernicus obs. 8−36646
- interstellar CO absorption in spectrum of ξ Ophiuchi, Copernicus obs. and cloud density 8−36656
- interstellar gas in diffuse regions, Copernicus UV obs. *(Italian)* 8−32552
- interstellar H_2 column densities, Copernicus UV obs. 8−8070
- interstellar local He I density from EUV obs. 8−4331
- interstellar Mg column density towards nearby stars from Mg II obs. 8−41023
- interstellar O I lines, O abundance determ. 8−16498
- interstellar O VI, spectroscopic tracer for hot interstellar gas, Copernicus obs. 8−16505
- Jupiter, auroral hot spots obs. 8−16333
- K648, halo planetary nebula, spectrophotometry and element abundances 8−41011
- BL Lacertae, optical monitoring by three-colour photographic photometry 8−16525
- BL Lacertae, photoelectric intraday photometric obs. 8−36681
- late-type stars intermediate-band photometry, calibration of indices 8−49424
- ρ Leonis, expanding envelope OAO-3 spectra *(Russian)* 8−4224
- local interstellar H and D densities, Copernicus obs. 8−16487
- local interstellar medium, intermediate-vel. gas obs. 8−36655
- LSI+61°303, possibly optical counterpart of GT 0236+610, absence of variability 8−49438
- α Lupi, UV light curve of β Cephei-type star 8−36570
- β Lyrae, UV spectrum 8−8048
- M25 (IC 4725), open cluster, stars four colour and Hβ photometry 8−8067
- M31, globular clusters colour indices, rel. to interstellar absorpt. law 8−28796
- M34, open cluster, UBV photoelectric photometry 8−12307
- M87, dynamical evidence for central mass concentration 8−49529
- M-type variable stars, obs. in DDO photoelec. system, spectral classification 8−32463
- Magellanic Clouds, spectrophotometry of nebulae suitable as standards 8−12350
- Markarian galaxies, nature from photometry and classification 8−28781
- Mars atmosphere, O_3 layer and two aerosol layers detect. by Mars 5 spacecraft UV obs. 8−49357
- Mars upper atmosphere, H Lyman α radiation meas. with absorpt. cell spectrophotometer 8−28519
- Merope nebula, uvby photometry and dust grains phase function in UV 8−32553
- meteors OH emission, UV photometric obs. 8−7943
- nearby stars, Mg II interstellar resonance doublet absorption 8−45391
- NGC 1904 (M79), UBV photometry, colour-magnitude diagram of halo globular clusters 8−32528
- NGC 2439 association, photometric and spectroscopic study 8−16470
- NGC 2527, galactic cluster, UBV photometry 8−16479
- NGC 3379, elliptical galaxy, spectroscopic obs. rel. to rot. and vel. dispersion 8−49529
- NGC 3603, luminous young cluster, UBV photometry 8−36643
- NGC 4151, Seyfert galaxy, nuclear region far UV spectrum 8−32573
- NGC 4235, Seyfert galaxy, spectrum and radial. vel. 8−49536
- NGC 6383, young open cluster, central core stars obs. 8−41003
- NGC 6543, planetary nebula, electronographic data rel. to struct. 8−20869
- NGC 6752, globular cluster, blue horizontal-branch stars photometry 8−49488
- NGC 7654 (M52), open cluster, stars four colour and Hβ photometry 8−8067
- NGC 7662, planetary nebula, rocket UV spectrum and models 8−28746
- NHC 4594 (Sombrero Galaxy), H II regions and ionised interarm gas detect. 8−36685
- Norma dark cloud region, stellar photometry rel. to cloud struct. 8−16494
- Nova Sagittarii 1977, early spectrum 8−32496
- Nova V3888 Sagittarii (1974), UBV and uvby photometry during decline stage 8−20836
- OB stars, UV P Cygni profiles long-term changes 8−12234
- OB-type stars in vicinity of long period Cepheid VZ Puppis, UBV β photometry 8−45339
- ξ Ophiuchi cloud, Copernicus UV obs. of interstellar C_2 8−41022
- Orion Nebula, far UV imagery 8−4326
- κ Orionis, expanding envelope OAO-3 spectra *(Russian)* 8−4224
- λ Orionis association, photometric props. of young cluster 8−16478
- σ Orionis E, period and luminosity stability from uvby β photometry 8−8017
- peculiar extragalactic sources, multiaperture UBV photometry 8−28772
- β Persei (Algol), gas stream producing absorpt. features in red wings of Mg II reson. lines 8−24524
- V400 Persei (Nova Persei 1974), photoelectric obs. 8−4252
- Perseus II complex, ξ Persei direction, Copernicus obs. 8−4301
- Phobos, composition, evidence for carbonaceous chondrite surface from spectral anal. 8−49365
- PKS 0237−23, absorpt. spectrum obs., absorpt. lines origin 8−41074
- planetary nebulae, spectrophotometry, emission line intensities, physical conditions 8−36651
- planetary nebulae central stars, UV radiation meas. 8−28679
- planetary nebulae central stars, variability from UV obs. 8−36668
- PN 108-76°1, halo planetary nebula, spectrophotometry and element abundances 8−41011
- PN 49+88°1, halo planetary nebula, spectrophotometry and element abundances 8−41011

ultraviolet astronomical observations continued
- T Pyxidis, recurrent nova, photoelectric obs. 8−4252
- quasars, gas and high energy particle interactions, B line search 8−4388
- quasars M87 and 3C 273, imaging polarimetry 8−41076
- quasars near peculiar pair of galaxies NGC 7714−7715, spectra and redshifts 8−28835
- FG Sagittae, spectrum of assoc. nebula 8−49498
- Saturn, Lyman α emission from disc and ring system 8−12150
- τ Scorpii, Copernicus UV spectral atlas 8−12220
- α Scorpii (Antares) nebula, spectrum 8−41014
- SMC X-1, VBLUW photometry, evidence for accretion disc 8−12409
- solar active regions, OSO-8 obs. of UV brightenings 8−28630
- solar background corona, Skylab study near solar minimum 8−28616
- solar chromospheric oscillations obs. in C II 1336 Å line by OSO-8 8−28625
- solar corona, EUV anal. of polar plumes 8−4178
- solar coronal holes, radio and EUV meas. of temp. distrib. and electron density *(Russian)* 8−16378
- solar coronal mass ejection event, 1973 December 19, kinematics 8−28640
- solar equatorial K-corona, temporal evolution 8−28618
- solar filament-corona transition region, OSO-VI EUV obs. 8−28620
- solar flare, 1973 June 15, Skylab XUV spectra, intersystem and forbidden transitions 8−4159
- solar flares, obs. of lines between 171 and 630 Å 8−49406
- solar Mg II h and k lines, Skylab high-resolution obs. 8−36544
- solar Mg II resonance-line wings, faint emission features obs. 8−32429
- solar Si II and Si III EUV emission line profiles, centre-to-limb vars. 8−28627
- solar Sn abundance from Sn I line intensity profiles 8−20772
- solar spectrum in vicinity of Si IV 1122 and 1128 Å 8−4170
- solar transition zone, search for turbulent free region 8−4174
- solar transition zone, Si IV line profile vars., rel. to MHD disturbances 8−28626
- solar UV light, polarisation at solar limb 8−45302
- solar UV spectra, preliminary results from OSO-8 LPSP instrument 8−49317
- solar vacuum UV centre-to-limb variation obs. *(Japanese)* 8−28604
- solar XUV He I and He II emission lines, intensities and gross centre-to-limb behaviour 8−40888
- solar-type stars, in open clusters, spectroscopic differences from Sun 8−36560
- solar-type stars, photoelec. scanner obs., search for solar spectral analogues 8−40938
- southern dark clouds, survey for Herbig-Haro objects and Hα emission stars 8−28536
- southern peculiar A-type stars, spectra and atmospheric anals. 8−24517
- southern quasars and quasar candidates, UBV photometry 8−32595
- stars in 3U 1538-52 field, photometric search for optical candidates 8−12412
- stars in Magellanic Clouds and Milky Way, five-channel photometric obs. 8−16398
- stellar spectra, atlas, line features use in spectral classification 8−12215
- stellar spectra, balloon-borne echelle spectrograph obs. 8−49318
- stellar spectral classification using Copernicus UV data 8−12216
- stellar spectral classification using Fe III UV lines 8−16404
- stellar spectral classification using satellite UV photometric data 8−16402
- stellar spectral classification using Skylab UV objective-prism spectra 8−16403
- Sun, chromospheric spicules, He ξ/H8 relative intensities in spectrum 8−40904
- Sun, coronal holes and assoc. solar wind, sunspot cycle 20 survey 8−40911
- Sun, coronal holes rel. to magnetic fields and model of formation in solar cycle 8−40909
- Sun, EUV emission line spectra of flare, analysis of Skylab obs. 8−40913
- Sun, EUV structure of small flare, Skylab obs. 8−40912
- Sun, H_2 lines detect. in EUV spectra 8−12184
- Sun, Si II lines 1808-1817 Å, observed and theoretical profiles 8−49412
- supergiant stars, B2 to G0, small amplitude light vars. 8−32469
- supergiant stars in LMC, spectral types and magnitudes, catalogue of 1882 objects 8−32361
- ξ Tauri, apparent wavelength depend. of v sin i 8−12240
- ξ Tauri, high-resolution rocket spectra of λ1920 and λ1720 features 8−4236
- DR Tauri, highly variable young star, spectrometric and photometric obs. 8−20829
- α Tauri (Aldebaran), Mg II lines obs. rel. to chromosphere model 8−40931
- T Tauri like stars, far UV photometry 8−20827
- Tololo emission-line galaxies, nature from photometric and spectroscopic obs. 8−49531
- Tr 27-102 (HD 159378), possible long-period Cepheid, light vars. obs. 8−45336
- 4U 1626−67, X-ray pulsar, optical candidate photometry 8−12418
- 4U 1636−53 (MXB 1636−53), X-ray burster, optical candidate photometry 8−12418
- 4U 1735−44 (MXB 1735−44), X-ray burster, optical candidate photometry 8−12418
- 3U 1956+11 optical counterpart, photometry and spectrum 8−49554
- UBVRGI photometric measurements of 1297 stars, catalogue on mag. tape 8−40839
- AN Ursae Majoris, nova-like variable, extremely high circular polarisation obs. 8−8018
- UV5, in globular cluster NGC 1851, He abundance determ. 8−49441
- CU Virginis, He spectrum variable, UV photometry with ANS 8−36585
- BW Vulpeculae, UV light curve of β Cephei-type star 8−36570
- NQ Vulpeculae (Nova Vulpeculae 1976), photoelectric obs. 8−4252
- white dwarfs, southern, Stromgren photometry 8−32456
- Wolf-Rayer stars, UV obs. 8−40965
- WRA 977, high-speed UV photometry of periodic modulation 8−16442
- young emission-line stars in S Hemisphere, image tube spectrograms 8−8016

- **ultraviolet astronomical observations** continued
  - zodiacal light, UV spectroscopy at 20° elongation 8−20728
  - H II condensation in NGC 2175, obs. of involved stars 8−20883
  - Mg I 2852A line obs. towards moderately reddened stars 8−20874
  - O VI interstellar survey, UV spectra of OB stars 8−36679
  - U stars and related objects, spectroscopic study 8−49465
- **ultraviolet astronomy**
  - conference, Erice, Sicily, 1975, May *(Italian)* 8−32436
  - grazing incidence telescopes, design, fabrication and performance, for EUV obs. 8−49329
  - Gurzadyan UV stellar group in Auriga, UBV and uvby photometry 8−45373
  - high resolution UV solar spectroscopy, review 8−45313
  - International Ultraviolet Explorer, spacecraft, instrumentation and program *(Italian)* 8−32320
  - International UV Explorer satellite, obs. of sample targets 8−32315
  - interstellar H_2 vibrational excitation in intense UV fluxes 8−36647
  - nonejecting novae as EUV sources 8−12238
  - OSO-8 Univ. of Colorado UV spectrometer expt., optical design 8−49326
  - polychromator, Astro 7, UV, for zodiacal light obs., absolute radiometric calibration 8−49336
  - spectrograph balloon-borne UV, for stellar obs. 8−49318
  - spectroscopy with Copernicus satellite 8−16310
  - stellar spectrograph BUSS, optical system, appls. *(Dutch)* 8−7880
  - wide field UV cameras, Marseille Obs. *(Italian)* 8−32346
- **ultraviolet communication** *see optical communication*
- **ultraviolet detectors**
  - ceramic channel electron multiplier, detect. efficiency in vacuum UV 8−12759
  - dosimeter, for natural radiation meas. in study of photodermatoses and drug photosensitivity 8−40339
  - HPLC, high sensitivity UV detector 8−45709
  - HPLC, UV absorption detector 8−45707
  - HPLC, UV detection 8−45706
  - HPLC, UV variable wavelength monitor 8−45708
  - inert gas photoelectron counter, XUV intensity meas. 8−32842
  - measurement techniques, industrial, medical appl. 8−37954
  - measurement techniques, solar radiation, industrial, medical UV radiation appl. 8−37057
  - monochromator, photon counting, solar radiation UV limit meas. at Earth surface 8−49134
  - photon counting, vacuum UV region, 120-200 nm, detection limit of apparatus *(German)* 8−45691
  - semiconductor ratemeter of UV radiation 8−285
  - VUV Eagle spectrometer, 2 m, design, construction, operation *(German)* 8−45732
  - Au-Si surface-barrier detectors with increased UV sensitivity 8−4696
- **ultraviolet lamps** *see lamps*
- **ultraviolet radiometry** *see photometry*
- **ultraviolet sources** *see light sources*
- **ultraviolet spectra of inorganic solids** *see visible and ultraviolet spectra of inorganic solids*
- **Umklapp process**
  - alkali metal, crossing of dispersion curves in (ξ00) direction 8−38795
  - alkali metals, electron distrib. function enhanced, phonon-limited electrical resistivity 8−6346
  - metal, closed Fermi surface, galvanomagnetic phenomena, in intermediate magnetic fields *(Russian)* 8−34822
  - multivalley semiconductor, rel. to donor binding energies, variational calc. 8−23041
  - thermal phonon drag by coherent acoustic waves, Umklapp processes 8−14417
  - Al, Nernst-Ettingshausen coeff., electron-phonon Umklapp scatt. 8−26848
  - As, electrical and thermal props. 8−14747
  - Cu, electrical resistivity, at low temp., temp. depend. 8−23071
  - Cu, umklapp annihilation of positrons, rot.-specimen method 8−2410
  - β_1Cu-Zn, structural Umklapp processes at low and high temp. lattice kinetics of phase transformation isotherms *(German)* 8−30707
  - β_1-Cu-Zn mixed crystal, metastable structural Umklapp process, isothermal phase transform. *(German)* 8−22798
  - GaAs-$Ga_{1-x}Al_xAs$ superlattices, resonance enhanced Umklapp Raman process 8−39547
  - Ge, lattice thermal conductivity three phonon processes 8−34662
  - Mg_2Ge, three-phonon relaxation rate and phonon conductivity 8−14416
  - Si, Auger recombination 8−26883
- **uncertainty principle** *see indeterminancy*
- **underground cables**
  - *see also cable laying*
  - fibre optical cable, buried, transmission characts. meas. *(German)* 8−33865
  - optical waveguide air refractive index thermal fluctuation obs. 8−9452
- **underwater acoustics** *see underwater sound*
- **underwater cables** *see submarine cables*
- **underwater sound**
  - *see also hydrophones; oceanography; sonar*
  - absorption in sea water, theory 8−1481
  - acoustic, backscattering, from thin air-filled spherical shells in water 8−13838
  - acoustic measurements, appl. of FM signal modulated by smoothed random telegraph signal 8−18130
  - acoustic reflection, from absorbing and nonabsorbing cylinders 8−1479
  - acoustic signal processing, influence of time- and space-varying random filters 8−5615
  - acoustic transmission in isospeed channel, effect of random ocean current 8−13840
  - adaptive cross-sensor beam forming with planar arrays 8−18121
  - ambient sea noise directionality, meas. and processing techniques 8−16025
  - arbitrary continuously stratified environments, propagated, reflected and transmitted acoustic waves 8−13829
  - array processors for noise and interference suppression and signal-to-noise resolution enhancement, error corrections 8−30132
  - bearing estimation bias resulting from source motion 8−29084
  - bottom-reflected sound field, defocusing in inhomogeneous antichannel 8−1484
  - broadband target classification using bionic sonar 8−18123
- **underwater sound** continued
  - bubbly liquid, acoustical determs. of bubble-size spectra 8−9735
  - coherent ray propagation through Gulf Stream ring 8−11906
  - detection, fibre-optic technique 8−13871
  - diffusion loss in refractive sound channels, bottom loss effects 8−9482
  - echo sounders, magnetostriction effects appl. *(German)* 8−23311
  - elastic cylinder submerged in water, scattered form function determ. 8−30105
  - excess sound propag. loss in stochastic environment 8−9478
  - explosive shock waves, weak-shock soln. 8−26003
  - fish, target strength at any aspect 8−30115
  - HF acoustic scatt., from submerged cylindrical shells coated with viscoelastic absorbing layers 8−1478
  - imaging systems characts. and appls. 8−33945
  - infrasonic sea noise, meas. and experimental problems 8−11902
  - liquid surface relief prod. by US field, holographic interferometry meas. 8−1519
  - long-range sound propagation, Doppler effects 8−30116
  - marine sediments, in situ acoustic impedance meas. method 8−9519
  - marine sediments, water-saturated, finite-amplitude wave propag. 8−1476
  - microwave ultrasound generation, use of piezoelectric film transducer of λ/4 operation, effective attenuation analysis *(Japanese)* 8−30145
  - monolithic cascade CCD ultrasonic lens applications 8−22231
  - narrow-band signals and noise amplitude fluctuations in sea 8−9479
  - New England shelf-slope water mass interfaces, acoustic imaging 8−3784
  - noise measurement of rotating sources *(Croatian)* 8−46869
  - normal modes in ocean sound channel with range depend. parabolic sound speed profile 8−33941
  - ocean, radiated noise meas. from data buoys and cycloidal propellers 8−33960
  - ocean bottom reflectivity at low freqs. 8−40559
  - ocean density profile remote sensing pulses, numerical algorithm 8−20429
  - ocean eddy effects on sound transmission 8−11905
  - ocean LF sound absorpt. rel. to temp., pH, B conc. and pressure 8−40560
  - ocean mooring monitoring, acoustic phase tracking technique 8−30138
  - ocean multipath propagation effects on sonar design and performance 8−5602
  - ocean surface scattering problem, connection between small-waveheight solns. 8−13839
  - ocean velocity profile, horizontal range, and travel time series expansions 8−5604
  - oceans, three dimensional sound ray paths in basins, troughs and near seamounts using ray invariants 8−30113
  - Oceans '77, conf., Los Angeles, USA (Oct. 77) 8−36193
  - parabolic-equation technique, accuracy improvement via sound-speed profile modification 8−1480
  - parametric acoustic arrays, historical background and theory 8−5621
  - parametric source, specialized drive waveforms 8−33985
  - passive detection, adaptive approach 8−5607
  - phased arrays use in very shallow water 8−1482
  - piezoelectric transducer, response equalization using low-pass filter 8−30144
  - pressure unit, 0.01 to 1 Hz, USSR state standard 8−38160
  - radial spatial coherence from near ocean surface source 8−30117
  - randomly perturbed one dimens. wave eqn., multiple-scales space-time anal. 8−8247
  - reciprocal transmission in midocean environment, current monitoring appl. 8−11907
  - reflection coefficient, for transverse waves in absorbing solid 8−9470
  - reverberation spectra rel. to remote detect. of turbulence 8−38124
  - sea floor analysis with deep tow techniques 8−33942
  - shallow water horizontal spatial coherence meas. 8−5605
  - shallow water with negative vel. gradient, average sound intensity *(Chinese)* 8−1477
  - slow waveguide, in water, Helmholtz eqn. soln. 8−30114
  - sonar, directivity of underwater horns 8−18138
  - sonar, evaluation procedure for refl.-reduction coating 8−9468
  - sonar transducer arrays, image prod., signal processing methods comparison 8−18122
  - sonomagnetic pseudoradiation from submerged acoustic sources 8−18093
  - speed of sound in seawater at high press., meas. 8−13837
  - stratified ocean as slowly varying waveguide 8−4490
  - supertanker radiated noise spectra in deep ocean, origin 8−33959
  - surface-generated noise received deep in ocean, attenuation 8−9481
  - symmetric line array, source passive location, variance bounds 8−9480
  - S.Tasman Sea, LF acoustic propag. meas., Project TASMAN TWO 8−11904
  - thin elastic cylindrical shell submerged in water, backscatter calc. from Kirchhoff approx. 8−30104
  - time-frequency-space generalised coherence and scatt. functions 8−5603
  - time-varying shallow water channel weighting function meas. 8−5606
  - transient pulses generation in water by ceramic transducer 8−1483
  - unified wave propagation theory, tenuous random medium 8−4491
  - unipolar acoustic pulses, quantitative schlieren visualization 8−38125
  - US fish finder, with colour TV display 8−38159
  - US image convertor optimal working frequency estimation *(Russian)* 8−30111
  - US magnetostriction vibrator efficiency meas. *(Japanese)* 8−9523
  - D_2O, sound speed rel. to normal water as a function of temp. and press. 8−2201

- **undulator radiation**
  - emission from 'Pakhra' synchrotron *(Russian)* 8−5409
  - oscillator at flight in homogeneous medium over plane boundary with periodically-inhomogeneous dielectric *(Russian)* 8−1138
  - polarised electron bremsstrahlung γ-quanta from ultrarelativistic electrons in mag. field *(Russian)* 8−46502
  - protons in synchrotron, beam parameter diagnostics via IR undulator emission *(Russian)* 8−836
  - spin effects during electron movement in undulation *(Russian)* 8−13652

- **unified field theories**
  - *see also Weinberg model*
  - asymptotically free E_6 model of particle interactions 8−24922

unified field theories continued
asymptotically free $SU(2)\times SU(2)\times SU(4)$ model of unified interactions 8−16968
atoms, handedness and parity non-conservation 8−29757
Bhabha-Gupta field coupled to external EM and gravitational fields, causality 8−4767
Cabibbo angle, CP violation quark masses 8−33016
Cabibbo angle and discrete symm. 8−29288
classical quark confinement from general relativity 8−45842
colour-flavour symm., renormalisation effects in guage theories 8−33018
conformal relativity, based on $SO_{4,2}$ 8−8311
cosmological constant, broken gauge theories and 3K black-body radiation 8−28870
differential eqns., strength concept review, appl. to Einstein-Maxwell eqns. 8−16706
Dirac equation as basis for unified treatment of electromagnetic and gravitational theory 8−8314
direct interactions between membranes, gauge invariant theory 8−4551
Einstein's strong field eqns. variational derivation 8−4544
Einstein-Cartan theory, rel. especially to elementary particle weak interactions 8−37171
Einstein-Maxwell field, symplectic structure 8−29028
Einstein-Maxwell fields in asymptotically null-spherical coords., news functions 8−12631
Einstein-Yukawa theory, unified 8−29240
EM field inside the nucleus, Salam-Strathdee phase transitions, vanishing Cabibbo angle 8−37296
energy momentum tensor for vector-tensor theory of gravity and electromagnetism 8−12633
Euclidean gravity, asymptotically flat self-dual solns. 8−45834
flavour mixing in ambidextrous $SU(2)_l\times SU(2)_r\times U(1)$ gauge theory 8−12805
fractionally charged quarks, binding in unified gauge theory with Abelian massless gluons 8−29296
gauge field theory, geometrical consideration 8−12809
general relativity conference, Trieste, Italy, 1975, July 8−8285
geodesic in gauge supersymm. 8−12634
global equivalence of Euclidean gauge and Higgs fields 8−8527
Goldberger-Treiman relation, corrections, unified gauge-field model 8−16969
gravitation, particle masses, instantons, unified theory 8−37168
gravitation and electromagnetism field equations, metric-affine gravit. framework 8−45547
Higgs-Boson mass, weak interactions at very high energies 8−8540
history of quantum field theory, search for unity 8−28904
Lagrangian formulation for gauge theory of strong+EM interactions defined on Cartan bundle 8−16964
left-right symm. gauge model, neutral gauge boson 8−29289
left-right-symm. unified theory of quarks and leptons 8−41466
left-right-symmetric theory of weak interactions in unified gauge theory, constraints on phenomenology 8−21369
lepton-quark and space-time symmetry 8−16967
Majorana-Weyl fields, development of unified models 8−33015
mesons and numbers of quarks and leptons, unified model 8−21370
multidimensional unified theory of gravit., EM and weak interactions 8−41462
neutral currents in generalised $SU(2)\times U(1)$ gauge models 8−45832
non-symmetric, plane wave-like solns. 8−29031
nonlocalization concept 8−21324
nuclear decays as test of elementary particle theory, review 8−21361
Pati-Salam $SU(2)_l\times SU(2)_r\times SU(4)$, gauge-c 8−12851
physico-geometrical remarks on unified gauge field and supersymm. concepts 8−37167
QCD theories of interactions, CP conservation, in presence of pseudoparticles 8−16923
quaternion limitations on higher dimension spacetimes for unified field theories 8−45545
six-quark model of quantum flavourdynamics, Cabibbo angle and quark masses 8−33017
SO(8) extended supergravity 8−16970
spontaneous origin of Newtons const., modified Einstein eqns., matter interactions in weak gravit. fields 8−12853
spontaneous symmetry breaking in interaction of scalar field with external vector field 8−8545
stochastic-field multieikonal theory, high-energy hadron dynamics 8−8634
stratifying strong, weak, EM and gravit. interactions in five dimens., geometrical model 8−37166
strong gravity and Dirac numbers 8−21372
$SU(2)_l\times SU(2)_r\times U(1)$ gauge model for weak/EM interactions, u-d quarks mass difference 8−12850
$SU(2)_l\times SU(2)_r\times U(1)$ gauge theory, left-right symm., neutral current struct. 8−41420
$SU(2)\times U(1)$, gauge theory of weak interactions 8−21328
$SU(2)\times U(1)\times U(1)$ gauge theory of weak and EM interactions in unified SU(6) scheme 8−41465
$SU(4)^4$, determ. of unifying mass scale 8−45830
SU(6) gauge theory, hierarchy of gauge symm. and CP nonconservation 8−41464
SU(6) unified gauge model, based on $SU(3)\times U(1)$ and colour SU(3) subgroups 8−12847
SU(N) conformal supergravity, gauge theories for extension 8−8577
superconformal unified field theory 8−12848
supergravity, SO(3) and SO(4), finiteness and renormalisability of scalar multiplet coupling 8−4821
supergravity, supersymmetric generalisation of differential geometry tensors 8−45546
superunified theories, geometry of gauge invariance 8−24723
symmetry violation natural suppression, muon and electron lepton number nonconservation 8−8574
twister space, complex fibration, fibration structure deformation, Einstein vacuum eqns., Maxwell's eqns. 8−12854
U(1) colour symm., Higgs coupling, proton stability 8−29290
unification of gravitation and matter, crossing terms in Einstein's eqns., singularity 8−21039
unified thoery of matter, derivation of fundamental physical law 8−20982
unitary spin, colour and unified theory, consideration of many-dimensional space-time 8−8570
VV+AA gauge model 8−29246

unified field theories continued
$e^+e^-\to FF$, with polarised particles, weak asymmetries, unified gauge theory anal. 8−8636
μ anomalous mag. moment, weak correction in gauge models 8−16965
$\mu\to e\gamma$, and other rare decays, in SU_6 superunified gauge theory 8−21408
$\mu\to e\gamma$, $SU(2)\times U(1)$ unified guage theory 8−8643
ν_μ mass limit in absence of muon-lepton-number conservation, unified gauge theories 8−21368
H, parity mixing of atomic states, spin-depend. weak interaction coupling const. 8−8572
H parity violations, fundamental struct. of weak current, unified gauge theories 8−12849

unimolecular layers *see monolayers*

units (measurement)
see also constants; dimensions; measurement; nomenclature and symbols
CGS to SI conversion for electromagnetism 8−16592
coherent-radiation spectral power density unit reproduction, USSR standard 8−37957
continuous laser radiation relative power-density distribution unit reproduction, USSR 8−37956
education, SI units, classification 8−36962
electrical, realisation progress *(German)* 8−160
flow, gas, measurement techniques, rel. to significance and treatment of phys. quantities *(German)* 8−1775
HF current intensity unit, USSR state standard 8−36979
introduction of SI system in Poland *(Polish)* 8−29082
IR radiation brightness unit reproduction error anal., USSR standard 8−45699
linear thermal expansion coeff. unit, 4.2 to 90K, USSR state standard 8−37001
noise units and traceability *(Japanese)* 8−18104
photometry radiation energy units reproduction, error anal. 8−45670
physical quantities, unit unification trends 8−41267
pulsed coherent radiation intensity unit reproduction, USSR standard 8−37955
radiation protection, SI units and ICRP recommendations 8−5054
radiometric exploration meas. standardisation advantages and methods 8−28325
reactor technology, sources, phys. units and biological factors *(German)* 8−46180
SI system *(Japanese)* 8−4583
SI units, introduction in Hungary, ionising radiation aspects *(Hungarian)* 8−8379
SI units, introduction in Hungary, practical aspects *(Hungarian)* 8−8380
specific physical quantity interpretation 8−8381
time, rel. to angle meas., history 8−20931
underwater sound pressure unit, 0.01 to 1 Hz, USSR state standard 8−38160

universe *see cosmology*

universe models *see cosmology*

unwinding *see winding (process)*

upper atmosphere
see also exosphere; ionosphere; magnetosphere; mesosphere; radiation belts; thermosphere
acoustic-gravity waves, diffr. around spherical Earth 8−4016
acoustic-gravity waves, relaxational dissipation 8−4018
aeronomical models, diurnal averaging 8−49186
airglow emissions, semi-annual vars. 8−28360
ambipolar diffusion coefficient estimates from radio meteor method 8−45064
atom and ion radiative recombination, rate coeffs. 8−40758
aurora, time-depend. model, particle precip. effects on atm. props. 8−4021
circulation flow patterns, laboratory simulation of abrupt changes, catastrophe theory appl. 8−40721
composition measurement, comparison of satellite self-contamination expts. and scatt. return flux calcs. 8−40722
constituents detection, submillimetre wave heterodyne radiometry 8−49183
cosmic antiproton-proton flux ratio at top of atmosphere 8−40783
dayglow spectrum, far UV N and N_2 emissions 8−28361
diffusion coefficient and height relation from radar meteor echoes 8−49187
disturbances, seasonal vars. in latit. struct. 8−32264
electric fields and currents, origin and structure *(German)* 8−32196
electron impact cross-sections of atmospheric gases 8−28398
electron impact on atmospheric gases, yield spectra 8−28401
equatorial aeronomy, conference, Townsville, Australia, (25-31 August, 1976) 8−36339
equatorial gravity waves, generation and props. 8−36232
gamma ray angle and energy distrib., 2-25 MeV 8−12033
gravity waves, rel. to equatorial ionosphere total electron content fluctuations 8−36360
hydrodynamical accelerator, numerical modelling *(Russian)* 8−16225
internal gravity waves, interpretation of experimental data *(Russian)* 8−16224
internal gravity waves and assoc. travelling ionospheric disturbances, electron density power spectra obs. 8−28394
ion-molecule reactions, exothermic, review 8−33563
IR radiation, model 8−12035
LF signals attenuation due to meteor trains 8−40726
meteor head echoes, heights anal. 8−36537
meteor wakes, red afterglow origin 8−36536
meteor wind observations from Sheffield, during January 1976 winter anomaly 8−45070
neutral gas composition during winter anomaly, cryo mass spectrometer meas. 8−45192
neutral wind in upper atmosphere, rel. to magnetospheric disturbances in aurora borealis zone *(Norwegian)* 8−24399
nightside auroral oval, instantaneous, from electron precip. equatorward boundary obs. 8−32289
photoelectron energy spectra 8−49190
pitot pressure measurements for density determ. between 50 and 120 km, W.Europe Winter Anomaly Campaign 8−45193
protonosphere, Gliddon's model of heat cond. 8−32294
protonospheric-ionospheric modelling of magnetospheric VLF ducts 8−28446
radiative transfer, non-LTE, in CO_2 15 μm band *(Russian)* 8−36341

- **upper atmosphere** continued
  - rare earth rich submicron grains, solar vs. terrestrial origin 8−12180
  - secondary cosmic ray electrons, fluxes at equator from Kosmos-428 data 8−45168
  - solar activity effects, mid-latit. ionospheric disturbance of corpuscular origin 8−28374
  - Space Shuttle, orbital environment 8−36430
  - space shuttle reentry, unsteady nonequilib. chemically reactive flow, parallel computation 8−47065
  - Standard Atmosphere, 1976, rel. to previous standards 8−11975
  - turbulent diffusion coeff. determ. from meteor trail photographs 8−45073
  - waves, relaxational dissipation, basic formulation 8−4017
  - H thermal dissipation near baropause 8−45062
  - Li releases, daytime, obs. via high resolution photometer rel. to winter anomaly 8−45023
  - NO airglow, 2150 Å (1,0) γ-band intensity meas. with polarising NO photometer 8−45076
  - NO density, high-altitude rocket meas. 8−45068
  - NO, Salyut 4 IR spectral obs. in upper atmosphere mid-latitudes 8−16223
  - Na I twilight and nightglow, interferometric studies of D-line profiles 8−36353
  - Na layer, laser sounding and interp. in terms of global atmospheric parameters 8−20570
  - O I 5577 Å green line, nighttime var. of 2-15 min fluctuations 8−49193
  - O I 5577 Å nightglow, meas. via two-channel rocket photometer 8−45078
  - O_3, 9.6 μm band radiance calc., excitation processes 8−36350
  - $O_2(^1\Delta_g)$ airglow, emission height profile meas. during winter anomaly event 8−45077
  - OH emission layer waves, comparison with F_2-layer waves 8−45065
  - OH, NO, NO^+, inverted populations due to moving bodies and ejected gas 8−32265

- **uranium**
  - *see also nuclei with ......*
  - *see also fission of uranium*
  - atom, excited state radiative lifetime, sputtering technique 8−17602
  - atom, gf-values, level mean lifetimes, electronic excitation and delayed coincidence meas. 8−21878
  - atom, high-lying levels in vapour near ionisation limit 8−21842
  - atom, isotope shifts rel. to $|\psi(0)|^2$ 8−17580
  - atom, L-shell photoionis., transition radn. ang. distrib. 8−33486
  - atom, matrix isolation studies with Fourier transform IR 8−45740
  - atom, photoionisation, by Ar ion laser radiation, appl. to U laser isotope separation 8−42233
  - atom, reson. absorption meas. using Zeeman tuned arc lamp 8−17593
  - Australian reserves, development program 8−4983
  - automated analyser, delayed neutron counting, geological sample analysis appl. 8−3769
  - chondritic meteorites, U isotopic comp. 8−4157
  - determ. in coastal sediments and seawater, activity ratios, disequilib. 8−27851
  - determination, in porcelain dentures, rapid anal. by delayed fission neutron method 8−15907
  - determination of ^{238}U, ^{234}U, ^{230}Th, ^{226}Ra and ^{210}Pb in U ores, dusts and mill tailings 8−15736
  - enrichment, commercial centrifuge plants in UK and Netherlands, prospects 8−5000
  - enrichment, demonstration centrifuge plants at Capenhurst and Almelo, progress report 8−29626
  - enrichment, HAGA radial separating nozzle centrifuge process, cost 8−46155
  - enrichment, market survey *(German)* 8−4999
  - enrichment plant criticality analysis *(Japanese)* 8−46156
  - exploration with computer-processed LANDSAT data 8−7777
  - exploration with electronic alpha cups 8−7781
  - extraction from sea water, around British coastal power stations 8−21788
  - extraction from seawater, tests of adsorbents 8−36198
  - extraction from seawater *(Japanese)* 8−36199
  - fission reactor fuel, U enrichment, optimal blending 8−13309
  - fuel enrichment, asymmetric process, separative power, resoln. of inconsistencies 8−29622
  - geological samples, f/α particle track anal. for U, Th and isotropic disequilibria 8−7799
  - HTGR fuel, recovery by graphite fuel element and C fluidised bed combustion 8−13314
  - induced magnetisation density 8−47952
  - ion, electron cyclotron resonance source *(French)* 8−29680
  - labile component, on marine sediment particle surfaces, surface layer thickness meas. 8−40592
  - laser induced fluoresc. spectroscopy, using induction heated oven 8−21230
  - laser isotope separation, atomic spectroscopy requirements 8−33638
  - laser using U in organic soln., nuclear pumping 8−5470
  - losses, at eluting agent interface in anion exchange chromatography, prevention 8−48706
  - lung-stored U, meas. using NaI and solid-state detectors 8−28090
  - LWR fuel appl., properties 8−8911
  - martensitic behaviour at low temp., variations, α-phase 8−41818
  - metal oxide:U^{6+}, luminesc. sensitivity to vibrational fine structure 8−6772
  - mill tailings, meas. of surface Rn flux, effect of moisture content 8−5056
  - nuclear fuel, thermal near-breeder reactor, effect on future U utilization 8−17322
  - nuclear reactors, initial fissile U requirements for fuel cycle, computer simulation 8−17320
  - ore deposit, H_2 as reducing agent 8−36169
  - phosphates, U content, α-ray autoradiography, fluorimetry, estimation 8−20414
  - phosphorite nodules on sea floor off Peru and Chile, U isotopes 8−7612
  - photoelectric cross-section at K-edge measurements 8−2983
  - photoelectric interaction around the K edge 8−5183
  - plasma, present research status with appl. to gaseous core reactors 8−33244

- **uranium** continued
  - prospecting, appl. of barrier technique for Rn isotope separation 8−21770
  - prospecting at exploratory borehole, spatial depend. of delayed-neutron signals 8−7817
  - prospecting method, using Ra accumulation in animal thyroid glands, anal. 8−27853
  - Purex process, concs. of U, Pu, HNO_3, fission products, in LMOM2 extractor, expt., graphical determ. 8−41843
  - reactor fuel, selected enrichments for minimisation of blending losses, optimal set 8−17402
  - recovery from manufacture of phosphatic fertilisers 8−17398
  - recovery in slags containing calcium and magnesium *(Spanish)* 8−8955
  - reprocessing and supplies in 1980s, trends 8−720
  - seawater, conc. and $^{234}U/^{238}U$ activity ratios in open ocean 8−36197
  - separation, by column extraction chromatography 8−44421
  - sputtering yield meas. by fission track technique 8−39646
  - superconductivity, phonon-softening 8−10592
  - supplies, United States industry and restrictive measures 8−686
  - supply study in Western world *(German)* 8−8960
  - thermal expansion coeff. and cones of zero expansion in α-phase single crystal 8−34635
  - $CaF_2:U^{5+}$, single cryst., EPR 8−19325
  - $CaF_2:U^{5+}$, trigonal centres, hyperfine parameters, EPR 8−43643
  - $CaF_2:U^{5+}$, trigonal EPR spectrum 8−15021
  - H isotope removal from flowing Ar, U and Ce as hydriding materials 8−17438
  - Pb/U in two-billion-year granulites in Late Precambrian metamorphic basement along S.Peruvian coast 8−28204
  - U^+, 70 GeV beam, propag. through fusion target chamber, stability 8−26303
  - U-UH_3 powder, appl. in Lyman alpha radiation source 8−13775
  - $U+H^+$, relativistic K-shell ionisation cross-section meas. 8−33593
  - $U+O_2$, assoc. ionisation, electron energy distrib. 8−35656
  - U+Pb, K-vacancy form., rot. coupling effect in quasimol. L-shell 8−25692
  - U(VI) removal from rat body by DTPA, DTPP, EDDIP, decontamination efficiency 8−44617
  - ^{235}U, depleted fuel, reactivity worths of fixed neutron absorbers 8−21654
  - ^{235}U enrichment analyzer based on interference spectroscopy, fabrication and performance *(Japanese)* 8−29625
  - ^{235}U, separation nozzle process for enrichment 8−21739
  - ^{238}U, ^{235}U, decay consts. for use in geochronology and cosmochronology 8−28189
  - ^{238}U in UO_2, Doppler effect in GCFR critical assemblies, 300-1100K 8−29574

- **uranium alloys**
  - Th-U, Kondo alloys, spin and phonon resistivity independ. 8−47777
  - Ti-U, dilute, superconducting transition temp. and mag. susceptibility 8−47899
  - U-Al (0.78 at.%), behaviour of metastable phases under neutron irrad., application of model 8−48408
  - U-Al fuel elements in light water, neutron multiplier, criticality studies for ^{252}Cf source 8−25367
  - U-Ce-C system, phase equilibrium exam. *(German)* 8−23670
  - U-Mo (1.5 wt.%) metallurgical study of forging *(French)* 8−21737
  - U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8−23729
  - U-$Mo(Ti)(Q^4)(Q^5)$, Q^4-quad, Q^5-quint, stress corrosion cracking in moist air, salt water, salted moist air 8−35562
  - U-Nb-C system, phase equilibrium exam. *(German)* 8−23670
  - UAs, localised cryst. field states, neutron inelastic scatt. obs. 8−14697
  - $U_2Co_3Si_5$, cryst. struct. 8−47285
  - UFe_2, thermodynamic props., agreement with Campbell correlation of laves phase compounds 8−15370
  - UGe_3, compensated metal, topological props. of Fermi surface, magnetoresist. meas. 8−6350
  - UGeS, mag. props., 4.2-300K 8−10667
  - UGeSe, mag. props., 4.2-300K 8−10667
  - UGeTe, mag. props., 4.2-300K 8−10667
  - UIr_3, uncompensated metal, topological props. of Fermi surface, magnetoresist. meas. 8−6350
  - UPd_4, localised cryst. field states, neutron inelastic scatt. obs. 8−14697

- **uranium compounds**
  - *see also uranium alloys*
  - bis-2-AC-benzofuranato uranyl complex, IR spectra 8−980
  - bis-3-acetyl-4-hydroxy coumarinate, uranyl complex, IR spectra 8−980
  - alkaline earth-uranium mixed oxides, EPR spectra 8−27090
  - fill-gas comp. and eccentric gap geometry effects 8−13284
  - mono-furfural 4-(2-pyridyl thio semicarbazonato) uranyl complex, IR spectra 8−980
  - graphite-UF_6 intercalation compounds, NMR exam. 8−39416
  - guanidinium uranyl sulphate trihydrate, new ferroelec., dielec. props. 8−43824
  - guanidinium uranyl sulphate trihydrate, X-ray diffr., crystal struct. 8−14331
  - high temp. (2300-2500°C) treatment, metallographic cross sections, microradiographic anal. *(German)* 8−29586
  - bis-3-methyl-4-(p-methyl phenylazo)-5-pyrazolonato uranyl complex, IR spectra 8−980
  - nitrides, matrix isolation studies with Fourier transform IR 8−45740
  - oxides, matrix isolation studies with Fourier transform IR 8−45740
  - uranyl complexes, fluoresc. state, rel. to electronic struct. *(Russian)* 8−5274
  - uranyl complexes, IR spectra, complexation effects on force consts. and bond lengths 8−980
  - X-ray absorption spectra, meas. of energy shifts of K absorption edge and K X-rays 8−11020
  - $(AsO_4)_2H_2(UO_2)_2.8H_2O$, point group symmetry for ferroelec., antiferroelec. and paraelect. phases 8−42983
  - BaO-$B_2O_3:UO_2{}^{2+}\rightarrow Er^{3+}$ glass, energy transfer 8−2895
  - $Co(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589
  - $Cs_2UO_2Br_4$, force consts., IR spectra 8−5216
  - F_2+UO_2, reaction kinetics, molecular beam study 8−46157
  - Gd_2O_3-UO_2, behaviour as control rod in commercial reactor 8−8918
  - $HUO_2PO_4.4H_2O$, H^+ ion cond., struct. mechanism, X-ray diffr. obs. 8−34651
  - $K_2UO_2Br_4$, force consts., IR spectra 8−5216
  - $K_5(UO_2)F_9$, optical spectra, vibr. freqs. calcs. *(Russian)* 8−31205

uranium compounds continued
$Mg_yU_{1-y}O_{2+x}$, thermodynamics from EMF meas., high Mg conc. 8−43143
$Ni(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589
$Ni[UO_2(SO_4)_2].4H_2O$, revision of crystallographic data 8−22699
$(Pu,U)O_2$, criticality data generation using SU-HAMMER code 8−29581
$(Th,U)O_2$, D_2O cooled, relative conversion ratio 8−29582
Th_3As_4-U_3As_4, cryst. growth by chem. vap. transport 8−23588
$Th_{0.81}U_{0.19}O_2$, irradiated fuel particles, meas. and interpretation of CO and Kr-Xe content 8−25287
(U,Pu)N, self-consistent normal fluid eqn. of state, press., density, and enthalpy of vaporisation calc. 8−8909
$(U,Pu)O_2$, build-up and decay of actinide nuclei in fuel cycle of BWR, PWR, HWR, HTGR and LMFBR 8−17314
$(U,Pu)O_2$, vapour press. eqn. of state, VENUS-II code studies 8−8908
$(U,Pu)O_{2-x}$, fuel, particle cavitation during reduction by H_2 8−8958
$(U,Pu)O_{2-x}$, O_2 thermomigration described by cluster model 8−22888
U loaded cation exchange resin, fabrication for HTGR fuel kernels, processing variables effect 8−8951
U-O system, phase equilibrium, thermal, X-ray and cond. meas. 8−35371
U-UH_3 powder, appl. in Lyman alpha radiation source 8−13775
UAs, mag. props. 8−43554
UAs, U_3A_5, cryst. growth by chem. vap. transport 8−23588
U_3As_4, ferromagnetic transitions and heat capacities from 5 to 950K 8−14955
UAsTe, crit. behaviour, Ising-like props. 8−43605
UBi, mag. props. 8−43554
UC, effect of porosity on fission-gas-induced swelling 8−8959
UC, polycrystalline, creep mechanism interpretation 8−8898
UC, transient capillary wave generation on laser irradiated surface 8−21653
$UC+UC_2$, neutron irradiation, U_2C_3 deposition 8−33253
$UC_{1.5}$, creep behaviour and phase change under compression stress 8−35432
UCl_4 molten mixtures with alkali metal chlorides, physicochemical props. 8−38915
UCl_4, vaporisation thermodynamics 8−44394
UCl_5, single crystal, thermal broadening of IR energy levels 8−35121
UCr_2O_6, hydrothermal cryst. growth, 40 kbar, 873K, cryst. struct. *(French)* 8−35342
UF_4, matrix isolated, IR spectra, interactions with frozen gas 8−9148
UF_4 optical interference layers, electron-beam decomposition 8−34541
UF_5, monomer struct. and pot. consts., IR and Raman spectra in inert gas matrices 8−5215
UF_6, convection-diffusion eqn. soln. for centrifuge axisymm. vel. field, rel. to isotope separation 8−17434
UF_6 crysts., density of exciton states, two-particle and mixed cryst. spectra 8−2829
UF_6, electronically excited, laser-induced time-resolved emission, self-quenching 8−42114
UF_6, electronically excited, emission quenching by organic mols. 8−42115
UF_6, electronically excited, emission quenching by inorganic mols. 8−42116
UF_6, gaseous fuel reactor research 8−21736
UF_6, isotope enrichment, ^{19}F NMR in gas, liq. and solid 8−23364
UF_6, plasma expts. related to plasma core reactors 8−8977
UF_6, present technology status for gas core reactors 8−33254
UF_6-He mixture, ballistic piston fissioning plasma 8−5038
UFe_2O_6, hydrothermal cryst. growth, 40 kbar, 873K, cryst. struct. *(French)* 8−35342
$UMnNiO_6$, hydrothermal cryst. growth, 40 kbar, 873K, cryst. struct. *(French)* 8−35342
UMn_2O_6, hydrothermal cryst. growth, 40 kbar, 873K, cryst. struct. *(French)* 8−35342
$U_2Mn_3Si_5$, cryst. struct. 8−26550
UN, band struct., SAPW calcs. 8−26810
UN form. by reaction of C in NH_3 and H_2-N_2 mixture 8−21738
UN formation, mechanism and kinetics, reaction of UO_2 with C and N_2 8−48649
UN, mag. props. 8−43554
UN microspheres, prep., effect of process variables 8−8956
U_2N_2Te, and related cpds., crit. behaviour 8−43605
U_2N_2Te, powdered, high field magnetisation 8−35008
$UO_{2\ \mathrm{and}\ 2.11}$, temperature factor determ. by powder elastic neutron diffraction 8−10152
UO_2, ^{236}U activity meas. *(Spanish)* 8−44822
UO_2, (uraninite), crysts., vibr. spectra, approx. calc. method *(Russian)* 8−35148
UO_2 and UO_2-Ni, surface, grain boundary and interfacial energies 8−21649
UO_2, build-up and decay of actinide nuclei in fuel cycle of BWR, PWR, HWR, HTGR and LMFBR 8−17314
UO_2, closed boiling system, effect of condensation on dispersion following LMFBR HCDA 8−8936
UO_2, clustering phenomena effect, anal. based on shock wave model 8−21652
UO_2, computer model of Young's modulus 8−31450
UO_2, condensate solidification onto steel struct. in above-core region of LMFBR after HCDA 8−17364
UO_2, condensed vapour following core disruptive accident, particle-size distribs. using first-generation model 8−13295
UO_2 cracked fuel pellets, wetting by molten stainless steel, in LMFBR transient undercooling accident 8−4993
UO_2 critical clusters in D_2O perturbation anal. of buckling 8−29573
UO_2, cross over, discontinuous to continuous phase transition in external mag. field 8−43592
UO_2, dislocation creep, creep deform. predictions 8−19815
UO_2 effect of Be impurity on Pu breeding control 8−21740
UO_2, effect of pellet density and axial restraint on failure threshold 8−17367
UO_2, energy depend. Doppler factor meas. using lead slowing-down time spectrometer 8−17310
UO_2, equilib. conc. of fission products, ^{235}U induced fission and ^{238}U spontaneous fission *(Spanish)* 8−44823
UO_2, equilib. conc. of fission products, calc. comparison with expt. values *(Spanish)* 8−44824
UO_2, first to second order transition crossover 8−10709

uranium compounds continued
UO_2, fuel, Zircaloy-2 cladding bonding mechanisms determ. by SEM and EPMA 8−17317
UO_2 fuel element/sheath, heat transfer meas. 8−29580
UO_2, growth by chem. vapour transport, using $TeCl_4$+Ar 8−35284
UO_2, high temp. irradiation, effect on microstruct. and unstable fission products 8−33250
UO_2, in reactor densification 8−21648
UO_2, irradiated, intergranular fission gas bubbles 8−21651
UO_2, irradiation induced lattice defects 8−33251
UO_2, LMFBR, boiling pools with internal heat generation, void distrib. 8−21626
UO_2, lenticular void migration rate in thermal gradient 8−21642
UO_2, liquid, struct. differences between ionic and molecular fluid models 8−26423
UO_2, matrix swelling rate 8−8900
UO_2, molten fuel freezing in shield plug following LMFBR HCDA 8−8941
UO_2, molten pool, heat transfer to concrete slab following LMFBR HCDA 8−8930
UO_2, monocrystalline, fission gas release charact. during irradiation 8−4985
UO_2, neutron diffr. extinction, wavelength depend. 8−38588
UO_2 nuclear fuel element, lenticular pore movement 8−21644
UO_2, O diffusion mechanism 8−33249
UO_2 pellet, interaction between cladding in water reactor fuel pins 8−25286
UO_2 pellets, thermal densification *(Korean)* 8−44065
UO_2, performance in organic-cooled reactor 8−25292
UO_2 powder, precompaction effect on compressibility 8−41846
UO_2 powder, sintering charact. 8−35341
UO_2, review of diffusion coeff. of fission product rare gases 8−33248
UO_2, thermal cond. by comparative longit. ht. flux, use of generalised Bessel functions 8−26741
UO_2, valence electronic configuration determ. by photoelectron spectroscopy 8−15284
UO_2^{2+} in aq. solns., luminescence quenching by metal ions 8−39588
UO_2^{2+} in aq. solns., luminescence quenching by H_2O mols. 8−39589
UO_2^{2+}, relativistic X_α scatt. wave calcs. 8−46268
$^{235}UO_2$ single crystals, electrochemical prep. 8−37478
$^{235}UO_2$, visualisation of fissionable radionuclides in rat lung using neutron-induced autoradiography 8−28055
UO_2-PuO_2 fuel, O_2 diffusion at low temps. 8−8899
UO_2-Triso (propene), high temp. (2300-2500°C) treatment, metallographic cross sections, microradiographic anal. *(German)* 8−29586
UO_{2+x}, possible anionic clusters and mixed valence effects 8−43333
$UO_{2.12}$ hyper-stoichiometric, defect struct., anal. of neutron diffr. data 8−26562
U_3O_8, ^{235}U enriched aerosol, characterisation by solid state track recorders 8−17538
α-U_3O_8, cryst. struct. 8−6039
U_3O_8, recovery from phosphoric acid *(Spanish)* 8−37428
$(UO_2)_2Cl_3$, prep. and cryst. struct. 8−38674
α-UOF_4, neutron diffraction study 8−14327
UO_2(Li) pellets, release of tritium on heating after neutron irradiation 8−40071
$UO_2(NH_2O)_2.3H_2O$, low temp. neutron anal X-ray diffr. exam. 8−2068
α-$UO_2(NH_2O)_2.4H_2O$, low temp. neutron diffr. exam. 8−26518
$UO_2(NO_3)_2$ solutions, cryoscopy and activity coeffs. 8−11544
$UO_2(NO_3)_2.2H_2O$, in n-butanol, ionic mobility determ. 8−34642
$UO_2(NO_3)_2.6H_2O$, in n-propanol, ionic mobility determ. 8−34642
α-UO_2SO_4, enthalpies of soln., form. determ. 8−27813
UO_2SeO_3, enthalpies of soln., form. determ. 8−27813
β-UO_2SeO_4, enthalpies of soln., form. determ. 8−27813
UP, mag. props. 8−43554
U_3P_4, magnetocryst. anisotropy, torque meas. at 0.34, 0.65 and 0.91 T, 118K 8−47969
UPTe, crit. behaviour, Ising-like props. 8−43605
$(UPu)O_{2-x}$, thermal expansion as a function of deviation from stoichiometry *(French)* 8−21645
US, band struct., SAPW calcs. 8−26810
USb, mag. props. 8−43554
USb, short-range spin correlations, neutron study 8−39293
USb, USb_2, U_3Sb_4, cryst. growth by chem. vap. transport 8−23588
U_3Sb_4, ferromagnetic transitions and heat capacities from 5 to 950K 8−14955
UT_3, ^3He distrib. 8−30661
UT_3, ^3He distribution from triton decay, NMR meas. 8−19360
$^{233}UO_2$, reactor fuel, neutron multiplication factors, temp. depend. 8−29557
$VO[UO_2(SO_4)_2].6H_2O$, synthesis and crystallographic data 8−26532
$Zn(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589

Uranus
astrometry, obs. with Danjon Astrolabe of Santiago during 1975 and (1976) 8−12151
atmosphere, methane absorpt. band in spectrum 8−45275
atmosphere, Raman scatt. 8−28571
ethane emission, unsuccessful search 8−16344
ionosphere, model, ionization by galactic cosmic rays and solar EUV radiation 8−4142
Love numbers 8−16338
magnetosphere, review 8−12145
Miranda, influence on struct. of Uranian ring system 8−4148
occultation of SAO 158687, estimation of true external errors of Tokyo meridian circle obs. 8−28487
radio emission in H_2O 1.35 cm line 8−20664
ring system, quantitative anal. of Dermott-Gold theory 8−4147
ring system, statistical mechanics of Keplerian orbits 8−20625
rings, geometric albedo upper limit 8−36510
rings, new discovery 8−45274
rings, occultations of stars during 1977-1980, predictions 8−16343
rings, S/N ratios for stellar occultations, 1977-80 period 8−32392
rotation period meas. 8−7920
rotation periods rel. to methane band strength var. 8−49376
rotation velocity determ. 8−36508
rotational period, modified spectroscopic technique 8−16345
rotational period from spectral line tilts 8−20726
satellite ε-ring, variable width and ellipticity, orbital considerations 8−40870

Uranus continued
satellite ring system, new features from Kavalur photoelectric record of SAO 158687 occultation 8−12152
satellite system, orbit-orbit resons. 8−4093
secular brightness increase, 1972-76 period 8−16346
spectrum in 5-20 micron range, obs. 8−32393
stellar occultations by ring system, 1977-1980, colours and magnitudes of stars 8−16277
thermal structure from IR meas. 8−36509
Titania and Oberon, IR photometry rel. to membership of new class of satellites 8−12146
Voyager low energy charged particle experiment 8−20618
Voyager magnetic field experiment 8−24431
Voyager mission objectives 8−24426
Voyager UV spectrometer experiment 8−24429
H_2 rotational quadrupole lines, theoretical brightness temps. 8−7917

urban planning *see town and country planning*

u.v. astronomy *see ultraviolet astronomy*

u.v. detectors *see ultraviolet detectors*

V-centres
see also H-centres
alkali halide, activated, luminesc. and stored light sum 8−6738
alkali halide crystals, radiation damage products, impurities and colour centres *(German)* 8−10086
nonmetals, V_k-centre dynamic model, fluctuation production of barriers, diffusion *(Russian)* 8−47372
phosphate glass, electron-irradiated, charge accumulation, comp. depend. 8−2159
CaF_2, doped, colour centre form. by UV irrad., afterglow, thermolum. and EPR obs. 8−10047
CaF_2:Tm temperature dependence of V_k-centre generation efficiency *(Russian)* 8−48203
CsBr, self trapped hole, hopping motion equilib. lattice config., electronic excitation energy, activation energy calc. 8−10046
CsCl, self trapped hole, hopping motion equilib. lattice config., electronic excitation energy, activation energy calc. 8−10046
CsI, self trapped hole, hopping motion equilib. lattice config., electronic excitation energy, activation energy calc. 8−10046
KBr, thermolum. and reactions of freed interstitial and trapped hole centres 8−23538
KBr, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769
KCl, cryst., colour centres, ionic cond., X-ray effects, thermoluminesc. *(Russian)* 8−6056
KCl, with Frenkel cation defects, EPR and thermolum. of V, V_2-centres 8−10769
KCl:Sr(Ca), thermoluminescence and colour centre thermal stability in irradiated sample 8−43941
KI, intrinsic luminesc. quenching, by X-ray induced coloration 8−19539
LiF, V_k-centre generation, temp. depend. 8−18644
MgO, defect centres, thermolum. examination 8−15235
MgO, single crystal, thermolum. meas. *(Japanese)* 8−19577
MgO:Li, $[Li]^0$ defect, high temp. and ionisation induced effects 8−34509
MgO:Li, $[Li]^0$ defect, stress induced optical dichroism 8−35179
MnF_2, radiation damage, optical absorpt. and luminesc. expts. 8−2161
NaCl:Ca^{2+}, X-ray induced luminescence 8−23516
RbI, intrinsic luminesc. quenching, by X-ray induced coloration 8−19539
$RbMgF_3$:Mn, low-temp. radiation damage, optical absorption meas. 8−22761
$RbMnF_3$, radiation damage, optical absorpt. and luminesc. expts. 8−2161
SrO:D, γ-irrad., V_{od} defects, EPR and ENDOR 8−27116
Y_2O_3, formation and changes in1point defects, EPR, optical transitions and thermolum. spectra 8−2118
ZnSe, optically detected mag. reson. of V^- centre and donors 8−10805

V_h-centres *see H-centres*

V-VI semiconductors *see semiconductor materials*

vacancies (crystal)
see also Frenkel defects; impurity-vacancy interactions; Schottky defects; vacancy condensation loops; vacancy-dislocation interactions
adsorption on internal boundaries, rel. to recrystalln. and precip. 8−10084
alkali halide, chalcogen^{2-} vacancy centres, absorpt. and fluoresc. spectra 8−48204
alloy, binary, conc., with short and long range order, computer simulation of diffusion 8−30778
alloy, vacancy formation energy, new method for determining 8−47345
alloy random, binary, diffusion correlation factors calc., comparison of matrix inversion, Monte Carlo and diffusion of probability techniques 8−30779
atomic diffusion mechanisms *(Hungarian)* 8−38868
atomistic computer experiments of point and extended defects 8−30610
BCC metal, heavy ion implanted, vacancy annealing stage, Mossbauer meas. 8−39463
BCC metals, stressed, computer simulation of vacancy and divacancy migration 8−47573
BCC structures, simulation of vacancy-thermotransport 8−47570
bimetal system, diffusion kinetics taking into account nondiagonal coeff. of Onsager matrix *(Russian)* 8−38871
covalent semiconductor, single vacancy, relax. energy and form. vol. calcs. 8−38691
cubic crystals, random motion, of vacancies, correl. factor and NMR diffusion parameters determ. 8−2284
cubic crystals, randomly migrating vacancies, computer simulation of correlated self-diffusion 8−2283
diffusion, activation enthalpy and entropy and defect form., basic thermodynamic relation, validity limit 8−47557
diffusion data obtained by NMR and Mossbauer expts., interpretation, mol. dynamics study 8−47567
disordered distributions of vacancies or altervalent ions, electrostatic energy 8−9995
displacement spike annealing, Mont Carlo method computer expteriments 8−30672

vacancies (crystal) continued
externally stimulated interstitial release followed by vacancy-interstitial annihilation, kinetics 8−34535
FCC crystals, close packed vacancy clusters, enumeration of migration, growth and contraction mechanisms 8−47352
FCC lattice, computer simulation of low energy displacement cascade 8−47367
FCC lattice, elastic interaction between point defects, nonlocal theory 8−38689
fluorite structured crystals, high temp. disorder and elastic consts. 8−30689
fluorochloroapatite, synthetic, defect struct. and colour centres obs. *(Russian)* 8−30612
formation energy, correl. with compressibility 8−2112
formation enthalpy measurements, via positron experiments 8−47337
fusion reactor materials, atom displacement and He prod. using fusion reactor first wall neutron spectrum 8−46168
grain boundaries, molecular dynamics studies, use of coincidence lattice theoretical model 8−30645
graphite, surface morphology changes after irrad. with energetic He ions 8−21767
hydrocarbon crystal, calc. of internal friction resulting from molecular defects 8−31448
irradiated materials, cascade damage and self-ion injection effects on swelling 8−34549
irradiation induced creep, point defect absorption at dislocations 8−19842
jellium residual resistivity of vacancies 8−6348
melting, vacancy mechanism 8−38814
melting, vacancy mechanism 8−38815
metal, atomic defect config. from X-ray and neutron scattering studies 8−47322
metal, atomic defect configuration from high resolution TEM 8−47324
metal, atomic defect props., conf., Argonne, IL, USA, (Oct. 1976) 8−47318
metal, BCC, high temp. positron annihilation 8−47421
metal, correlation of annealing temp. for radiation damage fields to melting point in DPAD expts. 8−43737
metal, dynamic study of defect mobility using HVEM 8−47327
metal, equilibrium vacancy conc. 8−38694
metal, H and He impurities, electronic struct. 8−10402
metal, HCP, atomic struct. of defects 8−30611
metal, ion beam damage, distinguishing between models of radiation damage using TEM *(German)* 8−30680
metal, NDT using positron annihilation technique 8−3294
metal, point defects, lattice theory 8−47321
metal, positron-phonon scatt. effect on positron trapping at monovacancies 8−26829
metal, self-diffusion, atomic jump processes 8−47562
metal, self-diffusion 8−47561
metal, self-diffusion acceleration by dissolved H_2 *(Russian)* 8−34647
metal, thermal expansion coeff. of defect-entropy volume 8−26707
metal, vacancies and interstitials, electronic struct. 8−47320
metal, vacancy concentration 8−47319
metal, vacancy defect mobilities and binding energies obtained from annealing studies 8−47325
metal, vacancy formation energies and volumes, exam. of models 8−47349
metal, vacancy formation parameters and Gruneisen constant 8−22709
metal, vacancy-solute interaction 8−47409
metal crystallite, BCC, mechanisms of growth of vacancy complexes 8−14338
metal swelling, max. point on temp. scale rel. to point defect generation *(Russian)* 8−38751
metals, cubic, relationship between defect resist. and bulk resist. at melting temp. 8−6344
metals, nontransition, jellium approach to vacancy energetics 8−47347
metals, vacancies, corrected spherical model 8−34802
metals, vacancy form. vol. from positron annihilation meas. 8−47339
metals and alloys, relaxation, rel. to defect struct. *(Russian)* 8−19801
microcrystallites, LCAO-MO calcs, in HMO approx., influence of lattice distortion adsorption, absorpt. of gases *(German)* 8−30584
migration and formation energies rel. to Debye temp. and melting point 8−22710
migration energy in pure metals and dil. alloys 8−47572
migration induced by subthreshold collisions, computer simulation exam. 8−47365
molybdates, nonstoichiometric, IR spectra rel. to vacancy struct. *(French)* 8−43867
plastically deforming solid, creep cavitation by vacancy diffusion 8−48471
porous solid sintering, role of gas in healing of isolated pore by volume vacancy diffusion 8−15330
quantum crystal, delocalisation of vacancy local phase stratification and impurity free region creation *(Russian)* 8−47637
radiation induced solute segregation, kinetic model, GEAR package of subroutines 8−30673
rare earth oxide film, short-range order to long-range order transition 8−10288
semiconductor, atomic displacements and enthalpy of vacancy formation 8−38690
semiconductor, elastic stresses effect on diffusion processes 8−10226
semiconductors, radiation damage studies on implanted Te, Sb and Sn by Mossbauer spectroscopy 8−2176
simple metal, single vacancy, relax. energy and form. vol. calcs. 8−38691
steel, austenitic stainless, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
steel, stainless, atom displacement and He prod. using fusion reactor first wall neutron spectrum 8−46168
swelling during self-ion bombardment, effect of implanted interstitials 8−10099
thermodynamic properties, phase transitions 8−47518
vapour growth, element incorporation 8−30556
void swelling simulation, effect of self ion injection 8−22772
Ag, electron irradiated, exam. of vacancy migration energies, and annealing kinetics 8−47571
Ag halide, photographic image form., defect and impurity states, LCAO calc. 8−16876
Ag, positron trapping by vacancies using ^{19}Ne source 8−47341
AgBr, diffusion of Fe^{3+}, vacancy migration evidence 8−47603

vacancies (crystal) continued
Al and Al-Cu (1.5 at.%), vacancy charact. study by electrical resistance derivative method, rel. to temp. 8−47361
Al, CC vacancy, electron and positron densities and temp. depend. of positron lifetime 8−19001
Al, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
Al, monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
Al, pressure effect on diffusion, theoretical study 8−47566
Al, quenched, diffusion solution for point defects in stress field, steady state and transient 8−30780
Al, quenched, positron annihilation study, vacancy clustering 8−27348
Al, quenched, vacancy-Fe interactions 8−47412
Al, quenched-in lattice defects, Mossbauer anal. of associated ^{57}Co 8−39820
Al, rigidity modulus, neutron irrad. and quenched, point defects 8−27546
Al, single vacancy formation energy, determ. using energy bands and wave functions, from LCAO calc. 8−47348
Al, vacancy double jumps and atomic diffusion 8−6175
Al, vacancy double jumps at high temp. 8−47569
Al, vacancy form. energy from positron annihilation meas. 8−47340
Al, vacancy form. enthalpy, simultaneous positron lifetime and momentum meas. 8−47335
Al, vacancy formation volume, temp. depend. 8−47350
Al, vacancy migration energy at high temp. 8−43010
Al, vacancy-solute interaction 8−47413
Al-Ag (1.03 at.%) alloy elec. resist. meas. above room temp., Ag atom configuration correlation 8−35534
Al-Er, dil., lattice location of ^{169}Er ions after implantation, Mossbauer effect of ^{169}Tm 8−39460
Al-Fe (0.02 at.%), rapidly quenched, ^{57}Fe Mossbauer spectrum associated with vacancy 8−23378
Al-In, dil., vacancy trapping and detrapping at ^{111}In, PAC spectra 8−39461
Au (111) film, sputtered, surface struct., HV electron microscopy and theoretical model 8−22981
Au, deformed, annealing kinetics of vacancies, elec. cond. meas. and computer simulation 8−47353
Au, electron irradiated, exam. of vacancy migration energies, annealing kinetics 8−47571
Au film, rel. to void growth in early stages of ageing and electromigration 8−38991
Au, quenched and annealed, conduction electron scattering 8−47774
Au, stacking fault tetrahedra, critical nucleation temp. 8−26581
Au, vacancy props. 8−47326
Au/Ag couple, diffusion induced stresses and plastic deform. 8−26736
BaF_2, NMR relax., ionic cond. and self-diffusion 8−23362
$BaTiO_3$:Gd, positron lifetime spectra meas. 8−43956
$Ca_2Nb_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
$CdCr_2Se_4$:In, influence of Se-deficiency on props. 8−30921
CdS:Li film, photocond., effects of annealing, S vacancies, and O_2 adsorption 8−34854
CdTe, high-resistivity, irradiation effects on carrier transport and trapping process 8−2164
CdTe:Cu, doping effects on evaporation kinetics and electronic props. during high-temp. annealing in vacuum 8−22743
CeO_{2-x}, 1.5<O/Ce<2, physicochemical equilibria, statistical thermodynamics model *(French)* 8−38688
CeO_{2-x}, small polaron mobility, elec. cond. and nonstoichiometry meas. 8−47785
$Co_{1-x}Mg_xO$ ceramics as O_2 sensors, phase stability, elec. cond. and thermoelec. power meas. 8−3420
γ-CoSe, d-electron deficit model, electrochem. meas. of free enthalpy *(French)* 8−30605
Cu, electrical resistivity changes at high temp. due to vacancies 8−26565
Cu, electron irrad., positron lifetime exam. of annealing recovery 8−47354
Cu, electron irradiated, evidence for vacancy migration in stage III 8−38693
Cu, electron irradiated, exam. of vacancy migration energies, and annealing kinetics 8−47571
Cu, interatomic pot., vacancy form., migration energy from phonon dispersion curves 8−42950
Cu, positron trapping by vacancies using ^{19}Ne source 8−47341
Cu, radiation damaged, temp. depend. of elec. field gradient, DPAC expt. 8−43727
Cu, self interstitial struct. determ., and vacancy clustering, X-ray exam. 8−47351
Cu, volume change due to point defects and He bubbles, isotropic elasticity theory 8−47445
Cu-Al (15 at.%), vacancy migration, and short range ordering, comparison of exp. results with theory 8−47356
Cu-Al alloy, vacancy formation energy, determ., using new method, elect. cond. meas. 8−47345
Cu-In, dil., point defect trapping after ion implantation, DPAC meas. 8−43728
Cu-Mn, positrons as probe of phase transforms. 8−31401
Cu_5FeS_4, bornite, superstructuring, vacancy clustering, high-resolution electron microscopy 8−42981
Cu_9S_5, digenite, superstructuring, vacancy clustering, high-resolution electron microscopy 8−42981
DX, X=Cl, Br, I, thermodynamic properties, phase transitions 8−47518
EuO, Eu rich, insulator-metal transition, model Hamiltonian 8−2422
α-Fe, BCC metals, stressed, computer simulation of vacancy and divacancy migration 8−47573
α-Fe, deformation induced intergranular creep cavitation 8−31473
Fe, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8−27349
α-Fe, interaction of foreign interstitial atoms with vacancies 8−6052
Fe vacancy form. by positron annihilation in thermal equilibrium 8−10041
α-Fe, vacancy migration, annealing expt. study, irradiation induced defects 8−6956
β-Fe-Al, struct. defect obs. 8−14337
Fe-Al, vacancy formation energy 8−18638

vacancies (crystal) continued
Fe-Al (51 at.%), crystal vacancies, dilatometric and field ion microscopy exam. 8−47346
Fe-Ni (50 to 94 wt.%), FCC, form. and migration energy of vacancies, induced magnetic anisotropy *(French)* 8−2110
Fe_3Al, vacancy conc. and ordering conc. 8−18639
$Fe_{1-x}O$, wustite, vacancy and interstitial ion order, equilib. conditions, neutron diffr. obs. *(French)* 8−14336
γ-Fe_2O_3, struct. vacancy distrib., effect on $\gamma \rightarrow \alpha$ transform. heat 8−6051
$Fe_{1-\delta}S$ chemical diffusivity and nonstoichiometric props. 8−10217
n-GaAs:Te, electron-irrad., absorpt. spectra *(Russian)* 8−15200
$GaAs_{0.6}P_{0.4}$:Zn, rel. to control of Zn diffusivity by multiple implantation 8−38877
$GaAs_{1-x}P_x$, $0 \leqslant x \leqslant 1$, evidence for common nature of certain deep-level radiative centres 8−6767
Ga_2O_3:Mg(Zr) single crystals, quenched, ionic and elec. props. 8−30922
GaP, localised states in presence of P vacancy, pseudopot. calc. 8−18992
Ge, irradiation at about 6K, low temp. annealing of defect 8−2162
Ge, polarisation of implanted ^{12}B 8−43653
H, metallic, defect form. energy, Einstein-Kanzaki model 8−34676
^{3}He, submonolayer on Grafoil, vacancy induced ferromag. 8−14536
^{4}He, solid BCC, plastic deform., stress-strain relations and US attenuation 8−38909
^{4}He, solid BCC, vacancy tunnelling at finite temp. 8−38907
$Hg_3In_2Te_6$, complex ordered-vacancy cpd., struct. and lattice dynamics 8−34496
In, positron annihilation, vacancy form. vol. 8−15245
KCl:$SnCl_2$, action of ionising radiation on Sn aggregation processes 8−34543
KCl:$SrCl_2$, H_{na} annealing, X-ray irrad., H centre capture by IV dipoles 8−10927
$K_2Mg_4Mo_4O_{16}(OH)_2(H_2O)_2$ study of non-stoichiometry *(French)* 8−30604
$La_2Ti_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
$LiNbO_3$, γ-irradiated and annealed, elastic and piezoelectric props. 8−2807
Mg-Ag, dil., ion irradiated, interaction between Ag and defects, channelling meas. 8−38766
Mg-Al(-Zn), solute-vacancy binding energies from hardness meas. 8−39789
α-MnS, defect energetics and range of homogeneity 8−47317
Na, monovacancy thermodynamic parameter calcs., temp. dependence 8−2114
Na, vacancy double jumps and atomic diffusion 8−6175
Na, vacancy formation volume, temp. depend. 8−47350
Na_2CO_3, rel. to elec. cond., 270-830°C 8−10216
Na_2O-K_2O-SiO_2, Na diffusion 8−26724
Nb, rel. to self diffusion, 1353-2693K 8−47576
NbC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
NbC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
Nb_xC powders, plastic deform. characts. on vibratory milling 8−11183
$Nb_{28}O_{70-x}$, O diffusion, rel. to Nb_2O_5 nonstoichiometry *(French)* 8−47583
$Nd_{1-x}S$, grown-in defect exam. 8−43014
$Nd_2Ti_2O_7$-$CaTiO_3$ system, mode of formation and stability of $A_nB_nO_{3n+2}$ phases *(French)* 8−3110
Ni, computer simulation of point defects and planar defects 8−43013
Ni, creep, rel. to radiation swelling and stacking fault energy *(Russian)* 8−27562
Ni, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8−27349
Ni Ga, defect struct. 8−30608
Ni, positron capture by dislocations, vacancies, rel. to temp. *(German)* 8−30606
Ni, positron trapping by vacancies using ^{19}Ne source 8−47341
Ni quadrupole interaction of vacancy associated with Te impurity, β-γ TDPAC meas. 8−43730
Ni, quenched vacancies, effect of oxidation *(French)* 8−27686
Ni-Cr (33 at.%), US deform. effect on short range order form. *(Russian)* 8−39839
Ni-In, dil., symmetry of lattice defect, DPAC meas. 8−43729
Ni-In, dil., uncorrelated radiation damage, TDPAC meas. 8−43343
Ni-Zn ferrites, comp., lattice imperfections, sintering 8−3080
$Ni_{1-x}Al$ solid solution, vacancy ordering exam. by electron diffr. after annealing 8−3123
NiO, elec. cond. meas. at 1000°C 8−10451
β-Ni_3S_2, formed during sulphidation of Ni, defect struct. and chemical diffusion 8−2115
β-NiSe, d-electron deficit model, electrochem. meas. of free enthalpy *(French)* 8−30605
Pb, perturbed γ-ray angular distrib. of ^{210}Po, temp. depend., radiation damage effects 8−43736
Pb, vacancy and divacancy props., exam. via quenching and annealing 8−47343
$Pb(Ti_{0.47}ZrO_{.53})O_3$, small polaron cond. mechanism, elec. cond. and thermopower meas. point defects 8−43380
Pd, localised vacancies produced by thermal neutron capture recoil 8−26598
Pt, thermal and fission neutron produced defect configurations 8−47432
Pt-In, dil., damage induced quadrupole interactions, DPAC exam. 8−39465
$RbMgF_3$:Mn, low-temp. radiation damage, optical absorption meas. 8−22761
Sc_2O_3:MgO, defect struct., X-ray diffr. and pyrometric density 8−34524
n-Si, 300 keV proton irrad., temp. depend. of defect prod. 8−6113
Si, interstitials and lattice vacancies 8−10038
Si, neutron irradiated, characts. of defect form. 8−14382
Si, oxidation induced stacking fault growth, role of point defects 8−10061
n-Si:Cs, ion implanted, minority carrier lifetime and defect struct., annealing effect 8−6395
Si:H, defects in monovacancy Si cluster, semi-empirical calc. 8−43329

vacancies (crystal) continued
  Si-As(Sb) temp. depend. of irradiation-induced displacement of impurities, backscattering meas. 8−26605
  SiC, synthesis by ion implantation of diamond, role of struct. imperfections 8−34529
  SiO_x, oxidation, film defect equilibria and growth reactions 8−11377
  SrO, proton, neutron irradiated, fluorescence from anion vacancies, F^+ centre model 8−48221
  $SrTiO_3$, pure and Nb doped, heat treated, Hall effect, electrical cond., optical absorpt., defect states 8−47812
  $SrTiO_{3-x}$, X-ray and electron diffr. obs. of anion deficiency 8−22708
  Ti, deform. and H_2 inclusion effect on annihilation γ-ray ang. correl. curve shape 8−31273
  TiC, nonstoichiometric, simple model for phonon dispersion, rel. to C vacancies 8−30718
  TiC_xO_y, lattice completeness and period 8−22706
  TiO_x, (x=0.88, 1.27), effect of heating at high press. on struct. 8−10190
  $(U,Pu)O_{2-x}$, O_2 thermomigration described by cluster model 8−22888
  UO_2, O diffusion mechanism 8−33249
  $UO_{2.12}$ hyper-stoichiometric, defect struct., anal. of neutron diffr. data 8−26562
  V, Doppler broadened positron annihilation lineshapes, prevacancy lattice expansion 8−27349
  V-O alloy, temp., dose and conc. depend. of void form. following V^+ ion beam irradiation 8−10105
  V-S system, order-disorder transition of metal vacancies, statistical thermodynamics 8−43012
  V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
  V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
  VN_{1-x}, vacancy ordered structure in cubic mononitride phase, transition entropy determ. 8−43011
  V_3Si, phase transition and transition temp., chemical comp. effects, defect struct. exam. 8−18651
  W, neutron irrad., at thermal energies, annealing exam. of recovery 8−47355
  W, vacancy-defect clustering, due to annealing and quenching, TEM and elec. cond. exam. 8−47344
  YIG, nonstoichiometry and electronic defects, thermogravimetric expts. and anal. of elec. data 8−6050
  Zn, defect recovery after low temp. electron irrad. 8−10090
  Zn, thermal recovery and stress-strain relations 8−11266
  Zn, vacancy conc., lattice parameters meas. 8−10040
  Zr neutron irradiated, faulted loops 8−10094
  Zr-base alloy as reactor core material, microstruct., deform. and fracture 8−4988
  ZrC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
  ZrO_2-Y_2O_3, solid solns., density meas. rel. to O vacancy model 8−2113
vacancy condensation loops
  see also prismatic dislocations
  irradiated materials, cascade damage and self-ion injection effects on swelling 8−34549
  metal, point defect clusters, TEM obs., review 8−26564
  Au foil, radiation damage, in situ study by HV electron microscopy 8−6101
  MgO, a⟨100⟩ dislocation loops, TEM obs. 8−38710
  Zr neutron irradiated, faulted loops 8−10094
vacancy-dislocation interactions
  HCP crystals, dislocation-point defect interactions in slip systems 8−47417
  ionic crystal. interaction energies between point defects and dislocations, shell-model calc. 8−22759
  Al, quenched, vacancy annihilation to non-uniformly distributed dislocations 8−6096
  α-Fe, internal friction peaks from dislocation relax. in plastically deformed and/or neutron irrad. sample 8−48438
  KCl, thermal hysteresis in ionic cond., dielec. loss meas. 8−34652
  MgO, interaction energies between vacancies and edge dislocations, shell-model calc. 8−22759
vacuum apparatus
  includes apparatus for producing, maintaining and handling vacuum per se
  see also vacuum gauges; vacuum pumps; vacuum techniques
  break-seal shattering, novel method 8−41322
  cell for surface studies using IR transmission spectroscopy 8−41361
  couplings, small bore British system, complementary to ISO recommendations 8−21148
  electric breakdown initiation, implications for HV technology 8−30509
  electrophysical properties measurement apparatus for films 8−4654
  extraction system for vacuum stoving and sample melting 8−21146
  feedthrough, bakeable, with 22 pins, for monitor system of proton synchrotron 8−21798
  gas circulating pump, closed system, without moving parts 8−180
  greases, desorption characts. 8−21147
  high-voltage vacuum feedthrough, fully screened 8−24814
  hot press, continuous, for transparent ceramics prod. 8−23643
  metallic superhigh-vacuum apparatus for 10 eV photoelec. meas. 8−21145
  MKh 1303 mass spectrometer, small-scale device for moving solid specimens in vacuum chamber 8−315
  pressure response in elementary system 8−37027
  PTFE seal for superfluid He 8−4625
  thermoelectric coolers, fast transient response of novel Peltier junctions 8−21141
  ultrahigh vacuum adsorption, Haul-Gottwald empirical isotherm origin 8−21149
  ultrahigh vacuum equipment for Kelvin meas. of surface charge of alkali halide crystals 8−12708
  ultrahigh vacuum system design for gauge calibration 8−21157
  LaB_6 cathodes, residual gas poisoning in vac. system, thermionic emission decay 8−27364
vacuum control
  No entries
vacuum deposited coatings
  anthracene, film substruct., vacuum deposited, low temp. luminesc. *(Russian)* 8−15226
vacuum deposited coatings continued
  anthracene, thin film vacuum deposited, exciton reflection spectra *(Russian)* 8−15194
  anthracene thin films, struct. rel. to substrate temp., thickness, condensation rate 8−30845
  benzene, vacuum UV absorpt. spectrum, 1100-2500 Å, effect of deposition temp. 8−23542
  dielectric film, formation during ion implantation, electric field effects 8−2801
  high rate film growth, book contrib. 8−11117
  metal, deposition condition relationship with struct. and props. 8−11369
  metal, on supercond. film, effect on T_c and residual resist. 8−47900
  metal film, vac. deposited, internal friction *(Japanese)* 8−47685
  millimetric and IR discontinuous-metal-film detector 8−289
  opaque metal coatings on plastic scintillator 8−3049
  optical reflectivity and transmissivity, DC resistivity, in situ meas. in ultrahigh vac. at low temp., Au appl. *(French)* 8−39617
  oxide, molecularly-deposited on cathode, elec. cond. 8−11062
  pentacene, evaporated on quartz, optical absorption, substrate temp. depend. 8−2932
  Permalloy film corrosion characterisation by crystal oscillator microbalance and resistance meas. 8−7101
  self-supporting films, method for coating substrate with parting agent 8−11112
  semiconductor, or semimetal, on supercond. film, effect on T_c and residual resist. 8−47900
  semiconductor films for solar collectors, absorbing surfaces at collectors 8−5580
  silicone, film deposition, glow discharge polymerisation, elec. and thermal characts. 8−6467
  strain gauge constantan alloy-film/ceramic steel system, electromech. behaviour 8−6634
  structure and properties, basic relationship 8−6236
  thickness meas., low temp., quartz thickness monitor 8−41275
  thickness measurement, quartz, thickness monitor nonlinearity 8−29091
  ALF_3, evaporated layers DC props. and α-particle scatt. 8−14845
  Ag film, substrate surface structure effects on absorptance 8−19585
  Ag film, surface roughness determ. from light scatt. meas. 8−5541
  Ag, high temp. stabilisation using SiO_2 8−1319
  Ag, initial stages of growth on Si (111) 7×7, LEED, AES and UPS expts. 8−38988
  Ag, internal friction vibr. reed technique 8−43276
  Ag, on Si (111), interface struct., AES 8−14589
  Ag particles on graphite, particle motion rel. to heating in gaseous environments 8−34695
  Ag, polycryst. boundary layer on seed cryst., role in hydrothermal growth mechanism of sodalite 8−30571
  Ag, quartz crystal, crystal damping during deposition 8−11116
  Ag, vacuum deposited film, surface struct., HEED meas. 8−6234
  Al, electron beam evaporation, on Kapton laminates, and characterisation 8−11373
  Al, low vacuum condensates, struct., IR refl. obs. *(Russian)* 8−30850
  Al, sputtered and electron gun evaporated films, grain size and orientation obs. 8−10308
  AlF_3, disordered film, optical transitions as function of prep. conditions 8−27340
  As_2S_3, electron beam deposited film, photoinduced birefringence and dichroism *(Russian)* 8−2934
  As_2Se_3, film, influence of electric field on crystallisation kinetics 8−42914
  Au, adhesion on oxide or glass with interposed fluoride film 8−19667
  Au, discontinuous films, glass substrate 8−6246
  Au, growth on clean and contaminated GaAs (001) surfaces 8−26785
  Au, microporosity induced by nucleation and growth processes, TEM expts. 8−10303
  Au, vacuum deposited film, surface struct., HEED meas. 8−6234
  Au, void growth in early stages of ageing and electromigration 8−38991
  B films, amorphous, prep., struct., props., review, book contrib. 8−48321
  BaO, on W cathode, struct. transforms., LEED obs. 8−11061
  BeO film, amorphous or polycryst., dielec. function, refl., from electron energy loss meas. 8−43947
  Bi film, vap. deposited, effect on deposition parameters and substrate condition on crystallinity 8−10290
  $CdGa_2S_4(Se_4)$, optical absorpt., and energy gaps 8−11012
  CdS film, heterojunction with copper sulphide, ordinary glass with silver layers as substrate 8−2525
  $Cd_xZn_{1-x}S$ film, vacuum evaporated, struct. 8−38985
  Cr, die cast Zn as substrate 8−6238
  Cr, film, vac. deposition onto low temp. substrate, cryostat *(Japanese)* 8−27403
  Cr, on die-cast Zn, microstruct. and intrinsic stresses, substrate temp. effects 8−10304
  Cs, on MgO secondary emitter, increasing of emission efficiency 8−2960
  Cu, vacuum deposited film, surface struct., HEED meas. 8−6234
  Cu-Al alloy film comp. struct. resistivity 8−6852
  Cu-Al_2O_3, dispersion-strengthened, vapour-deposited, tensile creep 8−11115
  Cu-based alloys, deposition condition relationship with struct. and props. 8−11369
  Cu-Sb-S-I amorphous film formation and stimulated crystallisation, electrophysical props. *(Russian)* 8−30838
  Cu-Zn multilayer condensate, diffusion process, brass formation 8−43186
  $Cu_{2-x}S$-CdS heterojunction V-I characteristic and max. photovoltage, long-term changes *(Russian)* 8−43468
  Er, film, evap., CO effect on work function 8−39188
  Fe films, vacuum evaporated, exam. of texture for various vapour beam incidence angles *(Japanese)* 8−48318
  Fe-refractory compound condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
  Ga, supercond. T_c and residual resist., variation with coating thickness 8−47900
  Ga_2Se_3, vapour phase deposited films, struct. 8−2383
  GaTe, hexagonal, vacuum deposited, physical parameters and substruct. 8−2393
  Ga_2Te_3, vapour phase deposited films, struct. 8−2383

vacuum deposited coatings continued
Ge, film, vac. deposition onto low temp. substrate, cryostat *(Japanese)* 8−27403
Ge-Si, UHV-produced epitaxial structs., electrophys. props. 8−3060
$Ge_{15}As_4Te_8$, film, influence of electric field on crystallisation kinetics 8−42914
$GeSe_2$ chalcogenide film, struct. changes due to laser induced transmittance oscill., SEM obs. 8−6240
In-S system, vac. deposited films, form., reacts. 8−43259
Kr, HCP, vap. phase grown thin films 8−18917
Li, on MgO secondary emitter, increasing of emission efficiency 8−2960
Li_xWO_3, electrochromic characteristics 8−6653
MgF_2, disordered film, optical transitions as function of prep. conditions 8−27340
MnTe film, elec. props. 8−43498
Mo, supercond. T_c and residual resist., variation with coating thickness 8−47900
Nb, superconducting film, thickness depend. of electrophys. parameter *(Russian)* 8−10590
Nb_3Ge, electron beam co-deposited, prep. and supercond. crit. temp. 8−15310
Nb_3Ge, supercond., electron beam evaporation technique 8−6470
Nb_3Si film, supercond., obtained by vaporisation in vacuum, props. 8−14865
Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8−10301
Ni 8−7099
Ni, electron beam evaporated, ductility and struct. 8−11439
Ni, evaporated at oblique incidence, residual stress, mag. anisotropy meas. 8−22992
Ni-Al_2O_3 alloy, electron beam evaporated, struct. and mech. props. 8−11114
Ni-Co-Cr-Al-Y, electron beam deposited, for Ni-base superalloy, fatigue crack initiation and propag. 8−11438
Pb, supercond., T_c and residual resist., variation with coating thickness 8−47900
Pb-M, M=Bi, La, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
PbS, film condensation on amorphous substrate, struct. and growth 8−38981
PbS, vap. deposited film, island growth obs. by optical diffr. from electron micrograph 8−10291
PbS-Al coatings, absorptivity, emissivity, as function of PbS thickness 8−46731
$Pb_{1-x}Sn_xTe$ film, deposition, elec. and piezoresist. props. 8−6465
PbTe film, residual conductivity 8−2595
Re, supercond. T_c and residual resist., variation with coating thickness 8−47900
Sb evaporated film crystallisation rel. to substrate temp., −50° to 170°C 8−47680
Sb film, elec. cond., and struct., thickness depend. 8−26974
Se film on brass, ESCA interface study 8−43269
Se, noncryst., controlled vapour deposition, crystn., and optical props. 8−39696
Se-Bi-I, amorphous, high sensitivity visible-near IR photoconductor development and characterisation 8−39153
Si amorphous film, annealing behaviour of void network 8−18551
Si, amorphous film, oxidised, vacuum deposited, cond. change due to electron irrad. 8−10089
Si homoepitaxy in high vac., stacking fault nucleation, crit. temp. for SiC growth 8−14620
a-Si, vapour species rel. to amorphous film deposition 8−14641
SiO, obliquely evaporated, topography, effect on liq. cryst. orientation 8−38987
SiO_2 as high temp. stabiliser for Ag films 8−1319
SiO_2, vacuum deposited, 7-10 μ, microhardness and structure 8−19669
SmS, metallic, transmission, refl. and absorpt. spectra 8−19587
Ta film, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
Ta film, vacuum-deposited, gas adsorpt. effects on photoelec. props. 8−15298
Ta-Ni alloy film, amorphous, UHV deposited, elec. and struct. props. obs. 8−6233
Te evaporated film nucleation on Au oriented islands, grain growth 8−2388
Ti, electrochem. oxidation, AES, XPS and electrochem. characterisation 8−7086
Ti, film, evap., CO effect on work function 8−39188
Ti, overlaid thin films, D pumping speed 8−33286
V-M, M=Ti, Nb, Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
W_2O_{5-x} current noise due to adsorption of water 8−6421
Xe, HCP, vap. phase grown thin films 8−18917
Zn film, vac. deposited, X-ray diffr. study of microstruct. 8−26796

vacuum deposited thin films *see vacuum deposited coatings*

vacuum deposition
used for EVAPORATED layer production in vacuum
see also electron beam deposition
alloy film, monitoring and controlling techniques, review 8−11113
automatic high vacuum coater, automatic, using minicomputer or microprocessor, IC semiconductor industry appl. 8−48317
DC glow discharge techniques for surface treatment and coating 8−11374
electron beam gun with multi-crucible for evaporation in ultra high vac. 8−27404
epitaxy, fine struct. formation *(French)* 8−43275
euglenoid flagellates, sputter and vacuum evap. coating, comparative effects on delicate features 8−24205
film thickness monitor, quartz crystal, based on SAW oscillator 8−3036
frozen hydrated tissue section prep. for X-ray microanalysis using satellite vacuum coating and transfer system 8−24200
high rate film growth, book contrib. 8−11117
II-VI semiconductor film technology 8−23621
interference coating deposition by Balzers BA-710 vac. system, photometric monitoring 8−46850
masks, using rib-supported structures, solving stencil problem 8−23615
metal, heating of polymer substrate surface during deposition 8−48319

vacuum deposition continued
metal coating of optical fibres, for strengthening and surface protection 8−30103
metal on Schottky barrier solar cell, optimum thickness indicator 8−21120
multicomponent alloy films, struct. form. laws and elec. prop. changes obs. during vacuum condensation 8−6850
ohmic contacts, sputter-etch plus evaporated film technique for contacts to Si devices 8−23165
opaque metal coatings on plastic scintillator 8−3049
phase transition dynamics, investigating device 8−22967
polyimide thin film vacuum deposition 8−39695
saturation density of nuclei, substrate temp. depend. 8−18932
shell, deposited in vacuum, elastic characts. meas. by short time static extension *(Russian)* 8−39961
ultrapure materials preparation, in orbiting ultrahigh vac. facility 8−7855
Al alloys, optical contrast enhancement by vacuum deposited ZnTe layers 8−44301
Al_2O_3 film growth on MBE GaAs 8−39706
As_2Se_3, vacuum evaporation, composition of condensates 8−44012
Au clusters, coalescence on NaCl substrates at room temp. 8−18935
Au, condensation on Si (111), AES obs. of very first stages 8−14633
Au, on mica, saturation density of nuclei 8−18932
Au vacuum condensation on KCl, spatial distribution of nuclei 8−18931
B films, amorphous, prep., struct., props., review, book contrib. 8−48321
Bi, amorphous, microbridge prep. and transition from superconducting to normal state 8−34933
$Bi_2TE_{3-x}Se_x$, solid solution films, prep. and props. 8−44013
CoO, evaporation curve struct. from AC arc electrodes *(Russian)* 8−3051
Cr, film, vac. deposition onto low temp. substrate, cryostat *(Japanese)* 8−27403
Cr film vacuum deposition on glass display panels 8−39694
Cu-Be, condensation *(Russian)* 8−44014
Cu-Mn-Ni, thin film, vacuum deposited, struct., elec. cond. *(Russian)* 8−19668
Cu-Zr, vapour quenching prod. (thermal evaporation and r.f. sputtering), amorphous film for electron microscopy 8−6851
FeO-Fe_2O_3, evaporation curve struct. from AC arc electrodes *(Russian)* 8−3051
Ge, film, vac. deposition onto low temp. substrate, cryostat *(Japanese)* 8−27403
Ge-As-Se, amorphous film, condensation formation and struct. props. *(Russian)* 8−38629
In-S system, vac. deposited films, form., reacts. 8−43259
InSb, evaporation kinetics, rel. to film growth 8−3050
$Mn_{2-x}Cr_xSb$ film, prep. and mag. props. 8−48009
NiO, evaporation curve struct. from AC arc electrodes *(Russian)* 8−3051
P, nuclear thin red target preparation 8−46196
PbSe, vacuum evaporation, composition of condensates 8−44012
$Pb_{1-x}Sn_xTe$, large single crystal growth, on quartz surface, non-seeded 8−48293
Pd-Ag (Cu) alloys, epitaxial growth and surface characterisation 8−14638
Pd_2Ge, PdGe, growth kinetics on single cryst. and evaporated Ge 8−22985
Re epitaxial film growth on sapphire *(Russian)* 8−35311
Se film, noncryst., controlled vapour deposition, crystn., and optical props. 8−39696
Se layer in metal crucible, radiation emissive power theory 8−22874
Se-Bi-I, amorphous, high sensitivity visible-near IR photoconductor development and characterisation 8−39153
SiO, evaporation geometry for film deposition 8−48320
W, notched wire flashing method 8−35309

vacuum gauges
see also barometers; ionisation gauges; manometers; vacuum measurement
Brownian motion press. gauge, diamag. levitation technique 8−24807
calibration, compact bakeable ultrahigh vacuum system design 8−21157
interfacing device for use with supervisory computer 8−8409
nuclear technolgoy, vacuum gauge design 8−17546
Pirani gauge, constant resistance thermistor 8−45642

vacuum measurement
see also vacuum gauges
cold traps, influence on low-vacuum pressure meas. 8−37026
dynamic expansion method for press. scale realisation in 10^{-3} to 10^{-8} torr range, uncertainty analysis *(German)* 8−37025
nuclear technolgoy, vacuum gauge design 8−17546
ultra high vacuum generation and meas. *(Japanese)* 8−45640

vacuum polarisation *see quantum electrodynamics*

vacuum pumps
see also cryopumping; diffusion pumps; ion pumps
applications of perfluoropolyethers *(Japanese)* 8−229
AVEhD 40/800 arc-sorption pumping system 8−227
gas cooled rotating piston pumps *(French)* 8−21153
perfluoropolyethers as vac. pump fluids 8−32828
PETRA electron-positron storage ring, vacuum system techniques and problems 8−17452
sorption pump, high vacuum, pumping speed and condensation coeffs. determ. 8−21156
Space Shuttle, methods of improving vacuum for expts. 8−32825
thermal desorption spectra, effect of vacuum system time consts. 8−22960
Ti sorption pump for molecular beam detector 8−21150
Ti sublimation pump *(Japanese)* 8−24806

vacuum sintering *see sintering*

vacuum techniques
includes techniques for producing, maintaining and handling vacuum per se
see also cryopumping; getters
cryogenic pressure-vacuum valve 8−37020
far IR spectroscopy, variable path length solution cell, for use in vacuum 8−45736
furnace, vacuum, regulated particle-delivery system 8−21139

vacuum techniques continued
  fusion reactors development wall contamination avoidance *(German)* 8−21769
  hot pressing, continuous, of transparent ceramics, press design criteria 8−23643
  inert gas atoms, desorbing from solid surface, ultrahigh vacuum apparatus for detection 8−32915
  lubricant vapour pressure and evap. rate in vacuum, determ. using ambient press. meas. 8−29123
  manometer calibration method in high- and ultrahigh-vacuum regions 8−16807
  MBE, vacuum interlock system 8−48330
  Meissner coils in high-vacuum applications, anomalous behaviour 8−32826
  metal melting in suspended state, large vol. and mass samples *(Russian)* 8−44036
  orbiting ultrahigh vacuum facilities, appls. and characts. 8−7855
  PETRA electron-positron storage ring, vacuum system techniques and problems 8−17452
  plasma confinement, mirror, multichambered neutral beam line, self-consistent background gas density calc. 8−34352
  polymer thin film, tensile testing multiposition unit, for testing in vacuo and gaseous media 8−11478
  rotary/push-pull vacuum feedthrough 8−32827
  sample heater, high vacuum, using Zener diode 8−12690
  ultra high and high vacuum appl. *(Japanese)* 8−45641
  ultra high vacuum generation and meas. *(Japanese)* 8−45640
  H evacuation at 25 m^3/sec by electric arc unit 8−21144
  Ni superalloy, transient liq. phase diffusion bonding and mechanism *(Japanese)* 8−2279

vacuum tubes
  see also diodes; pentodes; tetrodes; triodes
  1/f fluctuations *(Japanese)* 8−43448

valence bands
  β-carotene, electronic struct., classical and double beam photoemission obs. 8−9285
  β-carotene, XPS obs. 8−24030
  diacetylene polymers, photoelectron valence band spectra 8−43979
  graphite, high energy cond. and valence band states, XPS 8−39664
  graphite, XPS and Auger KVV valence band spectra 8−11028
  ionic crystals, surface electron states in continuous spectrum 8−26931
  metal electron response to local fields, X-ray processes 8−23584
  metatungstate mixed valence anions, XPS spectra, oxidation states 8−6824
  photoelectron spectroscopy, review 8−39668
  rare earth tellurides, electron density distrib. from Mossbauer spectra 8−23374
  retinal$_1$, all-trans, XPS obs. 8−24030
  semiconductor, carrier number and effective bandwidths *(Spanish)* 8−18954
  semiconductor, covalent, molecular cluster model 8−43283
  semiconductor, relaxation of nuclear spins interacting with holes 8−48073
  TCNQ, infinite stacks, all valence electron band struct. 8−39001
  ternary chalcopyrite semiconductors, energy band struct. 8−34767
  ternary semiconductor, struct. effects on energy band struct. 8−39021
  transition metals, 3d, XPS of valence bands 8−35249
  TTF, infinite stacks, all valence electron band struct. 8−39001
  W-dichalcogenide, valence band nature, elec. and mag. props 8−39014
  zincblende structured ternary alloy semiconductor valence bands, LCBO coherent potential approximation *(Japanese)* 8−47699
  Al, angle-resolved XPS from valence levels, Brillouin zone averaging 8−48285
  As, interband, magnetorefl. for circularly polarised radiation 8−2840
  Au, angle-resolved XPS from valence levels, Brillouin zone averaging 8−48285
  BP-BAs solid solns., electronic struct. of valence bands and nature of interatomic interaction 8−34764
  BaF_2, width of upper valence band, tight-binding calc. 8−26814
  Be, XPS investigation of density of states 8−6829
  BiI_3, layered semicond., valence bands UPS and XPS obs. 8−11078
  $(Bi_{1-x}Sb_x)_2Te_3$, highest valence band struct., Shubnikov-de Haas effect 8−14661
  CaF_2, width of upper valence band, tight-binding calc. 8−26814
  $CdIn_2Se_4$, defect zincblende semicond., valence band, cryst. struct. effects 8−48278
  CeN, electronic struct., XPS exam. 8−6269
  CoSb, electronic struct., XPS meas. 8−2990
  Cu, surface d-band narrowing, angle resolved XPS 8−19635
  CuBr, multiplet struct. of P-excitons due to valence band degeneracy 8−39035
  $EuCu_2Si_2$, XPS studies, valence band, 4-f region 8−6831
  GaAS, O_2 chemisorption on (110) surface, bonding sites 8−38938
  GaAs (110), valence band Auger spectra 8−35230
  GaAs, valence band fine struct. from light mod. with nonequilib. opt. phonons 8−39568
  n-GaAs, valence band studies of clean and O_2 exposed surfaces 8−43298
  Ge, valence band relaxation energies during XPS 8−39657
  Ge:Cu, hot photoexcited holes at low temp. 8−30954
  Ge-GaAs heterojunctions, electronic struct. 8−19138
  InP, valence band fine struct. from light mod. with nonequilib. opt. phonons 8−39568
  Mg, $L_{23}VV$ Auger spectrum 8−39634
  Mg, XPS investigation of density of states 8−6829
  MnSb, electronic struct., XPS meas. 8−2990
  Mo-dichalcogenide, valence band nature, elec. and mag. props. 8−39014
  MoS_2, UPS meas. band struct. determ. 8−35250
  Na, XPS investigation of density of states 8−6829
  Nb-V alloy, X-ray M- and L-emission bands obs. *(Russian)* 8−19602
  NbC, valence band struct. *(Russian)* 8−6268
  β′-NiAl, density of states, XPS meas. 8−48284
  NiSb, electronic struct., XPS meas. 8−2990
  $PbCl_2(Br)(I_2)$, valence band electronic struct., XPS and UPS obs. 8−6826
  PbI_2, layered semicond., valence bands UPS and XPS obs. 8−11078
  PbSe, spin-orbit splitting in valence bands, angle-resolved UV photoemission 8−2991
  $Pb_{1-x}Sn_xTe$, valence band struct., Hall effect meas. 8−39016

valence bands continued
  $Pt_{0.97}S_2$, optical props. at absorption edge 8−35140
  Se, trigonal, NMR chem. shift, tight-binding calc. 8−2759
  Si, valence band relaxation energies during XPS 8−39657
  Sm_2S_3-Sm_3S_4, valence related optical and other studies, review 8−31215
  $SnCl_2$, valence band electronic struct., XPS and UPS obs. 8−6826
  SnF_2, valence bands, electronic struct., UPS 8−39656
  SnS, tight-binding calc. of density of valence states 8−34760
  SnSe, tight-binding calc. of density of valence states 8−34760
  SnTe, tight-binding calc. of density of valence states 8−34760
  SrF_2, width of upper valence band, tight-binding calc. 8−26814
  Te, trigonal, NMR chem. shift, tight-binding calc. 8−2759
  Ti-Zr alloy, X-ray M- and L-emission bands obs. *(Russian)* 8−19602
  TlCl, valence band electronic struct., XPS and UPS obs. 8−6826
  Tm monochalcogenides, valence related optical and other studies, review 8−31215
  UO_2, valence electronic configuration determ. by photoelectron spectroscopy 8−15284
  V, and its cpds. with light elements, surface state, XPS investigation 8−11070
  VC, valence band struct. *(Russian)* 8−6268
  $YbAl_3$, XPS studies, valence band, 4-f region 8−6831
  ZnO (0001), (0001) and (1010), UPS rel. to elec. struct. 8−15288
  ZnS, Compton profile, state of valence electrons 8−11018
  Zr-Ni, energy spectra of valence electrons *(Ukrainian)* 8−6814
  Zr-Ni alloys, energy spectra, X-ray emission obs. *(Russian)* 8−19604
  ZrC, valence band struct. *(Russian)* 8−6268

valence bond calculations *see VB calculations*

valency
  Covalency and hyperfine interaction on the impurity ion in crystals 8−23063
  metal, noncubic, conduction-electron elec. field gradient, probe valence effects 8−47749
  transition metal, 2nd and 3rd long period, covalence of atoms 8−47274
  transition metal chalcogenide, possible anionic clusters and mixed valence effects 8−43333
  $Ce(Cu,Ni)_2$, pseudobinary phases, struct. and mag. props. rel. to Ce valence 8−6032
  $CeIn_{3-x}Sn_x$, conduction electrons role in valency fluctuations 8−47741
  Ce_3NbO_x, $CeNbO_x$ and $CeNb_3O_x$, redox processes, elec. resist., phase anal., mag. suscept., thermogravimetric meas. 8−34482
  $Ce_{0.74}Th_{0.26}$, mixed valence alloy, spin dynamics 8−10708
  Fe-Co alloys, at. valence states *(Ukrainian)* 8−2656
  Fe-Ni alloys, atomic valence states *(Ukrainian)* 8−2656
  $Pd_{21}Ge_8$, cryst. struct. *(German)* 8−18586
  $RbFeS_2^+$, ^{57}Fe Mossbauer hyperfine interaction, covalency effects, point charge model 8−39484
  TmS(Se)(Te), far IR refl. and DC resist., 1-300K, interconfig. fluctuation effects 8−35136
  UO_{2+x}, possible anionic clusters and mixed valence effects 8−43333
  V_2O_5-TeO_2 glasses, ESR spectra 8−10755
  Yb_xSy, synthesis and mag. props. 8−23242

valve voltmeters *see voltmeters*

valves
  see also diaphragms
  adjustable, selection for arbitrary Reynolds number *(German)* 8−22439
  aortic valve opening, haemodynamics 8−20208
  aortic valve prosthesis water hammer pulse effect *(Japanese)* 8−3676
  blood pump, pulsatile, stabilisation of unsteady ball valve motion 8−44708
  blood pump pressure servovalve control, moving coil system *(German)* 8−24182
  CANDU-PHW, valve maintainability, design, application, layout, administrative factors 8−25318
  cardiac assist devices, selection of prosthetic valves 8−44730
  Cocatron, servo valve for liq. He II level control, superfluidity and supercond. applic. 8−18855
  cryogenic pressure-vacuum valve 8−37020
  electro-osmotic valve, implantable, for controlled drug administration 8−40399
  hydraulic single-bellows valve use at 1K in dilution refrigerator 8−225
  hydrocephalus surgical treatment, valve system design *(Japanese)* 8−31963
  main steam isolating valves, back pressure light, PWR appl. 8−29602
  mitral valve prosthesis in vitro tester, unique design 8−40426
  prosthetic aortic valve, Bjork-Shiley, steady flow in vitro vel. 8−44735
  prosthetic aortic valve, Reul-Ghista optimal tri-leaflet Avcothane design performance 8−44736
  prosthetic aortic valve stress analysis using finite element compute program 8−48930
  prosthetic heart valve design flow evaluation using finite difference transforms 8−44733
  prosthetic heart valve flow pattern visualisation by laser technique 8−44734
  pulsatile blood pump, vortex diode used as outflow valve 8−44724
  PWR containment isolation using butterfly valves 8−13256
  sprung needle valve, VV-2500 type 8−22434
  ^4He pumping lines, low press. safety value 8−32822
  NO, combustion gas sampling system and valves for sampling during engine expansion process 8−24380

valves (electronic) *see electron tubes*

Van Allen radiation *see radiation belts*

Van Allen radiation belts *see radiation belts*

Van de Graaff accelerators
  14UD Pelletron accelerator at ANU, energy calib. using $^{12}C(p,\alpha)$ 8−17449
  beam optical components, anal. of misalignment effects 8−13355
  bremsstrahlung thick-target, spatial distrib. of energy transfer meas. with miniature dosimeter 8−15897
  CAMAC and microprocessor appl. to target room control 8−37468
  CN type, Berlin, conversion to heavy ion injector 8−25346
  corona stalilisation systems 8−29668
  electrostatic generator computer control 8−29666
  FN-7 tandem, matching of heavy-ion direct extraction Penning source 8−13357
  FN-Tandem at Saclay, up-grading 8−33313
  JAERI 20 MV tandem accelerator *(Japanese)* 8−33308

Van de Graaff accelerators continued
LECH, beam energy stabilization analysis 8−25343
LECH, main data 8−25342
Middleton type negative ion sputter source for Van de Graaff terminal operation 8−17455
MP tandem, magnetic suppression on inclined field acceleration tubes 8−46184
MP tandem, Rochester, operating experiences since upgrading 8−25348
MP tandem Van de Graaff, large aperture accelerating tubes, use at high pots. 8−33316
MP-Tandem at Munich, diagnostic and control system 8−29667
MP-Tandem at Munich, light link coupled current monitor 8−33311
Munich MP tandem, beam optical components, anal. of misalignment effects 8−13355
Orsay MP tandem, review 8−13352
Orsay MP tandem, zero degree detection system 8−13353
Rossendorf tandem EGP-10-1, exptl. results 8−13358
stack insulators, acceleration tube elements, construction in 5 MV Van de Graaff at Atomki 8−33317
subnanosecond pulsing using passive coaxial pulse shaper 8−46186
suppressed accelerator tube installations, design, performance 8−33319
Tandem, 3.5 MeV, Greengate and Fabreeka belt performance 8−29669
tandem, beam quality restoration through gas prestripping of molecular ions 8−46185
tandem, in-beam γ-ray spectroscopy 8−13373
tandem, review and subsystem developments 8−13351
tandem accelerators, MV heavy ion injection 8−13356
tandem accelerators and nuclear phys. conf. 8−13349
tandems, review of research appl. 8−13350
XTU tandem of Lab. Nazionali di Legnaro (Padova) 8−13354
W ions, fractionally charged, search 8−29083

Van de Graaff generators
No entries

Van der Pol oscillators *see relaxation oscillators*

Van der Waals forces
atom-diatom van der Waals complex, Born-Oppenheimer separation of radial and ang. motion 8−29828
calculation method, based on phenomenological Hamiltonian for polarised system interaction with EM field *(Russian)* 8−5316
chromatography, hydrodynamic, role of colloidal forces 8−48717
condensed media, space correlation functions of particle numbers and energy densities *(Russian)* 8−1971
conducting media, macroscopic theory of van der Waals force 8−30876
electrolyte solutions, van der Waals forces, force density 8−42877
ethylene molecules, long range forces in multipole expsn., ab initio calcs. 8−9219
gas-liquid phase transition, Van der Waals' model 8−14445
Hamaker functions, calc. from coagulation data, influence of Stern layers 8−48698
inert gas crystal, correlation forces *(Russian)* 8−22686
inert gas crystal, dielec. const., Brillouin scatt., short-range at. interaction effect 8−43881
linear molecules, spherical harmonics expsn. 8−5312
macroscopic theory of Van der Waals forces between dielectrics 8−15139
metal, pair potential between two ions in electron gas 8−47723
metal surface, van der Waals, interaction with mol., effect of spatial dispersion 8−10534
metal surface-void van der waals interaction energy 8−10036
mica surfaces, van der Waals interactions 8−30973
nematic liquid crystal, self-consistency requirements 8−18541
noble metals, effect of forces on crystal structure 8−2062
particle transport to rotating disc surface under external force field 8−15718
pure fluids, augmented van der Waals theory 8−18518
solids in air, direct meas. 8−43461
sphere-wall attraction, many-body formula, approximation 8−21000
water, Van der Waals interaction, Kramers-Kronig eqn. with full spectral data vs. oscillator model approx. 8−5998
pp scatt., low energy, strong van der Waals interaction 8−41563
Ar line broadening by at. collisions, meas. of oscillator strength of ArI lines reson. *(French)* 8−5172
Ca_2, matrix isolated, vis. and near IR spectra 8−5214
CsBr, evaluation of van der Waals dipole-dipole pot. 8−22692
CsCl, evaluation of van der Waals dipole-dipole pot. 8−22692
CsI, evaluation of van der Waals dipole-dipole pot. 8−22692
H_2, Van der Waals constants, upper and lower limits, analytic eqns. 8−29831
H_2Ar, van der Waals complexes, lifetimes calcs. 8−13564
HBr, fundamental IR band, solvent effect *(Russian)* 8−13501
HCl(-acetone)(-acetonitrile), soln., IR absorption, H-bonding, solvent effect 8−29778
H_2O, Van der Waals dispersion coeffs., 2 well separated mols., sum rule moment calc. 8−5156
^4He superfluid film, neutron scatt., surface effects 8−10251
KrAr, photoionisation spectra of ground and excited states 8−5297
Li, dipole oscill. strength sums, dipole-dipole and dipole-quadrupole van der Waals consts. 8−9127
Li+H(He) 8−9127
Mg_2 matrix isolated, vis. and near IR spectra 8−5214
NaNe, van der Waals mol., form., laser spectroscopy 8−29797
O_2+inert gas atom, absolute total elastic cross sections 8−9220
Sr_2, matrix isolated, vis. and near IR spectra 8−5214
Xe_2, photoelectron spectra, $X^1\Sigma^+_{(1/2)g}$ ground state pot. 8−5280
XeAr(XeKr) photoionisation spectra of ground and excited states 8−5297

Van der Waals molecules *see quasimolecules*

vanadium
see also nuclei with ......
alkali chloride: V^{2+}, phonon induced zero field splitting 8−39073
anodisation, oxide struct., electronic current, and const. current efficiency 8−15575
atom, ionisation potential, term value, correlation energy by vertical anal. 8−41964
atom, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874

vanadium continued
atomisation, for graphite furnace AAS, using graphite platform 8−32877
band electron momentum distributions calc. 8−18950
creep, substruct. changes *(Russian)* 8−23782
determination, in Mg alloy, emission spectrographic DC arc-powder technique 8−48713
diffusion of H_2 *(Japanese)* 8−10221
diffusion of H and D, effect of impurities on coeff. 8−47604
diffusion of O and N, least squares computer technique 8−38881
diffusion of positive muons 8−47601
dynamic deformation, influence of previous static loading *(Russian)* 8−6972
electron-phonon interaction, calc. using APW band struct. calcs. and measured phonon spectra 8−14869
electronic density of states, effective mass, electron-phonon interaction, Coulomb pseudopot. *(Russian)* 8−26804
electropolishing for TEM obs. 8−31605
energy bands, Compton profile, optical cond., SCF LCAO calcs. Gaussian orbitals 8−47698
energy gap determ. by optical methods *(Russian)* 8−30867
erosion coeff. temp. depend., electron beam melting 8−17418
Fermi surface topology, associated plane wave calcs. 8−14660
flow stress temp. depend., effect of interstitial atom clustering and embrittlement *(Russian)* 8−34538
hyperfine particles, surface magnetisation, explanation of expt. work 8−23303
impurity in II-VI semiconductors, absorption and luminesc. spectra 8−15203
internal friction and elastic constants, reson. vibrs. of metal spheres 8−15443
interstitial impurity and substitutional solute interaction, internal friction meas. 8−10082
lattice distortion and migration energy of H impurities 8−30796
lattice distortion in migration energy of O impurities 8−30796
lattice dynamics, phonon dispersion and atomic force constants, phenomenological model 8−26640
lattice dynamics, vibr. spectrum and sp. ht., CGW model 8−22793
low temperature depend. of elec. resist., mag. suscept., heat capacity, Hall const. *(Russian)* 8−30900
muon$^+$ spin resonance, diffusion, temp. depend. 8−39490
muon diffusion, μ^+SR meas. 8−39487
neutron activation analysis for determ. of V in crude oil 8−20109
neutron diffraction measurements, search for antiferromagnetism *(Russian)* 8−6516
neutron irradiated, void swelling, O_2 effect 8−6106
neutron multiple scatt. calcs., expt. verification using polarisation anal. technique 8−42865
photoelectric cross sections of low energy photons 8−46309
plastic deformation, struct. changes *(Russian)* 8−48447
polycrystalline, 20 keV protons penetration depth, ultrasonic meas. technique 8−30677
polycrystalline plate, struct. facators, time of flight neutron diffr. 8−47212
positron annihilation, Doppler broadened lineshapes, prevacancy lattice expansion 8−27349
radiation hardening and plastic instability *(Russian)* 8−39842
slip geometry and dislocation struct., rel. to degree and temp. of deform. *(Russian)* 8−38717
sputtered film, compressive stress transition 8−10310
superconducting, Ginzburg-Landau parameters, magnetisation meas. 8−2620
superconducting rotating disc, flux expulsion and trapping 8−6488
superconducting wire, helical propag. of flux jumps 8−14901
superconductor, soft modes, d-electron localisation 8−14872
surface state, XPS investigation 8−11070
Tokamak reactor ISSEC 8−41860
ultrasonic velocity meas., mag. field depend. 8−19104
US waves interaction with cond. electrons, double-pulse comparison spectrometer appl. 8−1526
void formation from 200 to 700°C following heavy-ion irradiation 8−10104
XPS, valence bands 8−35249
α-Al_2O_3:(V^{3+}), optical absorption spectra, DC and AC field effects 8−10925
Al_2O_3:V, V^{3+} pairs studied by phonon freq.-crossing spectroscopy 8−39068
Al_2O_3:V^{3+}, $g_\perp/g_\parallel$ determ. by freq. crossing spectroscopy using thermal phonons 8−23055
α-Al_2O_3:V^{3+}, near IR spectra, line lifetime, 2, 10, 77K 8−10972
CrN-VN, rhombic distortion of cryst. lattice at low temp. 8−2253
Fe-Ni-V, cryogenic toughness, strength, rel. to reactive metal addition 8−39885
$KMgF_3$:V^{2+}, zero-phonon line splitting in $T\times\varepsilon_g$ Jahn-Teller problem 8−19006
MgO:V^{2+}, zero-phonon line splitting in $T\times\varepsilon_g$ Jahn-Teller problem 8−19006
$(NH_4)_2SO_4$:VO^{2+}, ferrielectric phase transition, two-sublattice model, EPR of polar VO^{2+} probes 8−48127
PbO-SiO_2:V^{4+} glass, EPR 8−39392
V I in solar photosphere, oscillator strength computation 8−40905
V XXII, X-ray spectra from laser plasma 8−17596
V^{4+} ion complexes in diamagnetic crystals, ground state wavefunctions, hyperfine interaction parameters, EPR meas. 8−19311
V:transition metal, linear expsn. temp. coeff., polymorphic transition temp. shift 8−6164
V-C sandwiches, energy gap fluctuations *(Russian)* 8−34930
V-H, H effect on tensile props. at moderate temps. *(Japanese)* 8−19831
V-H, incoherent spinodals, meas. by Gorsky effect 8−19712
V-O alloy, temp., dose and conc. depend. of void form. following V^+ ion beam irradiation 8−10105
V-VO_x-Pb Josephson tunnel junction, crit. currents exam. 8−23209
YIG:V, mag. anisotropy and magnetostriction, effect of V 8−27029

vanadium alloys
see also vanadium compounds
A15 compounds, mode softening and high supercond. crit. temp. 8−14851
binary alloys with group IIIB and IVB elements, coord. polyhedra 8−9997

vanadium alloys continued
Cr-Mo-V steel turbine rotor, fatigue tests 8−39912
steel, 30N9K4, effects of Mo, V, and N on grain growth, tempering, hardenability, strength and toughness 8−44202
steel, Cr-Mo-V, combined Cr-Mn addition effects on hardenability 8−7046
steel, Cr-Mo-V, creep, effect of microstruct., heat treatment, transform. temp. 8−11248
steel, Cr-Mo-V, creep fatigue interactions obs., strain controlled and load controlled tests 8−44214
steel, Cr-Mo-V, cyclic oxidation and crack growth during high strain fatigue 8−31586
steel, Cr-Mo-V, high-temp. cumulative damage for stage I crack growth 8−19883
steel, Cr-Mo-V alloy, crack growth during strain fatigue at 825K 8−39890
steel, Cr-Mo-V creep crack growth, relation between engineering and metallurgical factors 8−11321
steel, Cr-Ni-Mo-V-Nb (12,8,1,1.5,0.4 wt.%) Ce addition effects on strength and hardness *(Russian)* 8−15454
steel, Mo-V, creep rupture strength, rel. to microstruct. *(German)* 8−35467
steel, NiCrMoV, stress corrosion cracking, cold work effects 8−11383
steel, V, tempering, initial stages of carbide form., electron diffr. *(Russian)* 8−19760
steel electrode, erosion resist., influence of C and carbide-forming elements *(Russian)* 8−11389
strengthening in internal oxidation *(Japanese)* 8−11493
V-Fe (29-35 at%), ferromag., mag. props. near crit. conc. for ferromagnetism 8−19225
Vicalloy 1, dilatometric anomalies and α to γ transform., effect of heating rates *(Russian)* 8−39762
Al alloy 7075, $CrAl_7$ form., effect of V and Zr 8−44132
Al-V-Ti, SiC coated B fibre reinforced, tensile and compressive strength, prior thermal treatment effect 8−11264
$Al_{10}V$, well defined local modes 8−26648
$Al_{10}V$-Ga, dil., well defined local modes 8−26648
Au-V, dil., ^{51}V CW NMR line width anal., RKKY broadening 8−15033
Au_4V, effect of structural changes on phys. props. 8−31400
Cr-V, cast, B additions effect on struct. and props. *(Russian)* 8−19891
$Cr_{1-x}V_xCo$, localised mag. moment of Co impurity 8−27014
$Cr_{1-x}V_xCo$, mag. state of Co impurity, NMR exam. 8−27100
$Cr_{1-x}V_xCo$, $x \leq 0.05$, antiferromag., nucl. mag. relax. 8−6590
Cu-V-Ga dil. alloys with V_3Ga particles, supercond. props. and microstruct. 8−39278
Fe-Ni-V, effect of low temp. ageing on props. during high temp. ageing *(Russian)* 8−39811
Fe-Ni-V alloy, ageing of martensite *(Russian)* 8−39808
Fe-Ni-V-(CO) alloy, lattice parameter variation during ageing *(Russian)* 8−39812
Fe-V, conc. depend. of mag. moment distrib., polarised neutron diffr. meas. 8−19218
Fe-V, nitrided, struct. and props. 8−19950
Fe-V (1.06, 5.23, and 15.55 wt.%), nitriding 8−3253
Fe-V alloys, Mossbauer study, hyperfine field effect on formation of local moments 8−27134
Fe-V-C melts, electron struct., mag. susceptibility meas. *(Russian)* 8−47729
Fe-VN-C-Mn-Si, dispersion hardening effect on mech. props. 8−3137
Fe-VN-(C), dispersion hardening effect on mech. props. 8−3137
$Fe_{3-x}V_xSi$, limits of solubility, mag. props. and electron conc. 8−10670
HfV_2, C15 Laves phase, supercond. and stoichiometry 8−39245
α-IrV, internally deformed struct. as source of homogeneous linear struct. 8−26497
Nb-V, valence bands, X-ray M- and L-emission bands obs. *(Russian)* 8−19602
Nb-V (20 at.%), optical props., 0.1-25 eV, band models 8−10892
Ni-Mo-Al-V, high-resist., struct. transforms., TEM *(Russian)* 8−19762
Ni-V, ferromag. reson. meas., anisotropy consts. determ. 8−39410
Ni-V, weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8−31063
NiAl-V join, phase relations and eutectic directional solidification 8−31396
Ni_3V, dissociation of $^1/_2\langle 112\rangle$ perfect dislocations and nature of slip dislocations 8−43022
Ni_3V, stacking faults, twinning deform., electron microscopy obs. 8−6070
Pd-Ru-V, elec. resist. and thermal cond. *(Russian)* 8−19017
Ti-Al-Cr-Mo-U, alloy VT22, phase composition and fatigue strength 8−3219
Ti-Al-Mo-V (8, 1, 1 wt. %), stress corrosion cracking and slow strain rate H_2 embrittlement 8−48569
Ti-Al-U (6,4 wt.%), low and high cycle fatigue rupture at same load 8−3217
Ti-Al-V, (6,4 wt.%), history dependent steady state creep rate 8−39866
Ti-Al-V, (6.7, 4.3 wt.%), fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510
Ti-Al-V, long-term corrosion stability rel. to use in joint endoprostheses 8−36059
Ti-Al-V, plane strain toughness and resistance to crack propagation *(French)* 8−23813
Ti-Al-V (6, 4 wt.%), compliance calibration results 8−19798
Ti-Al-V (6, 4 wt.%), ring test, evaluation for strain rate sensitive materials 8−39991
Ti-Al-V (6, 4 wt.%), texture effect on fatigue crack path 8−27633
Ti-Al-V (6, 4 wt.%), Widmanstatten, microstructurally sensitive fatigue crack growth obs. 8−27627
Ti-Al-V (6,4 wt.%), improved toughness from prior β-grains 8−15522
Ti-Al-V (6,4 wt.%), sustained loading charact. and H_2 effects 8−48515
Ti-Al-V (6,4 wt.%) superplastic deform. 8−31471
Ti-Al-V (6,4wt.%), galvanic couple with Al alloys, velocity effect on corrosion 8−35566
Ti-Al-V-Cr-Mo-Zr (3,8,6,4,4 wt.%), beta-C, microstruct. effect on mech. props. 8−27577
Ti-Al-V-Sn (5.5, 5.3, 2.3 wt.%) fatigue crack growth and fracture resistance enhancement, due to annealing 8−35510
Ti-Al-V-Sn-Zr alloy TS5, annealing effect on ductility and strength *(Russian)* 8−35427

vanadium alloys continued
Ti-Al-V-Sn(Mo-Fe), heavy section extrusion, fabrication and mech. props. 8−6985
Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8−3153
Ti-V (40 at.%), BCC, single crystal, fatigue and slip 8−19854
Ti-V-Si, equlibrium silicide, X-ray and electron diffr. obs. 8−27483
U-Q^5, Q^5=quint, stress corrosion cracking in moist air, salted moist air and salt water 8−35562
V-Cr(Fe)(Nb)(Ti), diffusion of H_2 *(Japanese)* 8−10221
V-D alloys, low frequency internal friction study 8−48444
V-H, H effect on fatigue crack propag. 8−48516
V-H, incoherent spinodals, meas. by Gorsky effect 8−19712
V-H, phase diagram, resistometric contribution 8−15372
V-H system, DTA, phase diagrams, low temp. phase 8−6903
V-N system, phase formation *(Russian)* 8−39739
V-Nb, mech. props., −196-1000°C, comp. depend. 8−39847
V-Nb, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
V-Nb-Ta, supercond., elec. resist. and electron-phonon interaction parameters 8−14862
V-O alloy, temp., dose and conc. depend. of void form. following V^+ ion beam irradiation 8−10105
V-Pd, dil. alloys, surface segreg. 8−18883
V-Sm, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
V-Ti, vacuum deposited supercond. films, T_c chem. comp. depend. *(Russian)* 8−19174
V-Zr-C, erosion coeff., temp. depend. reactor wall swelling due to He ion bombardment 8−17418
V-Zr-C, radiation hardening and plastic instability *(Russian)* 8−39842
V-Zr-N quasi-binary section, long term hardness to compare heat resistance 8−3223
V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8−10594
V_3 Ga, high T_c supercond., electron-phonon coupling, effect of electronic density of states sharp struct. 8−14877
V_3Ga, A15 compound, exam. of deformation processing, review 8−39864
V_3Ga, band theory, semiself-consistent band calcs. 8−2406
V_3Ga, grain size in A-15 reaction layers 8−14911
V_3Ga, NMR and mag. suscept. *(Russian)* 8−39420
V_3Ga, self-consistent APW band struct. calc. 8−47697
V_3Ga, single crystal prep. by iodine transport, supercond. T_c meas. 8−48294
V_3Ga, supercond., prep. from V-Al and Cu-Ga, crit. temp. and field 8−43506
V_3Ga-NbN point-contact Josephson junction, fabrication and characts. 8−19189
V_3Ge, band theory, semiself-consistent band calcs. 8−2406
V_3Ge, low temp. props., mag. suscept. and resistance 8−19213
V_3Ge, superconducting, high transition temp., sputtering 8−15309
V_2Hf, NMR meas., mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359
$V_{1-x}Pt_x$, A-15 struct., Knight shift in normal state, upper crit. field curves *(French)* 8−43519
VSi_2 thin film growth rel. to annealing environment and interposed layers 8−2395
V_3Si, A15 compound, exam. of deformation processing, review 8−39864
V_3Si, band theory, semiself-consistent band calcs. 8−2406
V_3Si, chemical composition effect on phase transition and transition temp. 8−14860
V_3Si, complex refr. index and reflectivity of thin film, microscopic characts. and superconductivity 8−31267
V_3Si, elec. resist. below 77K, phonon assisted interband scatt. 8−14703
V_3Si, electronic struct., electron-phonon interaction and high temp. superconductivity, APW calc. 8−14871
V_3Si, grain size in A-15 reaction layers 8−14911
V_3Si, H_{c2} anisotropy in high field, grain boundary flux pinning 8−43532
V_3Si, Hall effect, 77K to superconducting transition temp. 8−43359
V_3Si, high T_c supercond., electron-phonon coupling, effect of electronic density of states sharp struct. 8−14877
V_3Si, lattice dynamics, inelastic coherent neutron scatt. 8−26645
V_3Si, low fluence neutron irradiation, behaviour of supercond. transition temp. 8−43509
V_3Si, martensitic transform. coupling with supercond. transition 8−44126
V_3Si, phase transition and transition temp., chemical comp. effects, defect struct. exam. 8−18651
V_3Si, phys. props., appl. of new three-dimens. k.p model for A-15 cpds. 8−23015
V_3Si, press. depend. of positron lifetimes 8−11015
V_3Si, soft mode sound vel. in mag. field rel. to density of states 8−14647
V_3Si, sp. ht. anomaly at struct. transform. 8−14426
V_3Ti, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
V_2Zr, NMR meas. mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359
Ve-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
ZrV_2, supercond. rel. to struct. instability *(Russian)* 8−23196

vanadium compounds
see also vanadium alloys
resin:VO^{2+}, interaction with ligands, EPR meas. 8−10756
TGS:VO^{2+}, polarisation reversal, static hysteresis loops, switching, EPR 8−43633
B_2O_3-V_2O_5, thermal cond. of melt in region 900 to 1100°C, effect of convection 8−2309
Bi_2O_3-V_2O_5, sintered, high oxide ion cond. meas. 8−14503
$C(NH_2)_3V\ (SO_4)_2.6H_2O$, low temp. mag. props., mag. sp. ht. *(Japanese)* 8−19268
$CaO.V_2O_5$, reduction by Al powder for V production 8−44049
CaVG, polycryst. IR transmission spectra rel. to Faraday rotator and modulator appl. 8−10900
$(CdSO_4)_3.8H_2O:VO^{2+}$, polycryst., struct., EPR 8−15014
$CoK_2(SO_4)_2.6H_2O:VO^{2+}$, ESR, ion orientations 8−48029
$Cr_{1-x}V_xN$, solid soln., mag. struct. *(French)* 8−6519

vanadium compounds continued
- $Cr_{1-x}V_xN$ solid solution, X-ray diffr. structure exam. at low temp., deformation study *(French)* 8−2069
- $Cu_{0.75}VS_2$, cryst. struct. and phys. props. *(French)* 8−14328
- $Eu_3VTa_2O_9$, prep., characterisation and mag. props. 8−26535
- $Fe_{1+x}V_{2-x}O_4$ spinels, prep. and negative resist. characts. *(Korean)* 8−39119
- $(Fe_xV_{1-x})V_2S_4$, and $(Fe_xV_{1-x})V_4S_8$, mag. props. 8−27034
- KH_2PO_4:VO^{2+}, EPR spectra, Hamiltonian parameters, ferroelec. transition 8−39387
- K_2SO_4:VO^{2+}, polycryst., struct., EPR 8−15014
- $Li_{0.5}Fe_{2.5}O_4$-$Bi_2O_3(V_2O_5)$ systems, phase diagrams, sintering conditions 8−35366
- $Mg(NH_4)_2(SO_4)_2.6H_2O$:VO^{2+}, polycryst., struct., EPR 8−15014
- $(NH_4)_2SO_4$:VO^{2+}, ferrielectric phase transition, two-sublattice model, EPR of polar VO^{2+} probes 8−48127
- Na_2O-SiO_2:VO^{2+} glass, optical absorption spectra *(Japanese)* 8−42918
- $NaVO_3$-BaV_2O_6-SrV_2O_6, phase diagrams, simple eutectic system 8−48379
- SnO_2-VO_x-PdO ceramic, switching and oscill. phenomena 8−6417
- $Sr_3VTa_2O_9$, prep., characterisation and mag. props. 8−26535
- Ti-V-C-N, solid solns., quasibinary cross sections 8−23676
- TiN-VN refractory powder composite, resistors, produced in low temp. 8−11182
- V complex, BaVO(EDTA).$6H_2O$, cryst. and mol. struct., X-ray diffr. obs. *(Russian)* 8−30601
- V complex with carboxylate, channel model in exchange theory 8−14950
- V-H system, DTA, phase diagrams, low temp. phase 8−6903
- V-Mn-O system, phase comp. during oxide prep. 8−27447
- V-S system, order-disorder transition of metal vacancies, statistical thermodynamics 8−43012
- V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
- V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
- V-VO_x-Pb Josephson tunnel junction, crit. currents exam. 8−23209
- $V_{0.985}Al_{0.015}O_2$, struct. aspects of metal insulator transitions 8−18965
- $V_{1-x}Al_xO_{2\pm y}$, mag. and struct. props. meas. 8−2658
- VC, energy band struct., chem. bonding 8−18958
- VC, final-state effects in C Auger spectra 8−6818
- VC, metastable supercond. phase, effects of rapid quenching on transition temp. 8−2611
- VC, valence band struct. *(Russian)* 8−6268
- VC-TiC coating, high rate deposition by activated reactive evaporation, and characterisation 8−11372
- VC_x, surface state, XPS investigation 8−11070
- $V(CO)_6$, paramag. matrix isolated species, MCD spectrosc. appls. 8−46378
- VCl_4, intensity changes between He(I) and He(III) photoelectron spectra 8−21969
- VCl_4, Raman spectra and selection rules, Jahn-Teller splitting 8−988
- $V_{1-x}Cr_xO_2$, VPE and elec. and optical characterisation 8−3053
- $V_{1-x-z}Fe_xMo_zO_2$, Mossbauer effect exam., Fe conc. and precise struct. characteristics 8−31141
- $V_{1-x}Fe_xO_{2-y}$, Mossbauer effect exam., Fe conc. and precise struct. characteristics 8−31141
- VH_x, NMR, phase transition obs., activation energy for H diffusion meas. *(Russian)* 8−27506
- VN_{1-x}, vacancy ordered structure in cubic mononitride phase, transition entropy determ. 8−43011
- VN_x, surface state, XPS investigation 8−11070
- $V_{11-z}Nb_zGe_8$, cryst. struct. *(French)* 8−38675
- VO, (001) surface, spectral density of states 8−39187
- VO^{2+} ion, in calcium tartrate tetrahydrate, optical absorption spectrum 8−6713
- VO_2, CVD behaviour *(German)* 8−23625
- VO_2, film, absorption spectra, semicond.-semimetal transition 8−19512
- VO_2, metal-insulator transition, resist. meas. 8−14770
- VO_2, metallic, electronic struct., lattice instability 8−14664
- VO_2, quasi-one-dimens. system, appl. of qualitative theory for phase transitions 8−31086
- VO_2, semicond. phase, optical spectrum, CNDO CI calc. 8−27258
- VO_2, sputtered, switching effects in four-electrode structures 8−2596
- VO_2, V_2O_3, V_3O_5, isotope effect on metal-dielectric phase transitions temp. *(Russian)* 8−34771
- VO_2, VPE and elec. and optical characterisation 8−3053
- VO_2, X-ray Lα emission spectra of V 8−2947
- VO_2:Al(W), thin layer prep. by reactive DC sputtering doping effectiveness *(German)* 8−6847
- $VO_{(0.67\ \mathrm{to}\ 0.44)}C_{(0.20\ \mathrm{to}\ 0.70)}$, production by carbothermic reduction of VO_3, evaluation as ladle addition to molten steels 8−40049
- VO_x, minimum conductivity and electron localisation near metal-insulator transition 8−30960
- VO_x, surface state, XPS investigation 8−11070
- V_2O_{2n-1}, V_6O_{13}, V_2O_5, Magneli phases, chem. transport using $TeCl_4$ *(German)* 8−31343
- V_2O_3, 500 to 530K, magnetic susceptibility meas., high temp. transition, interacting Hubbard bands 8−39325
- V_2O_3, film, absorption spectra, semicond.-semimetal transition 8−19512
- V_2O_3, lattice parameter anomalies at high temp. 8−47522
- V_2O_3, phase transitions, Raman scatt. expts., 20-300K 8−39538
- V_2O_3:Al, struct., props., rel. to V_2O_3:Cr, X-ray diffr. and elec. resist. obs. 8−2531
- V_2O_3:Cr, struct., props., rel. to V_2O_3:Al, X-ray diffr. and elec. resist. obs. 8−2531
- V_2O_3-M_2O_3, M=Ti, Cr, struct. and mag. props. 8−27041
- V_2O_4, struct. from electron microscopy of Tyep F-2 fibre 8−2087
- V_2O_5, dielec. polarisation, permittivity meas., 50-200K *(Russian)* 8−39498
- V_2O_5, etching characts. by plasma reactive sputter etching 8−27661
- V_2O_5 film, electrochromism, X-ray electron spectra 8−48146
- V_2O_5 film, optical absorption in 1.0 to 5.5 eV range 8−19586
- V_2O_5, $Li_xV_2O_5$, and $Na_xV_2O_5$, catalytic behaviour in decomp. of isopropanol, 186-300°C 8−11553
- V_2O_5, splat-cooled, crystallisation, high-press. effects 8−9956
- V_2O_5, water in noncryst. solid, quenching of molten V_2O_5 *(French)* 8−42912
- V_2O_5-GeO_2-PbO glasses, memory and threshold switching 8−23142
- V_2O_5-P_2O_5, glass, DC cond. meas. high temp. range 8−6376

vanadium compounds continued
- V_2O_5-P_2O_5-CaO glass with metal electrodes, elec. characts., thermal conditions effect *(Russian)* 8−47884
- V_2O_5-TeO_2 glasses, ESR spectra 8−10755
- V_2O_5-TeO_2 system, vitreous, struct. obs. using neutron scatt. 8−22667
- V_2O_5-TiO_2 interface, role of struct. props. in interfacial reactions 8−31688
- V_2O_5-water, EPR of ${VO_{aq}}^{2+}$ formed by solar light photoreduction, electrolysis appl. 8−11540
- V_3O_5, dielec.-metal transition obs. and interpretation *(Russian)* 8−23023
- V_3O_5, insulator-metal phase trnasition at 450K, properties 8−39023
- V_3O_5, metal-insulator transition, effect of doping *(German)* 8−30869
- V_3O_5, semiconductor metal transition, IR spectra obs. *(German)* 8−23456
- V_3O_5, struct. and electronic aspects of cond. transition 8−15078
- V_4O_7, cryst. atomic struct., 120K and 298K 8−34486
- V_6O_{11} single crystals, heat capacity anomaly at 172K 8−10197
- V_6O_{13}, low temp. phase, cryst. struct. 8−42979
- V_nO_{2n-1}, cryst. growth and characterisation 8−31311
- V_nO_{2n-1}, X-ray Lα emission spectra of V 8−2947
- V_nO_{2n+1}, X-ray Lα emission spectra of V 8−2947
- V_xO_y, film, preparation by calcining vanadium naphthenate, formation process exam. *(Japanese)* 8−30849
- $VO[UO_2(SO_4)_2].6H_2O$, synthesis and crystallographic data 8−26532
- V_4O(β-phase), X-ray study of precipitated phase *(Ukrainian)* 8−6928
- $V_{0.4}Os_{0.6}B_2$, V_2OsB_2, cryst. chem. and struct. 8−42995
- V_3P, superconducting transition temp. 8−47898
- $V_{1-x}Re_xO_2$ $(0\leqslant x\leqslant 0.15)$; insulator-metal transition, DTA, X-ray, mag. and elec. meas. 8−10353
- V_5S_8, metallic evidence of spin flopping by magnetoresist. meas. 8−6352
- $V_{2-x}Sb_xO_4$, defect struct. exam. 8−18635
- VSe_2 phase, stability and Se equilib. vapour press., homogeneity range 8−43133
- V_3Si, quasi-one-dimens. band struct. 8−19596
- $V_{1-x}Ti_xO_{1.75}$, synthesis and mag. susceptibility obs. 8−23243
- $V_{1-x}Ti_xO_2$, metal-insulator transition, resist. meas. 8−14770
- $ZnSO_4.7H_2O$:VO^{2+}, single cryst., struct., EPR 8−15014

vanadium phosphate semiconductor glasses *see amorphous semiconductors*

vaporisation
- *see also boiling; evaporation; heat of vaporisation; sublimation*
- arc roots, high current, vaporisation effect 8−30496
- droplet vaporisation in moderately-high temp. stationary media, Chang model 8−34609
- droplets, vaporising, in gas stream in channel laminar entry region 8−30347
- F 8−43113
- falling film vaporising surfaces, heat transfer coeff. 8−9542
- humid atmosphere, water droplet vaporis. model with natural convection 8−33999
- ionic solid volatilisation, surface charge effects 8−14457
- Langmuir method of vaporisation meas., compact collector device 8−6150
- laser vaporised surface, free jet expsn. of vapour 8−1703
- metal cone, vaporisation, solution by wave front method 8−5640
- metal vaporization rate improvement in electron-beam vaporizers with water-cooled crucibles 8−21266
- rare earth metal-B systems, phase equilibria, phase diagrams, book contrib. 8−48389
- Ag, vaporization, thermodynamic props. determ. by mass spectroscopy 8−22841
- Al oxidative vaporisation, thermochemical analysis 8−11447
- Al_2O_3, high temp. gas phase equilib. formation enthalpy, dissoc., mass spectra 8−23925
- As_2S_3, mass spectrometric analysis 8−22843
- Cr oxidative vaporisation, thermochemical analysis 8−11447
- Cu, vaporization, thermodynamic props. determ. by mass spectroscopy 8−22841
- $EuBr_2$, vaporisation thermodynamics, enthalpy sublimation 8−22837
- Eu_2O_3+$EuPO_4$ in Mo crucible, $EuMoO_4$ and $EuMoO_3$ atomisation energy 8−40073
- $EuPO_4$ in Mo crucible, $EuMoO_4$ and $EuMoO_3$ atomisation energy 8−40073
- $FeBr_2$, UV-visible absorpt. spectrum, vaporisation thermodynamics 8−13512
- $Fe_{1-x}O$, wustite, vaporisation, mass spectrometric analysis of gaseous phase 8−48652
- Fe_3O_4, magnetite, vaporisation, mass spectrometric analysis of gaseous phase 8−48652
- Mg, heating by shock compression, of porous material, vap. form. *(Russian)* 8−2195
- P_4S_{10}, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
- P_4S_3, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
- P_4S_7, gas, vaporisation and thermal dissoc. obs. *(French)* 8−47511
- Pt oxidative vaporisation, thermochemical analysis 8−11447
- Pt-Ba cathode, vaporisation expts., heat of adsorpt. and migration of Ba on Pt 8−10272
- Si oxidative vaporisation, thermochemical analysis 8−11447
- ThO_x:Y_2O_3 solid electrolyte high-temp. vaporisation obs. 8−14456
- UCl_4, vaporisation thermodynamics 8−44394
- ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8−26663

vaporising *see vaporisation*

vapour density *see density of gases*

vapour deposited coatings
- *see also CVD coatings; sputtered coatings; vacuum deposited coatings*
- automated vapour deposition apparatus based on programmable calculator 8−44022
- cobalt, phthalocyanine, sublimed film, absorption spectra and association 8−48174
- columnar microstructure, shadowing mechanism 8−22987
- copper phthalocyanine, sublimed film, absorption spectra and association 8−48174
- growth morphology, effect of absorbed gas 8−11370
- mech. props. 8−6247
- metal, chemisorpt. of O_2 active sites, chemiluminesc. and vacuum microbalance obs. 8−22950
- optical, thickness monitoring using quartz cryst. monitor 8−5592
- optical film, thickness monitoring 8−5591

vapour deposited coatings continued

- pentacene, evaporated film elec. cond. meas. for various temps., SCL 8−10584
- prism-film coupler, for investigation of thin films condensed onto cold substrate 8−24873
- techniques, comparison between electron beam evaporation and high rate with plasmatron 8−11110
- Ag, ion beam plating using mass analysed ions, SIMS and AES expts. 8−19673
- Al, film deposition from metal plasmas 8−6859
- AlN film, Si doping by DC glow discharge 8−19674
- AlN, nonlinear optical susceptibility, SHG expts. 8−30012
- Au black solar absorber, struct. comp. and optical props. 8−27339
- Au films, condensation on alkali halides, growth, struct., stability *(French)* 8−38989
- Au, ion beam plating using mass analysed ions, SIMS and AES expts. 8−19673
- B, amorphous film, Raman scatt. exam. 8−39545
- Bi$_{1-x}$Sb$_x$ film, evaporated, cross-sectional struct., electron microscopy and replica technique study *(German)* 8−22977
- C, ion-plated, on metal, deposition method, graphitic struct., and tribological props. 8−11440
- CdS film, surface stoichiometry rel. to CdS-Cu$_2$S cell performance 8−2956
- CdS film preferred orientation, internal stress, and interface characteristics 8−26795
- Cr, on mild steel, hardness and protective props., rel. to grain size 8−11436
- Cr ultrafine particles, selective solar energy absorption 8−18027
- Cr-C, deposited by hollow cathode discharge, characterisation 8−11371
- Cr-N, deposited by hollow cathode discharge, characterisation 8−11371
- CsI, secondary emission yield, primary electron ang. of incidence effects 8−2961
- Cu, film deposition from metal plasmas 8−6859
- Cu, ion plating onto ABS plastics, expt. study *(Japanese)* 8−6858
- Cu, on ceramic substrate, RF bias ion plating process and microstruct. 8−11132
- Cu-Cr, vapour deposited, electron irrad., resistance behaviour *(German)* 8−47779
- Cu-Fe, vapour deposited, electron irrad., resistance behaviour *(German)* 8−47779
- Cu-Ni evaporated thin film couple interdiffusion obs. 8−43187
- Fe-Cu alloy, struct. and thermal stability 8−43265
- Fe-Ni-Cr vapour deposited film metastable phase formation *(German)* 8−38984
- Ga, film, polymorphism, electron diffr. obs. *(French)* 8−18922
- Ga$_x$Al$_{1-x}$N film, growth and props. 8−39702
- GaAs film, vapour-grown, effect of gas-phase stoichiometry on deep levels 8−10393
- Gd-Ag (0-16 at.%), vapour-quenched, struct. and mag. props. 8−38980
- LiF, secondary emission yield, primary electron ang. of incidence effects 8−2961
- Mo film on Si surface, MoSi$_2$ form. conditions *(French)* 8−43270
- Mo, on ceramic substrate, RF bias ion plating process and microstruct. 8−11132
- Nb selective plasma etching 8−39940
- Nb$_3$Sn, vap. deposited supercond. film, effect of N$_2$ and tape heating 8−34939
- NiSi$_2$, layer, on Si, ion implantation damage, channelling obs. 8−30676
- Pd$_2$Si layer, on Si, ion implantation damage, channelling obs. 8−30676
- Ru layer, 2-3 μm thick, ion plating and characterisation 8−11131
- Sb$_2$O$_3$-SnO$_2$ film vapour deposition in conveyor furnaces *(French)* 8−15311
- n-Si-Ag(Au) evaporated contact photoelectric props. *(Russian)* 8−43473
- Si$_3$N$_4$ off-stoichiometric plasma-deposited layer, AES evaluation of comp. 8−26781
- Si$_3$N$_4$ protective coatings on Mo, RF reactive ion plating 8−3250
- Ti, on ceramic substrate, RF bias ion plating process and microstruct. 8−11132
- TiC coated high speed steel, machining of steel 4340, tool life 8−11435
- TiC-Au film, prep. by activated reactive evaporation, struct. and mech. props. *(Japanese)* 8−3252
- TiN$_x$, synthesis by enhanced activated reactive evaporation 8−39705
- TiO$_x$ film, growth and struct. determ. 8−48328
- VC-TiC, high rate deposition by activated reactive evaporation, and characterisation 8−11372

vapour deposited thin films *see vapour deposited coatings*

vapour deposition

- *see also chemical vapour deposition; crystal growth from vapour; electron beam deposition; ion plating; sputtering; vacuum deposition*
- crystal nucleation on substrate, two-barrier thermodynamic pot., nuclei size distrib. 8−10300
- diamond, polycrystalline film growth from gas phase 8−48332
- film, adatom diffusion and capture by clusters, random-walk problem 8−2385
- ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
- molecular beam deposition apparatus, design and construction *(Japanese)* 8−23632
- molecular beam deposition apparatus *(Japanese)* 8−23631
- organic films, electronics and communications engineering appls. *(German)* 8−44011
- source configurations in thermal evaporation technique, deposition distrib. eqns. *(Polish)* 8−31339
- AlN, cpd. form. reaction in reactive evaporation, quadrupole mass analysis *(Japanese)* 8−23628
- CdS photoanode, for photovoltaic cells, prep. and characts. 8−14818
- Cu$_x$Mo$_6$S$_8$, evap. film prep., supercond. props., lattice parameters 8−23195
- Cu$_2$S-CdS solar cells, prep. and stoichiometric control of Cu$_2$S film 8−2560
- InSe luminescent film, production and characterisation *(Russian)* 8−39581
- MnTe, film, vapour deposition 8−47677
- Nb-Al, prep. from gaseous phase *(Russian)* 8−27451

vapour deposition continued

- SnO$_2$, transparent, on glass plates, in tunnel furnace *(Hungarian)* 8−35303
- TiC, cpd. form. reaction in reactive evaporation, quadrupole mass analysis *(Japanese)* 8−23628
- ZnS(Se)(Te) film, on semicond. substrates, early stages of growth, electron microscope obs. *(Russian)* 8−38976

vapour-liquid transformations *see liquid-vapour transformations*

vapour phase epitaxial growth

- crystal growth by MBE, devices and materials, review 8−39707
- CVD reactors, transport phenomena meas. 8−39701
- fine structure formation *(French)* 8−43275
- Ge-Si structures, molecular beam method, ion sputtering method 8−3060
- ionised-cluster beam deposition, epitaxy *(Japanese)* 8−48329
- ionised-cluster beam deposition and epitaxy, for electronic device fabrication 8−11133
- MBE, appl. to II-VI compounds *(Japanese)* 8−15317
- MBE, vacuum interlock system 8−48330
- MBE in space 8−35317
- molecular beam epitaxy apparatus, controlled by quadrupole mass spectrometer *(French)* 8−15315
- potentially superior method of preparing semicond. devices *(Czech)* 8−44027
- review of growth and appl. 8−22966
- semiconductor, MBE, doping impurity transport, free carriers effect 8−26793
- semiconductor, mol. flow in vac., free carriers effect on doping impurity distrib. 8−47682
- semiconductor compound films, formation and structure *(Japanese)* 8−22979
- stepped substrate-adsorbed layer interaction, selective effect on epitaxy 8−14616
- vapour growth, element incorporation 8−30556
- Ag, epitaxial growth and reaction with SnTe substrates 8−14640
- AlAs-GaAs film heterojunction, VPE growth and characts. 8−6439
- Al$_X$Ga$_{1-x}$As, VPE growth and characterisation 8−35315
- Al$_y$Ga$_{1-y}$As-Al$_x$Ga$_{1-x}$As laser struct., for integrated optics, MBE 8−13817
- AlN film, epitaxial growth by reactive evaporation *(Japanese)* 8−23629
- Au film, epitaxial growth on Ag(111) surface, LEED meas. 8−14632
- Au, growth on clean and contaminated GaAs (001) surfaces 8−26785
- BP, CVD on Si substrate, cryst. imperfections 8−10294
- Bi$_{12}$TiO$_{20}$, RF sputtered epitaxial film on Bi$_{12}$GeO$_{20}$, for optical waveguiding 8−9462
- Cd$_x$Hg$_{1-x}$Te, VPE on CdTe *(Russian)* 8−11129
- CdS, epitaxial layers on (111) Ce, growth and defect struct. 8−18920
- CdSe on ZnTe (111), monocrystalline layers 8−14631
- CdSe$_x$Te$_{1-x}$, solid solns., epitaxial layer prod. 8−23619
- CrCl$_2$, epitaxial relationships studied by RHEED and Auger emission spectra *(French)* 8−22990
- CrO$_2$, epitaxial growth on sapphire in air 8−27414
- Fe epitaxial growth on Au single crystals, substrate temp. effect on morphology 8−26798
- Fe, on Au, growth processes, ultra high vac. in situ electron microscopy 8−30842
- FeCl$_2$, epitaxial relationships studied by RHEED and Auger emission spectra *(French)* 8−22990
- Ga$_{1-x}$Al$_x$As, alternate monolayer crysts., MBE and props. exam. 8−10289
- Ga$_{1-x}$Al$_x$As-Ga$_{1-y}$Al$_y$As DH laser, grown by organometallic CVD, room temp. operation 8−29950
- Ga$_{1-x}$Al$_x$As-GaAs, CVD laser diodes, operation and growth processes 8−46598
- Ga$_{1-x}$Al$_x$As-GaAs, room temp. DH laser, CVD growth 8−37912
- Ga$_{1-x}$Al$_x$As-GaAs laser, DH, grown by metalorganic CVD, room temp. operation 8−13702
- GaAs, by pyrolysis, producing power GaAs MESFETs 8−23623
- GaAs, epitaxial growth in Ga(CH$_3$)$_3$-AsH$_3$-H$_2$ system 8−35312
- GaAs, epitaxial growth under different intake supersaturations in GaAs-AsCl$_3$ gas transport system *(Russian)* 8−26776
- GaAs, epitaxial layer growth by chloride process, μ and subμ thickness 8−23624
- GaAs film on recrystallised Ge film, solar cell appl. 8−19671
- GaAs, hydride VPE growth for FETs, and characterisation 8−27407
- GaAs, MBE of autoepitaxial films, temp. range for growth, RHEED monitoring 8−44025
- GaAs, produced by VPE using trimethylgallium and arsine, controlled doping 8−6855
- GaAs, substrate prep. effect on surface morphology 8−26780
- GaAs, ultrathin film growth by cracking of organometallic compounds at 40 to 100 torr *(French)* 8−44023
- GaAs, VPE, electron Hall mobility meas., attempted correlation with growth parameters 8−43417
- GaAs, VPE, surface defects rel. to technological parameters 8−44015
- GaAs, VPE growth rate variation with distance along substrate within const. temp. zone 8−2384
- GaAs, VPE in inert gas-H$_2$ mixed carrier system, thermodynamic analysis 8−11120
- GaAs, VPE UV stimulated 8−35313
- GaAs:Fe, for FET, VPE and characterisation 8−19672
- GaAs:Ge, VPE, doping, electrophysical characts. meas. 8−43493
- GaAs-Al$_x$Ga$_{1-x}$As films for optical devices, masked MBE 8−38100
- GaAs-GaAlAs heterostructure, growth by metal-alkyl-hydride process 8−15313
- GaAs$_{1-x}$P$_x$ epitaxial layers prep., photoluminesc. and electroluminesc. props. *(Czech)* 8−48233
- GaAs$_{1-x}$P$_x$, N doping using ionised beam in MBE 8−47400
- GaAs$_{1-x}$Sb, microprocessor controlled MBE growth 8−3058
- GaInAs, efficient photodiode for near IR detection 8−16848
- Ga$_{1-x}$In$_x$As$_{1-x}$P$_x$, VPE growth and characterisation 8−22970
- GaN epitaxy, sapphire substrate prep. 8−39929
- GaN, high-press. VPE and elec. characts. 8−14627
- GaN, on sapphire, crystallographic aspects 8−2387
- GaP for yellow-LEDs, prep. and props. *(Czech)* 8−48234
- GaP, heteroepitaxial growth on Si, substrate misorientation effects 8−3055
- GaP, two-stage vapour/liq. epitaxial growth on Si 8−3054

vapour phase epitaxial growth continued
- GaP, VPE Ni contaminant detection, IR photoluminescence of Ni 8−15212
- GaSb high-purity and doped layers grown by LPE and VPE methods 8−6863
- GaSb$_{1-x}$As$_x$, MBE RHEED meas. 8−18916
- Ge epitaxial films, structural perfection rel. to deposition conditions 8−43258
- Ge:P, doping of epitaxial layers, in chloride and hydride processes 8−43036
- HgCr$_2$Se$_4$-CdIn$_2$S$_4$ heterojunction, prep. and photovoltaic prop. *(Japanese)* 8−34889
- HgCr$_2$Se$_4$-CdIn$_2$S$_4$ heterojunctions, prep. and photovoltaic prop. 8−34892
- InAs, MBE growth, SEM, RHEED, optical microscopy and elec. meas. 8−18925
- In$_x$Ga$_{1-x}$P, solid solns., gas phase epitaxy from Ga-In-HCl-PH$_3$-H$_2$ systems 8−34722
- In$_{1-x}$GaxAs, MBE, RHEED meas. 8−18916
- InN, epitaxial layer prep. using InCl$_3$-NH$_3$ system 8−3056
- InP (100) substrates, for MBE, ion-cleared, contamination, SIMS meas. 8−11353
- InP, high-purity VPE, by PCl$_3$/In/H$_2$ technique, progress in control 8−6857
- InP, VPE, thermodynamics of transfer by water vapour 8−43260
- InSb film, MBE apparatus and AES 8−47875
- InSb thin films prepared by ion beam epitaxy system *(Japanese)* 8−22976
- MnTe, film, vapour deposition 8−47677
- NiO, formation on Ni (110), initial stage kinetics, RHEED and X-ray emission 8−15588
- Pb$_{1-x}$Cd$_x$S metastable epitaxial films, growth and physical props. 8−27417
- PbSe, monocrystalline film prod. by laser pulse *(Russian)* 8−3059
- PbSnTe film epitaxial growth on BaF$_2$ substrates 8−11134
- PbTe, continuous epitaxial film, grain size, growth cond. depend. 8−26786
- PbTe, uncontaminated films prepared by mol. beam deposition, elec. props. meas. 8−15316
- Pd, epitaxial growth on MoS$_2$, epitaxial orientation variation *(French)* 8−43256
- Pd-Ag (Cu) alloys, epitaxial growth and surface characterisation 8−14638
- Re epitaxial film growth on sapphire *(Russian)* 8−35311
- S on Cu~(111), selective effect of substrate steps rel. to adsorbed layer interaction 8−14616
- Si (111) face, cryst. film growth, transfer of impurity during condensation of mol. beams 8−10299
- Si epitaxial detector fabrication, crystal growth and preferential etching 8−37505
- Si, epitaxial growth on ion-implanted Si:As 8−6243
- Si, epitaxy lateral autodoping kinetics 8−6087
- Si, heteroepitaxial early growth island morphology rel. to deposition conditions 8−6245
- Si homoepitaxy in high vac., stacking fault nucleation, crit. temp. for SiC growth 8−14620
- Si, impurities incorporation kinetics *(French)* 8−22749
- Si, MBE, on n$^+$ Si, with wide range doping control 8−27402
- Si, mechanism of cryst. growth during chemical reactions in Si-H-Cl system 8−2392
- Si, pattern shift comparison in vertical, horizontal, and cylindrical reactor geometries 8−27408
- Si, using SiH$_2$Cl$_2$/H$_2$ as source for epitaxial films on insulators 8−48327
- Si:AS, lateral autodoping kinetics 8−39699
- SiC, H$_2$ effects on epitaxial growth rates 8−22968
- SiC:N, conversion factor at high doping levels 8−22744
- TiO$_x$ film, growth and struct. determ. 8−48328
- V$_{1-x}$Cr$_x$O$_2$, VPE, and elec. and optical characterisation 8−3053
- VO$_2$, VPE, and elec. and optical characterisation 8−3053
- ZnO film, growth rate and defectiveness, rel. to deposition conditions and substrate orientation 8−3057
- ZnO on Zn (0001), oxide film growth, at. and electronic struct. 8−15587
- ZnS, epitaxial growth by Zn-S-H$_2$ CVD method 8−27413
- ZnSe-Ge(GaAs)(mica) epitaxial heterostructs., growth struct. 8−43257
- ZnTe MBE thin film growth, elec. and optical props. 8−47887

vapour pressure
- *see also humidity; vaporisation*
- adsorbed film, adsorbent effects on props., empirical relns. 8−6217
- alcohols, self-association in binary mixtures, 2-const. model, vap. press. meas. *(German)* 8−18532
- amines, self-association in binary mixtures, 2-const. model, vap. press. meas. *(German)* 8−18532
- anthracene, optical determ. of vapour conc., vap. press. and heat of sublimation 8−22840
- constrained fitting of limited data 8−34615
- cyclohexane, vap. press. from 451K to crit. temp. and press. 8−47512
- dodecan-1-ol+n-hexane, vap. press. and thermodynamic props., 298.230 to 342.824K 8−47528
- ethanol, evap. rate var. with vap. press. 8−18758
- hexan-l-ol+n-hexane, vap. press. and thermodynamic props. 298.230 to 342.824K 8−43129
- ice, H$_2$^{16}O and H$_2$^{18}O samples, vap. press. isotope effects, −50 to 0°C 8−18757
- ice vapour pressure formulation using thermodynamic calcs. 8−43117
- polar and H-bonding compounds, vap. press. behaviour, generalised treatment 8−2227
- polar compounds, liq. props. representation, by modified Redlich-Kwong eqn. of state 8−34590
- polypropylene-chloroform (chloromethane), χ-parameters, heat of mixing, vap. press. and microcalorimetric meas. 8−34626
- predictive equation, behaviour between triple and crit. pts. 8−30744
- 3,3,4,4-tetrahydrothiophene-1,1-dioxide, vap. press. by effusion method 8−26680
- water, evap. rate var. with vap. press. 8−18758
- water, H$_2$^{16}O and H$_2$^{18}O samples, vap. press. isotope effects, 0-170°C 8−18757
- Ag, vaporization, thermodynamic props. determ. by mass spectroscopy 8−22841

vapour pressure continued
- Ag, vapour press. above different crystallographic planes *(Russian)* 8−18762
- AlI$_3$, UV absorbance, dimer-monomer dissoc. equilib., vap. press. of solid 8−13511
- Ar, effect of high mag. fields on vapour pressure 8−38825
- BeSO$_4$.2H$_2$O, composition of saturated solutions from 360 to 570K 8−22857
- CS$_2$, ^{13}C and ^{33,34}S isotope effects 8−18756
- Cr, vapour press. above different crystallographic planes *(Russian)* 8−18762
- Cs, liq., vapour press., thermodynamic functions determ., Knudsen-effusion radiotracer method 8−26678
- Cu, vaporization, thermodynamic props. determ. by mass spectroscopy 8−22841
- Cu, vapour press. above different crystallographic planes *(Russian)* 8−18762
- CuF$_2$, thermochemical props. 8−31674
- DI, thermodynamic properties 8−47517
- EuS, evaporation, thermodynamic data 8−2248
- Fe, vapour press. above different crystallographic planes *(Russian)* 8−18762
- Fe$_{1-x}$O, wustite, vaporisation, mass spectrometric analysis of gaseous phase 8−48652
- Fe$_3$O$_4$, magnetite, vaporisation, mass spectrometric analysis of gaseous phase 8−48652
- HI, thermodynamic properties 8−47517
- ^{4}He, nonsuperfluid liq., neutron scatt. dynamic struct. factor, saturated vap. press. 8−42878
- InAs, soln. in liq. Sn, vapour phase partial press. meas., rel. to LPE 8−34610
- InP, soln. in liq. Sn, vapour phase partial press. meas., rel. to LPE 8−34610
- Kr+ethene, liquid mixture thermodynamic excess functions 8−48690
- Mg-Bi, thermodynamic study vapour pressure measurement by transpiration 8−44395
- Mo, vapour press. above different crystallographic planes *(Russian)* 8−18762
- MoF$_5$, prep., melting temp., vapour density, press., enthalpy of fusion, meas., assoc. 8−38813
- N$_2$, effect of high mag. fields on vapour pressure 8−38825
- N$_2$, solid low-press. diffusion of vapour 8−22842
- Na-Cs solution, saturated vapour pressure of Cs over solution 8−26688
- NbSe$_2$, thermal dissociation 8−44370
- Ni, vapour press. above different crystallographic planes *(Russian)* 8−18762
- O$_2$, effect of high mag. fields on vapour pressure 8−38825
- Pb, vapour press., meas. using transpiration method, thermodynamic props. determ. 8−3365
- Pb-Bi alloy, vapour press., meas. using transpiration method, thermodynamic props. determ. 8−3365
- Sb-S, saturated vap. press. 8−43116
- ScI$_3$, mass spectra and vapour press., and thermochemistry for dimerisation 8−27809
- (U,Pu)N, self-consistent normal fluid eqn. of state, press., density, and enthalpy of vaporisation calc. 8−8909
- (U,Pu)O$_2$, vapour press. eqn. of state, VENUS-II code studies 8−8908
- UCl$_4$, vaporisation thermodynamics 8−44394
- V-S system, order-disorder transition of metal vacancies, statistical thermodynamics 8−43012
- VSe$_2$ phase, stability and Se equilib. vapour press., homogeneity range 8−43133
- W, vapour press. above different crystallographic planes *(Russian)* 8−18762
- ZrO$_2$-HfO$_2$(Y$_2$O$_3$) solid soln. complex refractories, sublimation *(Russian)* 8−47513

vapour pressure measurement
- controller, liq. ^{4}He applic. 8−16900
- lubricant vapour pressure and evap. rate in vacuum, determ. using ambient press. meas. 8−29123
- metals and alloys, sulphidation, high-temp., thermobalance for studying kinetics 8−23876
- pure liquid vapour pressure determination apparatus 8−41274

vapour-solid transformations *see solid-vapour transformations*

varactors
- thermometer appl., sensor, differential meter and stabiliser *(Czech)* 8−29115

variable-frequency oscillators
- *see also swept-frequency oscillators*
- magnetic field intensity changes detected by an oscillator employing a saturable-core reactor 8−12729
- resonance-tracking circuit for acoustic levitation expts. 8−46874

variable stars
- 10-day Cepheids, theoretical models 8−49449
- BX Andromedae, period increase *(Chinese)* 8−36642
- SW Andromedae, RR Lyrae variable, uvbyβ photometry 8−12249
- W Andromedae, SiO maser emission obs. 8−4225
- λ Andromedae, V photometric obs. during 1976-77 period 8−40994
- TW V586 and V1079 Aquilae, photometry, photographic obs. *(Russian)* 8−20842
- SX Arietis, He spectrum variable, UV photometry with ANS 8−36585
- UX Arietis, V photometric obs. during 1976-77 period 8−40994
- KR Aurigae, optical spectrum, variability *(Russian)* 8−36597
- B-type stars, nonradial pulsations, line profile variations 8−4228
- AC Bootis, eclipsing binary, detailed photometric study 8−36637
- bright IR star monitoring at 2.7 μm 8−16433
- BV 845, contact binary, improved photometric soln. 8−45365
- RS Cancri, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
- RS Cancri, OH emission obs. 8−8026
- VY Canis Majoris, circumstellar shell heterodyne interferometry 8−8000
- FF Canis Majoris, eclipsing binary, possible member of Collinder 132a, UBVβ photometry 8−32540
- UW Canis Majoris, eclipsing binary, UV photometry and primary component shape and atmospheric struct. 8−40992
- YZ Canis Majoris, flare star, coordinated X-ray, optical and radio obs. 8−8012
- W Canis Majoris, luminous C star in Canis Major OB1 8−12312

variable stars continued
VY Canis Majoris, OH masers very long baseline interferometric obs. 8−36712
VY Canis Majoris, relation to mol. cloud complex rel. to luminosity and evolutionary state 8−24536
β Canis Majoris stars, UV obs. by TD-1A satellite 8−20839
β Canis Majoris stars in southern hemisphere, photometric search 8−12243
YZ Canis Minoris, UV Ceti-type flare star, simultaneous 1420 MHz and optical obs. of flares 8−49464
RS Canum Venaticorum-type binaries, emission line vars. 8−24527
η Carinae, IR Fe II lines and interpretation of IR excesses 8−32478
η Carinae, soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
η Carinae, spectral obs. at 4 microns 8−4237
η Carinae, spherical circumstellar dust shell model, radiative transfer 8−36577
η Carinae nebulosity, proper motion meas. in complex outer shell 8−28687
R Cassiopeia, airborne IR spectrophotometry, H_2O and CO absorpt. bands 8−32465
DO Cassiopeiae, eclipsing binary, three-colour photoelectric investigation 8−16462
R Cassiopeiae, Mira variable, vel. struct. in SiO maser spectrum 8−12248
V Cassiopeiae, Mira variable rel. to new H2309+59 X-ray source 8−28859
TU Cassiopeiae, third period in beat Cepheid 8−16424
cataclysmic variables, hard X-ray obs. 8−36732
cataclysmic variables, short-period light oscills. rel. to non-radial oscills. of rot. stars 8−32477
CD −33°12119, 3U 1727−33 candidate, UBV photometry 8−12251
ω Centauri, JHK photometry of globular cluster, giant branch spread 8−16476
UW Centauri, visual magnitude estimates, UBV photometry 8−40962
V645=Proxima Centauri optical flares during 1977 May, S.African obs. 8−32480
λ Cephei, linear polarization variability in emission line O star 8−36571
U Cephei, mass transfer from light vars. outside primary eclipse, obs. and anal. 8−36636
T Cephei, Me variable, Tc discovery 8−32483
T Cephei, SiO maser emission obs. 8−4225
VV Cephei, spectroscopic obs. during 1976/77 eclipse ingress phase 8−45359
VV Cephei, UBV photometry during ingress phase of 1976-78 eclipse 8−20862
Cepheid bump mass anomaly, resonance effects 8−4238
Cepheid distance scale, depend. on Hyades Cluster distance 8−8121
Cepheid variables, effects of atmospheres finite extent on colour indices and radii determ. 8−32450
Cepheids, anomalous, in Draco dwarf spheroidal galaxy, instability strip 8−28695
Cepheids, classical, radii and temps. 8−49446
Cepheids, convective energy flux in atm. with gravit. field changes *(Russian)* 8−49422
Cepheids, double-mode, period ratios from linear and nonlinear theory 8−40953
Cepheids, freq.-period distribs. in Local Group galaxies 8−28694
Cepheids, intrinsic colours and physical props. from Walraven VBLUW photometry 8−28696
Cepheids, mass calc. methods, anomalies 8−49466
Cepheids, method for constructing envelopes and the period-amplitude relation 8−20840
Cepheids in Dunsink LMC II region, BV photographic photometry 8−45340
δ Ceti, period changes of β Cephei type star 8−32487
T Ceti, semiregular variable, Tc I absorpt. line obs. 8−28689
o Ceti (Mira), spectrum of companion star 8−4253
o Ceti (Mira), strong TiO-related dia. vars. 8−16429
o Ceti (Mira), variable 2.6 mm CO emission obs. 8−12241
UV Ceti flare stars, review *(Russian)* 8−28685
UV Ceti-type flare stars, simultaneous 1420 MHz and optical obs. of flares 8−49464
Circinus X-1 (3U 1516−56), vars. of optical and radio counterpart 8−12414
classical Cepheids, distance determ. via ang. dia. method, check on phase shifts 8−16439
CoD −35° 10525, bright YY Orionis star, spectrum and UBV photometry 8−36566
cool C stars, nearby, distances 8−49434
S Coronae Austrinae, T Tauri star, red-displaced absorpt. features obs. 8−4221
CRL 3099, highly evolved C star, IR photometry and spectrum 8−49436
SS Cygni, ANS detection of both soft and hard X-ray emission 8−36579
MR Cygni, eclipsing binary, photoelec. photometry and computer soln. *(Chinese)* 8−28724
V1057 Cygni, FU orionis type, UBVR photometry 8−12230
V1057 Cygni, hydromag. model of peculiar activity *(Russian)* 8−49442
V444 Cygni, IR eclipse obs. and Wolf-Rayet wind structure 8−45357
χ Cygni, Mira variable star, variable 2.6 mm CO emission obs. 8−12241
R Cygni, pure S star, new molecules identification 8−28700
CH Cygni, red giant, mag. field interpretation for outburst 8−4250
CI Cygni, spectroscopic obs. using multichannel analogue detector system 8−36461
V645 Cygni (CRL 2789), bipolar nebula, O-type exciting star 8−4392
V1500 Cygni (Nova 1975), brightness meas., (1917 to 1976) 8−36618
V1500 Cygni (Nova 1975), BV photometric obs. 8−36613
V1500 Cygni (Nova 1975), BV photometry 8−36619
V1500 Cygni (Nova 1975), He abundance of ejecta 8−28691
V1500 Cygni (Nova 1975), high-energy gamma-ray flux upper limit 8−36603
V1500 Cygni (Nova 1975), line spectrum evolution 8−32493
V1500 Cygni (Nova 1975), linear polarization obs. 8−36601
V1500 Cygni (Nova 1975), near IR spectroscopy 8−36599
V1500 Cygni (Nova 1975), near IR spectrum 8−36606
V1500 Cygni (Nova 1975), optical polarisation obs. 8−36622
V1500 Cygni (Nova 1975), photoelectric obs. 8−36620

variable stars continued
V1500 Cygni (Nova 1975), photometric and spectroscopic obs. 8−36604
V1500 Cygni (Nova 1975), photometric obs. 8−36616
V1500 Cygni (Nova 1975), photometry rel. to 3.3 hour var. and flickering 8−36591
V1500 Cygni (Nova 1975), polarimetric and photometric obs. 8−36612
V1500 Cygni (Nova 1975), short-term light vars. 8−36609
V1500 Cygni (Nova 1975), small amplitude light var. 8−36608
V1500 Cygni (Nova 1975), spatial and kinematic envelope model 8−36600
V1500 Cygni (Nova 1975), spectral energy distrib. 8736605
V1500 Cygni (nova 1975), spectroscopic obs., three hour periodicity, nebular model 8−12235
V1500 Cygni (Nova 1975), spectrum variations 8−36607
V1500 Cygni (Nova 1975), TV photometry 8−36602
V1500 Cygni (Nova 1975), UBVR Hα photometry and polarimetry 8−36611
V1500 Cygni (Nova 1975), UBVRI photometry and polarimetry 8−36614
V1500 Cygni (Nova 1975), visible and near UV photoelec. photometry 8−36610
V1500 Cygni (Nova 1975), visible and near UV spectrophotometric obs. 8−32492
V1500 Cygni (Nova 1975), visible and near UV spectrophotometry 8−32494
V1500 Cygni (Nova 1975), visible spectroscopy 8−36598
V1500 Cygni (Nova 1975), visible-band linear polarimetry 8−36621
V1500 Cygni (Nova 1975), visual magnitude estimates (1977 Aug.-1978 Jan.) 8−32474
V1500 Cygni (Nova 1975), wide-band IR photometry 8−36615
V1500 Cygni (Nova 1975) photometric obs. at Skalnate Pleso Observatory 8−36617
V1500 Cygni (Nova Cygni 1975), interstellar reddening and distance 8−4230
Cygnus X-1 (HDE 226868), optical photometry, (1972-1976) 8−32609
BY Draconis, dwarf binary, flare star, rotational hypothesis for quasi-sinusoidal light variations 8−4234
TW Draconis, photometric study of Algol-type system 8−45361
BC Draconis, radial pulsation period indicating Population II Cepheid 8−32491
CM Draconis, spotted dM4e eclipsing binary flare star, absolute dimensions and masses 8−12289
BY Draconis syndrome among dMe stars, photometric survey 8−16428
BY Draconis type variables, flare activity and quiescent variability 8−45338
dwarf novae, rapid brightness oscills. obs. 8−40968
dwarf novae, search for light oscills. during outbursts 8−40966
eclipsing binaries, late-type, mass-luminosity and radius relations, chem. composition 8−28728
eclipsing binaries, light curves, Fourier analysis, integral evaluation 8−45236
eclipsing binaries, orbital inclination, polarimetric determ. for five systems 8−45358
eclipsing binary light curves anal., linearised limb-darkening coefficients 8−49480
eclipsing variable stars, Fourier anal. of light curves, photometric perturbations for total and transit eclipses 8−12291
eclipsing variables, Fourier anal. of light curves 8−20854
eclipsing variables in Magellanic Clouds, tabulated light curves 8−16536
eruptive blue variables at high galactic latit., spectrophotometry 8−32482
extremely metal-poor stars, theoretical evolution and radial mode pulsational stability 8−28677
fast irregular variables, UBV and JHKL photometry *(Russian)* 8−28684
flare stars, anomalous Balmer decrement, stimulated transitions between highly excited atomic levels 8−5176
flare stars, chromosphere theory, fast electrons hypothesis 8−24514
flare stars, large-scale winds driven by mass loss, effects on interstellar matter 8−32464
flare stars, nature of nearby radiosources 8−12388
flare stars, physical characts. 8−12242
flare stars, possible galactic cosmic ray sources 8−49240
flare stars, theory of flare mechanism *(Russian)* 8−49444
flare stars as candidates for new class of transient soft X-ray sources 8−45337
flare stars in Pleiades, possible cyclic recurrence of flare activity *(Russian)* 8−49443
GD 154, new pulsating white dwarf, obs. 8−40928
U Geminorum, 1978 February magnitude estimates 8−36589
h 4866 B, vars. in spectral type and radial vel. 8−32518
Harvard Photographic Collection, recent novae and variable star research 8−32486
HBV 475 (V1329 Cygni), high-excitation emission lines obs. 8−40955
HD 124224, He Si variable, spectroscopic obs., starspots, oblique rotator model 8−12239
HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
HD 153919 (4U 1700−37), SAS-3 obs. of 97 minute periodicity 8−36730
HD 196517, new δ Scuti type variable star 8−49462
HD 5980, eclipsing W-R binary in SMC, photoelectric light curve 8−45366
HD 64740, He variable star, X-ray source 4U 0750−49 optical candidate 8−36584
HD 65750, photometric vars. of red giant, obs. of surrounding refl. nebula IC 2220 8−36567
HD 77581 (Vela X-1), optical pulsations discovery 8−20911
HDE 226868 (Cygnus X-1), anomalous light curve during X-ray increase of 1975 April-May 8−28850
HDE 226868 (Cygnus X-1), black hole candidate, optical and X-ray vars. 8−16577
HDE 226868 (Cygnus X-1), temporal and spectral var., X-ray rocket obs. 8−8163
HDE 245770 (Ariel 0535+26), photoelectric UBV photometry 8−36592

variable stars continued
HDE 245770 (Ariel 0535+26), UBV photometry during X-ray flare-up 8−28705
Henize 2-38, symbiotic star, steam and CO absorpt. obs. 8−40970
OP Herculis, irregular variable, Tc I absorpt. lines obs. 8−28689
OP Herculis, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
AM Herculis, light curves and Fourier analysis 8−49483
AM Herculis, multicolour photometry, slow optical pulsar 8−28693
AM Herculis, X-ray binary, vel. curves for emission lines broad and sharp components 8−32513
AM Herculis (3U 1809+50), multicolour linear and circular polarisation obs. and geometrical model 8−8053
AM Herculis (3U 1809+50), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
AM Herculis (3U 1809+50) system nature, general *(Russian)* 8−4295
HZ Herculis (Hercules X-1), hard X-ray spectrum, strong cyclotron line emission 8−41085
HZ Herculis (Hercules X-1), optical behaviour in (1976) 8−32603
HZ Herculis (Hercules X-1), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
AM Herculis objects, linear polarisation model 8−16460
TU Horologii, ellipsoidal variable, UBV photometry 8−4292
hot main-sequence, eclipsing binaries, masses 8−32514
HR 1099, flare activity observed at 2.8 cm wavelength 8−36590
HR 1099, flare emission at 2.8 cm (1978 February) 8−32476
HR 1099, radio flux vars. obs. and optical ephemeris 8−36641
HR 1099, RS Canum Venaticorum star, 4U 0336+01 optical counterpart 8−32475
HR 1099, V photometric obs. during 1976-77 period 8−40994
HR 2557, light vars., luminous δ Scuti-type star 8−32490
HR 3517, new δ Scuti star, discovery and photometry 8−12243
HR 4594, pulsating marginal metallic line (Am) star, obs. 8−49448
HR 5999, variable shell star, VBLUW photometry 8−28701
HR 6684, β Cephei-type variable, radial vel. var. 8−45344
HR 8210, pulsating marginal metallic line (Am) star, obs. 8−49448
EX Hydrae, U Geminorum type star, possible counterpart of (4U 1249-28) 8−36729
instability, broadened definitions for stars in thermal imbalance 8−16397
IR stars, search for 18 cm OH emission 8−8026
IR stars, search for OH 18 cm emission 8−40949
L19-2, low-amplitude ZZ Ceti type variable, UBV colours, period determ. 8−4242
EV Lacertae, flare star, hot-plasma model of strongest flares 8−20838
AR Lacertae, Fourier anal. of light curves, gas stream effects 8−20855
AR Lacertae, RS Canum Venaticorum type star, VLA obs. 8−8054
AR Lacertae-type stars, starspots 8−16443
LDS 678B (EG 131), white dwarf, spectrum vars. 8−40946
R Leonis, airborne IR spectrophotometry, H_2O and CO absorpt. bands 8−32465
R Leonis, circumstellar shell heterodyne interferometry 8−8000
ρ Leonis, expanding envelope OAO-3 spectra *(Russian)* 8−4224
R Leonis, Mira variable, CO and OH IR vibr.-rot. overtone bands 8−36574
AD Leonis, nature of radiosource near flare star 8−12388
20 Leonis, possible eclipse obs. in triple system 8−12298
R Leonis, strong TiO-related dia. vars. 8−16429
AD Leonis, UV Ceti-type flare star, simultaneous 1420 MHz and optical obs. of flares 8−49464
δ Librae, Algol-type eclipsing binary, detection of secondary 8−49475
LMC 186, luminous C-type Mira variable in LMC, obs. 8−28670
long-period, radial and expansion vels. from SiO line 8−40956
long-period variables, CO and SiO millimetre line emission obs. rel. to circumstellar shell props. 8−49423
long-period variables, H emission line form., models 8−28709
long-period variables, mass loss and circumnebular shells form. 8−8014
long-period variables, pulsation from near IR photometry 8−4248
luminous blue variable stars in M31 and M33, IR detect. 8−49437
luminous variable stars in M31 and M33, spectra and photometry 8−28686
α Lupi, UV light curve of β Cephei-type star 8−36570
XY Lyrae, late-type variable star, spectral energy distrib. and spectral types *(Russian)* 8−40958
β Lyrae, nature of secondary component from radio emission 8−36638
β Lyrae, photoelectric photometry (in 1971) 8−12294
β Lyrae, UV spectrum 8−8048
β Lyrae primary and secondary, catalogue of absorption lines *(Russian)* 8−28725
RR Lyrae stars, bibliographical catalogue at Strasbourg Stellar Data Center 8−16431
RR Lyrae stars, convective steady-state models, theoretical red edge of instability strip 8−4229
RR Lyrae stars in NGC 6235 globular cluster 8−4305
M22, photometry of giant branch variable stars 8−32537
M-type, obs. in DDO photoelec. system, spectral classification 8−32463
M-type giant stars, spectral energy distribs. and effective temp. scale 8−28678
magnetic variables, intrinsic rot. vels. 8−40967
marginal metallic line (Am) stars, metallicism and pulsation 8−49448
Mira variables, airborne IR spectrophotometry, H_2O and CO absorpt. bands 8−32465
Mira variables, discovery of 123 new stars in Palomar 10 globular cluster region 8−40837
Mira variables, discovery of 7 new SiO maser sources 8−32467
Mira variables, intrinsic amplitude and TiO absorption 8−36580
Mira variables, intrinsic props. from observational data 8−45333
Mira variables in globular cluster NGC 6356, photometric obs. 8−32530
1 Monocerotis, δ Scuti star, photometry and anal. 8−32495
R Monocerotis, bipolar nebula, optical and IR polarimetry 8−36658
V616 Monocerotis (Nova 1975), photographic photometric obs. 8−36587
multimode Cepheid variables, masses and radii from period ratio diagrams 8−28698
MX 1608−52, transient X-ray source, faint variable optical candidate 8−28860
neutron stars, luminosity enhancement following X-ray bursts 8−32502

variable stars continued
NGC 4833, southern globular cluster, BV photometry of variable stars 8−4304
NGC 5286, B photometry of variable stars, globular cluster membership 8−32534
NGC 6535, photometric study of variable stars in globular cluster 8−32529
NGC 6638, globular cluster, Mira and RR Lyrae variable obs. *(French)* 8−16475
nonradial oscillation mode splitting, effects of differential rotation 8−4211
Nova Sagittae 1977, visual magnitude estimates (1977 November 6 to 1978 January 7) 8−36593
OH/IR sources, microwave spectra, galactic distrib., radial velocity 8−16432
old novae, search for rapid photometric oscills. 8−4251
U and V451 Ophiuchi, eclipsing binary, late-type, mass-luminosity and radius rels., chem. composition 8−28728
Ophiuchus-Scorpius region, ZB flare stars and nebular variables *(Chinese)* 8−28702
α Orionis, CO and SiO millimetre line emission search rel. to circumstellar shell props. 8−49423
κ Orionis, expanding envelope OAO-3 spectra *(Russian)* 8−4224
σ Orionis E, He-rich B star, period and luminosity stability 8−8017
FU Orionis type stars, eruptive phenomena in early stellar evolution 8−12233
γ Pegasi, β Cephei star, dynamics of photosphere and shells 8−49447
period determination method *(French)* 8−36465
AX Persei, 1978 Jan.-Feb. outburst of Z Andromedae-type object 8−36588
X Persei, 580 day and other periodicities 8−16435
AG Persei, eclipsing binary, late-type, mass-luminosity and radius rels., chem. composition 8−28728
X Persei, energy distrib., light vars. 1972-76 period 8−16437
1 Persei, photometric variability, possible eclipsing binary 8−32489
S Persei, supergiant 22 GHz H_2O maser emission temporal var. 8−49461
X Persei, V-band polarization variability 8−49455
X Persei (2U 0352+30), photoelec. obs., light vars. 8−40999
X Persei (3U 0352+30), photometry, search for optical 13.9 minute period 8−16426
X Persei (4U 0352+30), light vars., tidal distortion by massive unseen companion 8−36640
β Persei (Algol), anal. of red and IR wide-band photometry 8−20853
V400 Persei (Nova Persei 1974), photoelectric obs. 8−4252
ξ Phoenicis, eclipsing binary, late-type, mass-luminosity and radius rels., chem. composition 8−28728
SX Phoenicis, simultaneous photometric and polarimetric obs. 8−49451
planetary nebulae central stars, variability from UV obs. 8−36668
Population II Cepheids and RR Lyrae stars in globular cluster M19, photographic obs. 8−41002
pulsating stars, hydromagnetic flow near oscillating porous limiting surface 8−12200
pulsation rel. to He abundance 8−28690
pulsational stabilities of star in thermal imbalance, comparison between methods 8−45316
pulsations, statistical theory of turbulent convection *(Chinese)* 8−28703
VV Puppis, brightening, emission line spectrum 8−40960
VV Puppis, brightening of magnetic variable (1978 March) 8−36595
V Puppis, eclipsing binary, as main sequence contact binary 8−4293
VZ Puppis, long period Cepheid, photometry of nearby OB stars 8−45339
T Pyxidis, recurrent nova, photoelectric obs. 8−4252
R548, pulsating white dwarf, photometric obs., light curve anal. 8−32488
red variable stars, narrow-band polarisation effects 8−16427
HM Sagittae, emission-line variable star, radio emission detect. 8−28706
HM Sagittae, eruptive BQ forbidden line star, obs. 8−20835
FG Sagittae, Fe-peak and s-process elements abundance *(Russian)* 8−12253
V Sagittae, light curve coherent oscills. 8−8022
HM Sagittae, near emission-line object, optical and IR obs. 8−36575
FG Sagittae, nonstable star, spectrophotometric obs. 8−28683
FG Sagittae, photometric radius and pulsation mass 8−36576
FG Sagittae, spectrum of assoc. nebula 8−49498
V3876 Sagittarii, identified with Nova Sagittarii 1978=IRC−20494 8−49459
W Sagittarii, magnetic field from Zeeman meas. 8−4240
V356 Sagittarii, unusual eclipsing binary, model 8−49477
RY Sagittarii, visual obs. of 1977 Sept.-Oct. minimum 8−49463
V367 Scuti in open cluster NGC 6649, double-mode Cepheid nature 8−49460
semi-detached eclipsing binary systems, revised photometric elements 8−20858
FH Serpentis (Nova 1970), thick inhomogeneous shell model for radio emission 8−12236
short-period variables, max. entropy spectral anal. appl. 8−16436
spectrum variables, He weak and He strong stars 8−4243
star associated with variable cometary nebula, spectrum and brightening 8−4333
stars in thermal imbalance, vibrational stability 8−40916
stellar and solar flares, review 8−7973
supergiant stars, B2 to G0, small amplitude light vars. 8−32469
supergiant stars, in LMC, long-term light vars. 8−45326
NML Tauri, airborne IR spectrophotometry, H_2O and CO absorpt. bands 8−32465
T Tauri, Hα line profile vars. 8−40944
DL Tauri, Hα profile in T Tauri type star *(French)* 8−8003
DR Tauri, highly variable young star, spectrometric and photometric obs 8−20829
DF Tauri, T Tauri star, He I triplet-to-singlet ratio 8−28680
BU=28 Tauri (Pleione), envelope during shell phase, 1972-75 period 8−28707
BU=28 Tauri (Pleione), spectrum vars., 1938-75 period 8−36578
T Tauri like stars, far UV photometry 8−20827
T Tauri stars and Herbig Ae-Be stars, broad-band IR photometry 8−4217
T Tauri stars and related objects, IR meas. 8−8002

variable stars continued
T Tauri stars in Orion Nebula (M42), possible coronal X-ray emission obs. 8−28852
T Tauri type stars, hydromag. model of peculiar activity *(Russian)* 8−49442
RR Telescopii, symbiotic star, steam and CO absorpt. obs. 8−40970
Tr 27-102 (HD 159378), possible long-period Cepheid 8−45336
U Trianguli Australis, beat Cepheid, mode interaction 8−4235
CQ Ursae Majoris, Ap star, UBV photometry, light curves, colour indices 8−49454
AN Ursae Majoris, nova-like variable, extremely high circular polarisation obs. 8−8018
W Ursae Majoris stars, role of photospheric convection 8−49478
α Ursae Minoris A (Polaris A), interstellar reddening determ. 8−8005
EQ Virginis, dwarf binary, flare star, rotational hypothesis for quasi-sinusoidal light variations 8−4234
CU Virginis, He spectrum variable, UV photometry with ANS 8−36585
BW Vulpeculae, UV light curve of β Cephei-type star 8−36570
NQ Vulpeculae (Nova 1976), Hα emission line profiles in 1976 November to December *(Russian)* 8−40971
NQ Vulpeculae (Nova 1976), isothermal dust condensation phase, broad-band photometry 8−36586
NQ Vulpeculae (Nova Vulpreculae 1976), visual magnitudes (1977 Aug.-Nov.) 8−16434
white dwarfs, pulsating, thermal stability of H burning shells 8−40929
Wolf 424, UV Ceti-type flare star, simultaneous 1420 MHz and optical obs. of flares 8−49464
WRA 977, high-speed UV photometry of periodic modulation 8−16442
X-ray sources, light and X-ray vars. rel. to masses 8−12430
young emission line objects in S Hemisphere, image tube spectrograms 8−8016
H_2O masers, detect. of new sources 8−32466
Hα emission line star near Gum nebula, UBVRI photometry and variability 8−32449
CN Leonis, nature of radiosource near flare star 8−12388
OH 26.5+0.6, late-type variable star, spectrophotometry from 2 to 40 microns 8−24568
OH large-scale sky survey at 1612 MHz 8−32358
OH/IR unidentified Type II stars, galactic distrib. and kinematics from 1612 MHz survey 8−49450
SiO maser emission obs. in eight long-period variables 8−4225
Tc stars, search for TcO spectral bands 8−40935

variational calculus *see variational techniques*

variational techniques
acoustic wave propagation, in nonuniform ducts, wave-envelope technique 8−9464
analogy between dynamics and statics, related by variational techniques 8−28934
atom, symmetric deorthogonalisation 8−37540
atom+atom, resonance energies, complex, diverging wave functions, least squares bivariational method 8−17741
atom+diatom collinear collisions, exponentiating trajectories and statistical behaviour, variational eqns. 8−27742
atomic dynamic polarisability, variational calc. 8−22047
atomic dynamic polarisability, variational calcs. with mode pot. *(Russian)* 8−902
atomic electron scatt., modified variational method 8−1081
atoms, variation-iteration procedure, by numerical integration scheme 8−17551
avoided-crossings, spurious, variationally calc., perturbation theory approach 8−5295
axisymmetric heat exchange, variational method *(Ukrainian)* 8−1547
Bach-Lanczos identity derivation from modified Hilbert variational principle 8−32737
bending, of plate, powerful finite element method for computing 8−1583
Biot's variational principle, consequence of invariance in thermal cond. 8−33988
boson system, many particle, radial distribution function, functional derivative 8−137
bounds to excited states from generalised Brillouin-Wigner eqn. 8−45507
cellular model for mol. and cryst. elec. struct. 8−29726
chemical reactions, decomposition theory, transition matrices, var. calcs. 8−20005
chemical reactivity, multiple site, interaction field modified Hamiltonian method 8−11498
collective open chemical systems, variational-Lagrangian thermodynamics of evolution 8−41255
complementary variational principles, review 8−41135
complex nuclei scatt., variational method in RGM based on GCM kernel 8−564
constant mean curvature and canonical time, concept generalisation 8−98
convection, natural, laminar, in open vertical channel, numerical soln. method 8−5799
cylindrical shell with elliptic cross section, subject to torsion, creep buckling 8−34040
deformation energy of nuclei, one particle spectrum, self consistent calcs., Hartree Fock variational method 8−12957
diamond-type crystals, energy levels of Mott excitons 8−6282
diffusion, nonlinear, stability 8−8366
dynamical systems, Clebsch potentials and variational principles 8−24657
Dyson eqn., exact soln. for mean value of Green's function 8−4559
eigenvalues characterisation, orthonormality-constrained variation method 8−45457
eigenvalues lower bounds for quantum Hamiltonians, classical limit of quantum theories 8−41200
elastic flexible body dynamics, finite element anal., Hamilton's principle 8−24667
electroacoustic wave variational expression derivation 8−1488
EM field theory, derivation of variational expressions using unified approach 8−9295
end-temperature in semi-infinite rod, distributed parameter optimal control problem 8−13886
energy eigenvalues lower bounds for quantum Hamiltonians in lattice field theories 8−45575

variational techniques continued
energy momentum tensor for vector-tensor theory of gravity and electromagnetism 8−12633
estimation aided by instrumental variables, regression model *(German)* 8−29080
ethane, barrier and one electron charge transfer states in strong orthogonal group function theory 8−13421
Euler-Lagrange differential in fibred manifolds 8−45469
exercise ECG processing principles and multivariate analysis results 8−7511
field problem structure, equilibrium, eigenvalue and propagation problems *(Rumanian)* 8−45520
finite elastic cylinders, Ritz solns. for axisymm. temp. and stress fields 8−38190
fluid channel desing using global variational method 8−38408
foreign gas broadening, translational heat-bath model, variational methods 8−9124
g- and p-modes of non-adiabatic self-gravitating fluid, perturbational-variational expansion 8−32337
Gelfand-Levitan eqn. and Korteweg-de Vries eqn. 8−32708
general relativity, combined Dirac-Einstein-Maxwell field eqns., tetrad field variation 8−4536
generalised polarisabilities, new variational bounds 8−45502
generating forms of K-generalised Lagrangian and Hamiltonian systems 8−4475
geometric formulation of Hamilton's Principle, spin particles 8−45482
gravitational superpotentials, affine connection, Riemann tensor, field eqns. 8−107
Gurtin's principle, 1-D theories of motion for beams 8−18179
Hamiltonian formalism for self gravitating relativistic perfect fluid, Lagrangian variational principle 8−16289
Hellinger-Reissner mixed variational principle, stiffness matrix determ. for nonlinear anal. of deep arches 8−18161
hermitian operators, upper and lower bounds to eigenvalues, variational calcs. 8−36882
incompletely optimized variational parameters, corrections, perturbation theory anal. 8−41180
initially-stressed solids, variational-Lagrangian irreversible thermodynamics 8−29074
instantons, variational anal. 8−24934
ion+atom, slow collision, K-shell ionisation, variational calcs. 8−42162
irreversible transport processes, noncoupled, nonstationary, classical variational principles 8−4567
Ising model, transverse, quantum crossover 8−43596
Ising model on square and triangular lattice, variational renormalisation group method 8−16740
isovector meson interaction, static source, use of coherent states 8−16921
Jastrow correlations and nuclear photoeffect 8−4927
ket vector variation, orthonormality-constrained variation method 8−45457
laminated viscoelastic composite, wave propag., dispersion relations, mode shapes, variational methods 8−18215
lattice Hamiltonian for arbitrary couplings 8−16746
linear accelerator cavity code, based on finite element method 8−33307
local approach, molecular correlation energies, intraatomic correlations 8−41967
many-valley semiconductor, energy states calc. of negative donor ion, high stress and stress free cases 8−2444
maximal entropy distrib. determ., using variational technique with Lagrange multipliers 8−24754
methane+methane (He)(Ne)(Ar), dispersion forces 8−13565
mixture of two elastic solids, variational theorem in linear theory for quasi-static case 8−9561
molecular collisions, diatomic transition operator, separable approx., variational approach 8−42150
molecules, symmetric deorthogonalisation 8−37540
Mooney-Rivlin rubber-like materials, finite element anal. 8−46894
multivalley semiconductor, donor binding energies calc. 8−23041
multivariate and conventional ECG analysis programs compared 8−7492
Navier-Stokes equations, stream function-vorticity formulation incorporating no-slip conditions, variational principle 8−38267
neutron diffusion and transport theory, discontinuous variational approx. 8−46129
neutron transport theory, buckling approximation inclusion in finite element calcs. 8−17276
nonlinear problems of thin shells appl. 8−5673
nonlinear shell analysis via mixed isoparametric elements 8−1566
nonlinear viscoelasticity, variational principles for isothermal problems *(Russian)* 8−28950
nonstationary temperature field determination, in a crystal on a substrate *(Russian)* 8−18158
normal modes of self-gravitating fluids in perturbed configurations, perturbational-variation procedure 8−32336
nuclear and neutron matter N-N potentials, variational calcs. 8−37292
nuclear matter theory, review, comparison of perturbative to variational techniques 8−33136
nuclear struct., pairing motion, large amplitude, time-dependent Hartree-Fock method 8−4908
nucleon fluid, constrained variational calc. of symmetry coeff. 8−46022
optical fibres, radially inhomogeneous, vectorial wave anal. using finite elements method 8−37999
optical fibres, truncated parabolic-index, with minimum mode dispersion, anal. 8−38000
optical waveguide, strip-loaded diffused, modal analysis by variational method 8−46776
pairing Hamiltonian, general, approximate solns., by variational method 8−36931
perturbed eigenvalues, perturbation expansions and variational constraints 8−16670
plasma, stratified, partially ionised, hydromagnetic stability 8−26276
plasma, transport coeffs., relativistic Boltzmann theory, variational method 8−47096
plate buckling, variational formulation for hybrid finite element method 8−18205
polar molecule-electron systems, variational method for bound state calc. 8−46261
positive-definite-matrix-conjugate vector, construction and constrained variation 8−8267

variational techniques continued
prestressed cablenets, 3-D, finite element anal. 8−5650
quantum mechanical perturbation theory, convergence props., energy series 8−80
quantum systems with discrete energy levels, variational method 8−31074
radius perturbation theory, appl. to NN system and pionic atoms 8−21007
random Ising model, press., variational principle 8−8352
random two-phase material, thermal cond., var. calcs. of upper and lower bounds 8−9550
rare earth compounds electron-phonon interaction influence on electronic phase transitions *(Russian)* 8−47743
reactor boundary changes, generalised perturbation theory 8−4980
resonance positions, complex-rotation technique for direct calcs. 8−33549
resonance width and energy, variational calc. 8−33445
Ritz-Givens-Householder method, anharmonicity type λx^{2m}, Schrodinger operator energy levels 8−28970
Schwinger variational principle for bound states and scatt. problems 8−16932
shells, large elastic deflections of axially compressed cylindrical and conical structs. *(Polish)* 8−13937
thermal conductivity in homogeneous isotropic solid body, variational principles *(Hungarian)* 8−22247
thermodynamic partition function, analytic props. of Lippman-Schwinger variational approx. *(German)* 8−36953
thermoviscoelasticity, bound dynamical problems, approx. calc. methods for crit. thermal states *(Russian)* 8−28949
thermoviscoelasticity, variational techniques *(Russian)* 8−13922
Thirring model, iterative variational anal., fermion field theory on lattice 8−41426
three-layer elastic-viscoelastic beam damping characteristics *(Japanese)* 8−9575
tides, oceanic and shallow water, spectral method of computation *(French)* 8−28321
transonic airfoil problem, variational principles 8−42626
transport-relaxation equations, time-depend. variational principle and reciprocity theorem 8−12655
truncated exponential density sequence, estimator asymptotic variance comparison 8−12539
two-stream mixing, variational soln. 8−38266
vibrations of multilayer orthotropic shells *(Russian)* 8−13968
Δ mass, three quarks bound state, variational method calcs. 8−21396
BH^{5+}, spurious avoided-crossings, variationally calc., perturbation theory approach 8−5295
^{8}Be, cluster formation, multicentre variational model *(Chinese)* 8−25128
(Br,Zr) system, 1 s σ orbital, variational calc. 8−37707
D_2, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
n-Ge:Au, electron capture by negatively charged traps, effect on hot electron enrgy energy distrib. 8−43398
(H,H) system, 1 s σ orbital, variational calc. 8−37707
H, electron impact excitation of resons. below n=3 levels, algebraic variational calc. 8−9254
H-quark interaction, var. method calcs. 8−37771
H_2, HD, c, I and i states, pot. energy curves and vibr. levels, Born-Oppenheimer approx. 8−931
H_2^+, spurious avoided-crossings, variationally calc., perturbation theory approach 8−5295
H_2+H, diatomic operator, separable approx., variational approach 8−42150
H_3^+, struct. props., in mag. fields, var. calcs. 8−21843
^{4}H, nuclear cluster model, energy levels by interaction set anal. 8−25136
He, ^{1}S ground state, variational perturbation calc., teaching 8−41129
He^+, isoelectronic series, Lamb shift, Bethe mean excitation energy 8−9092
HeH^{2+}, pot. energy curves for 2pπ and 3dδ excited states 8−29756
$HeLi^{4+}$, pot. energy curves for 2pπ and 3dδ excited states 8−29756
$^{4}He(t,n)^{6}Li$, cross section using var. calcs. in generator coordinate method 8−13122
$^{4}He(t,t)^{4}He$, cross section using var. calcs. in generator coordinate method 8−13122
LiF, ground and excited state props., local density formalism 8−10349
LiH, mol. elec. polarisabilities and dipole moments calcs. 8−41976
LiH, variational Hylleraas-type wavefunction, correl. 8−9082
LiH^{3+}, pot. energy curves for 2pπ and 3dδ excited states 8−29756
^{6}Li, cluster formation, multicentre variational model *(Chinese)* 8−25128
$^{6}Li(\alpha,\alpha)^{6}Li$, cross section using var. calcs. in generator coordinate method 8−13122
Ne, second-order correl. energy calcs. 8−33436
SmS, nonorthogonal orbitals in intermediate valence 8−43323

varistors
ZnO based varistors, evolution and role of chem. constituents rel. to prep. method, influence on elec. props. *(French)* 8−31367
ZnO, sintered grains, cond. model 8−14736

varnish
No entries

Vavilov-Cherenkov radiation *see Cherenkov radiation*

VB calculations
intramolecular electron transfer amplitude, basis function overlap effect 8−9080
localised mol. orbital struct., octet rule violations, fractionality 8−25445
methane, valence bond calc. convergence 8−9081
pairwise correlated generalised valence bond model, electron correl. model 8−41959
small molecules, HMO-CI, HMO-AO-CI methods, quantum chemistry model studies *(German)* 8−29753
H_2, mag. susceptibility calc. by distinguishable electron method 8−897
H_2^++H_2, pot. energy surface and nonadiabatic regions, charge exchange and reaction, VB calc. 8−40027
H_2O, minimal Slater basis set VB calcs. 8−46272
H_2O, sum rule props., SCF optimizations of MO and VB calcs. 8−5156
NiH, pot. energy curves, Hartree-Fock and valence bond methods 8−41958

VB calculations continued
NiH_2, pot. energy curves, Hartree-Fock and valence bond methods 8−41958
O_3, cyclic, stability, ab initio GVB-POL-CI calcs. 8−915
SO, pot. energy curves, pseudopot. multi-struct. valence bond calcs. 8−9094

vector diagrams *see vectors*

vector meson dominance model
σ SU(3) model, quark-loop contrib., low-energy meson dynamics 8−12869
additive quark model in quasi-two-body hadronic reactions, Δ and vector meson prods. relation 8−41494
generalised, electroprod. and photoprod. of vector mesons 8−41519
photoprod. of heavy hadrons, peripheral and VMD models 8−33074
radial excitations and q^2 depend. in VDM, appl. to ψ radiation decay 8−452
sum rules for vector meson-nucleon scatt. 8−45810
supersymmetric vector-like model of lepton interaction 8−412
$c\bar{c}$ meson radiative decays, generalised VMD mechanism 8−8606
$e^+e^-\rightarrow$baryon-antibaryon pairs, vector meson dominance model 8−21442
eN, pion production, vector-like theories *(Russian)* 8−37221
ep, polarised deep inelastic scatt., vector meson dominance anal. 8−33073
ep elastic scattering, VDM, p EM form factor *(Russian)* 8−17026
K form factor and struct. funct. in extended VDM 8−25046
$K_l^0\rightarrow\mu^+\mu^-$, VDM calc. of decay probabilities *(Russian)* 8−41539
$K_l^0\rightarrow\mu^+\mu^-\gamma$, VDM calc. of decay probabilities *(Russian)* 8−41539
$\nu p\rightarrow\nu$+vector meson + X, neutral currents, generalised VDM, Regge pole anal. 8−41532
pp inelastic collisions, ρ-dominance in collision model 8−37238
π^-p inelastic interactions at 205 GeV/c, three-fireball model, computer simulation 8−474

vector mesons *see meson resonances*

vectors
ket vector variation, orthonormality-constrained variation method 8−45457
Lorentz transformation, vector formulation, as student introduction to special relativity *(Italian)* 8−12447
Newtonian nature of any smooth 2n-dimens. vector fields 8−32648
polarized waveform dectors, matrix and Stokes vector representations, teleseismic waves appl. 8−12008
positive-definite-matrix-conjugate vector, construction and constrained variation 8−8267
relativistic vector formulation, of electric and mag. fields *(Italian)* 8−12448
rigid body, vector anal. of finite rotations, literature review 8−36819
thermodynamics, irreversible, vector forces and fluxes 8−24753

velocity
see also acoustic wave velocity; ion mobility; light velocity
NGC 5383, barred spiral galaxy, vel. field 8−24549
photosphere velocity research, effects of apparent yearly precession of Sun 8−20809
radio sources, extragalactic, with speeds exceeding speed of light, kinematic models *(Danish)* 8−36715

velocity analyzers *see particle separators*

velocity control
spacecraft relative motion around orbiting station, guidance method 8−16263
starship, single-stage constant-power, optimal exhaust vel. programming 8−20613

velocity measurement
see also acoustic wave velocity measurement; anemometers; angular velocity measurement; flow measurement; flowmeters; laser velocimeters; light velocity measurement; stroboscopes
astronomy, Doppler broadening parameters and Doppler shifts meas. without spectrograph 8−20646
blood, instantaneous values, ultrasonic Doppler system appl. *(Dutch)* 8−31832
dispersions, particle size and velocity distribution, in flowing media, meas. methods *(German)* 8−34213
EM velocity meter, with cylindrical magnet, output voltage, vel. profile effects *(Russian)* 8−45600
error estimation in photographic techniques *(German)* 8−304
filament velocity measurement, during spinning, streak photography 8−41367
formaldehyde, mol. beam, vel. meas. by Doppler effect on RF spectrum splitting *(French)* 8−13627
gas-gun projectile vel., direct display 8−177
heavy water, US velocity experimental determ. using freq. pulse method 8−21734
holographic interferometry, for displacement or flow velocity distrib. meas., fringe analysis 8−25820
holographic method for hypervelocity particle meas. 8−36978
laser Doppler velocimeter, for turbulent flow velocity meas., redesign 8−1245
laser interferometer system, for velocity-time history recording 8−45602
laser speckle photography for fluid flow vel. meas. 8−14112
light curtain for measuring speed trajectory, of object *(German)* 8−12738
light velocity, interference methods, accuracy 8−17997
liquid film flow down inclined plane, polarographic velocity meas. method *(French)* 8−34214
liquid metals, flow vel. meas., using EM system, vel. profile effects on output voltage *(Russian)* 8−45600
ocean current meas. by Lagrangian drifting buoys 8−45049
ocean current meas. near surface, general problems, review 8−45048
optical sensor, for liquid flow *(Russian)* 8−1759
plastic plate velocity measurement, as continuum, by streak camera technique 8−37095
solar photosphere, total vel. field determ. using weak absorpt. lines *(Russian)* 8−40894
speckle photography and interferometry, for fluid velocity meas. 8−26221
turbulent bubbly flow, laser meas. of local liquid velocity and void fraction *(Japanese)* 8−9693
velocimeter, non-contact, using laser produced speckle patterns *(Japanese)* 8−178

velocity measurement continued
- walking speed meas. methods and characteristics, humans *(Croatian)* 8−44624
- wind profile determ. X-band solid-state radar system 8−12028
- H ions, velocity measurement by Doppler shift of H atoms line spectra after traversing thin C foil 8−16778

velocity meters *see velocity measurement*

velocity microphones *see microphones*

velocity-modulation tubes
- No entries

velocity spectrometers *see mass spectrometers*

Veneziano model
- extended PCAC+Veneziano type model, Goldberger Treiman relations, $\eta\to\gamma\gamma$or $\pi^+\pi^-\gamma$ 8−21354
- hadrons, extended, stochastic description 8−431
- impact parameter amplitude *(Russian)* 8−37187
- multi-Regge limit 8−29274
- multi-Regge limit of Veneziano model, exchange of new trajectories 8−33043
- multi-Regge limit of Veneziano model, unconventional trajectories props. 8−33044
- Regge behaviour of 6-point function and new trajectories 8−16998
- sister trajectories *(Russian)* 8−41513
- K electromag. form factor Veneziano-type scatt. amplitudes *(Japanese)* 8−17019

ventilating *see ventilation*

ventilation
- *see also air conditioning*
- mechanical ventilation systems noise control, design approach 8−42489
- radioactive tracer appls. to ventilation and air pollution studies, review 8−28306
- sound attenuators, attenuation characts. 8−30123

ventilators *see ventilation*

Venus
- atmosphere, anal. by automatic interplanetary stations (Venera-4, 5, 6 and 8) 8−28520
- atmosphere, CO_2 lines equivalent widths, multiple scatt. calcs. 8−4095
- atmosphere, dynamical processes, three-dimens. model 8−32376
- atmosphere, impact ejecta trajectories, drag and gravity effects, analytic solns. 8−40854
- atmosphere, probe flight characts., scale model expts. 8−7854
- atmosphere, thermal regime exploration methods *(Czech)* 8−32374
- atmosphere, turbulent mixing coeff. and homopause height 8−49354
- atmospheric, review 8−32377
- atmospheric buoyant station, placed by inflated balloon entry 8−4058
- bow shock location compared with Mercury, Mars and Earth 8−28560
- cloud cover obs. and recording 8−49355
- cloud layer, optical model from spectral photometric data from entry probes and orbiters 8−4130
- clouds, UV absorbers identification 8−20665
- daytime ionosphere, two-freq. radioscopy results from Venera 9 and (Venera 10) 8−4129
- diameter meas. by occultation obs., teaching expt. 8−12457
- exploration by space craft, review 8−12076
- geomorphological obs. from Venera 9 and Venera 10 8−7895
- global thermal emission and radiometric albedo *(Russian)* 8−4132
- ionosphere, daytime topside, plasma transport 8−4131
- IR emission spectrum, 17-38 μm, aqueous H_2SO_4 droplets in CO_2 atm. 8−40855
- lower atmsopheric layer struct., appl. of penetrative convection model *(Russian)* 8−24335
- Mariner 10 expedition stages *(Norwegian)* 8−49291
- Mariner 10 radio occultation obs., pressure-temp. profiles 8−28563
- motion, numerical theory using radar, optical and Venera satellite obs. data 8−16325
- natural satellites, theory of escape 8−16323
- nightside ionosphere, electron currents meas. in optical shadow by Venera satellites 8−4133
- Pioneer Venus 1978, prospects 8−36436
- radar observations, delay time and Doppler freq. correction 8−7897
- radio emission in H_2O 1.35 cm line 8−20664
- rock density, method, equipment and results of Venera 10 meas. 8−28564
- solar wind interaction region, struct. from meas. of ion-flux characts. by (Venera 9 and 10) 8−4051
- spacecraft orbital transfer from Earth, minimal flight time calc. 8−4090
- spectrum, interpretation of weak absorpt. lines 8−24481
- surface, geologic interpretation of new radar obs. 8−20666
- troposphere, chem. model, vertical zoning, comp., diurnal vars. 8−45251
- CO_2, IR absorpt. bands, 3900-10000 cm^{-1}, assignment 8−7896
- H_2SO_4 aerosol cloud model implications 8−3312

Verdet constant *see Faraday effect*

Verneuil process *see crystal growth from melt*

vertex functions
- *see also elementary particle interactions; elementary particle theory; quantum field theory of interactions*
- Ising model, convergence of Feynman diag. expansions 8−16750

vibrating bodies
- *see also elastic waves; pendulums; piezoelectric oscillations; vibrations*
- absorbing structures, vibr. energy propag. 8−9596
- arches with flexibly supported ends, freqs. and critical loads 8−30218
- autoparametrically coupled systems, stochastic stability of stationary response 8−20961
- beam, 2-span, transverse vibr. under moving conc. load *(Russian)* 8−34063
- beam and circular plate with compliant boundaries, vibr. response 8−13952
- beam of linearly varying channel cross-section in centrifugal force field, coupled vibr. 8−18217
- beam on inertial elastic foundation, response to moving load 8−5680
- beams, free vibr., shear effect *(Polish)* 8−13966
- beams, fundamental natural freqs., upper and lower bounds 8−13957
- beams, tapered hinged, large-amplitude free vibrs. 8−38226
- beams, transient response prediction by Laplace transform techniques 8−1596
- Beck's column on elastic foundation, stability 8−13964
- biharmonic action on oscillator *(Russian)* 8−12556

vibrating bodies continued
- cantilever circular cylindrical shells, linear formula for critical freqs. 8−38240
- cantilever column under transient follower forces 8−1590
- cantilever sandwich beams, natural freqs. of vibr. 8−18212
- circular membrane, transient response to eccentric annular impact load 8−34056
- circular plate, finite amplitude vibr. 8−30214
- circular plate of variable thickness, antisymmetric modes of vibration 8−38239
- circular plates, temp. effects on large amplitude vibrations 8−13951
- circular plates subjected to transient loads, nonlinear dynamic response 8−16648
- circular rings, inextensional vibrations 8−13949
- circumferentially travelling radial loads on rings and cylinders 8−1564
- clamped skewed plates, elastic deformations by dynamic relaxation 8−34049
- clamped square plates, Rayleigh-Ritz vibration analysis with modified Bolotin flexural freq. estimates 8−42563
- clusters of cylinders in liquid-filled channels, free vibrations 8−38238
- complex Young's modulus determ. by resonant rod vibrs. *(German)* 8−18259
- composite plates with cut-outs, clamped, dynamic response 8−30222
- composite plates with cut-outs, simply-supported, dynamic response 8−30221
- composite rods, strongly anisotropic, dispersion longit. waves *(French)* 8−12573
- conical shell of compressible nonlinear elastic material, axisymm. proper vibr. 8−30211
- connected plates, vibr. power flow, cross-spectral density appl. 8−13947
- coupled dynamic systems, loss and coupling loss factors 8−38230
- coupled vibratory sources, low freq. discrimination 8−18096
- curved box girders, coupled free vibrations 8−30217
- curved rods of variable cross section, wave propag. 8−9484
- cylinder, longitudinal vibrs., gravity effects 8−34061
- cylinder in near-critical flow, influence of acoustic surface vibrs. on drag 8−5729
- cylinders, resonantly vibrating, vortex-excited lift and reaction forces 8−13961
- cylinders, solid or hollow, approx. separation of variables appl. to vibr. problems 8−1605
- cylinders and plates, dynamic deform. at high frequencies *(Russian)* 8−18223
- cylindrical pipes, modal density and damping 8−13948
- cylindrical shell, arbitrary cross section, transient motion in acoustic medium 8−38244
- cylindrical shell, nonlinear natural vibr. *(Russian)* 8−34062
- cylindrical shell in rigid baffle, model efficiencies of sound radiation and additional mass coeffs. 8−38129
- cylindrical shells, vibr. anal. by finite element formulation 8−34048
- cylindrical shells of varying thickness, natural freqs. and buckling loads 8−1597
- cylindrical shells with finite regions of structural discontinuity, wave propag. 8−13841
- damped, sandwich beam subjected to moving forces, forced vibr. 8−13953
- double-cantilever beam, forced vibration technique for meas. of material damping 8−19964
- dynamic vibration absorber, consisting of three permanent magnets 8−9614
- education, Hooke's law oscillator, ideal, anharmonic vibrs. 8−36743
- elastic bars in circulatory systems, influence of end supports on stability 8−30224
- elastic half-space, steady state vibr. elastic contact problem, dual integral eqns. appl. 8−18219
- elastic rod on viscoelastic half-space, forced longit. vibr., appl. to muscle study 8−44538
- elastic thin circular plate and particle of mass free vibr. analogy 8−1600
- elasticity with thermodiffusion, vibr. boundary value problems 8−41164
- electromechanical vibration-mounting, for machine vibration active suppression 8−18102
- elliptic arc bar, vibrs. perpendicular to plane 8−26076
- fibre composites, orthogonally reinforced, wave propagations 8−41168
- finite beam subjected to travelling loads with accel. dynamic behaviour 8−34055
- finite periodic beams, response to convected loading 8−38234
- flat skin-stringer structures, finite strip analysis 8−30220
- flexural mode vibration reduction using impedance systems 8−18225
- fluid filled cylindrical shell, response to moving load 8−38236
- forced vibrs. shell, viscoelastically damped, filled with pressurised liq., forced vibrs. 8−9584
- gyroscope, with shock absorber, errors due to spatial vibr. *(Russian)* 8−13892
- hand-arm system, vibrational responses of hand 8−7380
- heat exchanger tube banks, flow-induced vibrs. 8−46929
- helical spring of small pitch, free waves propag. 8−9598
- highly prestressed anisotropic plates, numerical perturbation technique 8−18214
- I-beams, normal modes 8−9597
- inelastic critical strength prediction by vibration testing 8−35611
- infinite plate reinforced by finite beam set and driven by point force, sound radiation anal. 8−1496
- infinite thin elastic plate under fluid loading, point admittance 8−13959
- inhomogeneous elastic structures, active compensation of vibrs. 8−18103
- isotropic elastic body, asymptotic distrib. of natural freqs. *(Japanese)* 8−30121
- isotropic random surfaces, profile spectra and spectral densities 8−9593
- layered shells of revolution, torsional vibrations 8−34053
- linear dynamic systems, response to product random processes 8−34054
- linear one degree of freedom system with random excitation 8−34057
- linear structures' greatest maximum response analysis 8−38241
- mechanical structures, realistic fatigue modelling 8−31517
- mechanical vibrators miniaturisation 8−18229
- mitral valve vibration anal. to detect first heart sound freq. 8−40233

vibrating bodies continued
  multilayer orthotropic shells *(Russian)* 8−13968
  nonconservative system resonance, modal analysis 8−42557
  nonlinear beam carrying concentrated mass, random vibrations 8−33948
  nonlinear oscill. of beam system *(Russian)* 8−13969
  nonlinear two-degrees-of-freedom system, internal resonance, forced vibrations 8−12551
  orthotropic plate vibrating problems, reduction method generalised procedure 8−8246
  orthotropic shells of revolution, maxi-element anal. for free vibrs. 8−13955
  panels, influence of in-plane loading on flutter and divergence 8−1599
  panels, support location influence on flutter, Galerkin method 8−1598
  piano string, longitudinal vibrations and inharmonic sound box tone *(Japanese)* 8−13865
  piezoelectric resonator with vibrating wall, impacting oscills. simulation *(Japanese)* 8−9483
  pipe conveying fluid, wave propag. and vibration response 8−9592
  piston engines, elastically suspended, nonlinear vibr. under kinematic stochastic excitations *(Polish)* 8−18221
  plate, beam-reinforced, edge support influence on admittance 8−1497
  plate, elastic, under aerodynamic tension, flutter, bending stiffness effect 8−30208
  plate, increase of first natural freq. and buckling load by optimal fields of initial stresses 8−13945
  plate, rectangular, of arbitrary thickness, free vibr. 8−13954
  plate, vibration mode, damping of Brownian motion by cold load 8−13967
  plate clamped along contour, vibr. problem, exact soln. 8−18228
  plate in turbulent pressure-fluctuation field, vibrations and sound radiation 8−38130
  plate-spring struct., dynamic characteristic determ. by rigid finite element method *(Polish)* 8−18220
  plates, thin rectangular, fundamental vibration freq. 8−38231
  plates joined at right angles with fluid contact, diffraction problem 8−18224
  plates on elastic foundations, nonlinear dynamic behaviour 8−13956
  proportionate Coulomb and viscously damped isolation system 8−42561
  rectangular and circular plates supporting masses, fundamental vibration freq. 8−30209
  rectangular plate, initially stressed, forced motion, elasticity solution 8−38235
  rectangular plate, supported on sides and some segments, free vibration 8−12550
  rectangular plates with elastically restrained edges, transverse vibrations 8−13960
  regular polygonal clamped plates carrying concentrated masses, free transverse vibration 8−42559
  Rijke tube, contrib. to asymptotic theory *(French)* 8−1491
  ring subjected to distributed impulsive load, dynamic response 8−13946
  rings on periodic radial supports, free vibration 8−9591
  rods axisymmetric motions, experimental assessment of Mindlin-McNiven rod theory 8−1595
  rotary structural joints, energy dissipation 8−30245
  rotating bars, extensional vibrations 8−30213
  sandwich beam shear-damping reduction effects 8−42560
  sandwich beams, tapered symmetric, frequency and loss factors 8−38247
  segmented beams, Fourier series component mode method 8−38237
  semilunar valvular motion vibr. model during early diastole, rel. to second heart sound 8−44533
  semilunar valvular vibration in early diastole, rel. to second heart sound 8−44544
  shear beam, transient response to correlated random boundary excitation 8−38245
  shells, finite cylindrical, of various wall thicknesses, flexural vibrs. 8−1588
  shells, thin, free vibr. anal. with approx. methods *(Russian)* 8−42564
  simply supported plates carrying concentrated masses subjected to hydrostatic in-plane stresses 8−30223
  simply supported regular polygonal plates, second natural freq. determ. 8−30120
  slender beams and thin plates, deformation effects, comments and reply 8−38229
  smooth circular cylinders mounted in tandem, in-line flutter 8−13958
  solid cylinders, axially symmetric natural vibrations 8−38131
  spherical floating gyroscope, perturbing viscous friction moment in suspension due to vibr. *(Russian)* 8−13893
  spherical shell accelerating in fluid medium, generation of waves 8−13843
  spinning annular plates reinforced with edge beams, vibration and stability 8−38225
  square laminated panels, forced transverse vibr. expt. *(Japanese)* 8−22298
  steel bar, effectiveness of rigid vibration-absorbing coating 8−18226
  structural vibration anal. using subspace iteration 8−38233
  submerged cylinders, forced oscills. test in water 8−5728
  systems with discontinuities, exact and direct analytical solns. 8−13962
  tapered beams and beams carrying mass, vibrations, finite element formulation, comments and reply 8−13950
  tapered cantilevers, nonlinear vibrations 8−34052
  thin elastic plate of const. width, vibr. energy propag. 8−9599
  thin elastic plates, nonlinear vibr. 8−1593
  thin plate flexural modes, synthesis of vibr. suppression system 8−9494
  thin rectangular plates, stability and vibration anal. by simplified mixed finite elements 8−34058
  thin strip, dispersion of flexural normal modes 8−1604
  thin tubes conveying fluid, collapse and flutter, comments and reply 8−34060
  three arm plate tuning fork, anal., mechanical filter appl. 8−22300
  three-layer structure, axisymmetrically driven, acoustic radiation 8−1507
  Timoshenko beam, elastically supported, moving harmonic load 8−42566
  torsional mass in gravimeter, vibration damping *(Russian)* 8−4015
  triangular plates on Vlasov elastic half-space 8−13963
  tube arrays in cross-flow, flow induced vibrs. 8−46984

vibrating bodies continued
  tube banks in air crossflow, hydrodynamic vibration models *(Russian)* 8−46981
  tube rows and arrays, fluid elastic whirling 8−46928
  tubes containing fluids, vibr. freqs. and flow parameters 8−1492
  viscoelastic beam, continuous, dynamic response 8−9569
  viscoelastically damped beams, shock response 8−38232
  yawed circular cylinders, vortex excited oscills. 8−46982

vibration control
  see also damping
  active suppression systems, effectiveness of criteria for placement of compensating sources 8−18099
  active vibration-mounting techniques 8−18102
  active vibration-suppression systems, automation 8−18098
  active vibration-suppression techniques for mechanical systems with many degrees of freedom 8−18101
  beam-reinforced plate, vibr. energy propag. in absorbing structs. 8−9596
  contact resonance of vibration pick-up and its control *(Japanese)* 8−33949
  double-pendulum vibration oscillator or seismograph 8−16200
  dynamic damping effect in small force measurement *(Russian)* 8−12687
  dynamic vibration absorber, consisting of three permanent magnets 8−9614
  flexural mode vibration damping by reinforcing beams 8−18097
  force controlled vibration isolation system 8−18100
  inhomogeneous elastic structures, active compensation of vibrs. 8−18103
  materials for noise and vibr. control, review 8−13854
  noise and vibration control systems, review 8−30127
  physical and technical acoustics, conference, Zvenigorodskii, USSR (Sep. 1977) 8−18081
  plate vibr. suppression by rate optimal response, numerical study 8−30229
  sound and vibration fields coupling in compensation of radiation nrom plate at subcritical freqs. 8−18110
  sound and vibration fields suppression, synthesis of systems 8−9494

vibration measurement
  see also seismometers
  aerospace instrumentation, conference, Las Vegas, Nev., USA, (May 1977) 8−12075
  blade, rotating, vibr. analysis using holographic interferometry 8−32807
  capacitive transducer with superconducting resonator for mechanical vibration meas. 8−21127
  computerised vibrational spectroscopy, using piezoelectric polymer transducers 8−29105
  contact resonance of vibration pick-up and its control *(Japanese)* 8−33949
  contactless meas. by fibre-optic and capacitive transducers 8−8400
  decrement recording as function of amplitude with fully automatic system 8−15630
  dynamic laser speckle interferometry, appl. to transient flexure 8−32861
  electronic equipment components, vibration charact. determ. by holographic interferography 8−29916
  electronic speckle pattern interferometry, small vibrations meas. 8−32865
  fibre optic laser-Doppler probe, mechanical vibr. meas. 8−30248
  high-temperature US apparatus for elasticity characts. and thermal cond. meas. of materials 8−5705
  holographic interferometry, time average, real time obs. of vibrating structs. 8−25813
  holographic interferometry, transient wave motion obs. from single doubly-exposed hologram 8−25825
  holographic vibration measurement, review *(German)* 8−33709
  holography, pulsed sandwich, exam. of electric drill vibrs. 8−33701
  holography, shifted reference, advantage of freq. translation error 8−42304
  in-plane mechanical vibrs. meas. by speckle imaging, sub Å range 8−30247
  laser-Doppler meter, 100 Å to 10 cm *(French)* 8−30250
  methods survey, dynamics, sensitivity and accuracy aspects *(Dutch)* 8−36999
  optical fibre as flexible coherent probe of vibr. 8−25975
  optoelectronic method, non-contact and non-reactive, at 60 kHz *(German)* 8−32805
  power generation, vibration monitor for rotating machines, ave. frequency technique 8−13299
  re-entry vehicle acoustic/vibration environment expt. 8−20620
  shock absorber, elastic damping props. determ. unit 8−5703
  sinusoidal phase modulated stroboscopic holography, for vibration anal. 8−29919
  strobe-hologram method, interference effect, linear approx. 8−1192
  structural dynamics, modal anal. 8−39993
  structural failure detection by vibration detector 8−15641
  structural freq. response testing, impulse technique 8−39992
  surface displacement and vibration meas. using laser speckle *(French)* 8−4686
  torsional vibration meas. with laser Doppler system 8−45612
  transducer, gel electrocapillary transducer type, appl. *(Polish)* 8−26094
  transducer design for nuclear reactor environment 8−823
  tympanic membrane, human, phase sensitive holographic technique *(German)* 8−3513

vibrational states in disordered systems
  alkali borates, vitreous and cryst., vibr. spectra and struct. comparison 8−23470
  amorphous dielectric solids, low energy atomic motions and anomalies at low temps. 8−30724
  amorphous materials for IR and microwave absoprtion, temp. and freq. depends. 8−39539
  amorphous metal, elec. resist., anharmonicity effects 8−14700
  amorphous metals, rel. to elec. resistivity temp. depend. calc. 8−6342
  binary alloys, three mode, long wavelength optical vibr., appl. to $\mathrm{Ge}_x\mathrm{Si}_{1-x}$ 8−6135
  biological system, cooperative behaviour, Bose condensation, Frohlich model 8−35797
  cancerous cell culture, phonons, long-range coherence, microwave effects 8−35816

vibrational states in disordered systems continued
  configurational properties of liquids near glass transition 8−26662
  Debye solid, amorphous and disordered harmonic, struct. factors 8−9954
  diffusion of particle in disordered system 8−22885
  disordered chains with short-range order, freq. spectra 8−10148
  dispersion relation of phonon-like excitations 8−18727
  glass, acoustic phonons lifetime at low temps. 8−26650
  glass, elementary defect creation during glassmaking, model 8−22668
  glass, ion motion and mixed alkali effect analysis 8−30793
  glass, low-freq. Raman scatt., 6-700K, excess scatt. 8−23473
  glass, porous Vycor, surface phonons, Raman and IR reflectivity spectra meas. 8−38931
  glass, spectral diffusion, phonon echoes and US saturation recovery 8−10149
  glasses, acoustic and dielec. props. at low temps., review 8−6128
  glycerol, supercooled liq., dynamical struct. factor, Mossbauer spectroscopy 8−27126
  graft copolymers, normal vibrs., calc. method *(Russian)* 8−29871
  harmonic systems, disordered, spectrum of dynamical matrix 8−30705
  heavy water, collective excitations in 10^8 cm^{-1} momentum range 8−43087
  ice I, assignment of O-H stretching bands in disordered state 8−19454
  isotopically disordered vibr. crystal quantum transport eqn., electron-phonon coupling 8−39081
  Lennard-Jones, glass, Raman spectrum calc. 8−48165
  liquid, Debye temp., short-range order, theory 8−2264
  liquid, vibr. modes, direct and indirect dephasing 8−48162
  mass-disordered harmonic Hamiltonians, LF density of states 8−47488
  melting, dislocation model, appl. to FCC cryst. 8−26658
  melting, dislocation model 8−26657
  metal, amorphous, electronic and vibr. props. 8−10151
  metallic glass, phonon transport below 100K 8−14422
  metallic glasses, temp. depend. of elec. resist. 8−14702
  nitrate salts, Raman spectra, thermally disordered energy states 8−35122
  n-paraffins, solid and liq., Raman spectra, longitudinal acoustic vibr. mode 8−31183
  phonon lifetimes, struct. disorders effects 8−34584
  polyethylene, oriented, Raman active modes 8−23457
  polyethylene, perdeuterated, skeletal vibr. spectrum 8−23445
  polyethylene oxide, Raman scatt. from longitudinal acoustic modes of crysts. swollen by oligomers 8−27226
  polymer, amorphous, translational motion and lattice vibr. obs. by Raman scatt., T_g phenomena 8−23469
  polymer, general composite perturbed elastic rod soln., longitudinal acoustic mode 8−18726
  polymer, vibrational spectra of chain, Green's function anal. 8−18724
  polymer, vibrational spectra of chain, Green's function anal., Fourier method for perfect infinite chain 8−18725
  polymers, longitudinal acoustic mode, appl. of general theory to planar zigzag of general theory to planar zigzag methylene chains 8−14421
  polystyrene, isotactic, normal vibrational anal. 8−43869
  polytetrafluoroethylene copolymers and oligomers, melt and solid, Raman active longit. acoustic modes 8−19484
  rare earth-gallium sulphide glass, R_2S_3-$1.8Ga_2S_3$, vibr. and electronic spectra, short-range order 8−27228
  statistical copolymers, normal vibrs., calc. method *(Russian)* 8−29871
  tetraalkylammonium bromide, solid and liq., Raman spectra, longitudinal acoustic vibr. mode, mol. dimensions of ions 8−31183
  thermotropic liquid crystal, formation, dynamic approach 8−47239
  trichloroethane, CH_3-stretching modes, Raman spectra reson. energy transfer obs. 8−48162
  vibrational relaxation times calc. from low-freq. mol. spectrum 8−2205
  water, collective excitations in 10^8 cm^{-1} momentum range 8−43087
  As, amorphous, phonon freq. distrib. 8−30723
  As, bulk amorphous, sp ht. meas., 1.8-20K 8−22866
  As_2S_3, amorphous, low temp. US meas., two-level systems role 8−30703
  As_2S_3, two-phonon vibrational spectra, crystalline and amorphous forms, Raman and IR spectra 8−39537
  B, amorphous film, Raman scatt. exam. 8−39545
  $BaTiO_3$, electron energy loss spectra, 0.02-2 eV 8−39642
  $Ca_3(PO_4)_2$, amorphous, reduced intensity functions, thermal vibr. coupling 8−42910
  D_2O, isolated in glassy H_2O, IR spectrum, deuteron tunnelling 8−27207
  Ge, amorphous, vibrational spectra, struct. model calcs. 8−22806
  GeO_2, amorphous, phonon freq. distrib. 8−30723
  Ge_xSe_{1-x} glasses, vibr. props. 8−2219
  Ge_xSi_{1-x}, long wavelengths optical vibr. 8−6135
  Hg_2Br_2, powder, Raman spectra, press. effects 8−2837
  Hg_2Cl_2, powder, Raman spectra, press. effects 8−2837
  KBr, liquid inelastic neutron scatt. obs. from short wavelength charge fluctuations 8−47487
  N_2-Ar mixture, picosecond dephasing of coherently excited vibrations 8−22172
  NaCl, molten, dynamical struct. factors 8−47228
  PbO-SiO_2 glass, IR and Raman spectra interpreted in terms of struct. 8−27213
  Rb, liq., phonons, collective modes calcs. 8−2218
  RbBr, liq., dynamic density fluctuations, diagonalized relax. theory 8−47230
  Si, amorphous, reduced intensity functions, thermal vibr. coupling 8−42910
  SiO_2, amorphous, low temp. acoustic absorpt., 9 to 20K and 15 to 65 MHz, Anderson model interpret. 8−26633
  SiO_2, amorphous, phonons, cluster-Bethe lattice approach 8−10150
  SiO_2, electron energy loss spectra, 0.02-2 eV 8−39642
  SiO_2, vitreous, fast neutron irrad., low temp. US meas., two-level systems role 8−30703
  Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8−23474
  TiO_2, electron energy loss spectra, 0.02-2 eV 8−39642

vibrations
  see also lattice dynamics; molecular vibration; vibrating bodies
  aerospace guidance computer 8−21313
  aircraft, deformable, dynamic model for natural vibration anal. by finite elements 8−46909
  arterial stenosis, in vivo and model expts., flow-induced wall vibrs. 8−3535
  band (tape), endless, torsional vibrs. during const. axial vel., damping effects *(German)* 8−34065
  bar, impact vibr., motion and dynamic stability analysis 8−26081
  bar, localised damage region effect on parametric excitation 8−30215
  beam, nonuniform, static and dynamic instability analysis 8−13942
  beam vibration frequencies by Schelkunoff iteration with HP-65 calculator 8−1592
  Beck's column subjected to vertical+follower forces, vibr., stability 8−9583
  bridge, appl. of finite difference method to numerical study of dynamic effects *(French)* 8−36826
  building structs., eigenvalue routines 8−26078
  column buckling criteria determ. using vibr. data 8−34098
  computer tomography detector vibr. sensitivity 8−35955
  coupled flexural and longitudinal vibrations of finite structures, energy absorpt. estimation 8−1495
  damping, internal, in 2 and 3 dimens. continua 8−13970
  discomfort assessment of dual-axis whole-body vibration 8−13842
  discrete dynamic system with series structure, non-linearity of vibration 8−28935
  elastic body, justification of two scale method for class of integro-differential eqns *(French)* 8−28947
  elastically viscous systems, crit. flutter loading, approx. determ. *(Russian)* 8−30212
  elastomechanical systems, theoretical models correction method *(German)* 8−38
  flexible bar, min. vol. design by dynamic programming *(Polish)* 8−13965
  flutter eqn., continuation and direct soln. 8−34047
  g- and p-modes of non-adiabatic self-gravitating fluid, perturbational-variational expansion 8−32337
  gas lasers, vibration immunity for interference work 8−5489
  gyrotachometer, error autocompensation at angle vibr. of base *(Russian)* 8−16782
  hair cells of organ of Corti, thermal noise 8−15845
  Hamiltonian system, two-dimensional, stability of equilib. position in case of equal frequencies *(Russian)* 8−36814
  isotropic elastic body, asymptotic distrib. of natural freqs. *(Japanese)* 8−30121
  laminate, anisotropic cylindrical shell, optimal problems of vibrations 8−1602
  linear damped system, of finite degrees of freedom, numerical solution 8−24656
  magnetovibration analyser for magnetite suspension 8−4668
  manual control operator performance, gain and vibration effects interaction 8−44756
  material anelastic behaviour, anal. using 3-lumped vibr. model *(Japanese)* 8−47473
  mechnical coupled-transmission lines 8−52
  metal, fatigue and inelasticity testing apparatus in symmetrical bending mode, 36 to 330 Hz 8−27722
  metals, elastic consts., resonance method for determ. within 80-300K temp. range 8−46918
  multi-degree of freedom system, Holzer's method 8−34059
  natural, orthotropic cylindrical panel with glued circular ribs 8−22299
  nonhamiltonian systems with one degree of freedom, forced periodic motion *(Russian)* 8−20959
  normal modes of self-gravitating fluids in perturbed configurations, perturbational-variation procedure 8−32336
  nuclear power plant seismic floor response spectra 8−819
  nucleation of crystallization centres, low frequency vibration effects on rate *(Russian)* 8−15383
  piezoceramic disc resonators, dispersion of thickness vibrs. 8−22237
  plane elastic standing waves of finite amplitude 8−18218
  plate, heated, vibr. anal., thermal buckling 8−26073
  plates, thick, higher order theory 8−26074
  plates, thin rectangular, with arbitrarily oriented stiffeners, free vibrs. 8−1591
  powder fluid bed forming in vacuum under vibratory action model 8−11147
  PVC, mechanochemical degradation in primary struct., mech. vibration effects, IR spectra *(German)* 8−19769
  PWR, internal vibration calc. rel to operational safety condition *(Czech)* 8−8915
  rod with nonlinear curvature, dynamic stability theory, lateral bending problem under torsion *(German)* 8−54
  semiconductors, elastic consts., resonance method for determ. within 80-300K temp. range 8−46918
  shell of revolution, resonant oscillation obs. by holographic interferometry *(Russian)* 8−22297
  stationary random processes, spectral density structure estimation *(Russian)* 8−24736
  steel VNS-2, damping capacity, magnetomechanical, phase transform. effects 8−31445
  stretched wire, vibr. freq., stiffness corrections for undergraduate expts. 8−12473
  string vibrations, linear and nonlinear, physical discretisation 8−45480
  structural dynamics, vibrs., eigenrelations 8−1589
  supersonic potential flow, panel flutter, finite element calc. 8−26152
  testing materials and structures 8−3298
  thermoacoustic vibration generation, in heated channel laminar flow 8−14029
  three-support bearing shaft system, flexural amplitude determ. and reduction method 8−46890
  timing periodic events, half-column method for student expt. 8−12516
  tube bank, in-line, acoustic reson. generation mech. 8−46958
  US vel. propag. meter for NDT of polymers 8−19976
  Zienkiewicz four-time-level scheme for numerical integration 8−1594
vibrations, crystal lattice *see lattice dynamics*
vibrations, molecular *see molecular vibration*
vibrations of crystal lattices *see lattice dynamics*
vibrometers *see vibration measurement*
vibronic states of molecules *see molecular vibronic states*
video recording
  C-CD camera, implantable, for continuous recording of sheep ovary images during reproductive cycle 8−40442
  FIM, video recorder registration of unstationary images 8−24897

video recording continued
holographic recording of digital colour TV signals on photographic film *(German)* 8−22101
image transform tape to film system 8−45742
magnetic tapes properties, ferromagnetic dispersions structural and magnetic characteristics *(Russian)* 8−16886
SEM, dynamic, with video tape recording 8−32952
tutored videotape instruction advantages for science and engineering courses 8−8194
TV signals on cine film, electron beam recording *(Russian)* 8−21251
X-ray TV, high-resolution system for medical work 8−24120
video signals
biofeedback for alpha monitoring of brain activity 8−20299
fibre optic video link, review of NASA tasks 8−42441
full duplex transmission link over single strand optical fibre 8−1341
image feedback processor, ghost image elimination from TV display 8−46519
LED analogue transmission, LED linearisation by predistortion 8−37993
lightwave communications, Bell system evaluation in Chicago 8−46821
videophones *see videotelephony*
videotelephones *see videotelephony*
videotelephony
X-ray picture transmission over voice grade telephone channels 8−44607
vidicons *see television camera tubes*
viewing screens *see screens (display)*
virial coefficients *see equations of state*
virtuons (virtual phonons) *see phonons*
viscoelasticity
see also creep; internal friction; stress relaxation
acoustic scattering, HF from submerged cylindrical shells with viscoelastic coatings 8−1478
adhesion of solids, review of physical mechanisms *(French)* 8−6231
aliphatic-aromatic block copolyamides, synthesis, struct. and dynamic viscoelasticity, DTA and X-ray anal. *(Japanese)* 8−31377
alkali borate and phosphate glasses, mech. and dielec. relaxs. and interpet. 8−27159
amorphous solids, time-temperature-pressure superposition phenomena, free volume theory 8−26059
arterial segments, canine, nonlinear anisotropic viscoelastic props. 8−20205
bending of orthotropic rectangular plates, conformal orthotropy concept 8−38204
buckling of viscoelastic plates 8−13932
butanediol-1,3, viscoelastic props., digital correlation Brillouin scatt. 8−2865
Cauchy and periodic unilateral problems for ageing linear viscoelastic materials 8−30191
circular viscoelastic porous shell, dispersion of longitudinal waves *(Russian)* 8−42556
coating, free, of vert. surface, by viscoelastic (viscoplastic) fluid 8−42576
composite materials, self-consistent estimates for viscoelastic creep 8−13921
compression struts, of nonlinear viscoelastic materal time dependent load bearing capability *(German)* 8−48474
conformational entropy effects in viscoelastic flow, continuum description 8−1621
continuous viscoelastic beam, dynamic response 8−9569
crack growth in viscoelastic medium *(Russian)* 8−18252
crack tip viscoelastic losses, detachment of glass sphere from viscoelastic mass *(French)* 8−42536
cyclohexanal, liq., viscoelastic and structural relax., US rel. and absorption meas. 8−26634
cylinder, short, visioelastic, expt. and theoretical investigation of heat evolution in cyclic compression 8−13929
cylinder contact with visocelastic lubricant, friction 8−7056
cylindrical shell, arbitrary cross section, transient motion in acoustic medium 8−38244
dissipation measures in viscoelastic media 8−42540
elastic circular plate with clamped edge on viscoelastic foundation with centre load 8−18176
elastic/viscoelastic bar interface, impact wave behaviour 8−26075
elastic/viscoplastic plate, combined longitudinal/torsional stress wave propag. *(Japanese)* 8−38227
entangled polymers, viscoelastic props., transient network model 8−13918
equation of state for class of viscoelastic deforms. 8−26060
equations, stability of numerical soln. 8−16647
fibrous composite, residual stress form. during hardening 8−1575
flexible string under transverse impact, dynamic deform. and possible unwinding from drum *(Russian)* 8−22279
flexible string under transverse impact loading, eqns. of motion *(Russian)* 8−22280
flexible viscoelastic cylindrical shell, dynamic stability 8−5678
flow along conical rotor, of viscoelastic fluid film 8−1697
fluid, oscillatory flow past infinite porous plate with variable suction 8−38373
fluid-saturated cracked solids, viscoelastic props. 8−36154
forced vibrs. shell, viscoelastically damped, filled with pressurised liq., forced vibrs. 8−9584
glass punch impact on viscoelastic solid *(French)* 8−42535
head viscoelastic model, impact response 8−40234
isotropic linear material characteristics, finite element method *(German)* 8−32681
laminate, residual stress form. during hardening 8−1575
laminated viscoelastic composite, wave propag., dispersion relations, mode shapes, variational methods 8−18215
linear, scalar and vector-valued optimisation 8−5665
linear one-dimensional viscoelastic solid, flow and relaxation distribution 8−36833
linear viscoelastic material, crack propagation due to increasing applied stress 8−18246
liquid flow in viscoelastic tube, wave propag. 8−9714
magneto-viscoelastic wave propag. in Voigt type material 8−31100
maltrose syrup, separation of elastic and shear thinning effects in capillary rheometer 8−42691
medial collateral ligament substitute specification and design 8−36060
viscoelasticity continued
micropolar fluid, second order, fund. and constitutive eqns., thermodynamics and flow 8−20970
muscle viscoelastic props. determ., appl. of forced longit.-vibr. of elastic rod on viscoelastic half-space 8−44538
NBS polystyrene, memory-function determ., relax. tests 8−1619
noncrystalline solids, thermally stimulated creep method for mol. motions investig. 8−22787
nonisothermal elastic-plastic and elastic-viscoplastic deforms., stress/strain relations 8−22276
nonlinear, variational principles for isothermal problems *(Russian)* 8−28950
nonlinear deform. wave propagation in dissipative medium, interaction and reverse problems 8−53
nonlinear viscoelastic spherical membrane, quasistatic inflation, bifurcation of response 8−46897
orthogonal fibre reinforced viscoelastic composites 8−42558
plastics, viscoelastic, fatigue testing, using hollow cylindrical specimens *(German)* 8−44292
PMMA, biaxially oriented, shrinking kinetics in transform. range 8−27588
PMMA, strain rate effects on viscoelastic crack bifurcation 8−35473
polyacrylamide-maltose syrup soln., meas. of viscoelastic flow props. 8−1622
polycarbonate, viscoelastic ductile, delayed yielding of plane stress viscoelastic Dugdale model 8−27569
polydimethylsiloxne, end-linked chains, viscoelastic losses 8−46898
polyethylene, expanded, dynamic model rel. to drop impact 8−7160
polyethylene, linear, cold-deformed, texture and molecular chain mobility 8−19805
polyethylene melt, low density, filler effect on viscosity and viscoelasticity 8−46919
polyethylene terephthalate, thermally stimulated creep method for mol. motions investig. 8−22787
polyethylenes, molten, Weissenberg effect 8−9616
polyisobutylene, memory-function determ., relax. tests 8−1619
polyisobutylene melt, thermodynamic constitutive eqns., adiabatic deform. expts. 8−1620
polymer, amorphous, molecular origin of relaxations 8−26058
polymer, relaxation properties investigation method and instrument 8−39967
polymer, viscoelastic ductile, delayed yielding of plane stress viscoelastic Dugdale model 8−27569
polymer chain, viscoelastic, local relax. props. anisotropy, internal friction influence *(Russian)* 8−37780
polymer film, viscoelastic props., capacitance change meas. *(Japanese)* 8−23752
polymer melt, viscoelasticity, rheological props., prep., transport and processing effects, tensile and shear flow *(German)* 8−13982
polymer soln., viscoelasticity, rheological props., prep., transport and processing effects, tensile and shear flow *(German)* 8−13982
polymer solution, jet thrust technique for normal stresses 8−9669
polymer with macrodefects, fracture mechanism *(Russian)* 8−35500
polymeric fluids, entropy effects in viscoelasticity 8−9618
polymers, conversion of dielectric to viscoelastic data 8−48109
polymers, entangled, viscoelastic props., interchain-intrachain entanglement model 8−42575
polymers, multicomponent, props. and struct., review 8−44076
polyoxymethylene-copolyamide blend melt, viscoelastic peculiarities *(Russian)* 8−38263
polystyrene melt, normal and shear stress relax., Rheometrics mech. spectrometer transient response 8−42577
polyurethane, stress plate in contact zone with solid indentor 8−1624
polyvinylacetate melt, thermodynamic constitutive eqns., adiabatic deform. expts. 8−1620
polyvinylidene fluoride-PMMA blends, dynamic mech. props. and sonic velocity, cryst. phase transitions 8−26454
pseudo-elastic analysis of plastics, validity in load-bearing appl. 8−39868
reinforced hollow spheres, dynamic behaviour 8−1577
rheological relations invariance with rel. to orthogonal time depend. transform. of coords. 8−1623
Rivlin-Ericksen fluids, unsteady flow through circular and coaxial ducts in radial mag. fields 8−42632
rod, numerical inversion of Laplace transform. by asymptotic extension 8−1576
ıolling, Newtonian or non-Newtonian liqs., two-roll mill problem 8−42616
shaft, whirling motion, stability analysis 8−13894
shearing motion, unidirectional simple, analysis of automorphous model 8−5718
shell, cylindrical composite, with viscoelastic filler, parametric oscills., dynamic instability *(Russian)* 8−38221
shock wave structure, eqn. of state for viscoelastic medium 8−9594
silicon oil, separation of elastic and shear thining effects in capillary rheometer 8−42691
small deform. superposed on finite deform. *(Russian)* 8−32679
strain amplitudes, max. value for linear viscoelasticity theory 8−30252
stress wave propagation in viscoelastic media 8−46910
stress/strain meas., by Moire method *(German)* 8−22309
surface wave propagation in viscoelastic media 8−42555
suspension, dilute, arbitrary-shape particles, time-depend. flow, Brownian rot. effect 8−26188
temperature displacement and stresses anal. *(Russian)* 8−18194
tendon mechanics, discrete nonlinear viscoelastic model *(German)* 8−44525
thermally stimulated processes 8−10829
thermoviscoelasticity, bound dynamical problems, approx. calc. methods for crit. thermal states *(Russian)* 8−28949
thermoviscoelasticity, variational techniques *(Russian)* 8−13922
three-layer elastic-viscoelastic beam damping characteristics *(Japanese)* 8−9575
urethane rubber, viscoelastic disc, contact problem, photoviscoelasticity obs. *(Japanese)* 8−30202
viscoelastic properties dynamic evaluation for use in cardiac prosthetics 8−40405
viscoelastic reacting fluids flowing over flat plate, boundary layer anal. of surface deposition 8−42675

viscoelasticity continued
  wave propagation, weak, in elastic-plastic and elastic viscoplastic solids with interfaces, Al calcs. 8−18216
  Al-Mg-Si alloy, descriptive method for alloy creep tests by nonstationary loadings 8−23759
viscometers
  see also viscosity measurement
  capillary-type closed viscometer, effect of unsteady flow 8−9736
  complex apparatus for viscous and elastic prop. meas. at high press. of liquids 8−9734
  electromechanical, with digital readout, biological fluid meas. appl. 8−28131
  high viscosity fluid continuous meas. device 8−5834
  Hoppler, ball passage time meas. digital electronic circuit *(Polish)* 8−47075
  Newtonian fluid, secondary flow in cone-and-plate viscometer 8−42692
  one-bulb capillary type for polymer intrinsic viscosity meas. *(Polish)* 8−42687
  rotating disk, in liquid surface with adsorbed film, torque 8−32685
  small volume inclined falling ball viscometer 8−1772
  string viscometer with wide temp. range 8−26217
  temperature meas. at fixed viscosity, instrum. 8−1764
viscoplasticity *see plasticity*
viscosimeters *see viscometers*
viscosity
  see also electroviscous effect; internal friction; viscosity of gases; viscosity of liquids
  accretion discs in close binary systems, viscosity and tidal torques 8−12296
  cell membrane influence of lipid composition and procaine on hyperthermic cell death 8−27907
  cholesterol, adsorbed monolayer on aerosil, IR spectra 8−15753
  confined acoustic beam in viscous medium, viscous energy losses near boundary 8−18092
  cosmological fluid, lepton era, transport coeffs., Weinberg-Salam model 8−32623
  Dynamic fluid interface displacement and prediction of air entrainment 8−2337
  education, metallic glasses, phase transition and mech., elec. and mag. props. 8−36765
  entangled polymers, viscoelastic props., transient network model 8−13918
  fluid film, approx. eqns. for long nonlinear waves 8−38346
  friction coefficient, sliding, between liquid and solid, method for experimental det. 8−22307
  interpolation formulae, extrapolatable, for data correlation *(Dutch)* 8−12661
  interstellar gas, in disc galaxies, effects of dissipation on response to oval distortions 8−12355
  lecithin, adsorbed monolayer on aerosil, IR spectra 8−15753
  lunar crust, viscosity from large impact structs. isostasy 8−12120
  magnetic, ferromagnetic colloid system 8−15715
  Mercury crust, viscosity from large impact structs. isostasy 8−12120
  methylhydropolysiloxanes, equilibration by catalysts *(German)* 8−35722
  natural rubber, viscosity meas. when various accelerators were added *(German)* 8−30688
  neurone membrane microviscosity, rel. to elec. activity modulation by Aplysia 8−7329
  nondissipative viscous stresses 8−9741
  photographic emulsion 8−16866
  polyisoprene, rheological props., accelerator and temp. effects *(German)* 8−34101
  polymer, stiff, optimised Rouse-Zimm theory 8−46472
  polypropylene-bitumen mixture, thermomech. investigation changes in viscosity, ductility, elasticity, mol. wt. effects *(German)* 8−35454
  proportionate Coulomb and viscously damped isolation system 8−42561
  rod external segment surface membrane, lateral diffusion of rhodopsin 8−15828
  sea ice deformation, viscous law as stochastic average of plasticity 8−16028
  thermoviscous solids with microstructures, irreversible thermodynamics 8−34005
  turbine flowmeter, universal viscosity curve, errors 8−34243
  $e\bar{e}\nu_e\bar{\nu}_e$, reactive mixture, bulk viscosity 8−45565
  As-Se-Te glasses, glass form., charact. temp., density, thermal expansion and dynamical viscosity, struct. model 8−26672
  $Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, acoustic emission during viscous flow 8−42915
  Na_2O-GeO_2 glasses, low temp. viscosity, as function of composition 8−38865
  $Pd_{77.6}Cu_6Si_{16.5}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
  $Pd_{48}Ni_{32}P_{20}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
  $Pt_{45}Ni_{30}P_{25}$, metallic glass, viscosity meas. from rates of thermal transformations 8−26713
viscosity measurement
  see also viscometers
  gas friction, detector using active permanent magnet suspensions 8−24829
  high viscosity fluid continuous meas. device 8−5834
  high-temperature viscosity measurements by gas percolation through porous medium 8−1781
  Hoppler viscometer ball passage time meas. digital electronic circuit *(Polish)* 8−47075
  liquid, complex apparatus for viscous and elastic prop. meas. at high press. 8−9734
  liquids under shear, Couette cell for birefringent, viscous and dielectric props. meas. 8−37034
  polymer, one-bulb capillary viscometer appl. *(Polish)* 8−42687
  temperature meas. at fixed viscosity, instrum. 8−1764
viscosity of gases
  acetic acid, viscosity of dissociating vapour 8−5840
  butyric acid, viscosity of dissociating vapour 8−5840
  ethane, viscosity and thermal cond. of liquid and gas, correl. eqns. 8−26715
  fluid, reacting spheres, kinetic theory 8−35668
viscosity of gases continued
  formic acid, viscosity of dissociating vapour 8−5840
  hydrocarbon, internal degrees of freedom, Eucken factor, effect on transfer props. 8−22445
  inert gas binary mixture, unlike mol. force consts. from viscosity data, thermal cond. 8−33565
  inert gases, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
  interaction potential, direct determ. from gas viscosity meas. 8−37702
  polyatomic gas viscosity related to Cp and molal vol. 8−34248
  polyatomic gas-inert gas mixture, viscomag. diffusion flux 8−47087
  propionic acid, viscosity of dissociating vapour 8−5840
  standards for single substances and mixtures 8−14481
  steam, effective spherically symmetric pots., applicability to viscosity calc. 8−1779
  steam, viscosity, international formulation 8−26714
  steam-air mixture, condensation, transport and thermodynamic props. *(Japanese)* 8−34251
  air, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
  Ar, force constant props., 12-6 pot. model 8−13563
  Ar, viscosity, meas. up to 2000K by percolation through porous medium 8−1781
  CO_2, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
  I_2, dynamic friction coeff. meas. by saturation spectroscopy, radiative lifetimes 8−18368
  Kr mixtures, binary and ternary, viscosity meas. 8−18367
  N_2, measurement using capillary-type closed viscometer, effect of unsteady flow 8−9736
  N_2, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
  O_2, shear viscosity coeff., 75-300K, up to 34 MPa 8−34253
  O_2, viscosity rel. to ionis., skin friction of wetted oscill. disc 8−34252
  Xe, viscosity meas., 170-1300K, up to 1000 bar 8−42698
  Xe+He(Ne)(Ar)(Kr), binary mixture viscosity and diffusion coeffs. 8−38443

viscosity of liquids
  see also lubrication
  acrylonitrile-butadiene-styrene terpolymers Sb_2O_3 effect of melt viscosity *(German)* 8−18265
  n-alkane-dimethylsiloxane mixtures, shear viscosity press. depend. 8−30775
  n-alkanes, obs. and anal. of depolarised Rayleigh doublet 8−35154
  p-aromatic poly(amide hydrazide), dimethyl sulphoxide solvent, dynamic birefringence, conform., viscosity *(Russian)* 8−39525
  auramine O, fluoresc. efficiency, solvent viscosity effects at high press. 8−9188
  binary critical mixtures, shear viscosity, pseudospinodal curves and scaling 8−22844
  binary fluid, crit. transport props., theory 8−14497
  binary liquid mixtures, viscous flow props., mol. thermodynamic theory 8−2280
  binary mixture, viscosity, semi-empirical procedure, data correlation 8−34643
  biological cell saturation density, evidence against diffusion-limited process 8−48770
  CBOOA, liq. cryst., temp. depend. of apparent viscosity and density 8−18542
  cholesteryl oleate, isotropic liq. cryst., shear viscosity 8−26668
  cholesteryl oleyl carbonate, isotropic liq. cryst., shear viscosity 8−26668
  concentrated electrolyte, solutions, viscosity, mixture law 8−18818
  crystal violet, fluoresc. efficiency, solvent viscosity effects at high press. 8−9188
  dielectric liquid, cond. effect on electroviscosity 8−1751
  dielectric polar liq., electroviscosity rel. to cond. process, EHD model 8−1750
  dilute suspension of spheres in power model fluid, apparent stress deform. behaviour 8−42578
  dyes in organic solvents of high viscosity, diffusion coeffs. 8−10203
  dynamic viscosity coeffs. *(Russian)* 8−47550
  elastohydrodynamic lubrication at high press., mineral oils between disks 8−34094
  electrolyte, dielectric dispersion and friction, viscous momentum transport and relax., ion mobility 8−27775
  electrolyte mixtures, in aq. soln., viscosity, individual electrolyte effects *(German)* 8−22881
  electrostatic drop formation, effects of conductive liquid props. 8−1122
  erythrocyte deformability, viscometric flow and laser diffractometric technique 8−35879
  ethane, viscosity and thermal cond. of liquid and gas, correl. eqns. 8−26715
  ethanol-water mixtures, specific volume, compressibility, viscosity, up to 3200 bar, 15, 25°C 8−10113
  ethyl formate, liquid, temp. depend. of US absorpt. and volume viscosity 8−38776
  ethyl n-dodecoate, photocapillary effect, temp. depend. *(Russian)* 8−34682
  ethylene-vinylacetate-copolymers charact. by gel chromatography, viscometry, osmotic meas. *(German)* 8−14496
  extended Jones-Dole equation, for rel. viscosity of electrolytic solns. 8−10208
  fluid, dense, chem. reacting, Enskog theory 8−35667
  fluid, reacting spheres, kinetic theory 8−35668
  galactomannan aqn. soln., rheological props., role of molecular mass and conc. *(French)* 8−22312
  HBAD, liq, cryst., temp. depend. of apparent viscosity and density 8−18542
  heavy and ordinary water dynamic viscosity coeffs. relation in liquid phase 8−21759
  n-hexane-n-dodecane 'ideal' mixture, viscosity, theory *(German)* 8−22882
  ideal mixture, viscosity, theory *(German)* 8−22882
  inert gases, transport props. in mean spherical approx. 8−9927
  isobutyric acid-water critical mixtures, shear viscosity, pseudospinodal curves and scaling 8−22844
  liquid crystal, colloid and surface chemical aspects 8−9950
  MBBA, isotropic, de Gennes coeffs. 8−31207
  MBBA, isotropic, obs. and anal. of depolarised Rayleigh doublet 8−35154
  MBBA, nematic liq. cryst., bend viscosity calc. 8−34423

viscosity of liquids continued
MDBA, liq. cryst., temp. depend. of apparent viscosity and density 8−18542
measurement complex apparatus for viscous and elastic prop. meas. at high press. 8−9734
methyl formate, liquid, temp. depend. of US absorpt. and volume viscosity 8−38776
mixture, empirical formula, continuum theory and generalised Navier-Stokes system 8−14498
mixture, Hildebrand fluidity eqn., viscosity calc. 8−38867
molten salts, cellular convection near solidification point *(French)* 8−14004
nematic liquid crystal, orientational electrooptic effects, time characts. 8−27191
nematic liquid crystal, twist viscosity, planar-model calc. 8−42893
nematic liquid crystals, MHD effect, high resolution NMR *(Russian)* 8−15040
nitrobenzene-cyclohexane system, viscosity and activation energy 8−26615
nitrobenzene-n-hexane, shear viscosity, critical conc. fluctuation rate, verification of renormalisation prediction 8−47514
parallel flow between parallel plates, substruct. distrib. and apparent viscosity 8−13983
phenylpyrimidines, liq. crysts., synthesis and phys. props. 8−1995
poly(methacrylic acid), aq. soln., gelation kinetics under shear stress 8−3387
polyacrylamide-maltose syrup soln., meas. of viscoelastic flow props. 8−1622
polybutadiene-n-hexane-n-heptane soln., Rayleigh scatt., diffusion coeff., viscosity 8−15179
polydimethyl siloxane solns., limiting viscosity no.-mol. wt. relations 8−18267
polyethylene film-resin melts, rheological props., prep. method depend. 8−34099
polyethylene melt, low density, filler effect on viscosity and viscoelasticity 8−46919
polymer in mixed solvents, viscosity data as function of mol. wt. 8−18266
polymer solution, bulk viscosity theory 8−22880
polymer solution, flexible mols., dynamic intrinsic viscosity, hydrodynamic interaction 8−47548
polymer solution, intrinsic viscosity 8−2281
polymer solution, Taylor-Gortler vortices, elongational viscosity effects 8−22379
polymer solutions, dil., dynamical props. 8−38608
polymer solutions, dilute, internal viscosities, frictional coeffs. calcs. 8−6171
polymer solutions, fluctuation-dissipation relations, viscosity, mol. wt. depend. 8−14266
polymer solutions, rheology, finitely extensible nonlinear elastic dumbbell theory 8−9617
polymer solutions, viscosity data represented as function of mol. wt. 8−26716
polyoxymethylene-copolyamide blend melt, viscoelastic peculiarities *(Russian)* 8−38263
polypropylene melt, zero-shear-rate viscosity, press. depend. meas. 8−43164
polystyrene, monodisperse latex, shear US meas. 8−31711
potential flow with elliptical form free boundary, viscosity effect 8−42581
protein dynamic states, role of geometry and elastic strains 8−48745
resin mortar, flowability, viscosity meas. with rotational viscometer *(Japanese)* 8−11260
simple liquids, transverse mode, Maxwell relax. time 8−22622
stiff polymer chain dynamics, local and global mode interaction, dil. soln. viscosity, dielectric relax. 8−37776
stratified flow, viscosity distribution effect on flow stream parameters along bottom surface, model *(Russian)* 8−22401
styrene-p-chlorostyrene triblock copolymer, dil. soln., conform. behaviour, comp. depend. 8−42886
styrene-vinylpyrrolidone block copolymer soln., conform. props., light-, X-ray scatt. and viscometry obs. *(Russian)* 8−37779
suspension of nonharmonic dumbell mols., intrinsic viscosity 8−2282
suspension of spheres, effective shear viscosity theory 8−11565
ternary electrolytes, viscosity and ion-solvent interactions in dioxane-water mixtures 8−18817
ternary fluid, crit. transport props., theory 8−14497
tetraglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
triglycine, aq. soln., density, viscosity and dielectric const., 0-60°C 8−47462
water, transport and thermodynamic props. *(Japanese)* 8−34251
water, viscosity, international formulation 8−26714
Ar, liquid, shear viscosity correlation function 8−47460
Ar, liquid, shear viscosity coeffs., model calcs. 8−47549
Ba, thermophysical properties, up to 1800K 8−30767
$CaCl_2$-KCl, binary melt, viscosity *(Japanese)* 8−10209
CaO-SiO_2 melt, viscosity and polymerisation *(Russian)* 8−26712
Co, viscosity, up to 2100K, vibr. method 8−38866
Cs, transport coeffs., temp. and press. depend., Enskog theory 8−6170
Fe, viscosity, up to 2100K, vibr. method 8−38866
FeO-SiO_2 melt, viscosity and polymerisation *(Russian)* 8−26712
^{3}He, liq., hydrodynamic modes, macroscopic dispersion relations, two fluid model 8−10242
^{3}He, liq., hydrodynamic modes, microscopic dispersion relations, transport coeffs. 8−10243
^{3}He, superfluid, heat capacity, spin susceptibility, NMR and viscosity *(Danish)* 8−22921
^{3}He superfluid, phys. props. *(Danish)* 8−2325
^{3}He, superfluid, quasiparticle transport eqn., shear viscosity 8−14531
^{3}He-B, viscosity near superfluid transition 8−38903
^{4}He, viscosity and positive ion mobility near melting transition 8−10240
Hg, transport coeffs., temp. and press. depend., Enskog theory 8−6170
$MgCl_2$-KCl, binary melt, viscosity *(Japanese)* 8−10209
MnO-SiO_2 melt, viscosity and polymerisation *(Russian)* 8−26712
Na_2-SiO_2-MgO glass, melt viscosity and IR meas. to study MgO behaviour *(Japanese)* 8−14495
NaCl-KCl electrolyte mixtures, in aq. soln., viscosity, individual electrolyte effects *(German)* 8−22881

viscosity of liquids continued
Ni, viscosity, up to 2100K, vibr. method 8−38866
O_2, shear viscosity coeff., 75-300K, up to 34 MPa 8−34253
PbO-SiO_2-TiO_2, molten, viscosity *(Japanese)* 8−18819
Rb, liquid, shear viscosity correlation function 8−47460
Rb, liquid, shear viscosity coeffs., model calcs. 8−47549
Se, shear viscosity relaxation rel. to US absorpt. 8−2202
Sn-Se, melt, density, kinematic viscosity, struct., 900-1400K 8−14395

visibility
see also atmospheric optics; brightness; light transmission
atmosphere, CW lidar meas. 8−40651
atmosphere, lidar meas., extinction coeff. extraction accuracy 8−24369
atmosphere, poor visibility due to pollution at Bombay Airport during monsoon season 8−32225
atmosphere, reduction by aerosols, linear system theory of visual acuity appl. 8−11997
atmosphere, visibility correl. with solar insolation at Fort Hood, Texas 8−24333
atmospheric haze effect on horizontal visibility range of objects 8−16161
dust, airborne, worldwide data on reduced visibility 8−40662
laser propagation experiment in low visibility atmosphere 8−46703
meteors, effective field of view for line sources 8−36535
moving target visibility, effect of mental set 8−27957
Ondrejov laser satellite-tracking station, cloud cover data 8−36418
reduction by aerosols in Los Angeles air basin 8−16157
underwater, basic controlling parameters 8−36196

visible and ultraviolet spectra of inorganic solids
alkali halide, chalcogen^{2-} vacancy centres, absorpt. and fluoresc. spectra 8−48204
alkali halides, microcryst. powders, colour centres, refl. spectra 8−23493
alkali halides, off to on centre defect transitions under hydrostatic press. 8−15199
alkali halides, vacuum UV absorption spectra, exciton splitting rel. to exchange interaction 8−23494
anthracene, O-O exciton absorption bands, thermomodulation study 8−39563
antiferromagnetic, noncollinear, exciton-magnon light absorpt. at T≠O *(Russian)* 8−23482
benzene film, vacuum UV absorpt. spectrum, 1100-2500 Å, effect of deposition temp. 8−23542
borosilicate photochromic glasses, photosensitivity rel. to AgCl particle shape 8−31223
chalcogenide semiconductors, optical and elec. props., comparison with SiO_2 8−6721
colour centre-phonon many-mode interaction, absorption band shape, adiabatic approx. 8−2883
diamond, irradiated, optical spectrum 8−6719
ferromagnetic dielectric, magneto-optical near UV reflection-spectra, meridional and polar intensity effects *(Russian)* 8−39572
ferromagnetic metal, magneto-optical near UV reflection-spectra, meridional and polar intensity effects *(Russian)* 8−39572
films, amorphous, prep., struct., props., review, book contrib. 8−48321
fluorochloroapatite, synthetic, defect struct. and colour centres obs. *(Russian)* 8−30612
GG GaS, indirect exciton exam. 8−39029
graphite intercalate with SbF_5 and AsF_5, optical reflectance 8−35163
graphite intercalation compounds, KC_8 and CsC_8 polarised reflectance 8−31213
halide crystals, 3p→4d transitions of transition metal ions, assignment from expts. on LiCl:Cu^+ 8−27272
leucosapphire, spectral absorpt. coeff., 1800K 8−27252
leucosapphire, spectral absorption coeff., 0.25-1.25 micron, up to 1800K, and 3.5-5.2, up to 1200K 8−27204
LiH, cubic, vibronic struct. and anisotropy of excitons, refl. and edge luminesc. spectra 8−23523
metal, light reflection, adatom characts. depend. 8−10918
metal sputtered film, compressive stress transition 8−10310
metal surface oxidation, refl. spectra obs. 8−39958
metallic thin film, structure-related optical characteristics in visible and UV 8−35217
metaphosphate glass: Ag dosimeter, optical absorpt. and radiophotolum., effect of temp. 8−40333
mixed crystals with indirect band struct., no-phonon struct. from Wannier exciton model 8−43898
oxide glass:Cr^{3+} absorption and emission 8−6774
oxide semiconductor crystals, with forbidden energy gap, review of spectroscopic props. 8−2876
polydiacetylene, cryst., refl. spectra, Kramers-Kronig transforms 8−43889
quartz, pleochroic amethyst, optical absorpt. of d^4 ion Fe^{4+} 8−15201
radiation damage tetragonal R2 centre, optical and EPR spectra 8−2888
rare earth cobalticyanides, R(Co$(CN)_6$)n.H_2O, (R=La to Lu), optical spectra 8−39566
rare earth compound, crystal field and Slater parameters and coordination 8−6771
rare earth garnets, cryst. field parameters for R^{3+} ions, exchange charge model 8−47747
rare earth-gallium sulphide glass, R_2S_3-1.8Ga_2S_3, vibr. and electronic spectra, short-range order 8−27228
rocks and minerals, colour values from diffuse reflectance spectra *(French)* 8−11881
ruby, optical pair spectrum, Stark effect with AC elec. field modulation 8−10911
ruby, optical spectra freq. shifts press. depend., nonperturbative theory 8−23499
ruby, spectral absorpt. coeff., 1800K 8−27252
ruby, spectral absorption coeff., 0.25-1.25 micron, up to 1800K, and 3.5-5.2, up to 1200K 8−27204
semiconductor, exciton absorption, electric field effect *(Russian)* 8−43902
semiconductors, light absorption, amplification and luminescence, saturation effects *(Russian)* 8−13771
silicate glass: Cr^{3+}, optical props., 88-273K, energy levels in crossing region 8−6709
silicate glasses:Cu^+, effect of UV irrad., absorption bands 8−31222
SmS film, metallic, interpretation of optical absorption spectrum 8−27344

visible and ultraviolet spectra of inorganic solids continued
transition metal ion 3d→4s transitions in crystals, obs. and interpretation 8−6339
zincblende structure semiconductor in intermediate mag. field, exciton spectra 8−18969
Ag aggregates, matrix isolation spectra 8−46476
Ag film, substrate surface structure effects on absorptance 8−19585
Ag halide photochromic glass, darkening mechanisms under pulsed laser excitation 8−25938
Ag, intraband optical conductivity, electron-electron scatt. 8−35166
Ag microcrystals, matrix isolation spectra 8−46476
$AgGaSe_2$ wavelength-modulated reflectance, optical electronic transitions, 1.5-5.5 eV 8−35170
$AgInSe_2$, reflectvvity and XPS meas. 8−35165
Ag_2S, metal-nonmetal transition, crystallographic, optical, mag. and transport props. 8−6418
AlF_3, disordered film, optical transitions as function of prep. conditions 8−27340
$(Al_{0.42}Ga_{0.58})As$, LPE grown layer, optical absorpt. coeff. meas. 8−6801
AlN, excitation, luminescence, reflection spectra in fund. absorpt. region 8−10956
α-Al_2O_3, colour centres, AES, electron energy loss, and optical spectroscopy obs. 8−35176
α-Al_2O_3:$V^{3+}(Cr^{3+})(Co^{3+})$, optical absorption spectra, DC and AC field effects 8−10925
β-Al_2O_3-Na_2O, colour centers, AES, electron energy loss, and optical spectroscopy obs. 8−35176
Al_2O_3-P_2O_5:Nd^{3+} glass, high Nd conc., spectroscopy and lasing obs. 8−46609
Ar, cryst., luminesc., absorpt. spectra, free, self-localised excitons coexistence *(Russian)* 8−31231
^{40}Ar:^{41}K, matrix isolation model system 8−45722
AsF_5-graphite intercalation compound, metallic. optical reflectance meas. 8−6683
As_2S_3, glassy, X-ray induced paramag. colour centres 8−19327
As_2Se_3, glassy, X-ray induced paramag. colour centres 8−19327
Au film, self-supporting, thermotransmission meas. 1.8 to 3.5 eV 8−27343
Au, intraband optical conductivity, electron-electron scatt. 8−35166
Au, ion implanted, ellipsometry, 1.8-5.5 eV, dielec. function 8−6697
Au ultrafine particles, optical props. 8−19481
β-B, rhombohedral, localised states charact., review, book contrib. 8−47728
$BaCl_2$:Pb, absorption and emission spectra *(Russian)* 8−23527
BaO-B_2O_3:UO_2^{2+}→Er^{3+} glass, energy transfer 8−2895
$Ba_{0.25}Sr_{0.75}Nb_2O_6$, spontaneous electroopticabsorption effect 8−19443
$BaTiO_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
Ca, optical props., 2-11 eV 8−15191
CaF_2:Co, X-irradiated, optical absorption spectrum 8−35173
CaF_2-NaF crysts., F_a centres, 385 and 435 nm absorpt. bands of electron irrad. crysts. 8−2889
CaO, electron irradiated, photocond. and luminesc. meas., F-centre electronic struct. determ. 8−6409
Cd_3As_2 film, amorphous and cryst., transmission spectra, 0.6-15 μm 8−11013
Cd_3As_2, thermoreflectance spectra 8−6702
$CdBr_2$, optical refl. spectra, exciton bands obs. around optical gap 8−15192
$Cd(Ca)F_2$:Co^{2+}, Jahn-Teller split $^4A_{2g}$→$^4T_{1g}(P)$ absorption band, elec. field effect 8−15202
$CdCl_2$, optical refl. spectra, exciton bands obs. around optical gap 8−15192
$CdCl_2$:Co^{2+}, optical absorpt. spectra, Zeeman study 8−6712
$CdCl_2$:Fe^{2+}, magneto optical study, ferromagnetically coupoed Fe(II) pairs 8−6711
$CdCl_2$-$CdBr_2$, solid soln., luminesc., optical absorpt. 8−19538
$CdCr_2Se_4$, crit. behaviour of optical absorption edge 8−35143
$CdCr_2Se_4$ film, absorpt. and Faraday effect 8−2936
CdF_2:Cr^{2+}, orthorhombic Jahn-Teller distortion 8−19007
$CdGa_2S_4(Se_4)$, band struct., and optical spectra 8−19511
$CdGa_2S_4(Se_4)$ film, optical absorpt., and energy gaps 8−11012
$CdIn_2S_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
$Cd_{1-x}Mn_xTe$ mixed crystal, fundamental absorption edge 8−10919
$Cd_{1-x}Mn_xTe$ mixed cryst., giant exciton Faraday rotation 8−27260
CdP_2, two-photon light absorpt. dispersion, allowed-forbidden transition *(Russian)* 8−15193
CdS, exciton absorpt. at low temps. *(Russian)* 8−48195
CdS, exciton obs. in thin surface layers, refl. spectrum *(Russian)* 8−2877
CdS, exciton spectra anomalies, surface state effects 8−18974
CdS, exciton-contrib. to reflection spectrum at high excitation intensities 8−43900
CdS, magnetoreflectance and magnetoluminesc. of A exciton 8−39597
CdS, spontaneous optical activity in exciton spectrum *(Russian)* 8−35167
CdS, transition metal centres, first-harmonic electromodulation spectra 8−35116
CdS, two-photon absorpt., excitons *(Russian)* 8−39571
CdS:Cd,Cu crystal, formation and bleaching of optically-induced absorption bands 8−31221
CdS-ZnS(CdSe), film, light transmittance spectra, comparison with Schott GG 495 glass filter 8−33838
CdSe, hexagonal, Coulomb interaction at E_1 interband transition 8−19507
CdSe, magnetoreflectance and magnetoluminesc. of A exciton 8−39597
CdSe:Ag, In, cryst., photocurrent and electroreflection, 77 to 300K *(Russian)* 8−23136
n-CdTe, single crystal, photoreflectance, temp. depend. of exciton spectra *(Russian)* 8−23488
$CdTiO_3$, refl. and absorpt. coeffs. 3-3.5 eV, and refr. index dispersion *(Russian)* 8−39561
$CoCO_3$, weakly ferromagnetic, light scatt. accompanying spin system excitation by high microwave power *(Russian)* 8−2745
$Co_xMg_{1-x}Al_2O_4$, struct., catalytic activity, Co^{2+} ion distrib. 8−30595
Cr, ultrafine particles, coatings for selective absorpt. of solar energy, efficiency 8−18060
Cr_2O_3, UV absorption spectra from reflectivity meas. 8−2879

visible and ultraviolet spectra of inorganic solids continued
Cr_7Te_8 film, optical and magneto-optical props., appl. as storage medium 8−23545
CsBr:Cu, polarisation study of tetragonal Cu^{2+} aggregate centres 8−39590
CsCl(Br)(I), doped F_{z1}-centre exam. 8−14341
$Cs_3Cr_2Br_9$, Cr (III) trigonal pair, exchange interactions, absorpt., MCD and Zeeman spectra 8−19009
$Cs_3Cr_2Cl_9$, optical absorpt., MCD, exchange interactions 8−10917
$CsPbBr_3$, optical props. and electronic struct. 8−48198
$CsPbCl_3$, optical props. and electronic struct. 8−48198
Cu clusters, visible and near-UV spectra 8−19503
Cu, intraband optical conductivity, electron-electron scatt. 8−35166
Cu-alloys, dil., optical props. and electronic struct. 8−35164
Cu-Ni, dil. alloy, optical reflectivity meas. virtual bound state model analysis 8−2873
$CuAlS_2$, reflectvvity and XPS meas. 8−35165
$CuAlS_{2x}Se_{2(1-x)}$, excitonic structure, phase-shift-difference spectra 8−2872
CuBr, multiplet struct. of P-excitons due to valence band degeneracy 8−39035
CuCl, induced absorption due to exciton-biexciton transitions 8−15187
$CuGaS_2$, reflectvvity and XPS meas. 8−35165
$CuGaS_2$-$CuGaSe_2$ system, forbidden-band width 8−35280
$CuGaS_{2x}Se_{2(1-x)}$, excitonic structure, phase-shift-difference spectra 8−2872
$CuGa(S_xSe_{1-x})_2$, refl. spectra, comp. depend. 8−39570
$CuGaSe_2$ film, optical props. near and above fundamental absorption edge 8−35215
$CuInS_2$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
CuInSe, reflectvvity and XPS meas. 8−35165
$CuInSe_2$ semicond. films, optical props., 1-3 eV 8−27346
CuO-MgO system, Cu ions valence states, electronic refl. spectra 8−35168
Cu_2S, rel. to band models of Cu_2S-CdS heterojunctions *(Japanese)* 8−23154
Cu_2S:Cd(Zn), effects of doping on elec. and optical props. 8−38743
EuSe, mag. semicond., dielec. and optical props. 8−10824
EuSe, optical absorption exam., electron phonon interactions 8−10923
Fe passive film AC electroreflectance and impedance obs. 8−7093
Fe_2O_3-$B2O_3$-PbO glasses, visible and UV optical props. *(Rumanian)* 8−48196
Ga, optical properties in 0.3 to 5 eV range 8−31196
Ga-group V semiconductors, electroreflectance spectroscopy using synchrotron rad. 8−10912
$Ga_{1-x}Al_xAs$, topographical stoichiometry determ. using electroreflectance 8−23483
$Ga_xAl_{1-x}N$ film, growth and props. 8−39702
GaAs, carrier concentration determ. using electroreflectance 8−23483
GaAs, final state interactions in gain and absorpt. spectra of electron-hole liq. 8−43305
GaAs, heavily-doped, band gap, magnetoabsorpt. oscills. obs. 8−18960
GaAs, low-temp. absorption spectrum in presence of optical pumping 8−15188
GaAs, optical absorption near fundamental edge due to CO_2 laser pulses 8−39569
GaAs, valence band fine struct. from light mod. with nonequilib. opt. phonons 8−39568
n-GaAs:Te, electron-irrad., absorpt. spectra *(Russian)* 8−15200
$GaAs_{1-x}P_x$ epi-wafer, comp. profile of heterogeneous struct., anodisation-electrorefl. meas. 8−26782
Ga_2O_3-R_2O_3:Nd^{3+} glass, prep., characts., X-ray diffr., absorpt. and thermal anal. obs. *(French)* 8−19704
GaP, fine struct. of indirect exciton 8−19509
GaP, obs. of Γ-L indirect transition, phonon struct. 8−48194
GaP-InAs solid solns., energy band struct., edge absoprtion spectra 8−39018
GaS, optical absorption edge under hydrostatic press. 8−23487
α-Ga_2S_3, defect semicond., optical absorption meas. 8−15186
GaSe, fine struct. of exciton spectrum 8−39567
GaSe(Te), optical spectra in 2 to 50 eV range 8−10915
GaTe layer semiconductor, UV-visible wavelength derivative and thermorefl. spectra 8−6666
Gd, optical constants, reflectance meas. *(French)* 8−2869
Gd, optical consts. polarimetric meas., mag. ordering effects 8−15184
$Gd_2(MoO_4)_3$, low temp. optical absorpt., external mag. field influence 8−43896
Ge, E_1-optical struct. from electroreflectance spectra 8−43897
Ge, electrodeposited, X-ray, electrochem., and electrorefl. characterisation 8−14624
Ge, electron-hole drops, kinetics of spatial distrib. *(Russian)* 8−43312
Ge, exciton mol. by phonon-assisted two-photon absorpt., theory 8−48197
Ge-Te alloy films, amorphous, semicond. props., refr. index, struct. study 8−26978
GeO_2, tetragonal, exciton struct. in UV absorption edge 8−48199
GeS, electron-hole interaction in d-electron excitations, photoelectron and optical spectra 8−34776
GeS(Se), dielec. function, optical and electron energy loss spectroscopy 8−15189
$GeSe_2$, optical absorption edge 8−43901
$GeSe_4$ film, self-controlled laser beam chopping effect 8−31266
$Ge_{1-x}Se_x$ film, EPR, elec. and optical props. meas. 8−48038
$Hg_{1-x}Cd_xTe$, surface topographic stoichiometry variations, electrolyte electrorefl. obs. 8−27249
Hg_2Cl_2, cryst., birefringence and dichroism, 200-500 nm and far IR 8−27257
HgI_2, excitons, spectral obs. 8−23492
$Hg_{1-x}Mn_xTe$, 1.7 to 3.5 eV, reflectivity spectra 8−43899
$In_{1.9}As_{0.1}Se_3$, growth by chem. vap. transport, characterisation as photoelectrode 8−43994
In_2O_3-SnO_2 thin film, effects of heat treatment on resist. and optical absorpt. 8−43495
InP, valence band fine struct. from light mod. with nonequilib. opt. phonons 8−39568
n-InSb, Landau emission spectra, influence of bakcground radiation 8−43935
InSe, wavelength modulated optical absorption above fundamental edge 8−27255

visible and ultraviolet spectra of inorganic solids continued
KBr film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
KBr, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KCl, doped, elec. conductivity and optical absorpt., quenching from 750°C 8−2289
KCl, electron irrad., F-centre absorpt., ellipsometric obs. 8−23501
KCl, F-centre phonon many-mode interaction, absorption band shape 8−2883
KCl film, oblique incidence transmission spectra for polarised extreme UV radiation 8−39614
KCl, luminesc. excitation spectra of F-aggregate centres, 400-900 nm. *(Russian)* 8−10980
KCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
KCl:Au, EPR and optical absorpt. 8−39397
KCl:Pb^{2+}, γ-irrad., rel. to props. 8−31262
KCl:$SrCl_2$, H_{na} annealing, X-ray irrad., H centre capture by IV dipoles 8−10927
KCl:Tl^+, absorpt. spectra, electrolytic coloration, migration in electric field, heat treatment 8−23504
K_2CsSb, evaluation as photocathode material 8−11072
KH_2PO_4;Tl, UV absorption bands obs. 8−27266
KI, self-trapped excitons and F-centres, picosec. range form., absorpt. bands 8−19515
KI:Pb^{2+}, absorpt., excitation and luminesc. spectra 8−19519
$KMgF_3$, extreme UV spectra, 9-30 eV 8−23486
$KMgF_3$:Co^{2+}, γ-irrad. single cryst., visible and IR absorption, MCD, annealing data 8−10926
$KMgF_3$:$Co^{2+}(Fe^{2+})(Mn^{2+})(Ni^{2+})$, high energy absorption spectra interpretation 8−6716
K_2NaCrF_6, Cr^{3+} optical spectrum open shell SCF MO cluster CI calc. 8−19501
$LaCl_3$:Pr^{3+}, hyperfine struct. of 6011 Å line, laser-induced absorpt. line narrowing 8−15196
LiCl, refr. index, 300-700 nm., temp. coeff., 100-580K *(Russian)* 8−15142
LiCl:Cu^+, 3d→4p transitions, near UV absorpt. spectrum assignment 8−27272
LiCl-D_2O glass, trapped and quasifree electrons optical transitions, bound-continuum character 8−6660
LiF, M-centre vibronic absorpt. spectra, elec. field, method of moments 8−27186
LiF:Fe^{3+}, optical absorpt., 200-750 nm 8−39576
LiF:Mg,Ti, thermolum. related Z-centres, optical absorpt. bands 8−23540
LiH, excitons, reflection, cathodolum. and photocond.-excitation spectra 8−10989
$LiIO_3$, visible and UV refr. indices 8−19439
$Li_{1-x}K_xI$, intrinsic optical absorpt. spectra 8−23500
$Li_{1-x}Na_xBr(I)$, intrinsic optical absorpt. spectra 8−23500
$LiNbO_3$, pure, two-photon photorefractive recording 8−31220
$Li_{1-x}Rb_xI$, intrinsic optical absorpt. spectra 8−23500
MgF_2, disordered film, optical transitions as function of prep. conditions 8−27340
MgO:Li, $[Li]^0$ defect, high temp. and ionisation induced effects 8−34509
MgO:Li, $[Li]^0$ defect, stress induced optical dichroism 8−35179
$MnAu_2$, optical consts., 0.5-3.5 eV, intra-and interband absorpt. *(French)* 8−10916
$MnCl_2.2H_2O$, magnetically ordered phase, $^6A_{1g}$ to $^4T_{2g}$ transition absorpt. lines, Zeeman effects 8−6699
$MnCl_2.2H_2O$, ordered, paramag. phases, optical absorpt. spectra, V-lines, Zeeman effects 8−6698
$MnCl_2.2H_2O$, paramag. phase, external mag. field depend. of $^4T_{2g}(II)$ Kramer doublets of Mn^{2+} 8−6700
MnF_2, radiation damage, optical absorpt. and luminesc. expts. 8−2161
MnZn ferrite, optical refl. and electroreflection spectra obs. 8−27262
NaBr powder coloured in electrodeless discharge, reflectance spectra, thermoluminescence props. 8−6796
NaCl, m-crocryst. powders coloured in electrodeless discharge, reflectance spectra, thermolum. 8−15238
NaCl, photoemission exam. of Na^+-2p core excitons 8−43982
NaCl plates, γ-irrad., optical absorption spectra, hologram recording samples 8−17878
NaCl:Au, EPR and optical absorpt. 8−39397
NaCl:NaOH($NaNO_3$), absorpt. spectra and dielectric losses 8−19524
NaCl:Zn^+, X-irrad., EPR and optical absorpt. 8−43642
NaF, M-centre vibronic absorpt. spectra, elec. field, method of moments 8−27186
NaI, refr. index, 300-700 nm., temp. coeff., 100-580K *(Russian)* 8−15142
Na_2KSb, evaluation as photocathode material 8−11072
$NaMO_2$, Stark shift of visible absorpt. of NO_2^- 8−19499
$NaMgF_3$, extreme UV spectra, 9-30 eV 8−23486
Na_2O-WO_3 glass containing transition metal ions optical absorption 8−27254
Nb alloys, optical props., 0.1-25 eV, band models 8−10892
Nb anodic oxide films, reversible optical changes 8−35580
$Nb_3(AlSi)$ film, thermomodulation spectra, 1.1-2.8 eV 8−48250
Nd, complex, Nd^{3+}-hexakis-antipyrine triiodide single crysts., polarised absorpt. spectra 8−10922
NdP_5O_{14}, spectral line intensity anal. 8−43888
Ni, absorption spectrum anomalies, 2-3 eV, optical anisotropy *(French)* 8−43893
Ni complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Ni complex, Ni-hexamethylenetetramine, reflectance spectra 8−31218
Ni-Cu alloy, optical absorpt. meas. 8−19518
NiO doped glass, improved band-pass characts. 8−42394
Ni(100) platelet surface optical and magneto-optic consts. 8−15151
O_2, cryst., polyexciton light absorpt. *(Russian)* 8−27251
$Pb_5Ge_3O_{11}$, uniaxial ferroelectric, optical activity dispersion 8−48141
PbI_2, complex dielectric and optical consts., ellipsometric determ. 8−23425
PbI_2 film, photolyzed, refr. index change 8−11010
PbI_2 intercalated with organic donor mols., cryst. struct. and phys. props. 8−26543
PbI_2, photolum. and reflectivity temp. depend., cryst. anisotropy effect on electron-phonon interaction *(Russian)* 8−15225

visible and ultraviolet spectra of inorganic solids continued
PbI_2-$PbBr_2$, optical spectra, solid soln. struct. 8−48247
PbS epitaxial film, struct., optical and elec. props. 8−19583
$Pb_xSn_{1-x}I_2$, thin films, photosensitivity, ageing and annealing effects *(Russian)* 8−6804
$Pb_xSn_{1-x}O_2$ film, optical props. 8−39616
Pd complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
PdO, semiconductivity and stability, optical props. 8−43497
Pt complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
RbCl:Au, EPR and optical absorpt. 8−39397
Rb_2CsSb, evaluation as photocathode material 8−11072
$RbMnF_3$, radiation damage, optical absorpt. and luminesc. expts. 8−2161
$(SN)_x$, electronic struct. and opt. props. 8−6256
SbSBr, electronic and optical props. 8−34763
SbSI, electronic and optical props. 8−34763
SbSI, energy band struct. from modulation spectra 8−43892
SbSeI, electronic and optical props. 8−34763
ScH_2, optical interband struct. and low energy plasmons 8−31200
Se film, noncryst., controlled vapour deposition, crystn., and optical props. 8−39696
Si, amorphous, discharge produced, optical and photocond. props. 8−39147
Si, amorphous hydrogenated, solar cell material 8−2565
Si, exciton mol. by phonon-assisted two-photon absorpt., theory 8−48197
Si, film, amorphous, optical absorption at high press. 8−35216
SiC, struct. of spectrum of excitons bound to neutral B atoms 8−19523
$Si_xGe_{1-x}(H)$ amorphous alloys, from glow discharge, optical properties 8−19510
SiN_x, film by magnetron sputtering, composition, hardness and optical props. 8−3047
SiO_2, amorphous, optical and elec. props., comparison with chalcogenide semiconds. 8−6721
SiO_2, fused, absorption edge meas. 8−43887
SiO_2 glasses, opt. consts. in IR and vacuum UV 8−27238
SiO_2, vitreous, radiation behaviour of optical props. 8−21655
SiO_2-Na_2O-CaO:Fe(As)(Cr) glasses, optical absorpt. changes on heat treatment 8−31224
Sm monochalcogenides, valence related optical and other studies, review 8−31215
SmS, metallic, transmission, refl. and absorpt. spectra 8−19587
Sm_2S_3-Sm_3S_4, valence related optical and other studies, review 8−31215
Sn film, white, optical props. between 2-15 eV 8−19584
SnS, electron-hole interaction in d-electron excitations, photoelectron and optical spectra 8−34776
SnS_2, optical props. and band struct. 8−2880
SnS(Se), dielec. function, optical and electron energy loss spectroscopy 8−15189
SnS_xSe_{2-x}, thermal changes in optical props. 8−19504
$SnSe_2$, optical props. and band struct. 8−2880
$SnSe_2$, single crystal, reflectivity, XPS, UPS, and band struct. 8−6701
$SrTiO_3$, pure and Nb doped, heat treated, Hall effect, electrical cond., optical absorpt., defect states 8−47812
$SrTiO_3$, semicond., free carrier optical absorption and scatt. *(Korean)* 8−23489
$SrTiO_3$, UV refl. spectra, optical consts. 0 to 32 eV Kramer-Kronig anal., band struct. calcs. 8−43903
Ta-W optical props., temp. depend., 4.2-1100K 8−2874
Ta_2O_5, anodised film, nonuniformities, optical props., spectrophotometric obs. 8−2933
TeO_2, visible and UV refr. indices 8−19439
Ti anodic oxide films, reversible optical changes 8−35580
TiN, optical props. at 300K 8−19466
TiO_2, resolved quadrupolar transition, absorpt. spectra obs., 1.6K 8−27259
TiO_2 single cryst., refl. and electrorefl. spectra 8−2870
TiO_2 single cryst., refl. and electrorefl., energy levels 8−2871
$TlCl_xBr_{1-x}$, $TlBr_xI_{1-x}$, polymorphous mixed cryst. layers, opt. props. 8−23490
Tl_2WO_4, effect of heating on colour, reflectance spectra 8−38673
VO_2, semicond. phase, optical spectrum, CNDO CI calc. 8−27258
VO_2, V_2O_3, film, absorption spectra, semicond.-semimetal transition 8−19512
V_2O_5 film, optical absorption in 1.0 to 5.5 eV range 8−19586
W-Re, optical props., temp. depend., 4.2-300K 8−2874
WO_3, polar, electrochromic absorpt. bands, small polaron theory 8−39528
WO_3-MoO_3 film, amorphous, electrochromic optical absorpt., expt. results and model 8−27341
Y-Er, surface, high-freq. elec. cond. dispersion function, effects of polishing and annealing 8−19506
YAG:Cr^{3+}, radiation colour centres, absorpt. and thermolum. spectra 8−48206
YAG:Nd^{3+}, Ce^{2+}, sensitisation, luminesc., absorpt. and emission spectra *(Russian)* 8−10982
$Y_{1-x-c}Gd_xNd_cScO_3$, crystal, absorption, luminescence, stimulated emission spectra 8−15220
$Zn_xCd_{1-x}S$, forbidden band width, exciton refl. and luminesc. meas. 8−10947
$Zn_xCd_{1-x}S$ solid soln. films, reactive cosputtering, struct., comp. and opt. absorpt. edge *(French)* 8−6237
$ZnGeP_2$, single cryst., polarised light photocond., optical transparency anisotropy *(Russian)* 8−2518
$ZnGeP_2(As_2)$, reflectvvity and XPS meas. 8−35165
$ZnIn_2S_4$, fund. optical consts., Kramers-Kronig analysis, reflectivity spectra 8−39573
$ZnIn_2S_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
ZnO, ang. depend. of reflection spectra and directional dispersion of anisotropic exciton polaritons 8−31216
ZnP_2, two-photon light absorpt. dispersion, allowed-forbidden transition *(Russian)* 8−15193
ZnS, natural and stress induced birefringence dispersion 8−6651
ZnS:Ga(Cl), deep traps, impurity electroabsorpt. and photocond. meas. 8−6707
ZnS-O, single cryst., fast neutron irrad., optical props. 8−27331

visible and ultraviolet spectra of inorganic solids continued
ZnSe, cubic, magnetoreflectance of Γ_6-Γ_8 exciton ground state 8−23495
a-ZnSe, elec. and optical meas., Mott-type model for amorphous semicond. 8−2414
p-ZnTe, single crystal *(Russian)* 8−23488
ZnTe: group I element, absorption saturation *(Russian)* 8−35183
ZnTe:Ag, containing dislocation loops, optical absorption-edge fine struct. 8−43905
ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304
ZrN, optical props. at 300K 8−19466

visible astronomical observations
1976 AA, position, elements and ephemeris (1977 Dec.-1978 Apr.) 8−12138
1977 RA, positions, improved elements, and ephemeris 8−4137
1977 RA, precise positions (1977 Oct. 16) 8−20715
1977 UB, posn. in 1895 and improved orbital elements 8−20713
1977 UB, precise positions, 1977, Nov. 8−7915
1977 UB, precise positions for 1977 Nov. 13-18 period 8−12139
1977 UB, precise prediscovery positions 8−20716
1977 UB, prediscovery positions, improved elements, orbital stability 8−12140
1977 UB, prediscovery positions and ephemeris continuation 8−16331
1977 UB (Chiron), discovery, orbital elements 8−45264
1977 UB (Chiron), precise positions 1945 Apr. 16 and 1978 Jan. 9-10 8−49372
1977 UB (slow-moving Object Kowal), precise positions 1977 Nov. 9-10 8−7911
1977 VA, precise positions, 1977, Nov. 8−20717
1977 VA, precise positions, photoelec. obs., 1977 Nov. 8−12144
1977 VA, precise positions 1977 Dec. 8−49371
1977 VA, precise positions (1977 November 9 and 10) 8−7912
1977 VA (Object Helin-Shoemaker), discovery position 8−7908
1977 VA (Object Helin-Shoemaker), positions elements and ephemeris 8−7909
1977 VB, discovery positions 8−7910
1978 CA, position, elements, ephemeris and B magnitude law 8−40860
1978 CA, positions 1978 Feb. 17-Mar. 8, photometric obs. 8−36487
1978 CA, precise positions 1978 March, ephemeris for 1978 Apr.-July 8−40862
1978 CA (Object Schuster), positions, elements and ephemeris (1978 Feb.-March) 8−36483
1978 CA and DA, UBV photometry 8−36486
1978 DA, discovery, positions, elements, ephemeris and magnitude law 8−36484
1978 DA, position, elements, ephemeris and B magnitude law 8−40861
1978 DA, positions 1978 March 1-8, photometric obs. 8−36488
1978 DA, precise positions (1978 March 8 to 15) 8−45262
A0535+26, transient slow X-ray pulsar, spectrophotometric survey 8−4263
A0620−00, transient X-ray source, spectrophotometry 8−4400
A- and F-type main sequence stars, scanner obs. 8−36563
A- and F-type stars in Selected Areas, photoelectric uvbyβ photometry 8−16412
A-type stars, Ca II K line obs. 8−20830
A-type stars, obs. and calc. spectra, 3600-4200 Å region 8−12217
A-type stars, predicted and observed spectral energy distribs. 8−4208
Abell 2634, cluster of galaxies, luminosity function *(Russian)* 8−28801
Abell 2670, cluster of galaxies, luminosity functions 8−16545
Abell 478, X-ray cluster of galaxies, redshift and optical struct. 8−8134
Abell clusters of galaxies, photometric study 8−4370
ADS 1538=Σ 168=BDS 1015, orbit of visual double *(French)* 8−8056
ADS 7251, photographic obs. in 1962-73 period, orbital motion *(Russian)* 8−28726
AFGL 437, optical and IR obs., young star cluster embedded in nebulosity 8−4394
AFGL/CRL IR sources, spectroscopic obs. 8−32599
AGK2+81°266, hot subdwarf, spectral type 8−45323
AL0827+24, quasar, absorpt. lines in optical spectrum 8−4390
Amalthea (J V), UBV photoelectric photometry near greatest W. elongation 8−36493
Amor-type asteroids 1960 UA, 1977 RA, and 1977 VA, precise posns. for 1977 period 8−28570
o Andromedae, Be-star shell spectrum changes, spectrograms 8−4245
BX Andromedae, period increase *(Chinese)* 8−36642
SW Andromedae, RR Lyrae variable, uvbyβ photometry 8−12249
λ Andromedae, V photometric obs. during 1976-77 period 8−40994
AO 0235+164, Lacertid, optical and radio absorption line systems 8−16520
AO 0235+164, nature of nebulosity assoc. with BL Lacertae object 8−28778
Ap and Hg-Mn stars, spectrophotometric scans, search for broad continuum features 8−12247
Ap stars, photoelec. obs. of light vars. *(German)* 8−20841
Ap stars, UBV photometry, light curves, periods 8−32472
Aquila X-1, photometry and spectroscopy of optical counterpart, model 8−32614
Aquila X-1 (3U 1908+00), optical counterpart for flaring source 8−41089
TW V586 and V1079 Aquilae, photometry, photographic obs. *(Russian)* 8−20842
Ara OB1, NGC 6193 and Ara R1, young southern complex, UBVRI obs. 8−16473
Ariel 5 clusters, optical morphology and galaxy density 8−8135
UX Arietis, RS Canum Venaticorum type star, UV excess, spectrophotometric obs. 8−8043
UX Arietis, V photometric obs. during 1976-77 period 8−40994
asteroids, 1976 August obs. at ESO La Silla with GPO plus three discoveries *(French)* 8−45260
asteroids, improved orbits for ten objects rel. to quality of observations *(Russian)* 8−49369
asteroids, main-belt, photographic photometry of 110 objects 8−40859
asteroids, main-belt, positions 8−12135
asteroids, precise positions (August 1975 to May 1976) 8−12134

visible astronomical observations continued
asteroids, synodic rotation periods from photoelectric lightcurve 8−45259
5 Astraea, photometric obs., pole orientation, rot. period 8−40858
Astronomical Engelhardt Observatory, latitude obs. *(Russian)* 8−4080
ε Aurigae, ^{7}Li I 6708 Å line and Li interstellar abundance 8−49494
NW Aurigae, eclipsing binary, photoelectric photometry 8−8052
LY Aurigae, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
KR Aurigae, optical spectrum, variability *(Russian)* 8−36597
α Aurigae (Capella), Ca II lines obs. rel. to chromosphere model 8−40931
α Aurigae (Capella) AB, angular diams. by two telescope interferometry 8−8055
AWM 4, redshifts for five galaxies in poor cluster 8−45415
B2 1101+38, BL Lacertae-type object UBV photometry 8−8114
B2 1308+32 (CSVS 6997, OP 313), common identification as Lacertid 8−8128
B2 1652+39, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
B-type stars, radial vels. determined at Radcliffe Observatory 8−12225
Basle catalogue of 1906 blue objects at high galactic latitudes 8−32360
BD+39°3226, BD+34°1543, hot subdwarfs, spectral types 8−45323
BD−7°3007, nova-like variable, simultaneous spectroscopy and photometry 8−12250
binary stars, spectroscopic and eclipsing, survey for intrinsic linear polarization 8−4288
bipolar reflection nebulae, photoelec. polarization maps 8−28742
BL Lacertae-type objects, variable, IR and visible polarimetry and photometry 8−16528
AC Bootis, eclipsing binary, detailed photometric study 8−36637
XY Bootis, photometric obs. of contact binary, light curves, mass ratio 8−4286
α Bootis (Arcturus), O and C abundances *(Russian)* 8−16420
bright galaxies and compact galaxies apparent associations 8−41040
bright zenith star obs., Poltava latit. differences interpretation 8−28488
3C 227 and 382 radiogalaxies, spectral-flux distrib. in 0.36-3.5 μ range 8−36710
3C 232, quasar, Ca II absorpt. lines due to galaxy (NGC 3067) 8−36719
3C 279, variable quasi-stellar source, IR and visible polarimetry and photometry 8−16528
3C 295 galaxy cluster, two-colour ISIT photometry rel. to galaxies evolution 8−24557
3C 303, double radiosource, radio struct. and optical field 8−16519
3C 33, rot. axis. of assoc. optical galaxy 8−4355
3C 343.1, distant radio galaxy, spectroscopy and photometry, redshift 8−8123
3C 371, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
3C 382 (B2 1833+32), variability of optical counterpart 8−41053
3C 66 A, BL Lacertae-type object, photoelectric intraday photometric obs. 8−36681
3C radiosources, systematic optical identification 8−36709
CA 0340−538 (3U 0328−523), southern cluster of galaxies, vel. dispersion and global parameters 8−36705
α Camelopardalis, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
UW Canis Majoris, eclipsing binary, photometry and primary component shape and atmospheric struct. 8−40992
YZ Canis Majoris, flare star, coordinated X-ray, optical and radio obs. 8−8012
29 Canis Majoris, massive hot binary star, spectrograms, mass loss 8−12299
α Canis Majoris (Sirius), rot. vel. and Ba abundance 8−12218
α Canis Majoris B, photoelectric obs. 8−4220
β Canis Majoris stars in southern hemisphere, photometric search 8−12243
α^2 Canum Venaticorum, mag. Ap star high-resolution polarisation obs. inside spectral line 8−40951
RS Canum Venaticorum, UV excess, spectrophotometric obs. 8−8043
RS Canum Venaticorum-type binaries, emission line vars. 8−24527
Carina Nebula stars, interstellar λ4430 band obs. 8−32555
η Carinae nebulosity, proper motion meas. in complex outer shell 8−28687
Cassiopeia A, image tube spectrograms 8−16485
ρ Cassiopeiae, absolute energy distrib. in 3400-7100 Å range 8−49440
TV Cassiopeiae, eclipsing binary, period and UBV light curves 8−4287
DO Cassiopeiae, eclipsing binary, three-colour photoelectric investigation 8−16462
γ Cassiopeiae, Hα linear polarisation in Be star 8−16425
μ Cassiopeiae, subdwarf binary, spectroscopic orbit 8−8046
TU Cassiopeiae, third period in beat Cepheid 8−16424
CD −33°12119, 3U 1727−33 candidate, UBV photometry 8−12251
cD galaxy in Abell 401, spectral obs. of halo 8−32584
UW Centauri, visual magnitude estimates, UBV photometry 8−40962
V645=Proxima Centauri optical flares during 1977 May, S.African obs. 8−32480
VV Cephei, complex close binary, linear polarisation during 1977 elcipse 8−40995
VV Cephei, eclipsing binary, astrometric obs. at Sproul Observatory 8−4290
λ Cephei, linear polarization variability in emission line O star 8−36571
T Cephei, Me variable, Tc discovery 8−32483
VV Cephei, narrow band photometry during 1976-78 eclipse ingress 8−4296
19 Cephei, O-type supergiant, spectroscopic study, model atm. anal. 8−28681
VV Cephei, spectroscopic obs. during 1976/77 eclipse ingress phase 8−45359
VV Cephei, UBV photometry during ingress phase of 1976-78 eclipse 8−20862
Cepheid variables, VBLUW photometry rel. to intrinsic colours and physical props. 8−28696
Cepheids in Dunsink LMC II region, BV photographic photometry 8−45340
δ Ceti, period changes of β Cephei type star 8−32487

- **visible astronomical observations** continued
  - T Ceti, semiregular variable, Tc I absorpt. line obs. 8−28689
  - o Ceti (Mira), spectrum of companion star 8−4253
  - o Ceti (Mira), strong TiO-related dia. vars. 8−16429
  - UV Ceti-type flare stars, simultaneous 1420 MHz and optical obs. of flares 8−49464
  - chromosphere flares, effective time of observations *(Russian)* 8−40893
  - Ci 182354, astrometric anal. of unseen companion from 61 cm Sproul refractor plates 8−16459
  - α Circinids, meteor shower on June 4, Australian obs. 8−16359
  - Circinus X-1 (3U 1516−56), obs. of optical and radio counterpart 8−12414
  - Cl 0024, galaxy cluster, two-colour ISIT photometry rel. to galaxies evolution 8−24557
  - cluster of galaxies obs. at low galactic latit. 8−4373
  - clusters of galaxies, ang. size-redshift relation for nearby clusters 8−4372
  - clusters of galaxies, characteristic size as metric rod for determ. of q_0 8−36703
  - clusters of galaxies, X-ray and optical study 8−28805
  - CoD−38°10980, white dwarf, photometry and spectroscopy rel. to gravit. redshift 8−24511
  - CoD −35° 10525, bright YY Orionis star, spectrum and UBV photometry 8−36566
  - Collinder 132a, b, UBVβ photometry of two sparse open clusters 8−32540
  - Coma Cluster galaxies, photometry 8−12381
  - 14 Comae, A-type shell star, spectroscopic obs. 8−7992
  - CC Comae, W Ursae Majoris type, spectroscopic orbit 8−12300
  - Comet Bradfield (1978c), discovery positions and appearance 8−32397
  - Comet Bradfield (1978c), positions, elements and ephemeris 8−32401
  - Comet Bradfield (1978c), positions, improved elements and ephemeris 8−36514
  - Comet Bradfield (1978c), positions, magnitudes and UBV photometry 8−36521
  - Comet Bradfield (1978c), positions and appearance (1978 February) 8−32405
  - Comet Bradfield (1978c), positions and visual magnitude estimates 8−40873
  - Comet Bradfield (1978c), precise position, spectroscopic obs., total visual magnitude estimates 8−40879
  - Comet Bradfield (1978c), precise positions 1978 Feb.-Mar., total visual magnitude estimates 8−45288
  - Comet Bradfield (1978c), precise positions and magnitudes (1978 Feb.) 8−32404
  - Comet Bradfield (1978c), precise psoitions, (1978 February 28 to March 8) 8−40875
  - Comet Bradfield (1978c), semiaccurate position 1978 March 8 8−36529
  - Comet Bradfield (1978c) IR and total visual magnitudes (1978 March) 8−45283
  - Comet Helin (1977e), precise positions (1977 April 18-29) 8−7935
  - Comet Kohler (1977m), positions, spectral emissions and magnitudes 8−7924
  - Comet Kohler (1977m), precise positions, orbital elements, ephemeris, total visual magnitude estimates 8−45286
  - Comet Kohler (1977m), precise positions 1977 Sept.-1978 Jan., total visual magnitude estimate 8−36518
  - Comet Kohler (1977m), precise positions (1977 Oct.-Nov.) 8−16355
  - Comet Kohler (1977m), precise positions (1977 September-October) 8−4155
  - Comet Kohler (1977m), precise positions for 1977, Oct. to Dec. 8−20751
  - Comet Kohler (1977m), precise positions for 1977 Oct.-Dec. period 8−28590
  - Comet Kohler (1977m), precise positions for 1977 Oct.-Nov., total visual magnitude estimates 8−20743
  - Comet Kohler (1977m), precise positions for 1977 Sept.-Dec., total visual magnitude estimates 8−20753
  - Comet Kohler (1977m) precise positions (1977 October 13 to November 10) 8−7937
  - Comet Kohoutek (1973 XII), CN and C_2 spectrophotometry 8−20738
  - Comet Kohoutek (1973 XII), ion tail interaction with compression region of solar wind corotating stream 8−49267
  - Comet Lovas (1975 VIII), precise posns. (1977 Aug. and Sept.) 8−12159
  - Comet Lovas (1976 XII), precise posn. (1978 February 4) 8−49386
  - comet Lovas (1976k), precise positions 1976/77 and ephemeris for 1978 Mar.-Jun. 8−24491
  - Comet Lovas (1977t), approx. positions for 1978, Jan. 8−24488
  - Comet Lovas (1977t), approx. posn. and stellar appearance 8−28591
  - Comet Lovas (1977t), asteroid-like appearance and orbit 8−28582
  - Comet Meier (1978f), discovery position, appearance and motion 8−49384
  - Comet Meier (1978f), precise positions 1978 Apr., spectroscopic obs. 8−49387
  - Comet Sanguin (1977p), precise positions for 1977 October 8−4151
  - Comet Schuster (1975 II), precise positions 1978 Jan. 8−40880
  - Comet Schuster (1975 II), precise posns. (1977 June) 8−12158
  - Comet Tritton (1978d), discovery, appearance and positions (1978 Feb.) 8−32403
  - Comet Tritton (1978d), positions, elliptical elements, ephemeris and magnitude law 8−36522
  - Comet Tsuchinshan (1977q), 1977 November 8 precise positions and appearance 8−4154
  - Comet Tsuchinshan (1977q), discovery positions 8−7934
  - Comet Tsuchinshan (1977q), positions, elements, and ephemeris 8−16350
  - Comet Tsuchinshan (1977q), precise positions, elements and ephemeris 8−16353
  - Comet Tsuchinshan (1977q), precise positions (1977 December) 8−28584
  - Comet Tsuchinshan (1977q), precise positions (1978, January 3) 8−45284
  - Comet Tsuchinshan (1977q), precise positions for 1977 Nov.-Dec. 8−20746
  - Comet West (1975n), nucleus splitting, photography and narrow-band photometry 8−36512
  - Comet West (1978a), discovery, positions and spectral obs. 8−24489
  - Comet West (1978a), positions, parabolic elements and ephemeris 8−28583

- **visible astronomical observations** continued
  - Comet West (1978a), positions and ephemeris extension (1978 Jan.-July) 8−36516
  - Comet West (1978a), precise positions 1978 Jan., Mar. 8−49383
  - Comet West (1978a), precise posns. (1978 February-March) 8−40872
  - Comet West (1978a), precise prediscovery positions, hyperbolic elements 8−40878
  - Comet West (1978a), semiaccurate positions 1978, Jan. 8−24492
  - cometary nebula, remarkable structural change obs. 8−4333
  - cometary nebula near NGC 7023, brightening, stellar object visual magnitudes 8−20882
  - compact and interacting southern galaxies with emission line spectra 8−41048
  - compact nebulae, very-low-excitation, in Magellanic Clouds, spectra 8−32556
  - cool C stars, ^{12}C/^{13}C ratio calc. 8−4205
  - cool stars, neutral-ion spectral anomaly 8−7985
  - S Coronae Austrinae, T Tauri star, red-displaced absorpt. features obs. 8−4221
  - β Coronae Borealis, Ap star, high resolution polarization obs. 8−8011
  - CPD−56°8032, emission line object, red and IR spectrum 8−4249
  - Crab Nebula, photoelectric spectrophotometry of filaments, abundances 8−41006
  - Crab Nebula, spectrograms of filaments, faint forbidden lines 8−45388
  - Crab Nebula outskirts, remarkable spectra and element abundances 8−36662
  - CRL 2688 (Egg Nebula), bipolar nebula, optical and IR polarimetry 8−36658
  - V1057 Cygni, FU orionis type, UBVR photometry 8−12230
  - V1500 Cygni, spectral development, visible and near IR obs. 8−4231
  - CI Cygni, spectroscopic obs. using multichannel analogue detector system 8−36461
  - Cygni 1975 (V1500 Cygni), visual magnitude estimates (1977 Aug.-1978 Jan.) 8−32474
  - V645 Cygni (CRL 2789), bipolar nebula, O-type exciting star 8−4392
  - α Cygni (Deneb), Ca II K line high-resolution obs. 8−16408
  - V1500 Cygni (Nova 1975), brightness meas., (1917 to 1976) 8−36618
  - V1500 Cygni (Nova 1975), BV photometric obs. 8−36613
  - V1500 Cygni (Nova 1975), BV photometry 8−36619
  - V1500 Cygni (Nova 1975), He abundance of ejecta 8−28691
  - V1500 Cygni (Nova 1975), line spectrum evolution 8−32493
  - V1500 Cygni (Nova 1975), linear polarization obs. 8−36601
  - V1500 Cygni (Nova 1975), optical polarisation obs. 8−36622
  - V1500 Cygni (Nova 1975), photoelectric obs. 8−36620
  - V1500 Cygni (Nova 1975), photometric and spectroscopic obs. 8−36604
  - V1500 Cygni (Nova 1975), photometric obs. 8−36616
  - V1500 Cygni (Nova 1975), photometry rel. to 3.3 hour var. and flickering 8−36591
  - V1500 Cygni (Nova 1975), polarimetric and photometric obs. 8−36612
  - V1500 Cygni (Nova 1975), short-term light vars. 8−36609
  - V1500 Cygni (Nova 1975), small amplitude light var. 8−36608
  - V1500 Cygni (Nova 1975), spectral energy distrib. 8−36605
  - V1500 Cygni (nova 1975), spectroscopic obs., three hour periodicity, nebular model 8−12235
  - V1500 Cygni (Nova 1975), spectrum variations 8−36607
  - V1500 Cygni (Nova 1975), TV photometry 8−36602
  - V1500 Cygni (Nova 1975), UBVR Hα photometry and polarimetry 8−36611
  - V1500 Cygni (Nova 1975), UBVRI photometry and polarimetry 8−36614
  - V1500 Cygni (Nova 1975), visible and near UV photoelec. photometry 8−36610
  - V1500 Cygni (Nova 1975), visible and near UV spectrophotometric obs. 8−32492
  - V1500 Cygni (Nova 1975), visible and near UV spectrophotometry 8−32494
  - V1500 Cygni (Nova 1975), visible spectroscopy 8−36598
  - V1500 Cygni (Nova 1975), visible-band linear polarimetry 8−36621
  - V1500 Cygni (Nova 1975) photometric obs. at Skalnate Pleso Observatory 8−36617
  - V1500 Cygni (Nova Cygni 1975), interstellar reddening and distance 8−4230
  - Cygnus A, rot. axis of assoc. optical galaxy 8−4355
  - Cygnus Loop, forbidden Fe XIV emission radial distrib. 8−32545
  - Cygnus Loop, supernova remnant, high vel. gas obs. and filaments spectra *(Russian)* 8−41028
  - Cygnus region, new optical supernovae remnant discovery 8−4330
  - Cygnus X region, riddle of γ Cygni radio source resolved 8−28809
  - Cygnus X-1, absence of 39 day period in non-UV data 8−8167
  - Cygnus X-1, discovery of synchronous binary polarization 8−41087
  - Cygnus X-1, search for rapid optical periodicities 8−24573
  - Cygnus X-1 (HDE 226868), optical photometry, (1972-1976) 8−32609
  - D and cD galaxies in poor clusters, struct. and photometry 8−32580
  - DA 240, radio galaxy, high-vel. gas in jet 8−28773
  - degenerate stars, photometry and spectra 8−12224
  - Deimos, 37 positional photographic obs. during 1973 October at Pulkovo *(Russian)* 8−28568
  - HR Delphini (Nova 1967), physical props. and element abundances in nebular state 8−36573
  - Hr Delphini (Nova 1967), spectral evolution during decline period 8−40957
  - diffuse interstellar features at 6379 and 6614 A, high resolution profiles 8−4314
  - distant cluster of galaxies, photometry and red shift 8−12377
  - distant galaxy clusters, redshifts and photometry, rel. to Hubble diagram curvature 8−49515
  - CM Draconis, spotted dM4e eclipsing binary flare star, absolute dimensions and masses 8−12289
  - BY Draconis type variables, flare activity and quiescent variability 8−45338
  - dust free zone around Sun, search with Helios 1 solar probe 8−45277
  - dwarf novae, rapid brightness oscills. obs. 8−40968
  - dwarf novae, search for light oscills. during outbursts 8−40966
  - 200 Dynamene, photoelec. light curve, rot. period, low spin rate object 8−32383
  - early-type stars in southern hemisphere, four colour photometry and spectral types 8−40945

visible astronomical observations continued
early-type stars with six degrees of galactic anticentre direction, radial vels. 8−7990
eclipsing variables in Magellanic Clouds, tabulated light curves 8−16536
effective field of view for line sources 8−36535
elliptical galaxies, in Coma cluster, surface brightness and colour distribs. 8−41063
elliptical galaxies, isophotes struct. 8−41058
elliptical galaxies, rot. meas. rel. to oblate models 8−16529
elliptical galaxies in Virgo and Coma clusters, ellipticity profiles 8−28785
δ Equulei, improved orbit for visual binary 8−45364
AS Eridani, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
66 Eridani, spectroscopic binary, search for light var. 8−32524
433 Eros, photographic obs. at 1975 opposition 8−49373
eruptive blue variables at high galactic latit., spectrophotometry 8−32482
ESO 113-IG45, galaxy and/or quasar, spectrum, photometry and struct. 8−28782
ESO 113-IG 45, interacting galaxy, Type 1 Seyfert spiral with bright central quasar 8−8126
ESO/Uppsala survey of ESO(B) Atlas of southern sky, fifth list containing 2395 objects 8−20653
52 Europa, photometry and rot. period 8−12133
extended radiosource 1400+162, BL Lacertae object in group of galaxies 8−4339
extragalactic background light intensity at 5100 Å wavelength 8−4414
extragalactic emission line objects, third list from Curtis Schmidt thin prism survey 8−28538
extragalactic emission-line objects, second list from Curtis Schmidt thin prism survey 8−28537
extragalactic radiosources, optical variability 8−12396
faint blue stars, uvby photometry in northern hemisphere 8−16415
faint blue stars near galactic anticentre, UBV photometry 8−40932
faint quasars, spectroscopy and props. of CTIO 4 metre survey 8−32592
faint red stars at intermediate galactic latit., UBVR photometric obs. 8−32457
faint stellar systems, discovery on ESO Schmidt plates 8−20887
fast irregular variables, UBV and JHKL photometry *(Russian)* 8−28684
Feige 24, EUV star, spectrophotometry in 3800-8200 Å region 8−4280
fireball of 1977 September 14 over Czechoslovakia 8−32408
fireballs photographed in central Europe, trajectories, orbits and classification 8−36534
FKSZ stars, differential catalogue of RA in 20-90° zone, Pulkovo obs. *(Russian)* 8−28644
Fornax dwarf galaxy, detection and props. of identified planetary nebula near centre 8−41005
G206.9+2.3 (=PKS 0646+06), supernova remnant, optical identification 8−36660
G296.1−0.7, radio SNR in Crux, assoc. optical nebulosity 8−16499
G77-61, dwarf C star, proper motion 8−4209
galactic bright nuclei, survey of 448 galaxies 8−32569
galactic globular clusters colour excess ratio, rel. to interstellar absorpt. law 8−28797
galactic halo, blue horizontal branch stars search on Schmidt plates 8−4362
galactic novae, search for light echoes 8−12246
galactic nuclei, stellar population synthesis 8−36688
galactic structure around l=140°, b=0°results from stellar UBV photometry 8−24555
galaxies, brightness distrib., decomposition of profiles into spheroid and disc components 8−8115
galaxies, diffuse [O I] emission and Hα lines, warm interstellar gas 8−4312
galaxies, elliptical and S0 colour-absolute magnitude relation 8−8108
galaxies, interacting, with compact components, UBV photometry 8−20888
galaxies, radial velocities for 39 objects 8−45410
galaxies, southern, with broad emission lines 8−20891
galaxies, southern peculiar objects and pairs, spectra and radial vels. 8−45411
galaxy group in Cetus with redshift discrepancy 8−36708
GD 154, new pulsating white dwarf, obs. 8−40928
GD 90, magnetic white dwarf, circular polarisation obs. 8−16409
Geminid meteor shower, obs. over Waltair during 1961-66 period 8−40881
U Geminorum, 1978 February magnitude estimates 8−36589
ε Geminorum, occultation by Mars, struct. and extinction of Martian upper atm. 8−7898
β Geminorum (Pollux), Ca II lines obs. rel. to chromosphere model 8−40931
giant stars, G- and K-type, CNO abundances 8−7993
giant stars, nonthermal vels. in photosphere 8−4219
globular cluster, discovery on ESO Schmidt plates 8−20887
globular clusters, evidence for H II in cores 8−8065
globular clusters, H II optical search 8−12305
globular clusters, UBV photometry 8−16468
globular clusters in Virgo cluster of galaxies, luminosity distrib. 8−12308
globular star clusters, TiO band strengths in metal-rich clusters 8−49487
Great Comet of 1577, Tycho Brahe's obs. and deductions 8−32407
Greenwich Obs. Time and Latitude Service, Time Report (July-September 1976) 8−20624
Greenwich Obs. Time and Latitude Service Time Report (October-December 1976) 8−24443
Gum nebula, Balmer alpha photographic obs. and interpretations 8−24545
GX 17+2 (3U 1813−14), photometry of optical candidate 8−28849
h 4866 B, vars. in spectral type and radial vel. 8−32518
HBV 475 (V1329 Cygni), high-excitation emission lines obs. 8−40955
HD 101065, Przybylski's star, element identification 8−4233
HD 122563, metal-deficient giant, atm. $^{12}C/^{13}C$ ratio, mixing 8−4201
HD 124224, He Si variable, spectroscopic obs., starspots, oblique rotator model 8−12239
HD 13738, spectroscopic orbit from photoelec. radial vels. 8−12297

visible astronomical observations continued
HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
HD 153919 (3U 1700−37), forbidden Fe XIV emission detect. 8−16571
HD 153919 (3U 1700−37), X-ray binary, spectrum variations 8−8158
HD 153919 (3U 1700-37), binary X-ray source, radial vels. in blue spectral region 8−49556
HD 165590, visual binary with spectroscopic binary component 8−32519
HD 174209 (ADS 11719C), photoelectric radial vel. 8−32517
HD 192913, Si Ap-star, lanthanide abundances, spectral identifications 8−45345
HD 193793, Wolf-Rayet binary, visible and near IR spectra 8−8023
HD 195592, obs. of interstellar K I 4044 Å line 8−24533
HD 196517, new δ Scuti type variable star 8−49462
HD 215038, Ap star, line identification list 8−32484
HD 215441, Ap star, line spectrum variations 8−4232
HD 216533, Ap star, spectral variation obs. 8−4244
HD 65750, photometric vars. of red giant, obs. of surrounding refl. nebula IC 2220 8−36567
HD 72968, low amplitude photometric double wave Ap star, light curve 8−28697
HD 77581 (3U 0900-40), X-ray binary, spectroscopic orbit and masses of components 8−16461
HD 77581 (Vela X-1), optical pulsations discovery 8−20911
HD 87892, central star of NGC 3132, obs. of visual companion 8−20859
HD 88230, dM0 star, high-dispersion photometric atlas from 3900 to 6000 Å 8−7996
HD 91805, spectrum anal. rel. to nature of Bidelman-MacConnell weak G-band stars 8−49432
HDE 226868 (Cygnus X-1), orbital period and inclination 8−16579
HDE 228766, evolved Of system, spectroscopic obs. 8−12237
HDE 245770 (A0535+26), Hβ var., general props., spectral obs. 8−4247
HDE 245770 (Ariel 0535+26), optical spectrum of Be star 8−4227
HDE 245770 (Ariel 0535+26), photoelectric UBV photometry 8−36592
HDE 245770 (Ariel 0535+26), UBV photometry during X-ray flare-up 8−28705
HDE 283048, hot subluminous star, spectrum 8−20823
head-tail radio galaxies velocities with respect to intracluster medium 8−49516
Herbig Ae/Be stars, Hα profiles 8−16410
Herbig Ae/Be stars, multicolour polarimetry 8−49445
Herbig-Haro objects in Gum Nebula, spectrophotometry 8−36565
AK Herculis, atypical W Ursae Majoris type, BV light curves 8−28719
α^2 Herculis, circumstellar absorpt. lines rel. to absolute mass loss scale for red giants 8−7997
u Herculis, eclipsing binary, phase-locked polarization 8−4281
OP Herculis, irregular variable, Tc I absorpt. lines obs. 8−28689
AM Herculis, multicolour photometry, slow optical pulsar 8−28693
AM Herculis, X-ray binary, obs., slow rotator model 8−12408
AM Herculis, X-ray binary, vel. curves for emission lines broad and sharp components 8−32513
AM Herculis (3U 1809+50), multicolour linear and circular polarisation obs. and geometrical model 8−8053
HZ Herculis (Hercules X-1), optical behaviour in (1976) 8−32603
TU Horologii, ellipsoidal variable, UBV photometry 8−4292
HR 1099, optical ephemeris and photometric wave minimum phase 8−36641
HR 1099, photometric and spectroscopic obs. 1978 Feb. 8−40998
HR 1099, V photometric obs. during 1976-77 period 8−40994
HR 2557, light vars., luminous δ Scuti-type star 8−32490
HR 3413, Ap star, photometric vars. and period *(French)* 8−32471
HR 4594, pulsating marginal metallic line (Am) star, obs. 8−49448
HR 5999, variable shell star, VBLUW photometry 8−28701
HR 6388, spectroscopic binary, orbit determ. from photoelec. radial vels. 8−49482
HR 6684, β Cephei-type variable, radial vel. var. 8−45344
HR 6940, spectroscopic binary orbit from photoelectric radial vels. 8−4294
HR 7083, spectroscopic binary, orbit from photoelectric radial vels. 8−32517
HR 8210, pulsating marginal metallic line (Am) star, obs. 8−49448
HR 9076 (ε Tucaae), Hα shell profile 8−36583
Hyades, BVRI photometry of new possible cluster members 8−32533
χ^2 Hydrae, uvby light curves of double-lined eclipsing binary 8−40996
VW Hydri, dwarf nova, short period light oscills. 8−20837
VW Hydri, light curves of dwarf nova 8−12245
Iapetus, radius from 1974 March 30 lunar occultation 8−36505
IC 310, galaxy, outer structure from electronographic obs. 8−16521
IC 4997, [O III] 4363 Å line intensity in variable planetary nebula 8−8100
interstellar CH^+ upper limit towards τ Scorpii 8−4309
interstellar K I, 4044 Å line obs. 8−24533
interstellar Na I lines hyperfine struct. in α Cygni direction 8−24542
Io, Na cloud, first photographs 8−32389
Io, Na I D_2 emission line profiles, var. with orbital phase angle and mag. latit. 8−4139
Io, periodic variations obs. in Na and K clouds 8−4138
Irkutsk prism astrolabe obs. programme *(Russian)* 8−4114
Jupiter, absolute reflectivities and limb darkening, 4100-8300 Å Si vidicon imaging 8−7916
Jupiter, astrolabe obs., 1976-77 winter period *(French)* 8−32387
Jupiter, atm. H_2 content from spectral line equivalent width *(Russian)* 8−12143
Jupiter, longitude measurements for surface details, phase exaggeration effect *(French)* 8−36497
Jupiter, NH_3 atmospheric abundance 8−12142
Jupiter, Pioneer 10 imaging data for prominent belt and zone, haze particles 8−45269
Jupiter, satellites, diameters from lunar occultation meas. 8−45272
K648, halo planetary nebula, spectrophotometry and element abundances 8−41011
Klemola 44, X-ray cluster of galaxies, redshifts and vels. 8−45414
L19-2, low-amplitude ZZ Ceti type variable, UBV colours, period determ. 8−4242

visible astronomical observations continued
AR Lacertae, double-subgiant eclipsing binary, spectra, abundances 8−8044
BL Lacertae, optical monitoring by three-colour photographic photometry 8−16525
BL Lacertae, photoelectric intraday photometric obs. 8−36681
AR Lacertae, RS Canum Venaticorum type star, UV excess, spectrophotometric obs. 8−8043
BL Lacertae, spectrum and magnitude of associated galaxy 8−24552
BL Lacertae object 0109+22, optical and radio props. 8−32567
late-type stars, intermediate band photometry in Geneva system 8−12231
late-type stars, spectrophotometry, incident and emergent flux calc. 8−4200
late-type stars in stellar groups, intermediate band photometry 8−4300
late-type stars intermediate-band photometry, calibration of indices 8−49424
late-type supergiants, C, N and O abundances for G AND K Ib stars 8−24509
LDS 678B (EG 131), white dwarf, spectrum 8−40946
Leonid meteor shower, struct. and relative activity of radiants, 1972 November 8−45291
ρ Leonis, non-anomalous diffuse interstellar absorpt. features 8−16418
20 Leonis, possible eclipse obs. in triple system 8−12298
R Leonis, strong TiO-related dia. vars. 8−16429
υ Leonis (SAO 138298), angular diameter from lunar occultation obs. 8−45332
AP Librae, extended source obs. by photoelectric photometry 8−4348
LMC, catalogue of 302 C stars 8−20654
LMC, probable nova discovered 1978 March, position and magnitude 8−45341
LP 182-44, faint blue star with large proper motion, discovery 8−49439
LP 701-29, lowest luminosity degenerate star with heavily blanketed spectrum 8−36562
LS I +61°303 as optical counterpart for GT 0236+610 source 8−36568
LSI+61°303, possibly optical counterpart of GT 0236+610, absence of variability 8−49438
599 Luisa, photoelectric light curve 8−16328
luminous C stars in LMC, photometry 8−28670
lunar occultations of stars, double and multiple stars obs. 8−4079
lunar occultations of stars, summary of obs. 8−7982
lunar surface colour differences, Tycho and Alpine valley areas 8−20663
β Lyrae, optical and IR photometry, gaseous disc electron density distrib. 8−28722
β Lyrae, photoelectric photometry (in 1971) 8−12294
M10, M12, M71, M92, globular clusters, radial vels. from meas. of stars in fields 8−41004
M15, X-ray globular cluster, search for O III 5007 Å forbidden line emission 8−36644
M1-78, emission nebula, optical position and 15.4 GHz struct. 8−41025
M22, globular cluster, membership and other problems 8−32537
M25 (IC 4725), open cluster, stars four colour and Hβ photometry 8−8067
M31, gas-to-dust ratio determ. 8−8120
M31, globular clusters colour indices, rel. to interstellar absorpt. law 8−28796
M31, Hα survey, catalogue of 981 H II regions 8−40840
M31, rotation of nuclear region from spectra 8−45395
M31, search for globular clusters in disc and minor axis fields 8−32568
M33, detection of SNRs, by strong S II forbidden line emission 8−36665
M34, open cluster, spectral types of brightest stars 8−12311
M34, open cluster, UBV photoelectric photometry 8−12307
M5 giant branch, spectroscopic survey 8−16467
M82 central regions, kinematics 8−45394
M87, dynamical evidence for central mass concentration 8−49529
M87, evidence for supermassive object in galaxy nucleus from SIT and CCD area photometry 8−49528
M87, luminosity profile and outer corona 8−41035
M8, Dragon dust cloud obs., isophotometry 8−36673
M-type giants, temp. sequence based on TiO spectra *(Russian)* 8−20831
M-type stars, in Orion population, CaH and TiO band strengths 8−12227
M-type variable stars, obs. in DDO photoelec. system, spectral classification 8−32463
Magellanic Clouds, spectrophotometry of nebulae suitable as standards 8−12350
Markarian galaxies, nature from photometry and classification 8−28781
Mars, astrolabe obs., 1975-76 winter period *(French)* 8−32378
Mars, atmospheric opacity during July-November 1976, Viking orbiter obs. 8−20676
Mars, cloud positions during 1907-73 period, topographic control 8−36479
Mars, dust storm obs., 1978, Jan. 8−24482
Mars, dynamical phenomena during June-November 1976, Viking orbiter imaging results 8−20675
Mars, geological obs. in Cydonia region from Viking 8−20674
Mars, geology of Chryse Planitia 8−20673
Mars, impact craters, emplacement of ejecta by surface flow 8−20671
Mars, permafrost features obs. by Viking orbiters 8−20670
Mars, phase function, July to November 1976, Viking orbiter photometric obs. 8−20677
Mars, photographic positions in 1973 and 1974, Pulkovo normal astrograph obs. *(Russian)* 8−28567
Mars, polar regions, Mariner 9 and Viking obs. of layered deposits 8−7899
Mars, Tempe area, detection of abnormally light area 8−28569
Mars, variable surface albedo features study during Viking primary mission 8−20678
Mars, Viking 1 orbiter imaging of Valles Marineris and geological anal. 8−20672
Mars, Viking orbiter images IPL processing 8−20679
Martian channels, Viking data rel. to classification and form. time 8−20669

visible astronomical observations continued
Martian volcanic features, obs. from Viking orbiters 8−20668
MC2 and MC3, optical identifications, 11^h28^m to 17^h00^m right ascensions 8−20900
MCG 8-11-11 (2Ariel 0551+466), Seyfert galaxy, brightening of nucleus 8−41053
MCG -5-23-16, spectroscopic obs. of possible X-ray source 8−45404
dMe stars, survey of BY Draconis syndrome 8−16428
Melotte 66, very old open cluster, BV photometry rel. to broad giant branch 8−32538
Mercury, bright patches in several large craters, possible physico-chemical alteration process 8−32375
Mercury transit, 1973 November 10, photographic obs. at Pulkovo *(Russian)* 8−28562
Merope nebula, uvby photometry and dust grains phase function in UV 8−32553
meteoroid albedo and size distrib. in 0.3-4.8 AU range 8−36539
meteors, magnitude errors and magnitude scales of observers in Sweden and Czechoslovakia 8−36533
meteors, N_2^+ 4278 Å bands in spectra, quantitative anal. 8−45290
Molonglo radiosources optical counterparts, spectrophotometric obs. 8−4375
Monoceros Loop, supernova remnant, high vel. gas, Na I lines obs. 8−12348
Monoceros Loop, supernova remnant, narrow band photography, shock wave model 8−32547
Monoceros Loop, supernova remnant, photographic obs. of diffuse and filamentary nebulosity 8−32548
1 Monocerotis, δ Scuti star, photometry and anal. 8−32495
R Monocerotis, bipolar nebula, optical and IR polarimetry 8−36658
V616 Monocerotis (Nova 1975), photographic photometric obs. 8−36587
Moon, Mosting A posn. determ., plate reduction *(French)* 8−20661
Moon, positional photographic obs. at Pulkovo with long-focus horizontal telescope *(Russian)* 8−28533
Mz 3 (p-K 331−1°1), obs. of bipolar nebula, possible protoplanetary 8−45376
128 Nemesis, photoelectric light curve 8−16328
Neptune, rot. period from spectral line tilts 8−20726
Neptune, secular brightness increase, 1972-76 period 8−16346
NGC 1199 and silhouetted compact high-redshift object 8−41031
NGC 1265, galaxy, outer structure from electronographic obs 8−16521
NGC 1275, Seyfert galaxy, radio and optical variability of nucleus 8−28793
NGC 1904 (M79), UBV photometry, colour-magnitude diagram of halo globular clusters 8−32528
NGC 2169, open cluster, spectral types of brightest stars 8−12310
NGC 2244, young open cluster, uvby Hβ photometry, colour excess, distance, age 8−32532
NGC 2362, very young open star cluster, photographic star counts *(German)* 8−16472
NGC 2403, Sc III type, surface photometry 8−32581
NGC 2439 association, photometric and spectroscopic study 8−16470
NGC 2516, spectroscopic binaries, radial vels. from objective prism plates *(German)* 8−45360
NGC 2527, galactic cluster, UBV photometry 8−16479
NGC 253, spiral galaxy, gas outflow from nucleus rel. to nucleus stellar population 8−28776
NGC 2782, peculiar hot-spot nucleus galaxy, vel. field 8−4357
NGC 3379, elliptical galaxy, spectroscopic obs. rel. to rot. and vel. dispersion 8−49529
NGC 3379, surface photometry, computerised analysis 8−12101
NGC 3448, optical and H I 21 cm line obs., peculiar nucleus 8−36696
NGC 3603, luminous young cluster, UBV photometry 8−36643
NGC 3603 stars, interstellar λ4430 band obs. 8−32555
NGC 3672, high luminosity spiral galaxy, extended rotation curves 8−8124
NGC 4088, rotation curve and mass of spiral galaxy *(French)* 8−36698
NGC 4151, galaxy, outer structure from electronographic obs. 8−16521
NGC 4151, Seyfert galaxy, companion galaxy and spiral arm obs. 8−16522
NGC 4151, Seyfert galaxy, periodicity of optical variations 8−41047
NGC 4235, Seyfert galaxy, spectrum and radial. vel. 8−49536
NGC 4565, spiral galaxy, optical halo detect. 8−12364
NGC 4762, S0 galaxy, rot. curve and dynamics 8−28774
NGC 4833, southern globular cluster, BV photometry of variable stars 8−4304
NGC 5128, Centaurus A, stellar population and dust lane 8−20890
NGC 604 in M33, [S III] obs. and N/S abundance gradients 8−8083
NGC 6210, 6543, 6572, planetary nebulae, spectroscopic obs. using multichannel analogue detector system 8−36461
NGC 6235, globular cluster, obs. of variable stars 8−4305
NGC 6302, line profiles from ionised and neutral gas in peculiar nebula 8−12341
NGC 6306, active galaxy, spectrophotometry and morphology *(Russian)* 8−28768
NGC 6356, photometric obs. of Mira variables in globular cluster 8−32530
NGC 6383, young open cluster, central core stars obs. 8−41003
NGC 6397, globular cluster, vel. dispersion meas. using TV detector and cross-correl. techniques 8−16305
NGC 6535, photometric study of variable stars in globular cluster 8−32529
NGC 6543, planetary nebula, electronographic data rel. to struct. 8−20869
NGC 6618, polarimetric obs. of nebula and neighbouring stars *(Russian)* 8−49491
NGC 6638, globular cluster, Mira and RR Lyrae variable obs. *(French)* 8−16475
NGC 6752, globular cluster, blue horizontal-branch stars photometry 8−49488
NGC 6853 (Dumb-bell Nebula), complex motions of neutral and ionised gas 8−24539
NGC 6853 (Dumbbell Nebula), ionization and abundances 8−45390
NGC 7000/IC 5070 (North American/Pelican) nebular complex, obscuration and excitation 8−36667
NGC 7293 (Helix Nebula), planetary, obs. of [O I] λ6300 vel. field 8−12340

visible astronomical observations continued
NGC 7654 (M52), open cluster, stars four colour and Hβ photometry 8−8067
NHC 4594 (Sombrero Galaxy), H II regions and ionised interarm gas detect. 8−36685
Norma dark cloud region, stellar photometry rel. to cloud struct. 8−16494
Nova Delphini 1967, emission line spectrum *(Russian)* 8−16440
Nova Delphini 1967, spectrophotometry in 3400 to 6500 A range 8−16430
Nova Delphini (1967), photoelectric and spectrographic obs. 8−20844
nova in LMC, discovery confirmation, magnitude, photometric obs., premax. spectra 8−49456
Nova LMC 1977b, photometry, light curves, distance modulus 8−8019
Nova Sagittae 1977, visual magnitude estimates (1977 Aug.-Oct.) 8−8021
Nova Sagittae 1977, visual magnitude estimates (1977 November 6 to 1978 January 7) 8−36593
Nova Sagittarii 1977, early spectrum 8−32496
Nova Sagittarii 1977, visual magnitude estimates (1977, Aug.-Oct.) 8−4246
Nova Sagittarii 1978, discovery on 1978 April 7, position, Balmer emission lines 8−45342
Nova Sagittarii 1978, precise position, visual magnitude estimates 1978 Apr. 8−49458
Nova Scuti 1975, spectrum, line identifications 8−45335
Nova Serpentis 1978, discovery obs. 8−36594
Nova Serpentis 1978, image tube spectrograms, emission lines 8−40964
Nova Serpentis 1978, precise position, spectra, visual magnitude estimates 8−36596
Nova Serpentis 1978, UBV photometry, visual magnitude estimates, spectrographic obs. 8−40963
Nova Serpentis 1978, UBV photometry and magnitude estimates 8−40959
Nova Serpentis 1978, visual magnitude estimates 1978 Mar.-Apr. 8−49457
Nova V3888 Sagittarii (1974), UBV and uvby photometry during decline stage 8−20836
Nova Vulpeculae 1976 (NQ Vulpeculae), light, colour and vel. curves 8−28708
NRAO 5 GHz and 4C catalogues, optical spectra and redshifts 8−8145
O-type planetary nuclei, spectral classification, magnitudes, distances 8−4203
OA 33, variability of optical counterpart 8−45421
OB-type stars in vicinity of long period Cepheid VZ Puppis, UBV β photometry 8−45339
Object Kowal, positions, indeterminate orbit, elements and ephemeris 8−7907
object Kowal, slow-moving asteroid discovery and positions 8−4136
Object Schuster, discovery and positions for fast-moving Apollo-type object 8−32385
occultations, photoelec. obs., diffraction, stellar diameters and double stars 8−7866
occultations of stars by Moon, 1965-71 events recorded at Poltava *(Russian)* 8−4083
Of stars, raxial vel. meas. 8−4226
Ohio radio sources, optical identification using radio and optical positions meas. by Texas interferometers 8−28808
OI090.4 and OJ−131, BL Lacertae objects 8−4359
old novae, search for rapid photometric oscills. 8−4251
open clusters, spectroscopic obs., search for Ap stars 8−45367
ξ Ophiuchi, obs. of interstellar K I 4044 Å line 8−24533
Ophiuchus-Scorpius region, ZB flare stars and nebular variables *(Chinese)* 8−28702
optical quasars, radio and optical obs., redshifts, luminosity function 8−49552
Orion Nebula, large proper motions of nebular features and faint star 8−12349
Orion Nebula, linear polarisation obs. 8−45392
Orion OB1 association, stellar spectral types 8−32539
Orion region, survey of extremely red stars with Schmidt telescope *(Japanese)* 8−20833
χ^1 Orionis (SAO 077705), ang. dia. from occultation obs. 8−20825
λ Orionis association, photometric props. of young cluster 8−16478
σ Orionis E, peculiar eclipsing binary, linear polarization obs. 8−32508
σ Orionis E, period and luminosity stability from uvby β photometry 8−8017
471 Papagena, rotational period and photoelectric lightcurve *(German)* 8−4134
471 Papagena, rotational period and photoelectric lightcurve 8−4135
Parkes radiosources with flat spectra, optical identifications 8−4382
partial solar eclipse, 1976 April 29, obs. in Poltava 8−45201
peculiar and interacting galaxies in southern sky, emission line obs. of 37 objects *(Russian)* 8−49511
peculiar extragalactic sources, multiaperture UBV photometry 8−28772
γ Pegasi, β Cephei star, dynamics of photosphere and shells 8−49447
AW Pegasi, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
κ Pegasi, radial vel. meas., visual binary with spectroscopic binary component 8−32520
Periodic Comet Arend-Rigaux (1977k), position and tail obs. (1978 March 5) 8−40874
Periodic Comet Arend-Rigaux (1977k), positions, appearance and spectrum 8−12157
Periodic Comet Arend-Rigaux (1977k), precise positions 1977 Oct.-1978 Jan., total visual magnitude estimates 8−36517
Periodic Comet Arend-Rigaux (1977k), precise positions for 1977 Nov.-Dec. 8−20745
Periodic Comet Ashbrook-Jackson (1977g), precise position (1977 Oct. 13) 8−20749
Periodic Comet Chernykh, precise positions and magnitudes (1977 Sept.-Oct.) 8−7926
Periodic Comet Chernykh (1977l), precise positions, improved elements and magnitudes 8−7932
Periodic Comet Chernykh (1977l), precise positions 1977, Sept. and Oct., ephemeris to 1978 Apr. 8−7941
Periodic Comet Chernykh (1977l), precise positions 1977 Dec.-1978 Jan. 8−49379
Periodic Comet Chernykh (1977l), precise positions 1977 Sept.-Dec. 8−24490
Periodic Comet Chernykh (1977l), precise positions (1977 November 17 to 1978 January 8) 8−32400
Periodic Comet Chernykh (1977l), precise positions for 1977 Oct.-Dec., total visual magnitude estimates 8−20755
Periodic Comet Chernykh (1977l), precise posns. (1977 Sept.-Nov.) 8−16351
Periodic Comet Clark (1978g), recovery on 1978 Apr. 13, positions Apr. 13-30 8−49388
Periodic Comet Encke, precise positions, 1977, Aug. to Oct. 8−7942
Periodic Comet Encke, total magnitude estimates (1977 September) 8−7925
Periodic Comet Gehrels 3 (1975o), precise positions, (1977 November 18 to 1978 March 5) 8−40876
Periodic Comet Gehrels 3 (1975o), precise posns. for 1978 March-April period 8−49385
Periodic Comet Giacobini-Zinner (1978h), recovery, positions for 1978 Apr. 30 and May 1 8−49389
Periodic Comet Grigg-Skjellerup (1977b), precise positions (1977 Jan.-Aug.) 8−7928
Periodic Comet Gunn, precise positions, Aug., Sept. and Oct. 8−12155
Periodic Comet Kojima (1977r), precise positions 1977 Dec.-1978 Jan. 8−36519
Periodic Comet Kojima (1977r), precise positions (1977 Dec. 5, 20) 8−20748
Periodic Comet Kojima (1977r), recovery posns. and earlier obs. 8−20739
Periodic Comet Kopff (1976b), precise posns. (1977 June-Oct.) 8−16356
Periodic Comet Kopff (1976b), precise posns. (1977 Oct. and Dec.) 8−28587
Periodic Comet Sanguin (1977p), positions, improved elements and ephemeris 8−16352
Periodic Comet Sanguin (1977p), precise positions 1977, Oct. to Dec. 8−20752
Periodic Comet Sanguin (1977p), precise positions (1977 October 11 and 19) 8−7936
Periodic Comet Sanguin (1977p), prediscovery position, elliptical elements, and ephemeris 8−4153
Periodic Comet Schuster (1977o), confirmation and semiaccurate posns. (1977 Oct.) 8−7929
Periodic Comet Schuster (1977o), discovery and positions (1977 October) 8−7927
Periodic Comet Schuster (1977o), precise positions 1977, Nov. 8−12156
Periodic Comet Schuster (1977o), precise positions (1977 September) 8−7933
Periodic Comet Schuster (1977o), precise positions and ephemeris for 1977/78, Dec. to May 8−7940
Periodic Comet Schuster (1977o), precise positions for 1977 Sept.-Dec. 8−20754
Periodic Comet Schuster (1977o), precise posns. (1977 Dec.-1978 Jan.) 8−36524
Periodic Comet Schuster (1977o), precise posns. (1977 Nov. and Dec.) 8−20741
Periodic Comet Schwassmann-Wachmann 1, outburst, total visual magnitude estimates, 1978 March 6-8 8−36527
Periodic Comet Schwassmann-Wachmann 1, precise positions, 1978 January 1 to 16, and outburst date 8−32399
Periodic Comet Schwassmann-Wachmann 1, precise positions, (1978 February 27 to March 12) 8−49381
Periodic Comet Schwassmann-Wachmann 1, precise positions 1977 Dec.-1978 Feb., total visual magnitude estimates 8−36520
Periodic Comet Schwassmann-Wachmann 1, precise posns. (1977 March and Aug.) 8−16354
Periodic Comet Schwassmann-Wachmann 1, precise posns. and magnitudes (1977-8) 8−28585
Periodic Comet Tritton (1978d), positions, elements and ephemeris 8−36531
Periodic Comet Tritton (1978d), precise positions 1978 March 8−40877
Periodic Comet Tsuchinshan 1 (1978e), precise position (1978 March 8) 8−45285
Periodic Comet Tsuchinshan 1 (1978e), recovery, precise position 1978 Feb. 4 8−36526
Periodic Comet Van Biesbroeck (1977s), precise positions 1977 Dec. and 1978 Mar. 8−45289
Periodic Comet Van Biesbroeck (1977s), recovery position 8−20740
Periodic Comet Whipple (1977h), precise positions 1977, Jul. and Aug. 8−24487
Periodic Comet Wild 2 (1978b), discovery and precise posns. (1978 January) 8−28586
Periodic Comet Wild 2 (1978b), positions, appearance and magnitudes (1978 Jan.-Mch.) 8−36530
Periodic Comet Wild 2 (1978b), positions, elements, ephemeris and magnitude estimates 8−36515
Periodic Comet Wild 2 (1978b), positions, elements and ephemeris 8−28589
Periodic Comet Wild 2 (1978b), precise positions 1978 Feb.-Mar., total visual magnitude estimates 8−45287
Periodic Comet Wild 2 (1978b), precise positions (1978 January 27) 8−32398
Periodic Comet Wild 2 (1978b), precise positions for 1978 Jan.-Feb. 8−32402
Periodic Comet Wolf-Harrington (1977j), precise position 1978 Jan. 3 8−36528
Periodic Comet Wolf-Harrington (1977j), precise positions (1977, July-August) 8−7931
AX Persei, 1978 Jan.-Feb. outburst of Z Andromedae-type object 8−36588
X Persei, 580 day and other periodicities 8−16435
ξ Persei, ^{7}Li I 6708 Å line and Li interstellar abundance 8−49494
1 Persei, photometric variability, possible eclipsing binary 8−32489
S Persei, supergiant light curve rel. to maser emission var. 8−49461
X Persei, V-band polarization variability 8−49455
X Persei (2U 0352+30), photoelec. obs., light vars. 8−40999

visible astronomical observations continued
X Persei (3U 0352+30), photometry, search for optical 13.9 minute period 8−16426
X Persei (4U 0352+30), light vars., tidal distortion by massive unseen companion 8−36640
V400 Persei (Nova Persei 1974), photoelectric obs. 8−4252
Perseus, spectrophotometric survey of stars along Milky Way 8−45403
Phobos, 20 positional photographic obs. during 1973 October at Pulkovo *(Russian)* 8−28568
Phobos, composition, evidence for carbonaceous chondrite surface from spectral anal. 8−49365
Phobos, evidence for carbonaceous chondritic composition from multicolour obs. with Viking lander cameras 8−49366
Phobos, first encounter by Viking Orbiter-1, mass and density determ. 8−49364
Phobos and Deimos, preliminary results from Viking obs. 8−20681
Phobos and Deimos, Viking imaging, primary mission overview 8−20680
SX Phoenicis, simultaneous photometric and polarimetric obs. 8−49451
photoelectric occultation observing, techniques and apparatus 8−4117
photographic four-colour sky atlas 8−24472
photosphere magnetic field patterns, evolution during Skylab 8−20798
PKS 0237−23, absorpt. spectrum obs., absorpt. lines origin 8−41074
PKS 0528−250, neutral stellar object with no emission and rich absorption 8−49551
PKS 1345+12, radio galaxy, optical spectrum 8−4341
planetary nebulae, Fabry-Perot interferometry 8−4323
planetary nebulae, spectrophotometry, emission line intensities, physical conditions 8−36651
planetary nebulae discoveries with low surface brightness 8−16496
planetary nebulae in M31 (Andromeda galaxy), identifications and photometry 8−28737
planets, astrometric and radiometric methods, tests of general relativity 8−45552
PN 108-76°1, halo planetary nebula, spectrophotometry and element abundances 8−41011
PN 49+88°1, halo planetary nebula, spectrophotometry and element abundances 8−41011
Population II Cepheids and RR Lyrae stars in globular cluster M19, photographic obs. 8−41002
possible comet, discovery 8−20747
pre-main-sequence A and F stars in NGC 2264, nature of IR excesses 8−32461
PSR 0531+21, Crab pulsar, light curve, 1973 to 1976 period *(Russian)* 8−12263
VV Puppis, brightening, emission line spectrum 8−40960
VV Puppis, brightening of magnetic variable (1978 March) 8−36595
Puppis A supernova remnant, optical and radio comparison 8−28760
T Pyxidis, recurrent nova, photoelectric obs. 8−4252
Q0453−423, quasar, absorption line spectrum 8−8144
Q2227.6−3928, highest redshift quasar from Tololo deep survey 8−12403
Q2228.1−4033, high redshift quasar from Tololo deep survey 8−12403
Q 0002−422, QSO with $z_{abs} \ll z_{em}$ 8−16565
quasars, faint emission line spectroscopy 8−8146
quasars, high-luminosity, space distrib. 8−8147
quasars, low-redshift, optical struct. 8−32596
quasars, otical variability, survey of objects from 17-22^h RA 8−41079
quasars absorption line features of Fe II and Mg II 8−16559
quasars M87 and 3C 273, imaging polarimetry 8−41076
quasars near peculiar pair of galaxies NGC 7714−7715, spectra and redshifts 8−28835
quiet Sun, limb darkening coeffs., integrated spectrum 8−24498
R548, pulsating white dwarf, photometric obs., light curve anal. 8−32488
radio galaxies, optical spectra, morphological classification rel. to spectroscopic classification 8−41038
radio galaxies in Coma cluster, optical obs. 8−12358
radiosources, catalogue of 347 sources obs. at 610 MHz, source parameters, identifications 8−40838
radiosources from 13th part of Parkes 2700 MHz survey, optical identifications 8−20901
red dwarf stars near north galactic pole, vel. dispersion 8−7989
red giants in M5 (NGC 5094), intermediate band electronography 8−49490
red stars at north galactic pole, proper motions 8−4214
Reticulum globular cluster, structure, star counts 8−12309
FG Sagittae, Fe-peak and s-process elements abundance *(Russian)* 8−12253
V Sagittae, light curve coherent oscills. 8−8022
FG Sagittae, light vars. rel. to photometric radius and pulsation mass 8−36576
HM Sagittae, near emission-line object, optical and IR obs. 8−36575
FG Sagittae, nonstable star, spectrophotometric obs. 8−28683
HM Sagittae, possible proto-planetary, nebula, emission line widths 8−45389
WZ Sagittae, recurrent nova, photometric study at minimum light 8−24513
FG Sagittae, spectrum of assoc. nebula 8−49498
W Sagittarii, magnetic field from Zeeman meas. 8−4240
RY Sagittarii, visual obs. of 1977 Sept.-Oct. minimum 8−49463
Sagittarius dwarf irregular galaxy, discovery on ESO Schmidt plates 8−20887
Santiago astrolabe, time, latit. and radius obs. (1968 to 1971) 8−12077
SAO 015338 (2A 1052+606), Hα emission and analysis of possible identification 8−32608
Saturn, astrolabe obs., 1977 Jan.-April *(French)* 8−32390
Saturn, astrometric results from 1974 lunar occultations of satellites 8−36506
Saturn, atm. H_2 content from spectral line equivalent width *(Russian)* 8−12143
Saturn, obs. of possible new satellite 8−7921
Saturn, ring A, Encke division, photometric confirmation from Iapetuo eclipses 8−45273
Saturn's rings, azimuthal brightness vars., obs. at intermediate tilt angle 8−4145
Saturn NH_3 atmospheric abundance 8−12142
Saturn rings, five-colour photometry 8−36504

visible astronomical observations continued
τ Scorpii, photospheric vel. fields 8−28672
U Scorpii, probable identification of recurrent nova at minimum 8−45343
α Scorpii (Antares) nebula, spectrum 8−41014
Seyfert 1 galaxies, spectrophotometry 8−4346
Seyfert galaxies, depend. of emission line intensity on colour index *(Russian)* 8−28769
Seyfert galaxies and quasars, Fe II emission obs., spectrophotometry 8−4347
Shapley-Ames southern galaxies, Las Campanas survey and classifications 8−45409
sky brightness, zenith photoelectric measurements during annular solar eclipse (1976, April 29) 8−3900
SMC, abundances in 10 H II regions 8−4320
SMC X-1, VBLUW photometry, evidence for accretion disc 8−12409
SMC X-1 (SK 160), spectroscopic orbit and masses 8−4285
SMC X-2, 14th magnitude OB star 0.5′ from source position 8−4411
SMC X-2, colours, spectral type and position of optical candidate 8−12421
SMC X-2, obs. of optical candidate 8−8162
SMC X-3, colours, spectral type and position of optical candidate 8−12421
SMC X-3, obs. of optical candidate 8−8162
SN 1181 (3C 58), discovery of optical counterpart 8−32546
SN 1604 (Kepler's supernova), optical remnant expansion time scale, brightness, reddening 8−28747
SN 1970g, in M101, spectra of type II supernova 8−8030
SN 1972e in NGC 5253, Type I, spectrum after 365 and 435 days 8−4255
solar background corona, Skylab study near solar minimum 8−28616
solar Ca II K-line, search for global oscillations 8−7959
solar chromosphere, Hα obs. close to limb 8−28628
solar chromosphere network pattern, identification with 1.35 cm radiogranulation *(Russian)* 8−40897
solar corona, Hα obs. of fine chromospheric structs. *(French)* 8−28607
solar corona, photoelectric obs. of Fe XIV depletion (1976, April 20) 8−28617
solar corona, white light polarisation during 1973 June 30 eclipse 8−20786
solar coronal line profiles above active regions, statistical anal. 8−7968
solar coronal red line, more precise wavelength *(Russian)* 8−40899
solar coronal streamers, electron densities from K-coronameter polarisation meas. 8−4182
solar eclipse, 1977 October 12, photographic obs., cloudy weather 8−45315
solar eclipse, 1977 October 12, photographic obs. from North America 8−45314
solar eclipse, 1977 October 12, ship-borne, expeditions in NW.Pacific 8−32434
solar elements i and Ω determ. from Doppler vel. meas. of solar plasma 8−28599
solar equatorial K-corona, temporal evolution 8−28618
solar faculae excess brightness, wavelength depend., rel. to solar oblateness 8−7955
solar filament obs. with multi-channel subtractive double pass spectrograph 8−12189
solar filaments, short-lived, differential rotation 8−28642
solar flare, 1973 June 15, Hα, magnetic and X-ray morphology 8−4173
solar flare magnetic fields and microwave burst spectra 8−7970
solar flares, nonthermal plasma wave elec. fields meas. using Stark effect 8−12193
solar granulation, lifetime from balloon-borne imagery 8−28601
solar granulation, one-dimensional speckle interferometry 8−45299
solar granulation, photometric props. from balloon-borne imagery and digital image enhancement 8−7956
solar granule/intergranule brightness contrast, new determ. 8−20797
solar Hα macrospicules, identification with EUV macrospiculs and X-ray bright point flares 8−16361
solar large-scale magnetic field, Stanford obs. compared with Hα synoptic charts 8−28612
solar photosphere, brightness field near disc centre, two dimens. spatial spectrum 8−7964
solar photosphere, centre-to-limb var. of RMS granular contrast 8−4176
solar photosphere, wavelength depend. of granulation, 0.38-2.4 μm region 8−12188
solar photospheric faculae, contrasts at solar disc centre using filigree pictures 8−12181
solar quiescent prominences, Hβ, He D_3 and Ca II 8542 Å line emission meas. 8−32427
solar quiescent prominences, spectra meas. 8−40886
solar-type stars, metal abundances, microturbulence, spectroscopic data 8−40943
solar-type stars, photoelec. scanner obs., search for solar spectral analogues 8−40938
southern dark clouds, survey for Herbig-Haro objects and Hα emission stars 8−28536
southern groups and clusters of galaxies, catalogue 8−28539
southern OB stars, MK spectral classifications 8−12221
southern peculiar A-type stars, spectra and atmospheric anals. 8−24517
southern peculiar galaxies and galaxy pairs, morphologies, spectra and redshifts 8−32579
southern quasars and quasar candidates, UBV photometry 8−32595
southern rich clusters of galaxies, finding list for 474 clusters 8−24470
southern visual double stars, meas. at Cerro Tololo Observatory 8−8057
spectrum variables, He weak and He strong stars 8−4243
star colours, refr. corrections for atmospheric spectral transmission changes 8−28535
stars, AGK3R declinations improvement using Toepfer meridian circle obs. *(Russian)* 8−28645
stars, DDO photometry, accuracy of derived two-dimensional spectral classes 8−16395
stars, right ascension determ. with Sukharev horizontal meridian circle *(Russian)* 8−28646
stars, Zeeman and Doppler shifts in spectrograms meas. 8−36467
stars in 3U 1538-52 field, photometric search for optical candidates 8−12412

visible astronomical observations continued
stars in field centred at $\alpha=2^h17^m.9$, $\delta=+58°59'$, BV magnitudes and spectral classes *(Russian)* 8−40841
stars in Magellanic Clouds and Milky Way, five-channel photometric obs. 8−16398
stars near South Galactic Pole, UBV photometry of 51 stars 8−4216
stars occulted by rings of Uranus, 1977-1980, colours and magnitudes 8−16277
stars within 25 pc of Sun, polarisation obs. 8−12202
Stein 2051, orbital motion, evidence for triple system 8−4289
stellar BVRI photometry, with photometer using Si diodes as light detectors 8−20651
stellar formation and evolution, role of UV obs. *(Italian)* 8−32446
stellar image spatial freq. modulation, atm. correlation scale meas. 8−40661
stellar spectra, atlas 8−20657
Stock 16, Basel 18, 19, Cr 272 and NGC 5168, open clusters, RGU photometry 8−16474
subdwarfs, old disc population, CaH and TiO band strengths 8−40930
Sun, asymmetry of selected Fraunhofer lines 8−4175
Sun, chromospheric rotation during 1972-73, years of declining activity 8−4186
Sun, diameter from photoelectric driftscans 8−4169
Sun, Fraunhofer lines, profiles in 4226-7700 Å range *(Russian)* 8−28606
Sun, He I D_3-line profile meas. with birefringent filter 8−4177
Sun, hedgerow prominences, fine structure from spectral obs. 8−40906
Sun, line profile families of faculae and pores 8−49408
Sun, mean mag. field obs. at Stanford 8−20800
Sun, meas. of Fraunhofer lines asymmetry *(Russian)* 8−40892
Sun, morphological analysis of 1972 October large group *(Chinese)* 8−28603
Sun, nonradial p-mode oscills. 8−32428
Sun, nonthermal vels. in photosphere 8−4219
Sun, north-south brightness asymmetry, obs. 8−45303
Sun, total eclipse of 1976 October 23, contact timing expt. 8−36547
Sun , total eclipse of 1976 October 23, in-flight obs. near Victoria, Australia 8−36548
sunspot intensity meas., correction for stray light during 1973 June 30 eclipse 8−28596
sunspots, struct. and dynamic props. of large group of 1972 August 8−49409
supergiant stars, B2 to G0, small amplitude light vars. 8−32469
supergiant stars, in LMC, long-term light vars. 8−45326
supergiant stars in LMC, spectral types and magnitudes, catalogue of 1882 objects 8−32361
supernova in anon. galaxy, discovery obs. 8−20846
supernova in anonymous faint spiral galaxy, discovery obs. 8−8031
supernova in Zw 310-31 = VV 11-10-52 faint galaxy NE of nucleus 8−4259
supernova remnants, Hα emission of optical filaments, shock waves interaction with interstellar medium 8−8103
supernova remnants, optical filament form. problem, observational approach 8−45384
supernovae in NGC 7723, NGC 1325, NGC 4402, UBV photometric obs. 8−16444
ξ Tauri, apparent wavelength depend. of v sin i 8−12240
λ Tauri, eclipsing binary, photometric elements, masses, radii, luminosities 8−28723
T Tauri, Hα line profile vars. 8−40944
DL Tauri, Hα profile in T Tauri type star *(French)* 8−8003
DR Tauri, highly variable young star, spectrometric and photometric obs. 8−20829
BP Tauri, T Tauri star, He I triplet-to-singlet ratio 8−28680
α Tauri (Aldebaran), Ca II K line high-resolution obs. 8−16408
α Tauri (Aldebaran), Ca II lines obs. rel. to chromosphere model 8−40931
BU=28 Tauri (Pleione), envelope during shell phase, 1972-75 period 8−28707
BU=28 Tauri (Pleione), spectrum vars., 1938-75 period 8−36578
time and latitude, astrolabe obs. at Merate Observatory for (1976) 8−12078
Titan, NH_3 atmospheric abundance 8−12142
Titan, secular brightness increase, 1972-76 period 8−16346
Tokyo Astronomical Obs., Time and Latitude Bulletins (April-June 1977) 8−45203
Tokyo Astronomical Obs., Time and Latitude Bulletins (January-March 1977) 8−45202
Tokyo meridian circle obs., true external errors, from SAO 158687 occultation by Uranus 8−28487
Tololo emission-line galaxies, nature from photometric and spectroscopic obs. 8−49531
Tr 27-102 (HD 159378), possible long-period Cepheid, light vars. obs. 8−45336
RW Trianguli, short-period close binary, circumstellar material size and brightness vars. 8−32512
Tycho supernova remnant, search for fossil Stromgren sphere 8−36661
4U 1538−52, obs. of optical candidate 8−41093
4U 1538−52, spectrograms of optical candidate, confirmation of identification 8−41094
4U 1538-52 optical counterpart, discovery of reddened Be-type star 8−36727
4U 1608−52, optical identification and transient source outburst 8−41088
4U 1626−67, X-ray pulsar, optical candidate photometry 8−12418
4U 1636−53 (MXB 1636−53), X-ray burster, optical candidate photometry 8−12418
4U 1735−44 (MXB 1735−44), X-ray burster, optical candidate photometry 8−12418
4U 1837+04 (Serpens X-1), obs. of optical candidate 8−41093
3U 1956+11 optical counterpart, photometry and spectrum 8−49554
UBVRGI photometric measurements of 1297 stars, catalogue on mag. tape 8−40839
unresolved visual binaries, suspected, reexamination 8−40993
Uranus, astrometric obs. with Danjon Astrolabe of Santiago during 1975 and (1976) 8−12151
Uranus, methane absorpt. band in spectrum 8−45275
Uranus, rot. period, modified spectroscopic technique 8−16345
Uranus, rot. period from spectral line tilts 8−20726
Uranus, rot. period meas. 8−7920
Uranus, rotation periods rel. to methane band strength var. 8−49376

visible astronomical observations continued
Uranus, rotation velocity determ. 8−36508
Uranus, secular brightness increase, 1972-76 period 8−16346
Uranus rings, geometric albedo upper limit 8−36510
Uranus satellite ring system, new features from Kavalur photoelectric record of SAO 158687 occultation 8−12152
CQ Ursae Majoris, Ap star, UBV photometry, light curves, colour indices 8−49454
XY Ursae Majoris, eclipsing binary, polarimetric obs. 8−28718
AN Ursae Majoris, nova-like variable, extremely high circular polarisation obs. 8−8018
α Ursae Minoris B (Polaris B), spectral type and interstellar reddening 8−8005
UV5, in globular cluster NGC 1851, He abundance determ. 8−49441
UV and X-ray sources, objective prism spectrophotometry 8−8150
variable stars in globular cluster NGC 5286, B photometry, cluster membership 8−32534
Venus, cloud cover obs. and recording 8−49355
Venus motion, numerical theory using radar, optical and Venera satellite obs. data 8−16325
Vesta, ang. diameter from speckle interferometry 8−20712
VI Cygni (Cygnus OB2) association, interstellar λ4430 band obs. 8−32555
ψ Virginis (SAO 139033), ang. dia. from occultation obs. 8−20825
visual double stars, ang. separation and position angles, photographic obs. 8−40997
visual double stars, meas. at Las Campanas Observatory, Chile 8−8058
visual double stars, photographic obs., ang. separations and position angles 8−20860
NQ Vulpeculae (Nova 1976), Hα emission line profiles in 1976 November to December *(Russian)* 8−40971
NQ Vulpeculae (Nova Vulpeculae 1976), photoelectric obs. 8−4252
NQ Vulpeculae (Nova Vulpeculae 1976), visual magnitudes (1977 Aug.-Nov) 8−16434
W92, possible gravit. contracting binary system in NGC 2264 young cluster 8−32462
Walker No.67 in NGC 2264, interstellar linear polarisation meas. rel. to circular polarisation existence 8−12223
white dwarfs, multiperiodic light curves, g-mode rotation 8−4210
white dwarfs, southern, Stromgren photometry 8−32456
white dwarfs, spectra of 47 southern stars 8−16417
white dwarfs, spectroscopic survey using Luyten catalogues 8−7998
wind effects on latitude obs. at Poltava *(Russian)* 8−3915
Wolf 1062, astrometric anal. of unseen companion from 61 cm Sproul refractor plates 8−16459
X-ray clusters of galaxies, gas stripping from spirals 8−32586
X-ray clusters of galaxies, radial distrib. of morphological types of galaxies 8−8129
X-ray clusters of galaxies, X-ray luminosity correl. with galactic content 8−32585
young emission-line stars in S Hemisphere, image tube spectrograms 8−8016
zodiacal light, Helios 1 and 2 obs. 8−24483
zodiacal light, source function from Helios A and Pioneer 10 photometric obs. 8−36539
zodiacal light Fraunhofer lines Doppler shift, interplanetary dust dynamics 8−45278
zodiacal light photopolarimetry, brightness annual vars. rel. to zodiacal cloud symmetry plane 8−45276
I Zw 1727+5015, redshift and spectra of BL Lacertae-type object 8−41044
CH star in M22 globular cluster, CH and CN anomalies 8−8001
H I and Mg II absorpt. lines obs. in QSOs and BL Lacertae objects 8−28838
H II condensation in NGC 2175, obs. of involved stars 8−20883
H II regions, abundance gradients from photoelectric spectrophotometry in 3700-7400 Å range 8−41036
H II regions, unusual large-scale motions 8−16509
NaH, interstellar, search in diffuse clouds 8−4325
Tc stars, search for TcO spectral bands 8−40935
U stars and related objects, spectroscopic study 8−49465

vision
see also colour vision; eye; vision defects; visual perception
accommodation microfluctuations, IR optometer recorder *(French)* 8−7463
acuity in cats with central retinal lesions 8−40158
acuity tests, comparison of STYCAR and Lighthouse tests for preschool children 8−35851
acuity tests, near-point, type-size variability 8−48802
adaptation 8−15834
adaptation to patterns containing 2-dimens. spatial struct. 8−40160
alcohol effect on visual recovery from glare, rel. to target acquisition 8−11660
artificial sight and hearing, appl. of microcircuits 8−20311
bar pattern detection, effects of subthreshold inducing fields 8−15840
behaviour monitoring system, EMG triggered photographic technique 8−31919
binocular disparity initial appearance and singleness of vision 8−40161
binocular flicker stimulator using polarisers 8−24075
blind boy with visual assoc. cortex destruction, pattern-evoked occipital pots. 8−40145
Boll, Franz, (1849 to 1879), investigator of retinal pigments, biography 8−20927
brain functional organisation, methodical approach *(Russian)* 8−35824
brain signal processing *(German)* 8−48792
brightness contrast simultaneous induction in pigeons 8−48804
n-butyl retinal Schiff bases, absorpt. spectral props., rel. to bathochromic shift in visual pigments 8−40117
carotenoids related to visual chromophore, electronic struct., band shape model 8−20142
cat binocular vision, eye alignment development 8−27955
cat superior colliculus, neuronal network characts. 8−31808
chromophore electronic structure 8−15764
cognitive processes, anal. by meas. of visual fixation points 8−31816
composite photographic-human visual system, spatial-freq. filtering effects in performance 8−4725
corrective saccades, effects of altering visual feedback 8−40150
cortex afferent geometry and neuronal trigger features generation, primates 8−35842

vision continued
- cortex local spectral anal., image description model 8−40143
- cortical muscarinic acetylcholine receptor and acetylcholinesterase increase on exposure of dark-reared rats to light 8−24069
- cortical pattern evoked pots. and single unit responses, cat 8−27947
- cortical plasticity rel. to local perfusion of noradrenaline 8−35847
- crustacean eyes and polarisation sensitivity 8−7350
- dark adaptometer for student use and optometric practice 8−48912
- dipteran giant visual interneurone response props., rel. to optomotor control 8−27940
- discrimination between small objects and large textured backgrounds 8−11652
- dual input nonlinear system characterisation using impulse trains 8−31761
- EEG alpha rhythm blocking, absence in visuobehavioural deprivation 8−27944
- EEG analysis methods and activation techniques *(Croatian)* 8−44666
- electrophysiologoal techniques for exam., of visual function in man, review 8−35843
- electroretinography, human, psychophysical appl., review 8−35859
- evoked brain potentials, comparison of signal components in auditory and visual pots. 8−44513
- evoked cortical potentials, transient response, techniques reviewed 8−35844
- evoked cortical pots. during binocular rivalry 8−40153
- evoked potential augmentation/reduction by cortical mechanisms, cat 8−27945
- evoked potential latency, steady-state, phase versus time analysis 8−11643
- evoked potential maturation in normal child *(French)* 8−24068
- evoked potential recording in high-noise environment, biphasic 60 Hz synchroniser cct. 8−24155
- evoked potential registration methods *(German)* 8−48916
- evoked potential scalp topography in auditory and visual go/nogo tasks 8−31818
- evoked potentials, averaged, long-term changes after X-irrad., rabbit 8−11704
- evoked potentials, size-specific interocular suppression, rel. to human binocular vision 8−31810
- evoked potentials, transient, real-time filtering 8−31940
- evoked potentials from occipital and precentral cortex in visually deprived humans 8−3479
- evoked potentials steady state, recording and appls., review 8−35823
- evoked response shape self-regulation in man 8−31809
- evoked response to sinusoidal gradients, latency changes, humans 8−7349
- evoked scalp potentials, spatiotemporal mapping for human 8−35845
- extended object visual detection 8−15839
- extra-retinal photoreceptor model for Aplysia californica 8−44506
- eye protection filter small dioptric powers local variation determ. *(German)* 8−27937
- fish, adaption to underwater light spectral composition 8−3485
- frog, Rana esculenta, under-corrected lens rel. to comparable aerial and underwater vision 8−7344
- fundus reflex luminance rel. to increased cognitive processing 8−35849
- grating adaptation decay 8−40159
- hemi-retina evoked average multichannel EEG pot. fields, latency differences between upper and lower hemi-retina 8−24067
- horizontal cell response in carp to monochromatic light, dynamic model, pattern recognition appl. 8−44507
- image defocus detection by human infants 8−7354
- image degradation by irregular retinal mosaic 8−20177
- increment thresholds, luminance, brightness 8−15838
- infant acuity meas. from pattern reversal evoked pots. 8−40149
- iris coloboma, selective atrophy in lateral geniculate nucl., cat 8−3471
- Kuhne, Friedrich Wilhelm, (1837 to 1900), chem. processes in retina, biography 8−20928
- lateral geniculate nucleus X-cell early development, kitten 8−27946
- lateral inhibition as mechanism of movement detect., forward inhibition 8−20176
- lens aperture, rel. to depth of focus, appl. to reading with relaxed eye 8−12489
- LF electric current stimulation of auditory and visual sensations 8−40261
- Lie group representation, computational results 8−27939
- loss, in objective determ. of human $+G_z$ accel. tolerance, ultrasonic blood flow meas. method 8−3619
- magnification in striate cortex and retinal ganglion cell layer of owl monkey 8−40146
- monocular astigmatism effects on kitten visual cortex development 8−7345
- neuromagnetic response latency of human visual cortex 8−40151
- neuron simulation using analogue and digital electronic circuit *(Spanish)* 8−27942
- neuronal organisation within mammalian visual thalamus 8−27948
- non-spiking visual interneurone, spike response 8−11645
- nonlinear receptive field model 8−27951
- occipital evoked potential meas. of contrast sensitivity and acuity of conscious cat 8−48803
- octopus brightness preference as function of background brightness, expt. 8−20178
- ophthalmic lens distortion display 8−7338
- optic tectum model of various vertebrates *(Spanish)* 8−40144
- particle induced visual phenomena in space 8−20297
- pattern and movement detect. in man and rabbit, separation and comparison of occipital pots. 8−48805
- peripheral vision photopic contrast sensitivity rel. to cortical magnification factor 8−24071
- photographic image detection and recognition visual factors, optimal viewing conditions 8−4724
- photon detection with optimum counting processor 8−27956
- photostimulator for visual electrophysiology 8−35846
- pigment retinal chromophore, role of protein in photochem. 8−15772
- pigment unprotonated chromophore-protein bond, ^{13}C NMR spectra 8−11607
- polarisation vision, functional similarity with colour vision 8−3497
- prelumirhodopsin, psec. kinetics, primary photochem. event in vision, proton translocation 8−44508
- prosthetic device, bioengineering and biomedical aspects of focal surface model 8−48942

vision continued
- pupil response as indicator of visual function, pupilometry equipment 8−40154
- 11-cis-retinal, donor energy effects on triplet-sensitized isomerization 8−3353
- retinal, highly polar excited electronic states, electron transfer 8−48757
- retinal anatomy and physiology, reprint of 1877 paper 8−20932
- retinal chemical processes, reprint of 1879 paper 8−20933
- retinal image light and dark contrast component processing 8−24070
- retinal isomers, dark equilib. and photochem. 8−15771
- retinal light intensity 2-dimens. profiles from laser-irrad. monkey eye 8−40141
- retinal Schiff bases in lipid bilayer membranes, photoelec. effects *(Japanese)* 8−7322
- retinal Schiff-base, photochem. step of vision, H-bonds, intermol. associations 8−31812
- retinal-entrapped membrane, photo-induced potential 8−20148
- retino-tectal mapping using microprocessor controller 8−31995
- rhodopsin, bathochromic shift origin 8−31767
- rhodopsin, cattle, phosphorylated, isoelec. focusing 8−15766
- rhodopsin, primary photophys. and photochem. processes in visual excitation 8−15773
- rhodopsin, transient light-induced conform. changes 8−15774
- rhodopsin and intermediates, absorpt. spectra and orientational change of chromophore 8−7321
- rhodopsin and photoproducts, temp. and wavelength effects on photochem. 8−11612
- rhodopsin conformation, spectral studies 8−15765
- rhodopsin phosphorylation as possible mechanism of visual adaptation 8−15836
- rhodopsin photosensitivity, thermal stability and metarhodopsin prod., extractant effects 8−7355
- rod, amphibian, dark adaptation processes 8−15835
- rod and cone signals interaction, temporal sine stimulation 8−11651
- scanning eye movement target point selection 8−24066
- scotopic reaction time, peripheral area-intensity interaction 8−3484
- shark visual system 8−15824
- spatial frequency and bar width selectivity in cat visual cortex 8−40152
- spatial frequency characteristics of receptive field of cat visual cortex, rel. to stimulus speed 8−20174
- spatial frequency characts. of complex receptive fields 8−20175
- spectacle lenses, scatt. light meas. *(German)* 8−46746
- stereoscopic threshold and viewing time with random-dot stereograms 8−35850
- stimulus deflector for eye movement, three-dimens. system 8−48945
- striate cortex single cell response, effects of interacting visual patterns, cat 8−7346
- sustained and transient mechanisms in human vision, temporal and spatial props. 8−40171
- telescopes, light vergence and accommodation 8−24065
- temporal properties of human visual nervous system 8−7353
- threshold effects of active and passive image displacements 8−27952
- UV light detection by homing pigeon 8−40157
- variability and periodicity, bibliography 8−27936
- vergence accommodation meas., dynamic optometer 8−35852
- vernier readings, visual acuity *(German)* 8−31814
- vertical fusional response in humans 8−48816
- visual angle increase, optical devices, geometrical and physiological optics *(Hungarian)* 8−20312
- visual cortex development model, mammal 8−3483
- visual-vestibular interactions, model of cerebellar influence 8−40156
- visuomotor mechanisms of monkey parietal lobe, visual input 8−27943
- X-ray image transmission system response rel. to X-ray diagnosis 8−35941

vision defects
- accommodation microfluctuations, IR optometer recorder *(French)* 8−7463
- acuity at ages 16 to 90, effects of luminance and contrast 8−3495
- amblyopes, monocular fixation and acuity 8−48801
- ametropia determination with laser refractor 8−35907
- anomalous trichromacy, single pigment shift model 8−11654
- astigmatism, recognition threshold and sharpness threshold 8−27950
- astigmatism induced by pterygium 8−40139
- bifocal lens designs, marginal aberrations 8−48927
- binocular oculomotor problems, phoria, vergence and fixation disparity 8−35835
- cataract, cold, form. in young rat lens, phase separation of protein-water mixture 8−11640
- colour, Roth 28-hue test 8−3494
- diabetic retinopathy, impairment of colour discrimination 8−15841
- diseases of optic nerve, tracts and visual cortex, annual review of ophthalmic literature 8−3475
- eye movement phase plane meas., antiaircraft tracking operator performance anal. 8−15825
- globe defects, evoked pots. from occipital and precentral cortex in visually deprived humans 8−3479
- hypermetropia rel. to chromatic aberration in small animals 8−40140
- hyperopic eye functional visual acuity at intermediate range 8−48791
- lateral spatial interaction in humans with abnormal visual experience 8−7363
- myopes, accommodation with rigid and flexible contact lenses 8−48787
- myopic and typical eyes, first order optics 8−44499
- ocular motility test in strabismus and amblyopia evaluation, computer administration and analysis via PAL8 program 8−48784
- orthokeratology, refr. error rel. to corneal power 8−48786
- red-green deficiency, validity of Pinckers' 100-hue version of Panel D-15 8−3493
- retinal degeneration, defective phagocytosis of isolated rod outer segments by RCS rat pigment epithelium 8−11647
- retinal diseases, literature review (1975-76) 8−35836
- sharpness corrective devices and apparatus *(Hungarian)* 8−15823
- spectacle lens design, computation of unwanted sphere and cylinder in periphery 8−48928
- strabismic amblyopes, stimulus field size assessment 8−11649
- strabismic amblyopia, optical aberrations rel. to visual loss 8−48788
- strabismic amblyopia, threshold contrast sensitivity function 8−7352

visual auroras *see aurora*

visual perception
- 100-hue test, validity of Pinckers' version of Panel D-15 8−3493
- acuity at ages 16 to 90, effects of luminance and contrast 8−3495
- autokinesis suppression by proprioceptive information about target location 8−7370
- binocular cross-correlation in time and space 8−40173
- border contrast enhancement as index of contact lens performance 8−3492
- border enhancement, brightness vs. darkness effects 8−7366
- border enhancement, effect of scatt. light 8−11658
- brightness generation, colour-brightness, contrib. of cortical colour channels to brightness sensation 8−11657
- cerebral dominance 8−7372
- cerebral lateralisation effects in visual half-field expts. 8−3496
- colour, Roth 28-hue test 8−3494
- colour images, rate distortion coding simulation for colour images 8−7361
- composite stimulus detection, rel. to grating and line detectors 8−3487
- consonants auditory and visual similarity rating patterns anal. 8−48807
- contrast reversals in backward masking 8−48817
- contrast sensitivity enhancement by spatial freq. adaptation 8−7364
- contrast sensitivity of human infant for moving and static patterns 8−7351
- contrast sensitivity over first 3 months of life in human infant 8−3486
- Cornsweet illusion, edge-induced visual contrast and spatial freq. interaction 8−11659
- Craik-O'Brien-Cornsweet illusion for visual depth 8−48815
- CRT/observer interface development trends 8−24076
- depth perception, visual sensitivities to cues, TV broadcasting appl. *(Japanese)* 8−48808
- disparity processing in human binocular vision 8−40179
- edge coding and detection using directional masks 8−42289
- face scanning and eye contact in early infancy 8−40169
- field strength in monocular and binocular perception, threshold luminance meas. *(Japanese)* 8−40166
- figure recognition, small-size, comparison of halftone and colour scales 8−48785
- fluorescent lamps, high colour rendering, visual clarity investigation 8−48809
- form recognition, scale invariant, in man and machines 8−40176
- frequency gradient pattern threshold visibility 8−11662
- grey toad, colour perception constancy, role of background in recognition of blue stimuli 8−15844
- human picture distortion ratings compared with objective error measures 8−44510
- illuminated scene, visual clarity, theory and expt. 8−48810
- illusory motion in depth, aftereffect of adaptation to changing size 8−48814
- image defocus detection by human infants 8−7354
- information capacity of eyes 8−11661
- lateral spatial interaction in humans with abnormal visual experience 8−7363
- light deprivation and maturation, bibliography 8−15843
- Mach-Dvorak illusion, onset to onset rule for binocular integration 8−7367
- medical display system perceived dynamic range evaluation from receiver operating charact. curves 8−44662
- metacontrast as function of spatial separation with narrow line targets and masks 8−7369
- minimally distinct border, temporal analogue 8−40174
- motion after-effect theory, perception mechanism 8−35862
- moving pattern interaction, subjective standstill 8−11664
- moving target visibility, effect of mental set 8−27957
- ontogenetic change in human colour vision, developmental pseudocyananopsia 8−35854
- opponent-colour channel spectral sensitivity 8−7359
- orthogonal combination of three visual channels 8−3491
- pattern matching, human performance, spatial freq. anal. model 8−40177
- phantom-motion aftereffect 8−31815
- photochromatic interval estimation for peripheral vision 8−27954
- polarisation and colour vision, functional similarities 8−3497
- position constancy loss during pursuit eye movements 8−40170
- prismatic adaptation, single and multistate, long-term retention by humans 8−40168
- reading, span of recognition 8−40172
- relative motion extraction model 8−48794
- rod contribution to colour information, using scotopic luminosity function and colour mixture data 8−35855
- rod photoreceptor model sensitivity, depend. on level of background light intensity 8−20179
- rod receptor orientation local variations 8−40175
- sensitivity, within-species vars. in squirrel monkey 8−7358
- short-term visual storage mediation rel. to spatial freq. 8−35861
- size preference of frogs for prey, effect of viewing distance 8−7362
- spatial aftereffects, role of afterimages 8−7365
- spatial and temporal information separation model 8−40167
- spatial frequency analysers, lateral inhibitory interaction 8−7371
- spatial resolution for detect. of real and apparent pattern and movement 8−48806
- spatial sensitisation as function of delay 8−11663
- stereomovement from interocular delay in random visual noise, random spatial disparity hypothesis 8−24074
- stimulation apparatus, stepper-motor shutter drive using monostables 8−35860
- strabismic amblyopia, threshold contrast sensitivity function 8−7352
- sustained/transient channel interactions, form inhibits motion in human visual system 8−48812
- symbol discrimination, human visual performance predictor 8−40178
- temporal noise, detectability of power fluctuations 8−48811
- temporal resolution of chromatic stimuli, with or without luminance transients, exam. 8−35856
- temporal stereopsis and dynamic visual noise 8−7368
- texture discrimination using random-dot patterns 8−11650
- thermal images, data processing and optimal projection to human eye 8−38038
- visibility reduction by atm. aerosols, linear system theory of visual acuity appl. 8−11997

visual perception continued
- vision, brightness subjective evaluation rel. to object and adaptation luminances *(Japanese)* 8−44509
- Zollner and related illusions, expts. using matching technique 8−48813

visualisation, particle track *see particle track visualisation*

vitreous state
- *see also electron energy states of amorphous solids; glass; glass transition*
- alkali borates, vitreous and cryst., vibr. spectra and struct. comparison 8−23470
- anthracene glass, excess electron optical absorption spectrum model, band shape 8−33500
- aqueous glasses, electron trapping reaction kinetics, non-Gaussian diffusion model 8−34843
- chain molecular amorphous solids, stat. thermodynamics and mol. theory 8−26442
- conference on noncrystalline solids, Clausthal, Germany (Sept. 1976) 8−22654
- electron spin echo, nuclear modulation 8−2727
- internal parameters, ordering parameters, history function, rel. to glass transition 8−30738
- Lennard-Jones, glass, Raman spectrum calc. 8−48165
- 2-methyltetrahydrofuran glass, 77K matrix ENDOR line shape model and expt. 8−6600
- optical oscillator strengths and excitation energies in liquids, solids and mols. 8−6648
- PMMA, craze growth, expt. and model 8−15520
- poly(ethyleneterephthalate)-p-hydroxybenzoic acid copolyester, liquid crystalline, X-ray scatt. obs. 8−9949
- polyalkylmethacrylates, vitreous, thermal cond., press. and temp. depend. 8−2315
- polycarbonate, glassy, temp. drop during deform. 8−15456
- polymer, glassy, power law relationship between yield stress and shear modulus 8−15467
- polymers, cholesterol containing, struct. and liq. cryst. props. *(Russian)* 8−38622
- polystyrene, craze growth, expt. and model 8−15520
- polystyrene, struct., X-ray scatt. and conformational analysis 8−26449
- styrene acronitrile copolymer, glass transition temp. determ. by elec. meas. 8−47506
- tetrahydro-2-methylfuran glaso, γ-irrad., spin trapping of radicals by BNB, EPR obs. 8−10776
- thermodynamics of glassy state with multiple order parameters 8−14283
- AgI-Ag_2O-MoO_3, comparison of ionic conductivity between glassy and crystalline solid electrolytes 8−30786
- $Al(PO_3)_3$, vitreous struct. 8−26443
- As_2S_3, crystalline and vitreous, nonlinear absorption of ruby laser radiation *(Russian)* 8−22165
- B_2O_3, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
- BeF_2, vitreous, Raman and IR spectra 8−39549
- C, glassy, negative magnetoresist. 8−23118
- C, low temp. sp. ht., thermal cond. and US vel. meas. 8−47533
- CaO-SiO_2 glass, solid reactions, study by hot stage electron microscope *(Japanese)* 8−12798
- Fe, realistic relaxed struct. model pair distrib. function 8−30544
- GeO_2, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
- Kr.2SiO_2, props. of vitreous deposits 8−22664
- LiCl-Li_2O-B_2O_3 system of vitreous electrolytes *(French)* 8−27767
- P-Se system, glass form. props., effect of P concentration *(Russian)* 8−2019
- P_2O_5, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
- SiO_2, cryst. and vitreous, struct. sensitive expansivity 8−22873
- SiO_2, dielec. absorpt. saturation, 0.4-8K 8−23394
- SiO_2 glass, low press. plasma treatment, paramag. defect form. *(German)* 8−23341
- SiO_2 glassy-amorphous system, struct. *(German)* 8−38626
- SiO_2, noncryst., MOS structure, ionic impurities motion, trapping layers 8−30999
- SiO_2, noncryst., radiation-induced defect centres, ESR spectra and struct. 8−23343
- SiO_2, Raman cross sections, rel. to appl. in fibre Raman lasers 8−31176
- SiO_2, vitreous, fast neutron irrad. effect on struct., interstitials role 8−26599
- SiO_2, vitreous, fast neutron irrad., low temp. US meas., two-level systems role 8−30703
- SiO_2, vitreous, photoelectric and photoluminescent props. in fundamental absorpt. region 8−39596
- SiO_2 vitreous, Raman spectrum, bound OH, Si-O stretch vibr. 8−19462
- SiO_2:Ag, luminescence and colour centre props. 8−10954
- SiO_2+H_2 reactions, rate controlling processes for H_2 transport in vitreous silica 8−26733
- SiO_{2-x} system, model for paramagnetic E′-centre 8−35034
- Te-Ge eutectic alloy, glassy, crystn. mechanism 8−22836
- Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8−23474
- ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304

vitrification
- chain molecular amorphous solids, stat. thermodynamics and mol. theory 8−26442
- configurational properties of liquids near glass transition 8−26662
- ethanol, plural glass-transitions, thermodynamic functions 8−38820
- glass, ancient samples, trace element anal. by neutron activation, rel. to corrosion and devitrification 8−12801
- glass formation, models 8−2012
- internal parameters, ordering parameters, history function, rel. to glass transition 8−30738
- melt, nucleation and cryst. growth in glass-forming melt 8−2016
- $(Mg_{0.88}Fe_{0.12})_2SiO_4$, natural peridot, shock-prod. olivine glass, TEM 8−10178
- polystyrene, amorphous, press. effect on glass transition and glassy state 8−26674
- radioactive liquid high level waste solidification 8−21669
- selenide systems, binary, glass transition behaviour, model, comp. depend. 8−26673

vitrification continued
- thermodynamical and model-statistical treatment 8−26661
- As-Se-Te glasses, glass form., charact. temp., density, thermal expansion and dynamical viscosity, struct. model 8−26672
- $Ca(NO_3)_2$-H_2O solns., ice I homogeneous nucleation temp., slow vitrification mechanism 8−26666
- $CdGe_{1-x}Sb_xAs_2$ system, amorphous and cryst. phases, DTA and microhardness obs. 8−22835
- KF-BeF_2-DyF_3, crystalline and vitreous phases of cross sections 8−44096
- KF-BeF_2-DyF_3, phase diagrams, intensification region 8−44097
- Te-Si glassy alloys, IR transmission and sp. ht. changes in glass interval, vibr. modes, struct. models 8−23474

Vlasov equation
- coherent state approach, quantum effects calcs. 8−1803
- linearised collisionless eqn. soln. for plasma oscillations 8−30423
- liquids, simple classical, vel. correl. and relative diffusion 8−14262
- Maxwell-Vlasov equations, in region exterior to perfectly cond. infinite cylindrical antenna 8−1843
- N-particle classical system, Vlasov dynamics and fluctuations in 1/N limit 8−130
- parametric plasma instability, saturation in a strong electromagnetic field *(Russian)* 8−22475
- plasma, method of solving Vlasov kinetic eqn. 8−14133
- plasma, Vlasov and water-bag models, self similar solns., simulation 8−26242
- system interacting via, vel. depend. interactions and pair-wise central pot. 8−34270
- two dimensional Vlasov eqn., numerical soln., multistep technique 8−1795

V_2O_5-P_2O_5 semiconducting glasses *see amorphous semiconductors*

vocoders
- *see also speech synthesis*
- portable, tactual, design, hearing aid appl. *(Japanese)* 8−44691
- visual speech vocoder as teaching aid for deaf 8−36069

voice *see speech*

voice coders *see vocoders*

voice communication
- interval modulation semiconductor laser communication system 8−9331
- vibration pick-up-type ear microphone and two way communication device 8−1535

voids (solid)
- alloys, irradiated, effect of defect trapping and solute segregation, on defect recombination rates and void swelling 8−47369
- amorphous thin films, crack networks of voids 8−2399
- bounded media, dislocation loop growth and void swelling by charge particle damage 8−6110
- CANDU fuel bundle design with reduced void effect 8−25277
- cavity location, computer program 8−18481
- composite materials loaded in, uniaxial tension under pressure, tensile strength eval. 8−19828
- crack tip, moving, void growth, coalescence, finite element anal. 8−1609
- delamination wear, subsurface void nucleation mechanism 8−3230
- ductile fracture, quantitative study of inclusions taking part in process 8−27630
- electron microscopy technique for small voids obs. 8−34403
- fast reactor materials, fast neutron damage 8−10093
- growth, rel. to intrinsic point defect properties 8−47315
- hydrogen embrittlement due to H-inclusion interaction 8−30664
- irradiated materials, cascade damage and self-ion injection effects on swelling 8−34549
- LMFBR reactor materials, simulation of void swelling and radiation-induced creep 8−8907
- metal, NDT using positron annihilation technique 8−3294
- metal, void lattice, plasma oscill. 8−10382
- metal surface-void van der waals interaction energy 8−10036
- metals, influence of a surface coating, on void formation 8−47416
- metals, swelling during pulsed irrad., model, void growth exam. 8−47436
- momentum transfer and damage energy gradient effects on He permeability 8−10102
- nucleation rate determ. from size distrib. 8−10035
- polyethylene, electric breakdown, effects *(Korean)* 8−2799
- polyethylene, solid, heterogeneity investigation by small angle neutron scattering 8−14298
- polyethylene spherulites, thermal expansion 8−2268
- polypropylene monofilaments, tensile props., orientation degree depend., IR dichroism obs. 8−3163
- polytrioxane, γ-irrad., layer-like void formation 8−22760
- polyurethane, void detection by neutron gauging 8−23910
- polyurethane foam, fast-neutron gauging for void detection 8−7157
- reactor materials, radiation-induced embrittlement and swelling due to void form, ASTM research 8−13231
- reactor materials, void swelling simulation, review 8−8906
- sapphire ribbon crystal, interface growth feature rel. to voids 8−34456
- size distribution during irradiation and annealing, time depend. computation 8−30674
- steel, austenitic, hot isostatically pressed superalloy A286, fracture path 8−23824
- steel, austenitic 316, displacement energy determ., HVEM obs. and electron bombardment 8−6100
- steel, C, quenched and tempered, ductility, effect of hydrostatic press. 8−44190
- steel, ferrite-pearlite, ductile fracture, pearlite colony morphology and hydrostatic press. effect *(Japanese)* 8−15510
- steel, stainless, ion bombardment, primary recoil energy spectra characts. 8−10103
- steel, stainless, neutron irrad., point defect cond. and void radius change, appl. of model for void growth 8−47436
- steel, stainless, solution treated FV 548, irradiated with 22 MeV C^{2+} and 46.5 MeV Ni^{6+} ions void swelling 8−22771
- steel, stainless, type 316, neutron irrad. damage simulation using HVEM, surface effect on void swelling 8−29572
- steel, stainless, Type 316 and 321, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
- steel, stainless, void shrinkage during electron irrad. 8−34540
- steel, stainless 316, irradiated void swelling incubation period, stress effects 8−6105

voids (solid) continued
- swelling, simulation, effect of self ion injection 8−22772
- swelling transition from gas bubble to void growth 8−14383
- trapped species in host lattice, teaching 8−16594
- void lattice, displacive stability of void 8−14335
- Zircaloy-2, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
- Al alloy, dil., neutron irradiation 8−22766
- Al, annealed and neutron irrad., exam. of positron lifetimes in voids and other defects 8−47426
- Al, neutron irradiated, void surface props. determ., anisotropic small-angle neutron scatt. 8−10095
- Al-Cu(Ag), tensile ductility, effect of ageing and impact velocity *(Japanese)* 8−15465
- Al-In alloy, dilute, electron irradiation, interstitial dislocation loop obs. 8−18681
- Al-Si alloy, dilute, electron irradiation, interstitial dislocation loop obs. 8−18681
- Al-Zn-Mg, cavitation during superplastic deform. *(Japanese)* 8−15464
- AlB_2 flake reinforced composites, prep., props. rel. to aspect ratio, book contrib. 8−48366
- α-Al_2O_3, sintered or hot-pressed, porosity effect on positron mean lifetime 8−27463
- Au film, low temp. void growth and resistivity decay 8−10302
- Au film, void growth in early stages of ageing and electromigration 8−38991
- Cu, cracks in fatigue early stages, direct obs. of substruct. by electron microscope *(Japanese)* 8−7028
- Cu, grain boundary morphology effect on void form. 8−48533
- Cu, surface tension at intermediate and high temps., influence of additional elements 8−15476
- Fe-Mn (32.5 and 38.3 wt.%), steel sheet, exam. of form limit diagrams and damage 8−48461
- GaAs, LPE layers, voids and depressions in facet and terrace growth 8−38974
- Mo, damage profile resulting from Ni^{2+} and He^+ ion bombardment 8−10100
- Mo, ion bombardment, damage profile, void size and density, TEM 8−47451
- Mo, ion bombardment by Ni^{2+}, TEM study of damage depth distrib. 8−10101
- Mo, irrad.-induced voids and dislocations, annealing, theory *(Russian)* 8−47418
- Mo, proton irradiated, annealed and rolled, void form. 8−22774
- Nb and Nb-Zr (1 wt.%), ion irradiated, void ordering 8−22770
- Ni coating, electron beam evaporated, ductility and struct. 8−11439
- Ni, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390
- Ni, irradiation-induced creep, mechanism for large transient strains 8−14391
- Ni, pure, heavy ion irradiated, dendritic void growth 8−14386
- Ni, self-ion irradiated, He effect on void form. 8−6112
- Ni, void swelling caused by neutron and self-ion bombardment, 573 to 873K 8−14387
- Si amorphous film, annealing behaviour of void network 8−18551
- n-Si:Cs, ion implanted, minority carrier lifetime and defect struct., annealing effect 8−6395
- Ta, ion irradiated, ordered void arrays 8−34553
- Ti-Mn (0.4 and 12 wt.%), bonding between α-β interfaces, subsequent deform. 8−14517
- UO_2, lenticular void migration rate in thermal gradient 8−21642
- V, neutron irradiated, void swelling, O_2 effect 8−6106
- V, void formation from 200 to 700°C following heavy-ion irradiation 8−10104
- V-O alloy, temp., dose and conc. depend. of void form. following V^+ ion beam irradiation 8−10105
- W, vacancy-defect clustering, due to annealing and quenching, TEM and elec. cond. exam. 8−47344

Voigt effect *see Magneto-optical effects*

volatilisation *see vaporisation*

volcanology
- Andean Wadati-Benioff zone morphology, andesitic volcanism, Nazca plate tectonic features 8−32039
- ashfall, pollen influx obs. of Mazama and Glacier Peak, Montana 8−24275
- N.Atlantic recent sediments, volcanism effects on mineral comp. 8−44802
- Baikal rift zone, petrochem. of Cenozoic basalts and assoc. rocks 8−36171
- basaltic andesite dykes, Iritono, central Abukuma plateau, plagioclase grain size 8−7618
- Chile, Quaternary volcanism 8−44980
- climate variability, effects of volcanoes, pollution and CO_2 8−28292
- convergent plate margins, volcanic activity rel. to great earthquakes 8−7588
- Eolian Islands, S. Thyrrenian Sea, basement structural trends from aeromagnetic and gravimetric data 8−40519
- eruption risk mapping 8−11856
- Greenland Ice Sheet impurities, past volcanism record 8−11855
- Iceland, tectonic spreading, problems and mechanism 8−36137
- immiscible picritic liquids, Ni partitioning 8−32069
- island arc lavas, sources as indicated by Nd and Sr isotopic studies 8−32044
- Kilauea volcano, Hawaii, three-dim. crust and mantle struct. 8−28205
- lava flows, thick layered peridotite-gabbro, Munro Township, Ontario 8−36168
- Lesser Antilles volcanic island arc, geochemistry 8−7598
- magma genesis conditions, H_2O and CO_2 solubility, petrological implications 8−11886
- major eruptions and volcanic dust rel. to N.Hemisphere temp. changes 8−36258
- Marda calc-alkaline suite, rare earth elements, Archean geochem. analogue of Andean-type volcanism 8−11898
- Marydale Formation, Kheis Group, South Africa, Rb-Sr age 8−32088
- metabasalts from Point Sal ophiolite, California, rare earth and trace element geochemistry 8−32092
- Midway volcano, Hawaiian volcanic chain, age determ. 8−32041
- Mount Agung 1963 eruption, volcanic dust influence on N.American high arctic climate change and glacier mass balance 8−36214

volcanology continued
- Mount St. Helens, Washington, electron microprobe anal. of glass shards from set-W tephra 8−24274
- Neogene volcanism in Rumania and thermal spring water *(Rumanian)* 8−20451
- New England Seamounts, submersible observations 8−20383
- New Hebrides, geochemisty and origin of Quaternary volcanism 8−20375
- NW.Nigeria, calc-alkaline volcanics and possible Pan-African suture zone 8−32086
- Onverwacht Group, Transvaal, sedimentology rel. to early Earth volcanism 8−44812
- E.Pacific Rise near 3°25′S, structural geomorphology of fast-spreading rise crest 8−44799
- peralkaline rhyolites, assoc. with andesitic arcs of SW.Pacific 8−32043
- Peru-Chile Trench granulitic basement, Sr isotope ratios of calc-alkaline volcanism 8−28204
- Pleistocene glaciation on Daisetsu volcano, rel. to Lake Biwa stratigraphy 8−24323
- prebiological compounds, form. in volcanic processes 8−40667
- primitive Earth, volcanic processes role in organic compounds evolution 8−32230
- pyroclastic flows, mobility 8−7604
- Quaternary lavas, Snake River Plain, Idaho, mineralogy and petrology 8−20402
- Recent andesites in Ecuador and N.Chile, Sr isotope data 8−32042
- Red Wine alkaline province, central Labrador, chronology 8−11842
- Reykjanes Ridge and Iceland, Cl and Br degassing by volcanism 8−36136
- San Juan volcanic field, S.Colorado, palaeomagnetic poles 8−32002
- Santorini (Thera) and Minoan tephra from bronze age eruption 8−24272
- E. Sicily, genetic implications of isotope and trace element variations 8−11893
- Soufriere Crater Lake, use as calorimeter, erupted lava heat loss rate calc. 8−28207
- subduction zone, ascending flow between descending lithosphere and overlying asthenosphere 8−40531
- tephra, late Holocene, from British Columbia and Alberta, identification 8−36167
- tephra attributed to Glacier Peak, Washington, electron microprobe data 8−24273
- Volcan Poas, Costa Rica, subaqueous S lake 8−28206
- Yellowstone caldera thermal struct. and Yellowstone Lake heat flow meas. 8−48997
- Yellowstone Group, palaeomag. of welded tuffs 8−48967
- Yellowstone Lake, seismic refl. and refr. surveys and palaeomag. study 8−49049
- Yellowstone volcanic plateau, conf., USA (1974) 8−49004

volt-ampere meters
- *see also power measurement; wattmeters*
- No entries

Volta effect *see contact potential*

voltage *see electric potential*

voltage comparators *see comparators (circuits)*

voltage control
- action potential clamp to probe effectiveness of space clamp in axons 8−40441
- electron microscope, UHV, const.-load tensile device and appls. to materials science 8−11462
- Langmuir probe, control system for maintaining prone at plasma potential 8−5943
- lipid bilayer hydrophobic ion interactions, inner volt. clamping method 8−28129
- microelectrode current and voltage clamp cct. for central nervous system neurons 8−24191

voltage-controlled oscillators *see variable-frequency oscillators*

voltage controllers *see voltage regulators*

voltage dividers
- *see also potentiometers*
- analogue divider for heart ratemeter 8−40368
- commutable circulator, with increased mean-power level 8−4637
- high voltage supply for X-ray equipment, low-power devices 8−21309

voltage drop *see electric potential*

voltage measurement
- *see also potentiometers; voltmeters*
- AC, average-value voltage transducer error anal. *(Russian)* 8−45649
- AC potentiometer, features and ccts. *(Polish)* 8−29128
- arc axial potential meas., wall stabilized Ar arcs 8−30499
- corrosion rate of ship basal layers, cathodic protection method *(Dutch)* 8−3297
- DC, low voltage in high ohmic circuits, using op amp based anxiliary equipment *(Czech)* 8−4664
- DC and AC analogue voltmeter calibration using digital voltmeter *(Polish)* 8−45655
- DC digital voltmeter, high-speed, precision 8−8420
- DC potentiometer for 100 mV-10 nV range, circuit diagram *(Polish)* 8−41332
- electrically conducting surface coating, of linear induction accelerator tube, beam losses and coating inhomogeneity 8−5066
- glow discharges, high-pressure, electro-optical meas. of current and voltage 8−37033
- high voltage sphere gap tech., influence of neighbouring surfaces *(German)* 8−29880
- HV electrical meas. by optical methods 8−24822
- linear rotary potentiometer nonlinearities compensation 8−45646
- microwave voltmeter, broad-band based on hot carrier thermoelec. effects, features 8−21166
- nonsinusoidal waveform measurement using analogue multimeters 8−16809
- photovoltaism of solid discs and flakes, cell designs with variety of contacts 8−24816
- potentialograph, electrical circuit 8−4638
- pulse continuous RF signal amplitude and phase difference measuring device 8−12719
- semiconductor contact potential and conductivity simultaneous automatic meas. 8−21118
- semiconductor differential thermal EMF measurement device for solid, fusion region and melt states 8−12716

voltage measurement continued
- semiconductors, airtight cell for simultaneous conductivity and thermo-EMF meas. 8−21168
- standard cells, low resistance differential potentiometer appl. *(Polish)* 8−29127
- true RMS measurement using electronic methods 8−24819
- true RMS voltage indicator system 8−12713
- vector voltmeter used for microwave measurements with the aid of high speed sampling 8−8418

voltage reference diodes *see avalanche diodes; Zener diodes*

voltage regulation *see voltage control*

voltage regulator diodes *see avalanche diodes; Zener diodes*

voltage regulators
- *see also voltage control*
- high-voltage DC stabiliser 8−4642
- power-supply block for ion source with electron bombardment 8−8467
- pulse-operated voltage stabiliser 8−4641
- X-ray electron spectrometer appls. 8−21307

voltage stabilizers *see voltage regulators*

voltage transformers *see potential transformers*

voltage transients *see transients*

voltammetry (chemical analysis)
- *see also polarography*
- blood, thin layer differential pulse voltammetric anal. 8−20089
- catalyst surface characterisation by cyclic voltammetry, review 8−40092
- ceramic glazes, Pb, Zn and added chromogenic ions release, as function of colouring oxide mill additions, voltammetric exam. 8−39920
- cyclic, for accelerated corrosion life tests of PbO_2 electrode 8−31582
- microprocessor-assisted flow-through anodic stripping voltammeter for oceanographic appls. 8−36324
- oyster, thin layer differential pulse voltammetric anal. 8−20089
- pattern recognition techniques, for interpretation of severely overlapped data, theory 8−7254
- pattern recognition techniques, for interpretation of severely overlapped data, expt. 8−7255
- pulse polarograph, with stationary electrodes, rapid scanning modifications 8−3402
- soy bean, thin layer differential pulse voltammetric anal. 8−20089
- square wave voltammetry, at dropping mercury electrode, exptl. appls. 8−35734
- square wave voltammetry, at dropping mercury electrode, theory 8−35733
- thin-layer differential pulse anodic stripping voltammetry 8−20089
- ultratrace analysis by differential pulse anodic stripping voltammetry, new technique 8−40100
- O_2 concentration meas. in tissue, pulse-mode method, equipment 8−7551

voltmeters
- *see also digital voltmeters; potentiometers*
- AC, ambiguity, in equivalent noise bandwidth approximation 8−4662
- DC, low voltage in high ohmic circuits meas., using op amp based auxiliary equipment *(Czech)* 8−4664
- DC electro-optic voltmeter, direct reading, with high input resist. 8−245
- DC microvoltmeter with 3, 10, 30 and 100 μV ranges *(Russian)* 8−8422
- field mill, electrostatic field meas., school use 8−16613
- HF millivoltmeter, 50 KHz to 50 MHz range, cct., construction details *(German)* 8−4630
- high impedance, using DC amplifiers, student laboratory appl. 8−12505
- microwave, broad-band, based on hot carrier thermoelec. effects, features 8−21166
- microwave measurements made by vector voltmeters with the aid of high speed sampling 8−8418
- true RMS voltage indicator system 8−12713
- wide range, AC and DC, construction project 8−12724
- ZnS:Cu,Cl, electrolum. voltmeter design, accurate high-voltage meas. 8−24813

volume control
- cation-exchange sorption microcalorimetry, automatic micro-injection system 8−24777

volume control (gain) *see gain control*

volume diffusion *see diffusion in solids*

volume measurement
- laboratory practices, devices repair and checking *(German)* 8−32803
- polymer, volume dilatometer design 8−5706
- pulmonary volume calculator, automatic analogue device, performance in hospitals *(French)* 8−31930

vortex flow *see vortices*

vortex flow (superconductivity) *see flux flow*

vortex lattice pinning *see flux pinning*

vortex state (superconductivity) *see mixed state*

vortex structure (superconductivity) *see flux-line lattice*

vortexes *see vortices*

vortices
- *see also cavitation; turbulence*
- aerofoil, thin, windward surface shock layer, hypersonic flow 8−34158
- atmosphere, divergence and vorticity from observed winds over India during monsoon 8−7695
- atmosphere, global vorticity budget over tropics and subtropics at 200 mb during northern summer 8−40640
- atmosphere, surface layer, meas. using acoustic echo sounder array 8−7810
- atmosphere global scale transport processes *(Dutch)* 8−3889
- axisymmetric flow in slot between coaxial cylinders *(Russian)* 8−14019
- bifurcation in steady flows of viscous fluid, expt. 8−30267
- bifurcation in steady flows of viscous fluid, theory 8−30266
- bluff bodies, cavitating, constrained flow, drag and vortex shedding 8−47006
- bluff cylinder vortex shedding, universal wake Strouhal number 8−46976
- boundary layer, nonstationary, with self-induced press. 8−34164
- boundary layer, transitional, oscills., stability waves, vortices 8−38287
- boundary layer form. in inviscid flow with vorticity 8−14022

vortices continued
- boundary layer temperature fluctuation space correlation coeff. in turbulent core *(Russian)* 8−14001
- chordwise variation in vorticity, approxs. for use in panel methods 8−18306
- compressible free vortex flow, boundary-value problem 8−26139
- confined vortex flow characts., expt. 8−5749
- confined vortex oscillator, mathematical model 8−14104
- convection, time dependent, double diffusive, stability in inclined slot 8−5744
- convection in channel downstream of constriction, local transfer coeffs. augmentation 8−5800
- corner, three-dimens., Navier-Stokes eqn. soln., numerical code 8−30314
- Cosserat continuum, analogy between disclination rank and vortex line invariant *(French)* 8−1977
- cylinders, circ., various arrangements, flow interference, review 8−46985
- cylinders, square cross section, oscills., vortex shedding freq. 8−46983
- diode, used as outflow valve in pulsatile blood pump 8−44724
- eddy flow attachment ideal fluid, partial differential eqn. soln. method 8−5752
- edgetone, fluid mechanics of vortex street 8−13835
- electrovortical flow in corrugated tube *(Russian)* 8−26205
- ellipsoid freely suspended, rotation about a slow viscous flow's vorticity axis 8−38386
- fire tornadoes, Japan, max. wind speed estimation 8−36255
- flow, through a surface 8−38341
- flow effects on structures, conf., New York, USA, (Dec. 1976) 8−46927
- gas jet, wall impact model, subsonic 8−34176
- Gulf Stream cold core ring, observed formation 8−44862
- head-on collision of two vortex rings 8−26125
- Heisenberg planar model, two dimens., renormalisation vortices, and symmetry breaking perturbations 8−10638
- hurricanes, inertia-buoyancy waves 8−7705
- inclined body of revolution, vortex wake effects of nose config. and free stream velocities *(Japanese)* 8−30299
- inclined hot-wire response equations, for flow field having dominant tangential velocity component 8−14105
- jet, large scale struct. and vortices, linear stability theory 8−26179
- laminar boundary layer, vorticity genesis 8−1630
- laminar compressible boundary layers, Taylor-Gortler instability 8−26140
- laminar to turbulent boundary layer shear flow, three-dimens., stability eqns. 8−38284
- line vortex pair, interaction with ground plane 8−1669
- log-normality of vorticity at fluid particle 8−26129
- merger, in two-dimens. mixing, statistical theory 8−42618
- MHD equilibria, by secondary bifurcation, rectangular boundary conditions 8−42673
- MHD viscous flow, stability in curved channel 8−9720
- MHD vortex flow generation, viscous fluid with spherical boundary, by AC EM field 8−5804
- models of atmospheric random vortices 8−28265
- momentum horizontal transport, cumulus-scale, in monsoon depression over India 8−44961
- mutual slip-through of vortex pair 8−42619
- Navier-Stokes equations, stream function-vorticity formulation incorporating no-slip conditions, variational principle 8−38267
- Navier-Stokes equations, vortex flow, new exact solutions 8−38340
- non-Newtonian flow, finite difference numerical solns 8−9661
- nonlinear problems, discrete vortex element methods 8−30302
- nuclear fluid dynamics 8−33131
- ocean cyclonic rings, warm saline water/cooler fresher water mixing 8−44861
- partially cavitating hydrofoil, linearised theory, singularity method *(Japanese)* 8−14050
- plate, thick, parallel flow, with separation and reattachment, local and average mass transfer *(German)* 8−22339
- polyethylene melt, vortices in die entry region and viscosity meas. 8−1700
- polymer solution, Taylor-Gortler vortices, elongational viscosity effects 8−22379
- polystyrene melt, vortices in die entry region and viscosity meas. 8−1700
- potential flow about boundary shape, method of singularity with spline fit distrib. 8−22324
- radial source flow between parallel disks, vorticity transport eqn. 8−42615
- random vortex methods for two dimens. large Reynolds number flow, errors 8−42614
- ring, constant vorticity, instability to short azimuthal bending waves 8−22354
- ring evolution in stratified and shearing environment 8−30303
- ring vortex instability, wave formation dependence on vorticity distrib. 8−34146
- rising core, at centre of vortex, analysis for laminar flow 8−1666
- rotating blades, vortex noise radiation 8−38143
- NESargasso Sea, large cold core cyclonic current rings 8−49031
- secondary polyvortex currents in rotating elliptical cylinders *(Russian)* 8−38338
- separated unsteady flows around bodies, streamline and steakline photographs 8−1634
- shedding by cylinders in steady currents 8−14021
- sheet core theory, appl. to wings *(French)* 8−1674
- sheet formation simulation, buoyancy and surface tension effects 8−9643
- slender bodies and wings, vortex asymmetries 8−9644
- slender-body vortices 8−26124
- sphere, conducting, proous in uniformly conducting fluid flow 8−34204
- sphere, vorticity dynamics *(Russian)* 8−34143
- stagnation flow, stability to three-dimens. disturbances 8−30265
- stationary V-states, interactions, recurrence, and breaking 8−42620
- suction vortex formation, surface roughness effects, simulation 8−7704
- summer monsoon, mid-tropospheric cyclones 8−40636
- superconducting mixed state, vortices, transport entropy theory 8−43534
- superfluid, rotating, vortex oscills., continuum model 8−34669
- swirling viscous flow with applied mag. field, differential eqns. for boundary layer 8−22428

vortices continued
- three-dimensional flow in highly-loaded axial turbomachine, vorticity effects 8−26130
- Tollmien Schlichting wave, two-dimens., flat plate downstream flow field 8−38357
- topographically induced, in homogeneous rot. flow, free surface effect 8−42612
- tornado vortex model, appl. to nuclear plant design 8−17444
- tornado vortex simulation at Purdue University 8−40677
- tornadogenesis, numerical model of vortex growth 8−49114
- torus, added-mass coefficients 8−32683
- trailing vortices, ang. momentum eqn. 8−14024
- tropical cyclone, nested grid for 3-dimens. 3-level model 8−28342
- tropical cyclone model vortex motion with and without current 8−28266
- tropical cyclones, convective fluxes 8−28267
- tube arrays in cross-flow, flow induced vibrs. 8−46984
- tube bank, in-line, acoustic reson. generation mech. 8−46958
- tube banks in air crossflow, hydrodynamic vibration models *(Russian)* 8−46981
- turbulence, models, two-dimens., vortex and Fourier mode 8−46945
- turbulent boundary layer, viscous sublayer temp. fluctuation spatial correlations *(Russian)* 8−34114
- turbulent channel flow, meas. of vorticity and turbulence prod., pattern recognition method 8−26194
- turbulent structure near wall 8−26106
- two dimensional, statistical mechanics 8−30304
- two-dimensional turbulence in square region, inviscid Navier-Stokes eqn. calcs. 8−16656
- unsteady transversely sheared mean flow characts., gusts 8−26142
- unsteady viscous separated laminar flow, numerical modelling 8−46933
- vortex flowmeter calibration data and appl. 8−34231
- vortex pairs, turbulent, neutral surroundings, verification of similarity soln. 8−26127
- vortex sheets, calculation of three-dimensional unsteady flows *(French)* 8−14025
- vortex sound at low Mach number, appl. to various flow fields 8−46978
- wake, jet, vortex struct. rearrangement in ideal fluid calc. *(Russian)* 8−5780
- wake of sphere, visual flow obs. 8−34141
- wakes, implicit finite-difference procedure 8−14018
- wall jet, radial, linear stability 8−22392
- warm core cyclone over North Sea, conditional instability *(German)* 8−16118
- water, friction factors in 2-D flow with relative large roughnesses 8−30357
- waterspout of 3 March 1977 at Iraklion, Crete *(German)* 8−16121
- yawed circular cylinders, vortex excited oscills. 8−46982
- He II, rot., vortex-disc interaction 8−10237
- ^{3}He, A-phase, in rotating bucket 8−2328
- ^{4}He superfluid, stability, interaction two vortex lines 8−47621
- ^{4}He, superfluid, US generated quantised vorticity 8−38893
- ^{4}He, superfluid, vortex quantisation and Higgs mechanism 8−2321
- ^{4}He, superfluid film, on oscillating planar substrate, energy dissipation 8−47620
- ^{4}He, surface profiles, evidence of large superfluid vortex 8−18857

waiting line theory *see queueing theory*

wakes
- aft-loaded airfoil, boundary layer displacement effect and wake near trailing edge 8−22366
- bluff body, turbulent near wake, vel. correlation struct. 8−30298
- bluff cylinder vortex shedding, universal wake Strouhal number 8−46976
- blunt body problem in nonuniform flow fields 8−5748
- cylinders, circ., various arrangements, flow interference, review 8−46985
- entrainment mechanism 8−1649
- fluidised bed, three-phase, bubble wake solids content 8−42660
- free stream turbulence and shear effects on boundary layer and wake structs. 8−26112
- hot-film anemometer for cylinder wake pattern with spray cooling 8−34238
- inclined body of revolution, vortex wake effects of nose config. and free stream velocities *(Japanese)* 8−30299
- instability and laminar to turbulent transition 8−38337
- intermittency determination from passive scalar probability density function 8−42611
- laminar, of thin flat plate set parallel to stream, centre line vel. variation 8−14042
- laminar, vel. distrib. of flat plate 8−34140
- laminar-turbulent transition, artificial control by external sound 8−34139
- LMFBR subassembly, central blockage wake anal. 8−29556
- near wake of disc, annular jet, vel. characts. 8−38336
- plane turbulent wakes, intermittent bulges, spanwise struct. 8−42610
- propeller wake, stalling conditions, 3-dimens. flow field obs. 8−46972
- sphere, visual flow obs. 8−34141
- square prism in uniform flow, wall press. of separation-reattachment flow 8−26123
- supercavitating blocked flow, finite cavity, anal. for wake displacement thickness 8−18322
- supersonic, of transverse circ. cylinder, laminar to turbulent transition, external noise effect 8−38367
- supersonic field, wave equation generalised axial radiation soln., flow patterns, wakes *(German)* 8−14043
- supersonic jet, turbulent wake, laser velocimeter meas. 8−26173
- supersonic near wake, mass transfer 8−9650
- turbulent, behind slender propeller-driven bodies 8−38335
- turbulent, vel. and temp. distribs., conditional averaging *(Russian)* 8−38296
- turbulent axisymmetric near wake behind bluff-base bodies 8−1665
- viscous mixing at trailing edge 8−1635
- vortex sheet, highly rolled, core theory appl. to wings *(French)* 8−1674
- vortex structure rearrangement in wake and jet, ideal fluid calc. *(Russian)* 8−5780
- vortex wakes, implicit finite-difference procedure 8−14018

Walsh functions
see also encoding; filtering and prediction theory; signal processing
nuclear reactor time-varying reactivity reconstruction method 8−671
signal processing, matrix relationship with discrete Fourier transformation *(Russian)* 8−26

Wannier functions
dislocated lattices, scattered wave functions 8−6326
disordered alloy, Blackman-Esterling-Berk approximation, rederivation and proof of analyticity 8−10318
excitons, tightly- and weakly-bound, unified treatment, Wannier representation 8−43301
Gaussian functions distributed over lattice, analytical transform. into Wannier functions 8−32768
graphite, Wannier functions and density matrix determ. in terms of localised orbitals 8−2408
perturbed crystals in kq representation, in presence of uniform mag. field 8−30856
Wannier-Stark ladders of finite crystal, level shifts 8−30895
BN, Wannier functions and density matrix determ. in terms of localised orbitals 8−2408
Cu, surface, (111), (100), (110), energy band parameters, EHT calcs. 8−34883
hexamethylphosphoramide:Li glass, metallic condensation of Wannier-Mott impurity states 8−2420
Si, phonon induced intervalley transitions, violation of selection rules 8−30875

warning systems *see alarm systems*

waste disposal
see also radioactive waste
actinides, fast reactor recycle as waste management alternative, performance calcs. 8−13269
CANDU wastes, disposal options in Canada 8−41826
CTR central power station waste management 8−773
deep sea waste disposal *(German)* 8−24311
geological and ocean nuclear waste disposal programme in UK 8−41829
hazard indices for nuclear high-level waste in underground repository, rel. to naturally occurring toxic minerals 8−15913
high-level radioactive waste, ultimate disposal on seabed, rel. to oceanographic circulation 8−13273
high-level radioactive waste disposal on seabed following reprocessing, feasibility study 8−13271
high-level tritiated aqueous waste, immobilization in polymer-impregnated concrete 8−13265
high-level waste solidification plant, contribs. to risk evaluation 8−17356
high-level-waste disposal on ocean floor, prospects of international cooperation 8−13272
hydrometallurgical plant effluent waters, Mo and W determ. by activation analysis with low-power neutron sources 8−7279
leaching of solidified radioactive waste, rel. to diffusivity const. 8−5055
long-lived fission product waste transmutation by spallation and neutron reactions using linear accelerator 8−13268
low-level waste burial facility at West Valley, correl. of water accumulation to operating practices 8−13266
low-level waste burial facility at West Valley, remedial work for trench water accumulation 8−13267
LWR fuel fabrication plant, cost of controlling inorganic chemical releases 8−5003
nuclear, spent fuel storage racks, decontamination and disposal 8−21731
nuclear fission waste storage in glass and salt *(Dutch)* 8−29587
nuclear power programme radioactive waste management 8−13258
nuclear waste disposal, migration in geologic formations 8−4994
nuclear waste disposal R & D programmes by OECD countries 8−41823
nuclear waste incineration for destroying actinides, costs and risks 8−41825
nuclear waste isolation plant design studies in USA 8−46151
nuclear waste management problem, R&D efforts 8−4991
nuclear waste management research, UKAEA programme for Iran 8−4992
nuclear weapons testing, radionuclide distributions in oceans and marine sediments 8−13344
ocean-disposed waste drift, satellite and current drogue studies 8−3824
pollution of underground water supervision, w.r.t. biochemical degradation processes *(French)* 8−24316
programme in W.Germany *(German)* 8−8954
pyrolysis, waste reduction in controlled atmosphere 8−35658
radioactive, development in Hungary *(Hungarian)* 8−13249
radioactive, disposal of high-level and long-lived waste 8−29610
radioactive, dry spent fuel cask handling system and transport 8−17348
radioactive, high-level vitrified waste, risk anal. of repository in geologic salt formation 8−17362
radioactive, laundry waste treatment system 8−17338
radioactive, long-term risk assessment of waste disposed in geologic formation 8−17361
radioactive, low- and intermediate-level waste, risk anal. of road transport in Netherlands 8−17359
radioactive, programme in Switzerland *(German)* 8−8953
radioactive, public acceptance 8−41824
radioactive, risk analysis for management system, safe design 8−17351
radioactive, risk estimation, evaluation, and management 8−17350
radioactive, use of ceramic encapsulation process, based on powder metallurgy *(German)* 8−33281
radioactive calcined waste solid spillage, recovery of U, erosion in solids transport system 8−13264
radioactive liquid high level waste solidification 8−21669
radioactive waste, conditioning and storage costs estimation *(Italian)* 8−25303
radioactive waste, high level, disposal in deep-sea bed, New Zealand 8−705
radioactive waste, national programmes, aspects 8−697
radioactive waste beneficial utilisation, programmes in 1977 8−8950
radioactive waste calcining facility, remote maintenance equipment 8−13263
radioactive waste disposal options, modelling studies 8−41830

waste disposal continued
radioactive waste management at Point Lepreau nuclear power station 8−29600
radioactive waste management schemes, criteria for assessing societal, moral and political implications 8−13270
radionuclide migration from low-level waste burial site 8−21671
safe nuclear waste disposal route, Swedish utilities design 8−41827
salt mine waste disposal, experience in West Germany 8−41828
sewage effluent along Israel coast, nearshore sediment pollution by trace metals 8−44882
sludge disposal in coastal waters, Philadelphia study 8−3823
spent reactor fuel, risk analysis of alternatives from reactor pool until final disposal 8−17355
transportation of nuclear waste material, risk analysis 8−17357
vitrified high-level radioactive waste, associated hazards 8−13259
vitrified high-level radioactive waste, rail transportation, fault tree anal. and accidental release 8−17358
vitrified high-level waste, calcs. of radioactivity release due to leaching in final disposal 8−17360
Zircaloy hulls, conversion to zirconate ion exchange materials for waste stabilisation 8−702
I radioactive waste, solidification in conrete, leach rates 8−703

water
see also groundwater; heavy water; hydroxonium ion; ice; moisture; seawater; steam
acoustic waves, laser-induced 8−25996
adsorbed in kaolinite dispersions, PMR exam. *(Russian)* 8−35058
adsorbed molecules, interaction with surface hydroxyls, IR spectra 8−43244
adsorption, on Fe_xO_y, oxidation and reduction effects on adsorption 8−43237
adsorption in cement and tricalcium silicate paste NMR relaxation exam. 8−48354
adsorption on silica, stepwise multilayer adsorpt., 130-150°C 8−14574
adsorption on TiO_2, IR spectra 8−14577
aerated, laser beam focusing by vertical temp. gradient 8−33661
air-water separated critical flow *(Japanese)* 8−42650
alpha particle stopping power, 0.5-8 MeV 8−40334
asteroid Ceres, evidence for water of hydration 8−32386
atmosphere, vapour-phase complexes, rel. to anomalous submm. spectra 8−16156
atmosphere, water vapour transport to Antarctica rel. to fallen snow O isotopic comp. 8−36237
atmosphere H_2O molecules, allowance for IR absorpt. effect on stellar radiation *(Russian)* 8−40832
atmosphere water vapour variations, baseline results from Smithsonian obs. 8−32197
at biological interfaces, struct. and functional aspects 8−40121
boiling in vertical channel 8−9544
boiling on finned surface, heat transfer crisis 8−9540
t-butanol-water, X-ray scatt. intensity composition depend., soln. struct. 8−6005
BWR, water chemistry characterisations 8−21635
BWR water chemistry characterisation 8−21658
canopy interception, measure of loss from hydrologic budget 8−11928
central force potentials, struct. and dynamics 8−38607
ceramics, porous, frost resistance under 1-d cooling, pore size distrib. effect *(Japanese)* 8−44069
chemical reaction with pyrolitic graphite surface 8−15707
chemisorbed phases on TiO_2 and $SrTiO_3$, UPS meas. 8−10285
chemisorption on TiO_2, electron stimulated desorption, AES and charact. loss spectra 8−22963
chemisorption on TiO_2 (100), electron spectroscopy, evidence for Ti^{3+} photogeneration 8−38940
chloroplast, EPR signal II and Mn-water splitting, factors influencing stability 8−24038
clay-water systems, NMR, substrate struct. and H_2O mol. relax. 8−7247
collective excitations in 10^8 cm^{-1} momentum range, neutron scatt. expt. 8−43087
complex dielectric constants, meas. at 10 GHz using cavity perturbation method 8−24815
Compton profile, H-bond contrib., HFS Xα model 8−17726
Compton profile meas., non-additivity of elastic and inelastic X-ray scatt. 8−43953
condensed gas films, thermal radiation absorpt. 8−32824
convection, free, from horizontal cylinder to air (water) (Si oils), correlation eqns., viscous dissipation 8−5632
critical flow states through pipe, modified Bernoulli theory 8−30345
crystallisation front, repulsion of macroscopic particles by gas layer 8−18568
crystallisation front movement, water and gas bubble distrib. 8−22830
cylinder heat transfer to turbulent cross-flow of water at critical Re *(Russian)* 8−34132
decomposition into H and O using solar energy, one-step effusional process 8−15672
density, effects of isotopic comp., temp., press., and dissolved gases, review 8−26616
density relation for pure and saline comp. 8−2185
determination, in organic solvents, IR spectrophotometric method 8−31731
dielectric constant of bonded lattice model 8−23386
diemthyl sulphoxide-H_2O-NaCl system, DTA exam. of primary ice phase field 8−48382
diffusive motions near 1°C 8−43156
drop interaction expts., review 8−11974
droplet aerosol interaction with EM radiation, temp. field and refractive index distrib. model 8−3899
droplet interactions, expts. for educational use 8−4441
droplet vaporisation in moderately-high temp. stationary media, Chang model 8−34609
droplets in mists, clouds, size, density distrib. meas., laser remote sensing technique *(Japanese)* 8−49175
drops, coalescence, theoretical model of approaching drops 8−32207
drops, coalescence problem, efficiency 8−32208
drops, collisions, coalescence efficiency, expt. evaluation 8−32206
drops, collisions with spherical particles, impaction and electrical effects 8−28272
drops in subsaturated air, aerosol particle collection efficiency 8−28273

water continued
dynamic viscosity coeffs. *(Russian)* 8−47550
electric breakdown strength of water transmission line 8−9897
electrode-solution interfaces, role of water 8−40058
electrolysis, limiting conditions for use of nuclear reactor heat in thermoelectrochemical cycle *(Russian)* 8−46183
electrolysis, photoassisted, Fe_xO_y electrodes prep. and characts. 8−15683
electron absorpt. at high energy 8−881
electrostatic interactions and the structure of water, conf. Brussels, Belgium (1972) 8−26413
epoxy resin, destruction by diffused water 8−48511
ethanol-water mixtures, specific volume, compressibility, viscosity, up to 3200 bar, 15, 25°C 8−10113
evaporation, rate var. with vap. press. 8−18758
evaporative water loss meas. from small animals by dew-point hygrometry 8−20326
far IR transmission spectrum 8−4713
fast neutron penetration spectra 8−29535
film, on slightly rough quartz surface, ellipsometric thickness meas., error estimation 8−32856
flow around cylinder, thermophys. characts. rel. to friction and heat transfer *(Russian)* 8−38328
formaldehyde-water, heuristic intermol. pot. function, ab initio MO calcs. 8−33566
friction factors in 2-D flow with relative large roughness 8−30357
glass fibre reinforced epoxy resin, destruction by diffused water 8−48511
glass fibre reinforced epoxy resin, destruction by freezing or boiling of phase separated water 8−48512
ground level abundances of N_2O, CO_2, CO and H_2O, simultaneous determ. 8−11969
H-bonded dimers, PCILO calc., energies, geometries 8−37557
heat pipe working fluid, crit. heat/mass transfer 8−42517
heat pipes, exptl. obs. *(Chinese)* 8−30171
heat transfer coefficients, heater plate thickness effects 8−34124
heavy and ordinary water dynamic viscosity coeffs. relation in liquid phase 8−21759
Henize 2-38, symbiotic star, steam and CO absorpt. obs. 8−40970
heterogeneous systems, NMR, substrate struct. and H_2O mol. relax. 8−7247
humid atmosphere, water droplet vaporis. model with natural convection 8−33999
hydrate librational modes in IR spectra 8−48161
hydrophobic effect, dil. soln. struct. and thermodynamic props., semi-empirical model 8−20060
imaging systems in water, point and beam spread functions 8−5426
interstellar H_2O maser in H II region NGC 281, obs. 8−28740
interstellar maser lines intensity vars. due to induced Compton scatt. 8−4319
ionisation energy at 298.15K 8−3364
jet, turbulence fine struct., polymer addition effects, high speed photography 8−26178
Jupiter magnetosphere, contrib. of water products from Galilean satellites 8−45268
Kerr const., 280 to 350K temp. depend. 8−35113
l 8−40970
laminate, fibre reinforced composites, moisture diffusion, 3-D Fick's law 8−10218
layer, semiinfinite, cooled (heated) from below, convection onset, density anomaly influence *(German)* 8−22350
liquid, solubility in compressed air 8−34631
liquid properties representation, by modified Redlich-Kwong eqn. of state 8−34590
liquid water, PVT props., density meas., 150-350°C, saturation to 1 kbar 8−34594
lithium perfluoro-octanoate-water system, liq. cryst. struct., self-diffusion, NMR 8−15036
2,6-lutidine-water, spinodal decomposition, light scatt. obs. 8−34625
lyotropic phase orientation, ^{17}O and ^{2}H NMR study 8−27905
lysozyme bound water, thermally-stimulated press. and current 8−15757
lysozyme-water mixture, phase separation, rel. to cold cataract form. in young rat lens 8−11640
Mars, water vapour obs. from Viking orbiters 8−20682
maximum density, free convective flow, past infinite porous plate with const. suction 8−42606
measurement standards for H and O stable isotopes 8−32246
medical nebulizer produced, droplet size distrib., evaporation effect 8−24084
melting ice layer, heated, free convection onset criterion, density anomaly effect *(German)* 8−22351
methanol-water, assoc. mixture, rot. barrier solvent effect, CNDO/2 calc. 8−29861
microemulsion, H_2O-toluol-sodium dodecylsulphate-alcohol, diffusion coeff., light scatt. data 8−15722
mineral type, Na, Cl, I and S determ. by neutron activation and X-ray fluoresc. analyses 8−3428
molecular interactions, nonadditive pot. model, quantum mech. data fitting 8−1047
molecular vibration, kinematic anharmonicity in exact and approx. coords. 8−17653
molecule, core ionis., single orbital relax., LCAO MO SCF calcs. 8−29739
molecule, core ionis. pot. of O, basis set depend. 8−17821
molecule, correlation energy, many-body Rayleigh-Schrodinger perturbation theory calc. 8−894
molecule, dipole oscill. strength distribs., sums 8−21975
molecule, double SCF method for electron correl., stretching force const. 8−17575
molecule, electron impact, dissoc. excitation, core pot. correction 8−25724
molecule, electron impact, H,D(2s,2p) prod. 8−42230
molecule, electron impact reson. observed in $A^2\Sigma^+ \rightarrow X^2\Pi$ radiation of OH 8−46455
molecule, electronic states, oscill. strengths calcs. 8−9095
molecule, emission detection in galaxy NGC 253 at 22.235 GHz 8−16534
molecule, geometry optimisation, using bond function augmented basis sets 8−905

water continued
molecule, ground state, energy, bond parameters, diagrammatic perturbation theory calcs. 8−25414
molecule, H-X bond position, correlation with electronegativity 8−9069
molecule, IR and band strengths, 5000-5750 cm^{-1} 8−5292
molecule, IR line intenisties and widths, ν_2 rot.-vibr. band 8−9200
molecule, IR spectra, 5030-5640 cm^{-1}, line centre positions, $H_2{}^{18}O$, $H_2{}^{17}O$ 8−5220
molecule, IR spectra, 6974-7387 cm^{-1}, line centre positions, $H_2{}^{18}O$, $H_2{}^{17}O$ 8−5221
molecule, iterative natural orbital procedures, convergence props. 8−46257
molecule, local mode structure 8−29770
molecule, lone pair orbital explicit representation, augmented contracted Gaussian basis set 8−25423
molecule, many-body Green's function, electronic mol. props. 8−25417
molecule, maser emission from OH/IR sources 8−16432
molecule, maser emission from stellar sources, bright IR star monitoring at 2.7 μm 8−16433
molecule, matrix isolation spectra, vibr.-rot. lines, nucl. spin interconversion 8−46336
molecule, matrix of rotational energy Hamiltonian, calc. *(Russian)* 8−37622
molecule, minimal Slater basis set VB calcs. 8−46272
molecule, multipole expansion of diatomic overlap, MEDO calcs. 8−46264
molecule, nuclear spin-spin coupling, ab initio SCF perturbation theory 8−33525
molecule, oscillator strengths, 10-60 eV, for photoabsorpt., photoionis. and fragmentation 8−42133
molecule, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
molecule, polarised photofluoresc. excitation spectra, VUV photodissoc., excited state lifetimes 8−5261
molecule, pot. surface, modified LEPS, ground state 8−17584
molecule, proton mag. shielding const., HF perturbation theory 8−46258
molecule, pseudopotential calculations, parameter fitting scheme appls. 8−41928
molecule, rot. consts. for ground state and (110) and (011) interacting states 8−21902
molecule, Rydberg states, visible spectra 8−9162
molecule, shape, electrostatic force study with floating wavefunction 8−37545
molecule, sum rule props., SCF optimizations of MO and VB calcs. 8−5156
molecule, vac. UV absorption spectra, Rydberg series vibr. anal. 8−42093
molecule, vertical ionis. pot., many-body Rayleigh-Schrodinger perturbation theory 8−9063
molecule, vertical valence ionis. pot., many-body Green's functions 8−22051
molecule, vibr. Raman scatt. signature in flames 8−25539
molecule, vibr.-rot. intensities of $3\nu_2$, $\nu_1+\nu_2$, and $\nu_2+\nu_3$ bands of $H_2{}^{16}O$ 8−5291
molecule, vibrational excitation by electron impact, threshold structs. 8−22038
molecule, X^1A_1 ground state, large-amplitude Hamiltonian for vibr.-rot. 8−25511
molecule, ZZ 8−46418
molecule+atom, quasielastic H atom ejection *(Russian)* 8−37712
molten glass/water thermal interaction, nucl. reactor appl. 8−46149
monolayer of alcohol on water, eqn. of state 8−6195
monomer on ice I_h basal plane, static interaction 8−18891
Monte Carlo simulation of isothermal-isobaric ensemble 8−30530
muscle water transverse and longit. NMR relax. rates 8−35810
neutron diffusion across absorpt. discontinuity 8−21620
neutron transport at thermal energies, effect of 1/v absorbers 8−29532
non-uniform water-bearing rock formations, evaluation via DC resistivity sounding method 8−40474
nonelectrolyte addition effect on struct. 8−9937
nonelectrolyte-water, X-ray scatt. intensity composition depend., soln. struct. 8−6005
nonelectrolytes, aqueous, excess heat capacity, H bonding 8−3362
nucleic acid-water interactions, review 8−44448
optical constants, 6-450 cm^{-1}, 19°C 8−6649
optical consts., absorpt. and refr. index 0.1 Å-1 m 8−48139
optical fibres, diffusion of OH in core and H_2O in cladding, transmission props. 8−42420
n-pentane-water interface, nucleate boiling 8−2342
petroleum-acetylene-O_2 combustion products, seeded, elec. cond., for MHD power plant 8−34256
petroleum-water-gas mixture, in inclined stratum, nonstationary filtration, including gravity 8−1729
photoacoustic effect, nsec. and psec. laser pulse induced 8−38777
photoassisted electrolysis, EPR of $VO_{aq}{}^{2+}$ ions 8−11540
photodissociation, semiclassical approach to abnormal rotation of $OH(A^2\Sigma^+)$ 8−40069
photoelectrolysis at high current density, using TiO_2 and $SrTiO_3$ photoanodes 8−15679
photoelectrolysis in sunlight, using sensitised TiO_2 electrodes 8−19143
photoelectrolysis with semicond. materials 8−2562
photolysis with n-TiO_2 anode 8−2563
photooxidation, at α-Fe_2O_3:TiO_2 electrodes 8−15684
PIXE elemental anal. 8−20127
PMR, direct observation in rotating frame *(Russian)* 8−39422
polywater, discovery, production and appls. 8−30529
preconcentration, for X-ray fluoresc. anal., using ion exchange filter membranes 8−7228
proton mag. moment in Bohr magnetons, g-factor ratio determ. 8−33526
proton relay model systems, reaction field theory of solvent effects 8−44346
pycnometer, precision hydrostatic, density comparison, influence of isotropic comp. and dissolved air 8−45597
Raman bands, influence of paramag. rare earth cations 8−15157
$tRNA_{yeast}{}^{phe}$, Fourier transform PMR in aq. soln., ^1H exchange and relax. rates meas. method 8−15049
rock permeability and penetrating water zone propag. 8−7671

water continued
roto-vibrational structure, correlated bender theory 8-37627
salts, aq. solns., mechanical and electro-optical anharmonicity *(Ukrainian)* 8-2830
saturated steam/water system, thermodynamic data tables 8-26679
self-diffusion, flow meas., 25-65°C 8-2278
self-diffusion −31°C to 350°C 8-2275
solubility under magma genesis conditions, petrological implications 8-11886
sorption on Fe, visualisation using THO and autoradiography 8-26761
sorption on Si(111), EELS 8-14571
spray, air atomised, dispersion characts., orifice shape depend. 8-34182
steam-water two phase mixture, relative vel. of vapour phase, determ. of void fraction 8-5791
stellar masers, detect. of new sources 8-32466
structural changes due to hydration of monat. ions, stoichiometric mixture, thermodynamic props. 8-7225
structure, review *(French)* 8-26424
structure, theory based on quasi-component distrib. functions 8-38606
submerged cylinders, forced oscills. test in water 8-5728
sunlight transmission through uniform waterdrop atmosphere study 8-36244
supercooled, Brillouin scatt. 8-43884
supercooled, probability of ice nuclei form. 8-3909
supercooled drops, hydrodynamic behaviour, interaction with columnar ice crystals 8-32205
surface boiling in tubes, heat transfer 8-9541
surface dipolar plasmons, nonradiative, dispersion relations 8-6308
surface structure, single ion hydration energies 8-26752
surface tension, temp. coeffs. meas. 8-43216
thermal boundary layer near air-water interface, fine struct. *(Russian)* 8-22332
thermodynamic activity in Dead Sea brine 8-31673
transcapillary water movement resulting from non-oncotic osmotic forces 8-44548
transient heat transfer (0-220°C, 1-10 bars) *(Russian)* 8-38183
transport and thermodynamic props. *(Japanese)* 8-34251
triethylamine-water, near crit. soln. pt., sp. ht. at const. press. and crit. conc., −1-22°C 8-38847
triple point cell prep. for calibrating thermometers 8-204
troposphere, ^3H in water vapour, rel. to reactor release detect. 8-11988
tube bank streamlining in critical flow regime with heat transfer *(Russian)* 8-14009
in upper atmosphere, electron impact yield spectra 8-28401
Van der Waals interaction, Kramers-Kronig eqn. with full spectral data vs. oscillator model approx. 8-5998
vapour, absorption line profile, N_2 induced broadening 8-20516
vapour, atmospheric, IR transmissivity 8-11998
vapour, attenuation of 10.6 μm radiation, role of $(H_2O)_2$ dimers 8-13741
vapour, depolarised Rayleigh scatt., rot. Raman spectra, mol. polarisability 8-33513
vapour, dimerization, from thermal cond. meas., 373K 8-44359
vapour, dissociating, composition and thermodynamic props., initial at. method 8-40034
vapour, effect on motion of Ag particles supported on graphite 8-34695
vapour, large-scale irregularities in troposphere, effects on radioastronomical seeing 8-24339
vapour, latit. distrib. in lower stratosphere, aircraft meas. 8-32173
vapour, photodissoc., production cross section meas. for $OH(A^2\Sigma^+$ to $X^2\Pi)$ fluoresc. 8-25604
vapour, role in thermal oxidation of Si, ellipsometry meas. 8-27656
vapour, rot.-vibr. levels, nonperturbative multimode model, 2 interacting Morse oscills. 8-9135
vapour, slow neutron scatt., effect of pressure total interaction cross section 8-17273
vapour, spectral line shape changes in vapour with buffer gas *(Russian)* 8-46402
vapour, supercrit. temp., electron localisation, density fluctuations, mol. orient. 8-38446
vapour, vars. in Mars polar areas, model 8-49363
vapour absorpt. in 10-12 μm atm. window 8-20513
vapour adsorption isotherm, improved measurement method *(Japanese)* 8-6220
vapour bands, 2.7 and 1.9 μm, adiabatic pressure depend. 8-33509
vapour dielectric constant, rotational part, engineering method of calc. 8-40717
vapour in troposphere under stable anticyclonal conditions, CO_2 laser radiation absorpt. 8-20515
vapour maser turn-on in H II region W3(OH) 8-36677
vapour pressure behaviour, generalised treatment 8-2227
vapour RF discharge, low press., afterglow, spherical plasmoid, optical diagnostics 8-38568
viscosity, international formulation 8-26714
VUV reflectance, refr. index, absorpt. coeff., isotope effects 8-6695
water+glycine(serine) zwitterions, interaction pots., ab initio SCF LCAO calcs. 8-48747
water-2-propanol, density, US vel. meas. 8-18529
water-air interface, overall heat transfer coeffs., humidity and density profiles, turbulent pulsations *(Russian)* 8-22349
water-ethanol, inversion of Kirkwood-Buff theory 8-27807
water-ethanol mixtures, hydrophobic interaction, scaled particle theory 8-22625
water-isobutyric acid critical mixtures, shear viscosity, pseudospinodal curves and scaling 8-22844
water-methanol, heat of mixing, high-press. calorimetric obs. *(German)* 8-16797
water-methanol(formamide), permeability of cellulose membrane 8-11557
wave diffraction by 3-D bodies, hybrid element method 8-38344
Ar-$N_2(Cl_2)(F_2)(H_2O)$ laser, energy pathways by proton excitation 8-5459
CO-He-O_2-H_2O laser discharge, stability, influence of recombination and ion chem. 8-17915
CO_2-N_2-H_2O mixture, unstable-oscillatory expansion *(Russian)* 8-1637
$Ca(NO_3)_2$-H_2O solns., ice I homogeneous nucleation temp., slow vitrification mechanism 8-26666

water continued
$CdCl_2$-KCl-H_2O, water activity, 0 and 50°C, conc. depend. *(Russian)* 8-31679
D_2O-H_2O, IR absorption spectra, statistical charact., continuous model of liq. struct. confirmation 8-6671
D_2O-H_2O mixtures, US vel. at 298.15K, adiabatic compressibility 8-10127
$H_2+H_2O^+ \rightarrow H+H_3O^+$, reaction kinematics 8-31625
HCl-H_2O, p-V-T relations up to 773K and 1500 bars 8-43096
HDO molecules, stretching vibrs., freq. meas. in hydrates 8-29772
HDO molecules in solid hydrates, D quadrupole coupling consts., O-H and O-D stretching freqs., H bond distances 8-29773
H_2O^-, in γ-irrad. Y-type zeolite, alternative EPR triplet assignment to NO_3^{2-} 8-11534
H_2O^+, airglow emissions from cometary inner comas 8-45282
H_2O^+, pot. energy surface, linear approach 8-41978
$H_2{}^{16}O$ and $H_2{}^{18}O$ samples, vap. press. isotope effects, 0-170°C 8-18757
$H_2{}^{18}O$, vibr. relax. rate consts., fluoresc. method determ. 8-17762
H_2O-CO_2-N_2 gas mixture, oscillatory nonequilib. in planar supersonic nozzle flow 8-1758
H_2O-decahydronaphthalene (tetrahydronaphthalene), liq.-liq. phase equilib., crit. phenomena 8-18764
H_2O-isobutyric acid, crit. mixture, partial molar vol., temp. depend. 8-18800
H_2O-NaCl-sucrose, phase diagram determ., appls. in cryobiology 8-15777
$H_2O+Cs(K)$, ionising collisions in crossed-beam systems 8-48641
$H_2O+H_3O^+H(H_3S^+)(HCNH^+)(HCNO.H^+)$, proton transfer, rate and equilib. consts. 8-48636
H_2O+inert gas ion, thermal energy charge transfer 8-37739
$H_2O+NH_2^+(NH_3^+)$, bimolecular reactions, product. distrib., rate consts. 8-11513
$H_2O+NH_3^{\cdot +} \rightarrow NH_4^+ + OH^{\cdot}$ 8-15660
$H_2O+O(^1S)$, product channels 8-46422
H_2O+SO_2, rot. linewidths (intensities) of $^{32}S^{16}O_2(^{34}S^{16}O_2)$, 91.5-95.5 GHz 8-42044
H_2O+Sc(La)(Y), O atom abstraction, product internal state distrib., fluoresc. study 8-48643
$H_2O^+ + NH_3$, bimolecular reactions, product. distrib., rate consts. 8-11513
$(H_2O)_2$, accurate atom-atom potential 8-21990
$(H_2O)_2$, photoionis., H_2O proton affinity 8-17731
$H_2O(D_2O)$, VUV absorption spectra, Rydberg series, rot. line shapes, quantum defect 8-5244
H_2SO_4-H_2O, aerosol form., nucleation calcs. 8-31709
He+water (cyanomethane), afterglow, excitation and quenching reactions, optical pumping 8-35690
Hg, thermodynamical Gruneisen parameter, press. depend. 8-14479
$Li+H_2O \rightleftharpoons LiOH+H$, equilib. consts., ab initio SCF and CEPA calcs. 8-3361
LiCl aqueous soln., ion-water clusters, electronic struct., Compton profi4e 8-47227
Mg vermiculite, adsorbed water mol. orientation, elec. pot. calc. 8-26763
NH_3+H_2O, collision-induced energy transfer, IR-microwave double reson. obs. 8-42171
$N_2O/N_2/H_2O$, CW gasdynamic laser, numerical anal. 8-29935
RbCl-KCl(H_2SO_4)-H_2O, water activity, 0 and 50°C, conc. depend. *(Russian)* 8-31679
RbX-CdX_2-H_2O, X=Cl,Br,I, Gibbs free energy, H_2O activity, 25°C *(Russian)* 8-31678
T concentration meas. with electrolytic enrichment cell and reduction system 8-20128

water boilers *see boilers*

water conditioning *see water treatment*

water cooling towers *see cooling towers*

water pollution
see also water pollution detection and control
aircraft effects, Canadian environmental policy 8-33950
N.E.Atlantic, heavy metals and petroleum products 8-3827
Black Sea, quantitative distrib. of suspended matter 8-3818
deep sea waste disposal *(German)* 8-24311
estuarine density fronts, effects on coastal pollutants 8-7659
forced plume characteristics 8-18286
global sea pollution, ecological aspects 8-3826
halocarbons, meas. in W. Europe 8-36272
heavy metals, adsorption on inorganic minerals 8-49006
high-level radioactive waste, ultimate disposal on seabed, rel. to oceanographic circulation 8-13273
Humboldt Bay, California, offshore current meas. rel. to proposed outfall 8-44876
Israel coast, nearshore sediment pollution by trace metals derived from sewage effluent 8-44882
Kuskokwim River drainage, Alaska, Hg dispersal from lode sources 8-40600
lake surface, crude oil spill spreading 8-16079
liquefied natural gas spilled on water, spreading and evap. investig. 8-26748
marine radioecology, radiobiological protection aspects *(French)* 8-11744
mixed spot spreading in stratified saline soln., expt. investigation *(Russian)* 8-40595
ocean, discharged conservative substances long term conc., estimation technique 8-44885
ocean surface layer, dye plumes diffusion, expt. 8-44871
oil from World War II tanker, potential drift directions along N. Mid-Atlantic Bight 8-40566
oil pollution, estimation of aromatic hydrocarbons in seawater in Gulf of Mexico 8-44880
oil spill, dynamics in fractured ice field in Buzzards Bay, Massachusetts 8-40596
organic pollution of ocean, rel. to dissolved free amino acids conc. in seawater 8-44883
passive contaminant dispersion in oscillatory fluid flow 8-44881
radionuclide distributions in oceans and marine sediments from nuclear weapons testing 8-13344
radionuclide migration from low-level waste burial site 8-21671
radionuclide migration in seawater and marine sediments *(French)* 8-11916

water pollution continued
radiosotope behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831
Saruhashi River, Japan, heavy metal pollution *(Japanese)* 8−40599
sludge disposal in coastal waters, Philadelphia study 8−3823
Texas impoundments, critical levels of P and N_2 8−11929
waste products discharge supervision w.r.t. biochemical degradation processes *(French)* 8−24316
wells of Greater Chicago area, dead water, ^{3}H anal. 8−16062
Cs, radioactive, dynamics in herons inhabiting contaminated reservoir system 8−28092
^{137}Cs movement and loss in small lake 8−24317
^{3}H, environmental transport from atm. release of mol. ^{3}H 8−11987
^{3}H kinetics in freshwater marsh, simulation model 8−24318
Hg, in fish and waters of Irish Sea and other United Kingdom fishing grounds 8−36204
^{210}Pb, ^{210}Po, concs., physico-chem. states and residence times in marine and estuarine waters 8−11913
Pu, industrial effluent, behaviour and transport in Great Miami River, Ohio 8−16061
SO_2 low core, equilibria between air and water 8−16137
T, in Pacific Ocean, source function for transport models 8−32122

water pollution detection and control
see also water treatment
American detection, research and enforcement program 8−45002
artificial aeration optimization, in river networks 8−36203
askarels, environmental pollution reduced using biodegradation *(Slovene)* 8−7663
automated profiling water quality sensing system 8−45052
automatic sampling buoy for accumulation of dissolved and particulate organic material in seawater 8−49149
Black Sea, heavy metal conc. meas. by charged particle induced X-ray anal. 8−24312
chemical flocculation plant at Ahrensburg, in West Germany, water treatment appl. *(German)* 8−40601
coastal, remote sensing appl., Italian methods *(Italian)* 8−3828
energy disperion X-ray analysers, evaluation 8−48712
environmental samples, X-ray fluoresc. anal., particle size correction method 8−48705
fungicides, detect. by laser excited reson. Raman spectroscopy 8−31732
Great Lakes coastal waters, thermal plume meas. systems 8−44891
hard water, trace element determ. by multielement ICP-AES method 8−23992
hydrocarbon pollution detection, caution on use of Niskin sampling bottles 8−45039
hydrometallurgical plant effluent waters, Mo and W determ. by activation analysis with low-power neutron sources 8−7279
Isar River, Bavaria, trace elements distrib. in sediment, suspension and water samples by neutron activation analysis 8−3834
large fuel reprocessing plant, anticipated chem. emissions 8−5004
LWR fuel fabrication plant, cost of controlling inorganic chemical releases 8−5003
neutron activation analysis of Cr after preconc. on activated C 8−3993
nondestructive neutron activation analysis of environmental samples using low-energy photon spectrometry 8−3995
North Sea pollution detection, remote sensing project *(Dutch)* 8−36202
nuclear power plant, impact and fate of released Cu on aquatic environments 8−7665
nuclear power plants, effect on chem. quality of surrounding surface- and ground-water 8−7679
nuclear power station using seawater for condenser cooling, radiation monitoring 8−29552
ocean industrial waste dumping, dispersion meas. technique 8−44884
ocean surface water, global radioactive contamination levels determ., math. method 8−7816
ocean surveillance by US Coast Guard using remote sensing techniques 8−45004
ocean-disposed waste drift, satellite and current drogue studies 8−3824
offshore environmental monitoring program for proposed nuclear power plant in Islote, Puerto Rico 8−11917
oil detect. using scanning lidar system *(Russian)* 8−32123
oil spill analysis with gas chromatography 8−7294
oil spills remote detection using laser-excited Raman backscatt. and backscatt. fluoresc. 8−32242
optical processor, real-time, for pattern recognition of biological specimens 8−40454
pesticides, detect. by laser excited reson. Raman spectroscopy 8−31732
petroleum, weathered, source identification using IR spectra and correl. coeffs. 8−15153
physical methods, continuous, in tubular columns, probes utilisation *(French)* 8−3836
purity meas. by coulometric method *(Japanese)* 8−45769
quality modelling, Kalman filter theory and practice 8−45058
radio buoy for tracking oil slicks 8−45034
radioactive Cs contamination, removal agent efficiencies *(Slovak)* 8−24319
radionuclide adsorption on hydrated MnO, ^{137}Cs and ^{90}Sr 8−3822
reservoir sedimentation process and detention structure model 8−44892
river aeration system subject to random disturbances, optimal control 8−16078
saline water, trace element determ. by multielement ICP-AES method 8−23992
Saronikos Gulf, Greece, sediments, trace elements analysis by neutron activation 8−3825
Sava River, influence of water pollution on ranney wells in Belgrade 8−40602
seawater pollution studies, laser appls. *(Polish)* 8−20528
soft water, trace element determ. by multielement ICP-AES method 8−23992
Susquehanna River system, use of ^{210}Pb as heavy metal tracer 8−49046
trace elements determination using routine neutron activation analysis 8−3992
vinyl chloride, trace determ. in water by direct injection GC/MS 8−35739
^{3}H, low-level meas., inter-laboratory comparison 8−44888

water pollution detection and control continued
Hg, determ., in fresh and saline waters, automated UV digestion-AAS method 8−44414
Hg in surface waters in seas around the UK 8−7664
^{222}Rn concentrations in water, rapid meas. with commercial liq. scintillation counter 8−28339
T enrichment in water by electrolysis for low-level T activity meas. 8−17536

water purification *see water treatment*

water supply
see also dams
climate and climatic change, effects on water supply 8−49044
icebergs, melting in environment with salinity gradient, rel. to fresh water supply 8−24305
multi-inflow reservoirs, flow dynamics 8−20452
radioisotope applications in agriculture, hydrology, medicine industry etc., booklet 8−35947
reservoir optimisation, information value 8−49060
reservoir sedimentation process and detention structure model 8−44892
reservoir under random sediment yield, Bayes design 8−11933
reservoirs with Markovian inflows, modelling 8−16080
resources planning, use of multiattribute utility theory 8−11932
river management operational system development using weather radar 8−40718
Sava River, influence of water pollution on ranney wells in Belgrade 8−40602
trace element determination, by multielement ICP-AES method 8−23992
usage regions in Lithuania, multi-image classification *(Russian)* 8−16069
Volga water management system, effectiveness of spring flood long-range forecasts 8−3837
B determination in nuclear power station waters, flame photometer method 8−45672

water treatment
see also desalination
askarels, environmental pollution reduced using biodegradation *(Slovene)* 8−7663
chemical flocculation plant at Ahrensburg, in West Germany, appl. *(German)* 8−40601
fission reactor heavy water purification by deuterated ion exchange resins 8−8897
polymer manufacture, radiation treatment of waste-water, feasibility *(Russian)* 8−46181
radioactive, low-level, ^{60}Co removal by ferric hydroxide coagulation-flocculation, improvement using diethyldithiocarbamate 8−37415
B determination in nuclear power station waters, flame photometer method 8−45672

watthour meters
see also power measurement
No entries

wattmeters
see also power measurement; volt-ampere meters
differential, analogue, adiabatic calorimeter and liquid chromatograph appl. *(Czech)* 8−23979
static, for use in educational establishments 8−45656
test instrument survey *(German)* 8−8394

wave equations
see also Dirac equation; Schrodinger equation
aerodynamically generated noise, especially jet noise *(French)* 8−14002
asymptotic solns. using methods of averaging and two-timing 8−59
Bargmann-Wigner eqns., SO(4,2) covariant formulation 8−37126
Benjamin-Ono eqn., multi-soliton like solns. 8−28960
Bhabha first order relativistic wave eqns., historical development 8−14
bilocal field, and mechanical model 8−29241
black holes, rotating, electromagnetic perturbations 8−12279
bosons in weak external EM field, as one-particle problem 8−12462
chemical, for ionic system reactions 8−15653
chemical reactions in multicomponent system with diffusion, nonlinear wave equations 8−19991
de Broglie wave packet, nondispersive 8−36858
diffusion, nonlinear waveshapes generated by possibly finite initial disturbances 8−36948
with dissipation, growth and instability theorems, appl. to continuum mechanics 8−36839
double sine Gordon equation, exact multiple soliton solutions 8−20978
electrons in Kerr geometry, one dimens. wave eqn. 8−12622
field theory, massless equations, first-order, conformally covariant 8−29265
finite element Laplace transform soln. 8−4488
FitzHugh-Nagumo equations, perturbation anal. of slow periodic wave soln. 8−24060
Gelfand-Levitan eqn., variational principle 8−32708
Green tensor expansions for harmonic vector wave eqn. in spheroidal coord. systems 8−41171
Huygens, principle on curved space-time, validity 8−21024
hyperbolic conservation laws, Glimm scheme for solving, deterministic version 8−20972
hyperbolic mixed problems, leading wavefront propagation 8−36836
hypoelastic compressible rate-sensitive material flow, integrable generalized wave eqns. 8−38213
Kadomtsev-Petviashvili equation, two-dimensionaL solitons and their interaction 8−12575
Klein-Gordon eqn. in stationary space times, positive and negative frequency solns. 8−29002
Klein-Gordon kinks with fourth order derivative self coupling 8−32970
Korteweg-de Vries eqn., higher order, prolongation struct., Lie algebra, soliton solns. 8−8249
Korteweg-de Vries eqn., variation principle 8−32708
Korteweg-de Vries eqn. 8−16661
Korteweg-de Vries eqn. difference analogue 8−55
Korteweg-de-Vries and Schrodinger eqns., oscill. water surface wave solns. 8−26131
lightlike wave function and wave eqn. on null-plane using Bethe Salpeter eqn. 8−41412
linear equation associated with solitons, Green's function using scatt. theory 8−4507

wave equations continued
matrix relativistic wave eqns. 8−367
micrononcausal Euclidean wave functions for hadrons, virtual mesons in deuterons 8−41408
multimode cylindrical surface wave excitation, multiple impedance boundary condition simulation 8−26000
n-space dimensions, approx. integration formulae 8−16659
nonlinear dispersive waves, statistical theory, based on Korteweg de Vries eqn. 8−16662
nonlinear evolution eqns., prolongation structs. 8−24637
nonlinear evolution eqns., soliton connection 8−16661
nonlinear hyperbolic waves, Poincare-Lighthill-Kuo method secular term elimination 8−41166
nonlinear Klein Gordon eqns., localised nondissipative stationary solns., quantum droplets 8−12819
numerical solution of problems in unbounded regions, use of coord. transforms 8−8219
oblique derivative problem *(French)* 8−36837
plane wave interference in inverse scatt. theory 8−57
plane wave propagation, general theorems, self-adjoint differential operators of order 2n 8−36842
polynomial field theories, nonlinear Klein Gordon eqn., exact multiple solution solns. 8−45773
pulsons, two space-dimensional, dynamics of collisions in φ^4 field theory 8−8250
quasiclassical approx. in scatt. problem, wave function representation by functional integral 8−87
radial, Bremmer series soln., for eqn. with spherically symmetric velocity function 8−28973
randomly perturbed one dimens. wave eqn., multiple-scales space-time anal. 8−8247
Reggeon quantum mechanics, Hamiltonian formulation, S-matrix, pomeron Green functions 8−16951
relativistic, curved space-time, generalised quaternion formulation 8−366
relativistic radial equations for two spin 1/2 particles with static interactions 8−32699
relativistic wave equation, Poincare group, extended particle model 8−41414
relativistic wave equations without Velo-Zwanziger pathology 8−24927
scalar and EM wave eqn. solns. in gravit. and EM waves metric 8−8307
sine-Gordon equation, classical solns. of field eqns., moving t'Hooft-Polyakov monopole *(Russian)* 8−16935
sine-Gordon equation, difference analogue 8−20976
sine-Gordon equation, regular solns. using surfaces of const. negative curvature *(Russian)* 8−20980
sine-Gordon massless quantum eqn. in 2 space time dimens. 8−32754
slowly varying medium, multiple time scale method 8−8248
soliton dynamics in nonintegrable systems, classical solns. 8−28996
soliton inelastic interaction, examples and Boussinesq. eqn., computer investigation 8−51
solitons, in dispersive media, nonlinear evolution eqns. soln., review 8−60
space-time, homogeneous, isotropic, with const. curvature, wave eqn. of nonrelativistic spin-s particle, Galileian limit 8−32740
spin 1/2 wave equations irreducible under Poincare group, degenerate to Dirac eqn. 8−21332
string vibrations, linear and nonlinear, physical discretisation 8−45480
supersonic field, wave equation generalised axial radiation soln., flow patterns, wakes *(German)* 8−14043
Toda equation, difference analogue 8−20975
two-body equal-time wave eqn., quark-antiquark system 8−32992
two-fermion relativistic eqns with form factors, anomaloys mag. moment interactions 8−372
WKBJ approx. for classical particles with spin in external field 8−32692
Yang-Mills theory, 4-d Minkowski space general theorem for absence of finite energy nonsingular solns. 8−21318
d breakup into Δ resonances, probability, isobar model, static NN-$\Delta\Delta$ mixing pot. 8−29438
ψ_{tt}-$\Delta_3\psi=0$, R-separable solns. 8−4489
^{3}He, superfluid, soliton solns. for spin orbital freedom wave eqns. *(Japanese)* 8−38904

wave functions
see also orbital calculation methods
A = 16 − 208 nuclei, HF calc. (Russian) 8−21506
alpha-particle, internal wave functions, higher configs. effect on probabilities of α-transitions in spherical nuclei 8−17155
anharmonic oscill., interpolative perturbation scheme 8−32720
atom, one-electron density, spherically averaged, upper bounds calc. 8−25415
atom, screened Coulomb pots., anal. perturb. theory for relativistic case 8−21861
atom+atom, resonance energies, complex, diverging wave functions, least squares bivariational method 8−17741
atomic collisions, approximate wavefunctions, radial couplings calcs. 8−42163
atomic energy spectra calc. using trajectory integrals 8−21838
B-S wave function for generalised four-dimens. harmonic oscill. *(Chinese)* 8−64
Be, Rayleigh-Schroedinger perturbation calculations 8−9064
binding energy of nuclear matter, corelated basis functions method appl. 8−45998
chemical bond transferability, group or loge functions 8−41939
cranked deformed harmonic oscillator, wave functions, matrix elements, high spin nucleus appl. 8−25131
deuteron, EM form factors relation to wave functions 8−37210
diatomic molecule, wave functions and intensity factors, using effective Hamiltonian *(French)* 8−5114
Einstein paradox 8−32730
electron momentum distribution, study by means of Compton effect *(Polish)* 8−48252
electronic, MRD-CI method 8−46278
electronic piecewise polynomial wavefunctions, for HF calcs. 8−5115
energy functional, direct minimisation in LCAO-MO density matrix formalism 8−5118
global wavefunctions, appl. to scatt. theory 8−41179
ions, positive and negative, Hartree-Fock-Roothan wavefunctions with 3d and 4d electrons 8−17569

wave functions continued
lightlike wave function and wave eqn. on null-plane using Bethe Salpeter eqn. 8−41412
Lippmann-Schwinger approach to elastic scatt. by semiinfinite crystals 8−47687
many-body system, effect of increasing N *(French)* 8−37539
many-body theory, short-range asymptotic wave function method, appls. 8−24727
molecular deuteron quadrupole coupling freqs. calc. 8−29801
molecular image, effects of dynamical scattering, in high resolution electron microscopy 8−14255
multicentre multielectron system, wave function construction 8−893
multiconfiguration wave functions, optimisation 8−33411
neutron spinor wave function, 4π-periodicity factor using perfect cryst. interferometer 8−45515
nuclear shell and cluster model wave functions 8−29412
open shell, self-consistent electron pair theory 8−25408
orthogonality, radial orbitals, energy invariance 8−84
photoemission, many-electron theory, in electron spectroscopy book 8−17714
Polyakov-'t Hooft monopole and dyon, quantum theory *(Russian)* 8−392
projection of wave functions on states with definite ang. momentum 8−12590
quantisation, geometric, representation spaces 8−36869
quartz resonators, parameter calc. with energy trapping *(Russian)* 8−30141
relativistic average of config. wavefunctions, applicability to at. and ionic intermediate coupling props. 8−17574
relativistic three-particle bound states, wave function calcs. 8−8558
scattering, algebraic theory, existence of wave operators *(French)* 8−24692
second-row atoms, SCF loge localised wave functions 8−41932
seismic wave, reflection at free surface, appl. of Huygens' principle 8−7594
semiclassical, regular and irregular 8−20998
semiconductor, wave functions and optical cross sections associated with deep centres 8−34801
Serber-type spin-adapted wave functions and time reversal 8−5117
SO(2N+1) operator representation and wave functions of fermion many-body systems 8−41227
spin wavefunction matrix element expansion 8−41185
superheavy atoms from heavy ion collisions, electronic binding energy, wave functions 8−46252
total angular momentum body frame radial wavefunction, coupled states and infinite order approxs. 8−25641
triatomic molecules, vibr. energies, wavefunctions, ab initio calc. 8−17652
two-dimensional multichannel scattering, wavefunction corrections averaging method 8−9060
WKB wave function, systems with many degrees of freedom, solitons and pseudoparticles 8−29255
d, six-quark model, form factors and struct. functions 8−45871
(γ, e) reaction, determ. of atomic wave function, electron energy levels *(Russian)* 8−957
$B_nH_n^{2-}$, n=5-12, localised orbitals, bonding, PRDDO calcs. 8−13431
$C_2B_{n-2}H_n$, n=5-12, localised orbitals, bonding, PRDDO calcs. 8−13431
Cu^{2+}, g-anisotropy and ground state wave functions in crysts. *(German)* 8−23065
Cu^{2+}, in Zn (II) complex, ground state ion wavefunction calcs. 8−895
Cu^{2+} ions, ground state wave functions, cryst. field effect, ESR data anal. 8−23060
GaAs, energy bands and wavefunctions, localised orbital description 8−18942
Ge, energy bands and wavefunctions, localised orbital description 8−18942
H, first-order wave functions, computer calcs. using Green's functions 8−41934
H_2, channel coupling theory of covalent bonding, dissoc. energy 8−13419
H_3^+, photofragmentation vibr. energy levels and wavefunctions calcs. 8−42143
HCN, vibr. energies, wavefunctions, ab initio calc. 8−17652
HCl, electric field gradient at Cl, two- and one-centre wavefunction expsn. 8−17561
^{2}H, D-state wave function calc. 8−8740
He, electron elastic scatt., 50-500 eV, optical model semiclassical wavefunction approx. 8−22030
He, ground state, explicitly correlated wave functions 8−17566
HeH^{2+}, pot. energy curves for 2pπ and 3dδ excited states 8−29756
$HeLi^{4+}$, pot. energy curves for 2pπ and 3dδ excited states 8−29756
^{3}He, correl. pairing theory 8−10247
^{3}He, D-state effects in (d,^{3}He) reactions 8−4948
Hg, electron impact excitation, spin polaris. and differential cross section 8−17800
Li, ^{2}S ground state calc. using Hylleraas-type wavefunctions 8−33418
Li, potentials and wave functions of electrons *(Russian)* 8−47688
LiH, variational Hylleraas-type wavefunction, correl. 8−9082
LiH^{3+}, pot. energy curves for 2pπ and 3dδ excited states 8−29756
^{6}Li, three-body model using hyperspherical harmonics 8−29411
N^-, continuous absorption coeffs., from elastic e-N scatt. data, target wavefunction effect 8−9128
Na, potentials and wave functions of electrons *(Russian)* 8−47688
^{58}Ni, charge density, single particle struct., using proton wave functions 8−45995
P_4, allowed multiplets, coordinate wavefunctions 8−33444
Si, energy bands and wavefunctions, localised orbital description 8−18942
V^{4+} ion complexes in diamagnetic crystals, ground state wavefunctions, hyperfine interaction parameters, EPR meas. 8−19311
Zn (II) complex, β-diketonate, 5-coord. adducts, Cu^{2+}, ground state ion wavefunction calcs. 8−895

wave mechanics
see also wave equations; wave functions
Bose-like oscillator, one dimens., wave mech. representation using Wigner commutation relations 8−36872
fermions, charged relativistic, semi-classical, two-body problem, new approach 8−29284

wave mechanics continued
  Huygens' principle, formulation of quantum and classical mechanics *(French)* 8−36851
  Kemmer-Duffin eqn., additional symmetry 8−89
  Louis de Broglie's thesis, conceptual background, reply 8−13
  model-space effective operators construction 8−4508
  particle interactions with infinite and semi-infinite periodic potentials 8−28991
  Rarita-Schwinger eqn., additional symmetry 8−89
  Schrodinger's wave dynamics, global mobility 8−45512
  spinless particles through one dimens. pot. barrier, formal series method, refl. coeff. 8−32700
  three-particle scattering, unitary regularization *(Russian)* 8−28999
  tunnel effect, inner energy storage by wave mech. system 8−36857

wave propagation
  see also acoustic wave propagation; electromagnetic wave propagation
  bar semi-infinite prismatic, elastoplastic wave propag., intense load-release wave existence *(Russian)* 8−24671
  body waves, short period, propag., isotropic scatt. model including wave conversions 8−40510
  compressional and shear wave vels. in rocks, temp. depend. 8−7579
  Cosserat medium, hemitropic, propag. of plane, cylindrical and spherical waves 8−20968
  dusty gas, weak wave, general decay law 8−5785
  effects on Omega, anal. *(French)* 8−24672
  elastic plastic half-plane under movable loads, propag. of plane waves *(Russian)* 8−5685
  elastic wave, transverse, reflection from cylindrical defect 8−47472
  elastic wave propag., one-dimens., finite element anal. *(Japanese)* 8−28961
  elastic waves in two-phase media, interaction model 8−18213
  elastoplastic half-spaces interface, oblique refr. of plastic wave, self-similarity problem *(Russian)* 8−20974
  energy flux for plane waves in linear conservative systems 8−12574
  engineering problems, numerical anal. based on finite element method *(Japanese)* 8−28928
  fibre composites, orthogonally reinforced, wave propagations 8−41168
  free waves, in helical spring of small pitch 8−9598
  in galaxies, density wave propag. through disc 8−20894
  holographic interferometry, transient wave motion obs. from single doubly-exposed hologram 8−25825
  hyperbolic mixed problems, leading wavefront propagation 8−36836
  I-beams, dispersion relations for normal modes 8−9597
  impact and axisymmetric wave propag. in short length bars 8−5683
  inverse problem soln. using J-fraction expansion 8−11819
  layered hyperelastic half-space, one-dimens. propag. of weak discontinuities 8−30226
  linear wave theory, conservation eqns., aeroacoustics appl. 8−9476
  lossless wave supporting system, distributed parameters from boundary meas. 8−16658
  Love wave scattering matrix for continental margin, theory 8−20360
  Love wave scattering matrix for continental margin model 8−48982
  Love-type SH waves, propag. in nonhomogeneous internal stratum between two semi-infinite elastic media 8−32016
  multidimensional wave radiation from source with Gaussian time variation and Gaussian approx. distrib. about spherical sheet 8−45487
  multiple ray reflections in spherical isotropic Earth model, normal mode representations 8−48981
  nonlinear deform. wave propagation in dissipative medium, interaction and reverse problems 8−53
  nonlinear waves, fixed intensity approximation *(Russian)* 8−9410
  pipe conveying fluid, wave propag. and vibration response 8−9592
  plane wave diffraction by smooth cylindrical surfaces *(Russian)* 8−12577
  plane wave propagation, general theorems, self-adjoint differential operators of order 2n 8−36842
  plane waves, group vel. in inhomogeneous media *(Russian)* 8−5755
  radiation damping in general relativity 8−8310
  random linear systems and temporal homogeneity 8−32691
  random wave propag., mean power transmission determ. by using cumulant expsn. 8−36841
  Rayleigh channel waves propag. in coal seams, model seismic expt. *(German)* 8−40513
  Rayleigh waves transmission and reflection through a step 8−44775
  Rossby wave packet, vertical propag. in dissipative medium *(German)* 8−36220
  scalar wave propagation, coherent scalar field in pair correlated random distribs. of aligned scatterers 8−32690
  seismic wave, reflection at free surface, appl. of Huygens' principle 8−7594
  seismic waves, one-dimensional, in elastic inhomogeneous media, inverse solns. 8−40518
  SH wave propag. in two-layered heterogeneous medium 8−48976
  shear modes in anisotropic systems, dispersion curves 8−36107
  solar atmosphere, propag. of MHD shockwaves 8−24503
  solids, inhomogeneous linearly elastic, parabolic theory of stress wave propagation 8−38243
  soliton gas, turbulence due to weak dispersion, stochastisation of soliton motion 8−41169
  string, pulse vel. derivation without calculus, for teaching 8−24610
  surface waves propag. in crystalline media 8−2350
  three-frequency wave interaction, waveguide and soliton solns. 8−41167
  transient and impulse responses of one-dimens. linearly attenuating medium, analytical results 8−32687
  transient and impulse responses of one-dimens. linearly attenuating medium, parametric study 8−32688
  transmission through pressure duct, analysis and experimental results *(Italian)* 8−36838
  transverse pulse propagation along hanging chain, teaching 8−28898
  two-way transmission 8−20977
  unified wave propagation theory, tenuous random medium 8−4491
  upper atmosphere, acoustic-gravity waves diffr. around spherical Earth 8−4016
  vibrational energy propag. in thin elastic plate of const. width 8−9599
  viscoelastic media, surface wave propagation 8−42555
  wave-packet self-modulation, in nonlinear dispersive medium 8−41192
  wavefront dislocations, incoherent Gaussian random waves 8−16660

wave propagation continued
  weak shock propagation in liquid-filled tubes 8−26004
  weak wave propagation in elastic-plastic and elastic viscoplastic solids with interfaces, Al calcs. 8−18216

wave scattering *see scattering*

waveform analysis
  see also spectral analysis
  analogue multimeters, used for nonsinusoidal waveform measurement 8−16809
  arrhythmia detection by RR-interval comparison *(Bulgarian)* 8−15919
  ECG pattern recognition and representation by finite Haar transform 8−3654
  EEG computerised analytical method *(Slovenian)* 8−28113
  EMG, interactive minicomputer system for anal. of twitch waveforms of human motor units *(Japanese)* 8−28103
  exercise ECG processing reproducibility rel. to waveform recognition and lead system 8−7513
  layered system, spectral function, waveform determ. at depth 8−16172
  seismic deconvolution and wavelet estimation 8−20542
  uterine contraction waveform online digital processing system 8−15916

wavefront-reconstruction imaging *see holography*

waveguide antennas
  diffraction by semi-infinite parallel-plane waveguide in anisotropic plasma 8−1845

waveguide components
  see also circulators (microwave); directional couplers; optical waveguide components; waveguide couplers
  precision cells, for lossy liquids permittivity meas. at 70 GHz 8−37032
  resonators, RF breakdown, rel. to lower hybrid reson in Tokamak plasma 8−26364

waveguide connectors *see waveguide couplers*

waveguide couplers
  see also directional couplers
  commutable circulator, with increased mean-power level 8−4637
  optical, coupling coeff. meas. by detuning 8−30066

waveguide joints *see waveguide couplers*

waveguide junctions *see waveguide couplers*

waveguide theory
  see also guided electromagnetic wave propagation; optical waveguide theory
  acoustic and liquid wave propag. in slowly-varying guides 8−4490
  acoustic wave characteristics rel. to EM waves *(Japanese)* 8−46858
  diffraction of EM waves on slots in plane waveguide walls *(Russian)* 8−29884
  electrically and mag. polarised matter in waveguide, EM field, Green's function method 8−1123
  fluid-filled waveguide with transverse resistivity, mode-selective sound transmission 8−1452
  liquid waveguide, sound generation by absorpt. of modulated laser radiation 8−1539
  polarised matter in co-axial waveguide, general cross-section, EM field 8−1124
  quantisation of radiant energy, teaching appl. 8−36757
  relativistic electron beam in iris-loaded waveguide, limiting current 8−5879
  shear wave propag. in trilaminated waveguides, continuum mixture theories 8−33935
  surface wave line, dielec. obstacle on impedance jump 8−18063
  three-frequency wave interaction, waveguide and soliton solns. 8−41167
  two-dimensional waveguide transition theory 8−12576

waveguides
  see also circular waveguides; dielectric-loaded waveguides; dielectric waveguides; optical waveguides; plasma filled waveguides; rectangular waveguides
  acoustic, average field attenuation in irregular waveguide 8−1459
  acoustic, mode-selective transmission in fluid-filled waveguide with transverse resistivity 8−1452
  acoustic, nonlinear interaction of elastic waves with reson. *(Russian)* 8−6206
  acoustic, single-mode, active sound field suppression 8−38113
  acoustic, Young sound wave propagation in thin electrically loaded piezoelectric waveguide 8−38112
  acoustic multimode waveguide, active sound fields suppression system 8−18113
  acoustic slow waveguide, in water, Helmholtz eqn. soln. 8−30114
  acoustic strip surface waveguide, diffr. and guidance anal. 8−13828
  acoustic waveguide, active noise suppression 8−5613
  circular pipe, simulation of finite amplitude sound wave nonlinear propag. 8−13834
  elastic surface waves guided by edge of semiinfinite slit 8−1457
  ferromagnetic metal polycrystals, model for EM generation of US guided waves 8−22236
  gas-filled, ion acceleration by electron beam, in mag. field 8−9316
  horn design for focused SAW radiation into waveguide 8−1542
  impedance meter verification scheme 8−37035
  inhomogeneous waveguide system, self-consistent beam dynamics 8−9009
  iris loaded waveguide relativistic electron beam interaction, electron energy distrib. space charge effects 8−46190
  isotropic elastic waveguides, numerical anal. by mode-matching method 8−9465
  isotropic elastic waveguides, rectangular rods, mode-natching method 8−9466
  mechanical waveguide using circular cylindrical rod for HF intense US production *(Japanese)* 8−33983
  plane waveguide, acoustical-gravity waves interaction and self-action *(Russian)* 8−36221
  reflection maser, tunable, using ruby-filled waveguide 8−5443
  relativistic electron beam generation in coaxial vacuum waveguide, mag. self insulation breakdown *(Russian)* 8−1145
  SAW guide step analysis 8−1487
  self excitation of active noise suppression in a waveguide 8−18109
  slotted acoustic waveguide propagation expts. *(Japanese)* 8−46859
  two-dimensional diffraction by parallel-plane waveguide in anisotropic plasma 8−5880
  $LiNbO_3$:He$^+$, ion implanted SAW guides, air-gap Si convolver data 8−42500

wavemeters
see also frequency meters
microwave, calibration using spectrometer *(Polish)* 8−29866

waves
see also charge density waves; elastic waves; electromagnetic waves; gravitational waves; gravity waves; liquid waves; magnetohydrodynamic waves; magnetostatic waves; plasma waves; spin density waves; spin waves; wave propagation
air-water flow, periodic instability related to continuity waves 8−1716
atmosphere, nonlinear stationary waves theory *(Russian)* 8−16089
atmosphere, Rossby waves stability *(Russian)* 8−44923
atmosphere baroclinic waves, numerical modelling of instability *(Russian)* 8−44922
boundary layer stability, nonlinear effects 8−1636
density waves in disc around Uranus, as explanation for 'rings' 8−4148
density waves in spiral galaxies, finite spiral arm inclination regime in stellar dynamics 8−49534
drag of three-dimensional body in hypersonic Newtonian flow *(Russian)* 8−22369
galaxies density waves, non-linear effect on gravit. instability for adiabatically deformed case 8−20864
Galaxy, density wave model rel. to struct. around l=140°, b=0° 8−24555
gas-liquid mixture, press. perturbations propag. 8−34186
internal linearized waves propagating in a stably stratified system, props. 8−34149
laminar to turbulent boundary layer transition, nonlinear wave interaction, numerical calc. 8−38281
laminar to turbulent boundary layer transition prediction, linear stability theory 8−38279
liquid with gas bubbles, steady-state perturbations, wave propag. 8−5788
nonlinear wave modulation in strongly dispersive systems with random field 8−36840
nonresonant second-order interaction of waves, generation of deeply penetrating gravity-like oscill. 8−28508
recurrence formulas for phases and amplitudes of free wave spherical functions 8−56
Rossby solitary waves, theory 8−1678
Rossby wave forced on uniform shear, critical layer evolution 8−42622
spiral density waves in galaxies, non-linear theory 8−32576
supersonic flow past slender body, wave system 8−34155
toothlike wave dispersion due to turbulent viscosity *(Russian)* 8−1676
troposphere, Sun-induced large-amplitude standing planetary waves 8−36236
upper atmopshere, comparison of waves in OH emission layer and F_2-layer 8−45065
upper atmosphere, wave struct. between 50 and 120 km rel. to winter anomaly 8−45193
upper atmosphere waves during winter anomaly, results of meteor obs. from Sheffield 8−45070
wave-transition spectra and vacillation in open rotating cylinder 8−14020

waxes
carnauba wax, and rosin mixtures, hetero- to homocharge transition, temp. depend. *(Japanese)* 8−35082
carnauba wax electret, effective charge rel. to polarisation tmep. 8−15086
carnauba wax electret, electric charge studied by TSC *(Japanese)* 8−6626
carnauba wax thermoelectrets crystallite orientation, X-ray diffr. obs. 8−43774
ceresin wax magnetoelectret, X-ray diffr. pattern 8−6014
Takiwax film, hologram recording at 10.6 μm, image reconstruction 8−17868

waxing *see polishing*

weak ferromagnetism
see also canted spin arrangements; Morin temperature
alloys, nearly and weakly ferromagnetic, mag. clusters, unpolarised neutron diffuse scatt. 8−39297
domain structure theory, for antiferromagnet with weak ferromagnetism 8−47997
hexagonal antiferromags., ground states antiferromag. vectors, ferromag. moments *(Russian)* 8−27040
hysteretic phenomena 8−27059
manganese stearate, mag. two-dimensional system, mag. susceptibility 8−10669
one-magnon Raman processes in weak ferromagnets with single-ion anisotropy 8−27234
orthoferrite plate, domain boundary crit. velocity *(Russian)* 8−35015
$CoCO_3$, long wave IR spectrum, high freq. antiferromag. reson. *(Russian)* 8−31115
$CrTe_{1+x}$, thermal expansion and spontaneous magnetostriction *(Russian)* 8−48017
Cu complex, strong antisymmetric exchange 8−34976
$DyFe_{0.998}Co_{0.002}O_3$, mag. transition, NMR meas. 8−27036
$FeBO_3$, spin wave dispersion at small wavevectors, Brillouin scatt. and ferromag. reson. 8−47962
$FeBO_3$, weak ferromag., mag. field influence on crit. behaviour of susceptibility 8−14942
Fe_3BO_6, canted mag. struct. near Neel point, Mossbauer meas. 8−35073
Fe_3BO_6, spin reorientation by mag. field, Mossbauer meas. 8−35074
Fe_3BO_6, spin-reorientation, elec. resist. and microwave absorption 8−14751
$Fe_xCo_{1-x}Ti$, high press. mag. props. 8−23271
α-Fe_2O_3, Morin transition, Mossbauer spectra meas. 8−31071
Fe_2O_3, natural haematite, weakly ferromag., magnetoresist. *(Russian)* 8−23110
MnSi, weak itinerant ferromag., mag. excitations, neutron scatt. obs. 8−34969
$NdFeO_3$, mag. transition, NMR meas. 8−27036
Ni-Pt alloys, mag. props. under hydrostatic press. 8−6556
Ni-V(Mo)(Ru)(Cr), weak ferromag., stiffness const., low-temp. meas., rel. to RPA-CPA theories 8−31063
$TlMnCl_3$, weak ferromag. and mag. struct., temp. depend. 8−19219
$YFe_{1-x}Mn_xO_3$ orthoferrite, spin reorientation, mag. torque meas. 8−47979
$YFeO_3$, induced spin reorientation near Neel point 8−19267

weak interactions, elementary particle *see elementary particle weak interactions*

weapons
military fibre-optic communication systems progress 8−1425
neutron bombs, effects *(German)* 8−814
nuclear weapons testing, radionuclide distributions in oceans and marine sediments 8−13344

wear
see also abrasion; hardness
abrasive and impact abrasive wear testing equipment for materials at elevated temps. 8−7136
bend erosion, particle size effect 8−11346
boronised coating on steel, sliding and abrasive wear, corrosion resist. 8−11428
brass, frictional wear, effect of alloying and metal oxide compounds *(Russian)* 8−31541
brittle, non metallic materials, wear chart, exam. *(German)* 8−35521
brittle material, wear, acoustic emission obs., effect of ion aggregates in Rebinder-Westwood environment 8−48536
capillary wear effects in interfacial tension meas. with Lippmann electrometer 8−26751
cavitation erosion, observation of eroded surface by SEM 8−15536
contact stress anal. involving fretting fatigue loadings, computer soln. 8−34096
delamination theory, review 8−3229
delamination theory implications for minimization 8−3238
delamination wear, mechanics of crack propag. 8−3231
delamination wear, subsurface void nucleation mechanism 8−3230
diamond, segmental wheel, wear resistance 8−48539
epoxy-steel system, friction and wear 8−44229
erosion, book contrib. 8−11350
Ferrography, use to predict wear, for maintenance 8−3303
fretting fatigue in vacuum apparatus for investigation 8−15640
fretting on polycarbonate, influence of experimental conditions on wear 8−44228
Fretting-induced damage between contacting steel-polymer surfaces 8−15539
friction machine for wear tests, plastic lubricant attachment 8−3273
friction surfaces, wear meas. using profilograph, mould producing material quality factors 8−7116
frictional electromagnetic clutch material, sintered, friction, hardness, wear props. 8−11339
glass, wear, acoustic emission obs., effect of ion aggregates in Rebinder-Westwood environment 8−48536
graphite, radiation damage effect on erosion by H 8−21640
graphite, surface erosion by 100 keV $^4He^+$ and 200 keV H_2^+ 8−23569
graphite, surface erosion by ion bombardment crystal anisotropy effect 8−23845
impact wear, book 8−48544
interface erosion rate meas. using pulse-echo US method 8−182
laboratory measurement method using Ferrography, study of diesel engine wear 8−3304
lubricating oils, spectrographic anal. of wear metals 8−20114
materials and lubrication media, for frictional pairs, choice by energy criteria *(Russian)* 8−31541
metal, sliding wear, surface topography and integrity effects 8−3235
metal erosion by solid particles, high-speed photography 8−39919
metallic ion plated soft film, friction and wear 8−15549
metallographic micro of worn balls, prep. method 8−3274
metals, cavitation erosion 8−48538
MHD generator, cathode spot erosion, thermal conduction-diffusion 8−5955
multispeed tool life tests with radioactive tools 8−44338
orthopaedic implants, SEM study of wear 8−15926
Permalloys, wear by magnetic tape, AES *(Japanese)* 8−39916
polycarbonate-steel surfaces, changes in morphology induced by fretting 8−15538
polyethylene, ultra high molecular weight, wear limit, γ-irradiated and unirradiated *(Japanese)* 8−27649
polyethylene based compositions, filled with Fe, Al_2O_3 powder, effect of filler particle size on wear resistance 8−44226
polymer, reciprocating impact wear testing apparatus, results 8−15639
polymers for artificial joints, wear testing 8−31981
prostheses articulating surfaces, holographic interferometry exam. 8−40415
PVC, filled with SiC particles, abrasion resistance *(Japanese)* 8−7055
reciprocating impact wear testing apparatus 8−15639
sapphire, wear chart, exam. *(German)* 8−35521
SEM specimen chamber use for dynamic expts., state-of-the-art review 8−23918
sintered parts for frictional units 8−11342
sliding contact seal, thermoelastic instabilities 8−18257
spherical indentation mechanics, appl. to reversible and irreversible contact between rough surfaces 8−13976
steel, adhesive wear, heat treated load effect 8−11344
steel, alloy, friction surface and lubricant nature, effect on adsorption and temp. stability of lubricant layers 8−15544
steel, austenitic stainless, cavitation erosion resistance, martensitic transform. effect *(Russian)* 8−35524
steel, austenitic stainless, flow cavitation erosion, initial part of incubation period 8−44224
steel, C, hard patch of rubbed surface, tempering effect *(Japanese)* 8−7054
steel, C, wear charact. of worn surface layer under lubrication *(Japanese)* 8−35526
steel, fatigue strength of 30 KhGSNA, 12 KhN3A, effect of friction in abrasive medium after hardening 8−35507
steel, grinding effect with Elbor wheel 8−48540
steel, high speed, tool, characts. 8−48542
steel, high speed, wear resistance of white layer formed by vacuum oil quenching *(Japanese)* 8−11336
steel, high speed YXM62, heat treatment, mech. props., wear, fracture toughness for cutting tool 8−19864
steel, high temperature strength, corrosion-erosion effect of gas metal mixtures stream *(Russian)* 8−35576
steel, maraging, 18 wt.% Ni, solution heated and aged, surrface damage during machining, unlubricated 8−15599
steel, medium C, behaviour under combined fatigue and wear 8−3236
steel, mild, cavitation erosion rate, effect of stress level 8−15545

- **wear** continued
  - steel, mild and stainless, fretting wear, role of adhesion and delamination 8−35533
  - steel, Mn, solutioning of castings in salt baths 8−23871
  - steel, N_2 implantation, nitride form., wear rate reduction 8−27149
  - steel, sintered bearing material, standardisation, wear and friction props. 8−19901
  - steel, sintered type M2 high speed, heat treatment response and cutting props. 8−15336
  - steel, stainless, stress distribution effect on chipping of blanking punch *(Japanese)* 8−31543
  - steel, stainless AISI 304, single phase FCC, stacking fault energy and delamination wear 8−3239
  - steel, stainless AISI 304, wear at high sliding speed 8−3237
  - steel, stainless wear by magnetic tape, Auger spectroscopy exam. *(Japanese)* 8−39916
  - steel, tool, high speed, multispeed tool life tests with radioactive tools 8−44338
  - steel, unhardened, grinding by Si_3N_4-based abrasive material 8−35529
  - steel 35KhN2VL, deoxidation effect on fatigue and endurance limit in wear tests varying P and S content *(Russian)* 8−35523
  - steel AISI 1020, wear at high sliding speed 8−3237
  - steel bearing balls, exoelectron emission for surface fatigue wear testing 8−39960
  - steel matrix-bronze surface, water lubricated bearing material, manufacture, friction, corrosion and erosion 8−11341
  - steel-cast Fe cam-roller pair, wear resistance after strengthening treatment *(Russian)* 8−31542
  - steel-polymer wear mechanism during fretting corrosion 8−35522
  - surface erosion by ion bombardment *(Russian)* 8−23567
  - Ag, electrical contact material with liquid lubricant, prod. and appl. 8−10559
  - Al alloys 7075-T6 and 2024-T3, crack propag./wear rate relationship 8−3232
  - Al, cavitation erosion in water flow, initial stage 8−27648
  - Al, single phase FCC, stacking fault energy and delamination wear 8−3239
  - Al, sliding wear in NaCl of varying pH 8−3240
  - Al-Si cast alloy, flank wear of carbide tool during machining *(Japanese)* 8−19900
  - Al_2O_3 hard anodic coatings, effects of cellular structures 8−11448
  - Al_2O_3, wear chart, exam. *(German)* 8−35521
  - B-S compounds, relative antiwear efficiency 8−35532
  - C fibre reinforced polyethylene matrix, ultra high molecular weight, wear limit, γ-irradiated and unirradiated *(Japanese)* 8−27649
  - C, glassy, surface erosion by ion bombardment crystal anisotropy effect 8−23845
  - CoB-based boride coatings on Co base alloys, microstruct. and mech. props. 8−11427
  - Cr film, on mild steel, hardness and protective props., rel. to grain size 8−11436
  - Cu and Cu-Sn(Zn)(Al) alloys, wear, effect of Mn_5Si_3 content *(Japanese)* 8−35525
  - Cu solid soln., wear 8−3233
  - Cu solid solutions, single phase FCC metal, stacking fault energy and delamination wear 8−3239
  - Cu-Al(Sn), effect of Al and Sn on friction and wear 8−11348
  - Cu-Cr, precipitation hardened, wear 8−3234
  - Cu-TiC precipitation hardened composite, struct. effect on friction 8−11337
  - Fe, cast, cavitation erosion rate, effect of stress level 8−15545
  - Fe, cast, effect of heat treatment, on wear resistance, 8−44148
  - Fe, cast, steel cam-roller pair, wear resistance strengthening treatment *(Russian)* 8−31542
  - Fe, wear of surface due to friction, surface hardening 8−44227
  - Fe-Cr, friction and wear in controlled environment, effect of sliding mode and specimen geometry 8−15542
  - Fe-Cr (5 wt.%), friction and wear in controlled environments, oxide film effect 8−15546
  - Fe-Mn-C (11.5, 0.2 to 1.6 wt.%), water quenched, effect of C on phase composition, abrasion, plasticity *(Russian)* 8−35445
  - MgO single crystal on low C steel disc 8−15541
  - MnZn ferrite, abrasive wear *(Japanese)* 8−39917
  - Mo-Cu, electrical erosion resistance during electrospark machining 8−35531
  - Ni, single phase FCC stacking fault energy and delamination wear 8−3239
  - Ni-Zn ferrites, hot-pressed, key props. 8−15348
  - Pb, friction, wear in supercond., normal states *(Russian)* 8−39914
  - Pt-Pt mechanical contact, FIM obs. of contact area 8−35527
  - Ti alloy, fretting wear, role of adhesion and delamination 8−35533
  - Ti, wear at high sliding speed 8−3237
  - TiB_2, electrode, hot pressed, erosion resistance, struct. and porosity effects 8−3228
  - TiC coated high speed steel, machining of steel 4340, tool life 8−11435
  - TiC-Au film, prep. by activated reactive evaporation, struct. and mech. props. *(Japanese)* 8−3252
  - W-Cu, electrical erosion resistance during electrospark machining 8−35531
  - W-Pt mechanical contact, FIM obs. of contact area 8−35527
  - WC-Co alloys, P additions, effect on hot pressing, hardness and wear resist. 8−11162
  - WC-Co hard metal, stress conc. factor and stress intensity factor, rel. to wear *(German)* 8−11335
  - WSe_2, lubricant, prep. by self-propagating high-temp. synthesis, technological characts. 8−35338
  - ZrO_2, wear chart, exam. *(German)* 8−35521
- **wear, abrasive** *see abrasion*
- **wear resistant coatings**
  - boride, diffusion soaking effect on struct. 8−18846
  - boride coftings, technology, props., book contrib. 8−48574
  - boronised coating on steel, sliding and abrasive wear, corrosion resist. 8−11428
  - boronising, titanium alloys, effect on wear 8−19903
  - metal coatings on steel for watch part finishing, ion plating *(French)* 8−23879
  - metallographic exam. of sprayed-on coatings *(German)* 8−19981
  - polymer-composition coatings for rubbing mechanisms for optomech. instruments 8−29198
- **wear resistant coatings** continued
  - protective coatings for metals, chemically vapour deposited 8−44261
  - silicide coatings, on steel, exam. of fracture processes 8−44206
  - steel, medium C, 45, deposition of composite, wear resistant Ni-B-Cr coating 8−11420
  - Al, ion plating on Ti, graded interface form. 8−11442
  - Al_2O_3 hard anodic coatings, effects of cellular structures 8−11448
  - B coating on steel 45, effect of abrasive particle size on wear 8−44225
  - B-Cu(Al) coating on steel 45, effect of abrasive particle size on wear 8−44225
  - C, ion-plated, on metal, deposition method, graphitic struct., and tribological props. 8−11440
  - Co-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
  - CoB-based boride coatings on Co base alloys, microstruct. and mech. props. 8−11427
  - Cr, on mild steel, hardness and protective props., rel. to grain size 8−11436
  - Cr-C, deposited by hollow cathode discharge, characterisation 8−11371
  - Cr-N, deposited by hollow cathode discharge, characterisation 8−11371
  - CrC electrophoretic coating, electric field strength effect on deposition rate 8−19677
  - Fe-base wear resistant dispersion hardened electrolytic coating, annealed and sintered 8−35593
  - FeB_x coatings on steel, formed by B diffusion, pack cementation process, microstruct. and mech. props. 8−15592
  - Mo, plasma-sprayed, powder characts. 8−48548
  - Ni-base wear resistant dispersion hardened electrolytic coating, annealed and sintered 8−35593
  - Ni-Mo-Cr-Si, plasma and detonation coatings, Laves- and carbide-strengthened, comparative props. 8−15562
  - steel, Hadfield, hollow cathode sputtering 8−11433
  - TaC-NiC, powder for plasma arc spray coating appl. 8−15591
  - TiC coated high speed steel, machining of steel 4340, tool life 8−11435
  - TiC-Au film, prep. by activated reactive evaporation, struct. and mech. props. *(Japanese)* 8−3252
  - TiN coating on steel for watch part finishing, ion plating *(French)* 8−23879
  - TiN decorative coating, ion plating on steel and Stellite, and abrasion resist. 8−11441
  - WC-Ni detonation sprayed coating, wear resistant 8−35594
  - WC-TiC, powder for plasma arc spray coating appl. 8−15591
  - WC-TiC-Co, powder for plasma arc sprayed coating 8−15591
  - WC-TiC-TaC, powder for plasma arc spray coating appl. 8−15591
  - Zn, effect of surface-active substances in electrodeposition on props. *(Russian)* 8−11359
- **weather** *see meteorology*
- **webs (membranes)** *see membranes*
- **weighers** *see balances*
- **weighing**
  - accurate method for mass meas. using analytical balances with built in weights *(German)* 8−45596
  - Autoweigh system, electronic weighing device for premature infants 8−44632
  - ferrous alloy melting, chromatogravimetric equipment for redox studies 8−40097
  - liquid, programmable precision digital equipment *(Hungarian)* 8−32795
  - loose and pulverised materials in motion, design and operation *(Polish)* 8−12673
  - patient weight monitoring, continual in-bed method 8−48910
  - shipboard weighing techniques 8−45595
  - Al, film, initial oxidation, AES, work function and gravimetric meas. 8−7087
  - O_2, chemisorbed on metal films, active sites, chemiluminesc. and vacuum microbalance obs. 8−22950
- **weighing machines** *see balances*
- **weight, atomic** *see atomic mass*
- **weight, molecular** *see molecular weight*
- **weight indicators** *see balances*
- **weight measurement** *see weighing*
- **Weinberg model**
  - asymptotic freedom predictions for neutral and charged current neutrino interactions 8−8581
  - colour-flavour symm., renormalisation effects in guage theories 8−33018
  - cosmological constant, broken gauge theories and 3K black-body radiation 8−28870
  - cosmological fluid, lepton era, transport coeffs., Weinberg-Salam model 8−32623
  - effective potential of Coleman-Weinberg Lagrangian, simple computation 8−8543
  - gauge model of weak and electromag. interactions, polarised lepton scatt. 8−45901
  - heavy vector mesons, decay into Higgs particles 8−12908
  - Higgs boson, mass, upper and lower limits *(Russian)* 8−4795
  - Higgs meson mass and decay of metastable vac. state. 8−4819
  - Higgs-boson exchange P and CP violation 8−8575
  - light Higgs boson, appl. of current algebra 8−45835
  - multidimensional unified theory of gravit., EM and weak interactions 8−41462
  - muon number nonconservation effects in gauge theory with V+A currents and heavy neutron leptons 8−8573
  - neutral current constraints on gauge models of weak and EM interactions 8−45831
  - neutral current couplings in neutrino-hadron interactions 8−24993
  - neutral current effects in Berthe-Heitler pair prod. 8−33022
  - neutral currents and quark charge origin 8−21373
  - neutral currents properties and structure, gauge theory predictions, obs. 8−12856
  - QCD, sum rules for light quarks *(Russian)* 8−45812
  - spin projection operators for fields of any spin *(Japanese)* 8−32733
  - stellar core collapse, neutrino trapping 8−32437
  - string-like configurations in Weinberg-Salam theory, Regge trajectories of excitations 8−16966

Weinberg model continued
  SU(2)×U(1), allowed supersymmetric vacuums of Yang-Mills theory 8−4783
  SU(2)×U(1) gauge model, eigenvalue condition for Weinberg mixing angle, new leptons and quarks 8−41463
  transition amplitudes and probabilities for $\nu\nu$, $\bar{\nu}\nu$, $\bar{\nu}\bar{\nu}$, νe, $\nu\bar{e}$, $\bar{\nu}e$, and $\bar{\nu}\bar{e}$ scatt. 8−21415
  unified theories of strong+weak+EM interactions, Weinberg angle, dynamical symm. breaking *(Russian)* 8−413
  unified vectorlike gauge theory based on group SU(6) for quarks+leptons 8−4818
  (V-A) model, mixing between ordinary and heavy leptons, neutral current reactions 8−41472
  weak interaction theory, review 8−4822
  e^+e^- annihilation channel, differential dispersive theory of ψ/J 8−45933
  $e^+e^-\rightarrow\nu_e\bar{\nu}_e\gamma$, gauge theory analysis, Weinberg-Salem model, ang. and energy distribs. 8−12894
  $e^+e^-\rightarrow pX$, weak neutral current, polarisation effects, asymm. parameters *(Russian)* 8−459
  $\gamma e^-\rightarrow e^-\nu\bar{\nu}$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
  $\gamma N\rightarrow$lepton pairs, weak neutral currents anal. 8−8670
  $K_l\rightarrow 2\gamma$ or $\pi^+\pi^-\gamma$, Weinberg-Salam model, weak radiative decays 8−41541
  ν, $\bar{\nu}$, inclusive neutral current interactions 8−25036
  $\nu(\bar{\nu})N\rightarrow\nu(\bar{\nu})\gamma X$, hadron neutral current, Weinberg-Salam model *(Russian)* 8−45910
  νe scattering, weak lepton structure analysis, Weinberg-Salam model *(Russian)* 8−25039
  $\nu e^-\rightarrow\nu e^-\gamma$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
  $\bar{\nu}p\rightarrow\bar{\nu}p$, energy spectra of recoil fermions, Weinberg-Salem model 8−12895
  $pp\rightarrow N\Delta$, parity violation in Weinberg model 8−8701
  Bi, parity non-conserving optical rot., Weinberg-Salam relativistic central field theory vs. obs. 8−953
  Bi, parity nonconserving optical rot. upper limit, obs. vs. Weinberg-Salam theory 8−952

Weissenberg cameras *see cameras; X-ray crystallography apparatus*

welding
  see also electric welding; electron beam welding
  austenitic stainless steel, ultrasonic tests, false indications, cause and influence 8−31599
  austenitic stainless steel weld metal defect detection, shear-wave polarisation effect 8−44337
  crystalline particles at sphere-plane contact, nondiffusional deform. under capillary forces 8−15329
  hip total replacements, welds in stems of cast Co-Cr femoral components 8−44697
  laser application, CO_2 and Nd:YAG systems *(German)* 8−1294
  LWR, effect of small pipe weld types on personnel exposure 8−4996
  material selection w.r.t. brittle fracture strength *(German)* 8−15534
  metal, microplasma welding, heat propagation in parent metal *(Russian)* 8−15642
  oblique entry US inspection of welds, defect coord. meas., error anal. 8−40008
  PETRA electron-positron storage ring, vacuum system techniques and problems 8−17452
  pipeline inspection, welding flaw detect., NDT 8−19984
  pipes, large-diameter, US testing of welds 8−3267
  pipline girth welds, NDT of defects 8−27704
  radiographic weld testing between tubes and tube-plates in heat exchangers *(German)* 8−7151
  solar cell welds, nondestructive tech. system selection 8−35629
  solar cells, NDT for mechanical strength evaluation 8−35630
  spot welding process, acoustic emission signals, anal. *(German)* 8−44296
  steel, ferritic weldment, US testing of defects, charact. and size 8−7104
  steel, high-speed, shiny nonfusion rings in friction welding, origin 8−23872
  steel, stainless, weld overlaid, creep-rupture props. 8−13230
  thermal stresses and metal movement, computer simulation 8−34002
  ultrasonic examination of welds, book 8−48608
  underwater wet plasma wetting in pressurized water 8−7090
  US and sonic, of Ag metal oxide contact materials 8−29095
  US testing of electroslag welds, using tandem probe techniques 8−27692
  welded pressure vessels, residual stresses determination 8−40014
  Al-Zn-Mg alloy, welded, solute profiles at weld bead/parent metal interface 8−19942
  Be, welded acoustic emission 8−39976
  Cu, poly and single crystalline, solid phase bonded interface, behaviour exam. *(Japanese)* 8−48611
  $Ni_{40}Fe_{40}B_{20}$ glass alloy, rapidly quenched, explosive welding to A516-70 steel and to itself 8−39954

welding electrodes
  arc welding electrode metal drop free surface calc., MHD anal. *(Russian)* 8−5822

Wentzel-Kramers-Brillouin calculations *see WKB calculations*

Wertheim effect *see Wiedemann effect*

wetting
  adsorption isotherm and solute activities from spreading pressure-surface charge data 8−14576
  caffeine in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
  clastic rock softening characteristic tests *(Japanese)* 8−49013
  deformable solid surfaces, thermodynamics 8−34694
  dense fluid monolayer, eqn. of state, appl. to alcohol monolayer on water 8−6195
  Disjoining pressure of thin layers of binary solutions 8−15716
  drop, surface wetting, motion anal. 8−22934
  electrospark machining, bronze, spreading and form. of surface layer, in solid-alloy-liquid-metal systems, kinetics *(Russian)* 8−27668
  Fe, melt, wettability of CaO-MgO refractory *(Russian)* 8−10257
  Fe base alloy, with metallic coating, oxidation effects, wetting, adherence 8−7085
  granular material, thermal conductivity, wetting effect 8−47611

wetting continued
  infiltration in homogeneous isotropic porous medium, moisture profiles and wetting 8−18336
  liquefied natural gas spilled on water, spreading and evap. investig. 8−26748
  platelet adhesion to solid surfaces, effects of plasma proteins and substrate wettability 8−35814
  spreading from binary surfaces, thermodynamics 8−6197
  Spreading of liquid TiO_2 over refractory metals under the influence of surface forces 8−26749
  steel, mild wettability, effect of relative humidity 8−18872
  uracil in aq. electrolyte, adsorpt. isotherm and solute activities from spreading pressure-surface charge data 8−14576
  vertical plate, wetting by a liquid, model 8−22319
  C fibres, wettability, relative, evaluation 8−43209
  Cu, spreading and form. of surface layer, in solid-alloy-liquid-metal systems, kinetics *(Russian)* 8−27668
  Ge surface, wetting by Sn, Pb rel. to cryst. orientation 8−43211
  $MgO-Al_2O_3-ZrO_2$, wetting with liquid Fe and Al 8−22936
  Ni, spreading and form. of surface layer, in solid-alloy-liquid-metal systems, kinetics *(Russian)* 8−27668
  Si surface, wetting by Pb, Sn, Ge in H_2+HCl 8−43210
  β-SiC crystals, wetting by Si and growth by vap.-liq.-solid mechanism 8−3005
  Ti-molten glass system, interactions and wetting, EPR anal. 8−14542
  UO_2 and UO_2-Ni, surface, grain boundary and interfacial energies 8−21649
  UO_2 cracked fuel pellets, by molten stainless steel, in LMFBR transient undercooling accident 8−4993

whiskers (crystal)
  field electron emission microscope atomic resolution exam. 8−32929
  field emission cathode, single crystal, activation efficiency improvement 8−27377
  metal, 1/f noise theory 8−34872
  metal whisker thickness meas. using MII-4 microinterferometer 8−166
  phthalic anhydride, whisker growth in closed cryst.-vapour system 8−34734
  sodium acetate trihydrate, whisker growth on membrane in aq. soln. 8−30854
  tensile strength, dislocation density depend. *(Russian)* 8−19820
  C whisker formation by Ar ion bombardment 8−30851
  CeO_2, single cryst. whiskers, electron field emission 8−27378
  Cu, H_2 reduction of CuI, growth mechanism 8−30853
  Cu, whiskers, hardening during uniaxial extension, preliminary torsion deform. *(Russian)* 8−15420
  Fe, whisker growth, added C black effect 8−30852
  Fe whiskers, galvanomag. size effects 8−14709
  Ge, amorphous whisker growth 8−2400
  Pb, growth from metallic vapour phase, $<10^{-14}$ torr, elec. resist. 8−47686
  SbSI, reversible characts. of generation of second microwave harmonic 8−39509
  SbSI, vapour phase growth on seeds 8−11090
  Si p-type single-crystals for thermoanemometers 8−3975
  Si whisker coated C fibres for composites, shear strength improvement 8−3093
  Si whiskers, polytypism and amorphousness 8−26801
  β-SiC, atom-probe FIM expts. 8−35275
  SiC whisker coated C fibres for composites, shear strength improvement 8−3093
  Sn, supercond., current induced phase transition 8−10600
  Sn, supercond., current-carrying, mutual influence of voltage steps in V-I characts. 8−10601
  W, AC and DC electrochem. etching 8−43278
  ZnO, hollow crystals, growth by oxidation of ZnSe vapour, mechanism 8−34733
  ZnO, precipitation from gas phase 8−6025

whistlers
  see also ionospheric electromagnetic wave propagation; magnetospheric electromagnetic wave propagation
  amplification at freq. > upper cut-off freq. 8−40763
  analysis methods, ground-based obs. *(French)* 8−36398
  analysis methods, theoretical whistlers *(French)* 8−40762
  dispersion characts. of low latitude whistlers, effect of ions 8−20575
  Doppler shifts on whistler received at Siple Station, Antarctica 8−28429
  ducted whistler mode signals, Pc 4-5 pulsation effects on Doppler shift 8−4040
  electrostatic lower hybrid wave, nonlinear decay to whistler and Alfven wave pair 8−26275
  incoherent scattering of radio waves by whistler mode oscills. 8−45135
  ion cyclotron beam-whistler mode instability in parallel shocks 8−14148
  ionosphere, channel lower hybrid resonance excitation by superthermal particle streams *(Russian)* 8−4025
  ionosphere, propag. theory, ray-tracing 8−49216
  ionosphere, VLF waves, natural and elecron-beam producted, rocket obs. 8−7829
  low-latitude types in the ionosphere, measurement of wave-normal directions 8−4023
  magnetosphere, electrons resonance interactions with whistlers, bunching effect 8−45146
  magnetosphere, non-ducted propag. 8−36402
  magnetosphere, polar region, VLF noise generation by electron beams 8−4039
  magnetosphere, use of trigger VLF emission for plasma diagnostics 8−45149
  magnetosphere, whistler mode mag. field amplitudes rel. to very weak pitch angle diffusion 8−28399
  man-made whistler-mode signals, spacecraft obs. near electron gyrofrequency 8−28418
  nonresonant interaction with electrons in plasma 8−9792
  plasma, magnetised, whistler wave damping, dipole antenna obs. 8−34327
  plasma, scattering decay of electron whistler-ion quasimode parametric coupling 8−18401
  plasmapause, whistlers and VLF noise propag. 8−40749
  plasmasphere structure from whistler records at Belsk, Poland 8−20581
  polarization, external transverse elec. field effects 8−28427

whistlers continued
precursors, catalytic role of power line radiation 8−12056
prolongitudinal mode whistlers, raytracing in transition level gradient model 8−4042
resonant particle effects in Langmuir and whistler waves, long-time-scale plasma simulation 8−42796
solar wind, whistlers model for small-scale inhomogeneities 8−45173
stability of whistlers and pearl type waves in magnetosphere 8−12051
turbulence, nonlinear interaction of magneto-sound waves 8−45134
VLF hiss in plasma penetrated by electron beam 8−26293
VLF whistler mode signals, simultaneous phase and group path meas. 8−49234
VLF whistlers, magnetosphere cold plasma densities meas. comparison with ULF waves meas. 8−28436
wave radiation in plasma *(Russian)* 8−36400

white dwarfs
accretion belts, rel. to nova phenomena 8−36582
Ariel 0620−00, transient X-ray source, white dwarf spherical model 8−12415
BD−7°3007, nova-like variable, simultaneous spectroscopy and photometry 8−12250
birth rate, rel. to planetary nebulae, distance scale 8−20867
α Canis Majoris (Sirius B), EUV obs., evidence against photospheric origin of 0.25 keV flux 8−49481
α Canis Majoris B, photoelectric obs. 8−4220
cataclysmic variables, short-period light oscills. rel. to non-radial oscills. of rot. stars 8−32477
CoD−38°10980, gravit. redshift meas. 8−24511
cool DA white dwarf and subdwarf discrimination by spectroscopy and photometry 8−7999
critical accretion flow of gas into compact stars, rel. to X-ray sources 8−20817
degenerate equilibrium configurations with frozen-in mag. field 8−8008
degenerate stars, spectrophotometry and spectra 8−12224
eruptive blue variables at high galactic latit., spectrophotometry 8−32482
Feige 24, EUV obs., temp. determ., interstellar H I density calc. 8−16422
Feige 24, EUV star, spectrophotometry in 3800-8200 Å region 8−4280
force-free magnetic fields in degenerate stars, stability 8−49425
formation rate in stellar systems 8−28674
GD 154, new pulsating white dwarf, obs. 8−40928
GD 90, magnetic white dwarf, circular polarisation obs. 8−16409
hard X-ray emission from white dwarf binary systems, obs. 8−36732
HD 49798, strange composite sdO star, possible existence of white dwarf companion 8−49435
AM Herculis, multicolour photometry, slow optical pulsar 8−28693
AM Herculis, X-ray binary, obs., slow rotator model 8−12408
AM Herculis (3U 1809+50), IR light curves 8−28727
AM Herculis (3U 1809+50), multicolour linear and circular polarisation obs. and geometrical model 8−8053
AM Herculis objects, linear polarisation model 8−16460
hot degenerate stars in steady-state accretion, thermal stability 8−40929
HZ 43, EUV obs., temp. determ., interstellar H I density calc. 8−16422
L19-2, low-amplitude ZZ Ceti type variable, UBV colours, period determ. 8−4242
LDS 678B (EG 131), spectrum 8−40946
linear radial and nonradial modes of oscillation 8−4213
LP 182-44, possibly low-luminosity white dwarf 8−49439
LP 701-29, heavily blanketed white dwarf, spectrum synthesis 8−32455
LP 701-29, lowest luminosity degenerate star with heavily blanketed spectrum 8−36562
magnetic fields, effect of vacuum birefringence on X-ray emission polarisation 8−4408
magnetic white dwarf in binary system, collapse, mass ejection, nova mechanism 8−32485
magnetic white dwarfs, line and continuum spectra 8−4207
masses, rel. to planetary nebulae ejection by He shell flashes and planetary distance scale 8−24540
mixing processes and elements separation in envelopes 8−12222
models, thermodynamic inconsistency of modified Saha eqn. at high press. 8−36450
multiperiodic light curves, g-mode rotation 8−4210
nonejecting novae as EUV sources 8−12238
nonradial oscillation mode splitting, effects of differential rotation 8−4211
planetary nebulae central stars, evolution to white dwarf stage 8−12325
planetary nebulae central stars, UV radiation meas. 8−28679
R548, pulsating star, photometric obs., light curve anal. 8−32488
rotating magnetic white dwarfs, equilib. struct. 8−49433
slow nova, evolution of model with Z=0.03 envelope from pre-explosion to extinction 8−32468
slow nova, hydrodynamic study of outburst 8−40954
slow rotation in collapsed stars, effects of mass loss 8−49426
southern white dwarfs, Stromgren photometry 8−32456
spectra of 47 southern stars 8−16417
spectroscopic survey using Luyten catalogues 8−7998
superdense matter eqn. of state, nuclear size correction to relativistic Thomas-Fermi model 8−29413
thermonuclear runaways, theory 8−40937
AN Ursae Majoris, nova-like variable, circular polarisation rel. to white dwarf mag. field 8−8018
van Maanen's star, astrometric study of Sproul plate series, radial vel., gravit. redshift 8−40936
virial theorem, energy content and mass-radius relation 8−45327
zero-temperature degenerate stars with subnuclear densities, radial oscills. 8−12219
H burning shells, thermal stability 8−4212
Hβ line profiles for dwarfs with dipole and quadrupole magnetic fields 8−8004

white noise
axon membrane white noise, stimulation, strength-freq. relationship, squid 8−3466

white noise continued
hot plasma, white noise excitation, sum of ion acoustic waves 8−42736
oil exploration seismic data processing, white noise estimators 8−3973

wideband amplifiers
us vibration propag. vel. meas. in solids using broadband amplifier 8−1521

Widmanstatten structure
steel, C, relax. resist. rel. to struct. 8−23788

Wiedemann effect
No entries

Wiedemann-Franz law *see Lorenz number*

Wien effect
Mathematics of Wien dissociation for weak electrolytes 8−3343
perturbation solution of Wien dissociation in weak electrolytes 8−23950

Wigner coefficients *see Clebsch-Gordan coefficients*

Wigner crystal
CDW of two-dimensional electrons, in strong mag. fields 8−43316
melting temperature calc., dislocation theory 8−43207
quasi-one-dimensional systems, charge distrib. and lattice distortion 8−6317
TCNQ salts, electron arrangement in ground state, optical spectra interpretation 8−47715
TCNQ salts, quasi-one-dimensional, Wigner cryst. model 8−47273
two-dimensional electron system in strong mag. field, crystallisation 8−30966

Wigner effect *see radiation effects*

Wigner lattice *see Wigner crystal*

Wilson cloud chambers *see cloud chambers*

Wimshurst machines *see electrostatic generators*

wind
acoustic-microwave Doppler radar system, wind and wind shear meas. at Dulles Airport 8−32233
aeroelastic stability of wide span surface structs., wind vels., flutter, binary divergence 8−26083
E.African low level jet stream, theory 8−40632
air-water exchange reactions, wind-wave interactions *(Dutch)* 8−3785
airborne Doppler radar meas., bias error determ. 8−3879
ambient air/water interface, frictional coefficient at low wind strength, obs. *(French)* 8−16020
ancient Mesopotamia, city wall and street orientation rel. to winds 8−49074
Asian summer monsoon, simulation by general circulation models 8−40637
astronomical telescope, anal. of frame-type mount under wind load 8−28518
Banks Island, Canada, deposits and aeolian processes *(French)* 8−36163
barotropic-baroclinic instability of mean zonal wind during summer monsoon 8−40638
bora, rel. to N.Adriatic Sea circulation 8−40556
boundary layer, lower, influence of built-up area on turbulence *(Russian)* 8−44925
boundary layer, roughness length and zero-plane displacement, wind and temp. profiles 8−24329
boundary layer, spectral scale of wind fluctuations 8−20481
boundary layer, speed and turbulence characts. near ground over escarpments 8−44897
canopy flow, higher order closure model 8−44944
Chicago area lake breeze, numerical study 8−7682
NE.Chukchi Sea, wind effects on coastal currents 8−32107
circulation in closed basins, rigid-lid model 8−32131
cloud motion estimates, aircraft verification expt. 8−16113
coastal breezes, dispersive, monostatic acoustic sounding system *(French)* 8−7683
coastal zone of non-uniform sea, wind effect on steady circulation *(Russian)* 8−16038
D-region, neutral winds meas. via payload B I rocket-borne expt. package 8−45190
D-region, winds rel. to radio wave propag. during Western European Winter Anomaly Campaign (1975/76) 8−45123
daytime neutral winds in lower thermosphere and mesosphere, meas. during winter anomaly 8−45071
diurnal and semidiurnal variations over tropical island 8−24332
dynamo region, wind systems rel. to mag. vars. during reverse equatorial electrojet events 8−36368
E-region, equatorial, dynamics rel. to neutral wind vars. 8−36369
E-region, neutral winds, comparison of Chatanika radar and optical meas. 8−32272
E-region, winds and elec. fields meas. over Malvern 8−49206
effects on latitude obs. at Poltava *(Russian)* 8−3915
energy conversion, variance anal. of wind characts. 8−49100
energy source for mesoscale motions in oceans 8−40625
energy transfer to ionosphere from lower atmosphere 8−28381
environmental impact assessment, air pollution problems 8−49124
equatorial ocean response to periodic monsoon winds 8−3773
error predictions for Omega stations, smoothing improvement factor 8−7719
evaporation from Earth surface, wind influence *(Spanish)* 8−44965
extreme wind speed probability, mixed wind climates 8−28295
F-region zonal winds, estimation during Joule heating using incoherent scatter techniques 8−36344
flow around tall buildings 8−36256
geostrophic wind speed rel. to momentum exchange, global maps *(German)* 8−44955
Germany, tower meas. of wind speed freq. distrib. *(German)* 8−16120
gravity wave induced wind field determ. using phase path meas. 8−16178
NW Gulf of Mexico, near-bottom cross-shelf currents, response to wind forcing 8−3780
HF radio acoustic sounder, atm. wind and temp. remote meas. 8−32235
horizontal wind meas., airborne system automatic calibration *(French)* 8−24386
horizontal wind profiles, comparison of Doppler radar and rawinsonde balloons meas. 8−44916
horizontal winds and temp. structure rel. to atmospheric tidal oscills. 8−20457
hurricane, barotropic ocean response 8−36191

wind continued
- hurricane Camille, wind speed and direction, ocean wave height and barometric press. meas. 8−36254
- Hurricane Gloria, ocean wave patterns, obs. with airborne synthetic-aperture radar 8−44873
- W.Indian Ocean, low-level cross-equatorial jet stream 8−44959
- W.Indian Ocean, SE. trades local vars. 8−32150
- ionosphere, meas. by self-contained tethered balloon sounding system 8−28343
- ionosphere dynamo region, wind fields expansion rel. to electrostatic fields 8−36387
- Irish Sea, backing of W. and N.W. winds rel. to differential heating 8−24340
- Japan, fire tornadoes, max. wind speed estimation 8−36255
- Japan, wind characts., field obs. and lab expts. 8−36253
- lake, variable depth circular model, time dependent response to wind stress 8−24320
- Lake Ontario, north shore coastal boundary layer response to storm 8−24322
- Lake Superior, coastal upwelling/downwelling cycles 8−44889
- lakes thermal structure, modified wind speed influence 8−11943
- lower atmosphere, VHF coherent radar sounding, wind and refractivity turbulence struct. 8−28281
- lower atmosphere, wind and O_3 vertical distrib. meas. (1977, April 1 to June 29) *(French, Flemish)* 8−11966
- lower thermosphere, dynamical processes connection with troposphere and stratosphere processes *(Russian)* 8−24401
- mathematical model for diagnosis and prediction of surface winds in mountainous terrain 8−3871
- mesoscale flow over complex terrain during Eastern Tennessee Trajectory Expt. (ETTEX) 8−49101
- mesoscale intense convective storm, Oklahoma, objective anal. 8−32168
- mesoscale winds aloft, numerical prediction models, verification 8−16110
- mesosphere, equatorial, waves and winds over Jicamarca from multiheight radar obs. 8−36230
- mesosphere, wind systems behaviour during transition from summer to winter conditions 8−49097
- mesosphere winds at equatorial latits., observational aspects review 8−36229
- monsoon depressions, life history, struct. and movements 8−44963
- SW.monsoon over India, onset and northern limit 8−49102
- monsoons and Indian Ocean equatorial currents variability, modelling *(Russian)* 8−44839
- neutral wind in upper atmosphere, rel. to magnetospheric disturbances in aurora borealis zone *(Norwegian)* 8−24399
- nocturnal jet at dawn 8−20479
- northern hemisphere, stratosphere, winds for 1957-65 period 8−24350
- ocean, wind circulation in two-dimens. dynamical model *(Russian)* 8−40557
- ocean current regime in Gulf of Kutch, NW.India 8−36184
- ocean over North America eastern continental shelf, wind stress meas. 8−3776
- ocean surface, wind stress and roughness length over breaking waves 8−24299
- ocean surface mixed layer, energy and momentum transfer by wind 8−44856
- ocean wind waves generation theory, dynamical eqns. *(Russian)* 8−44840
- ocean wind-driven circulation, effect of islands and depressions 8−3799
- ocean wind-driven quasigeostrophic water movements near fast ice edges 8−49026
- ocean wind-generated linear and nonlinear Kelvin waves along irregular coastline 8−11908
- ocean wind-generated surface waves, HF spectrum meas. 8−44857
- ocean wind-waves in finite water depth, freq. spectra *(Russian)* 8−44843
- optical wind and precipitation sensors *(Japanese)* 8−16207
- Oregon Coast, wind and current data, rotary cross-bispectra and energy transfer functions 8−44858
- Pacific, E.equatorial, long wave obs. from geostationary satellite, rel. to SE. trade winds 8−24308
- N.Pacific, South China Sea and Indonesian Seas, regional energetics during winter 8−44960
- NW Pacific, wind-wave tropical cyclone model, parametrisation characts. 8−24301
- passive remote crosswind sensor 8−7773
- Philippines, high wind study 8−36257
- power from wind and Sun, meteorological aspects 8−36250
- profile determ. X-band solid-state radar system 8−12028
- radiowave propagation, raindrop canting angle as function of wind velocity, crosspolarisation 8−3855
- Rock of Gibraltar, wind-tunnel simulation at 1:5000 scale, compared to meteorological meas. 8−28284
- sea and land breeze obs. over Goa, India 8−32155
- sea breeze circulation over Bombay 8−32160
- sea breeze rel. to pollution over gulf region 8−11977
- sea state and wind sensing by HF skywave radar 8−24396
- sea surface signal interpretation and energy transfer calc. 8−28241
- sea surface tension variability with mean wind speed 8−7656
- sea-breeze front passages at Cambridge, England 8−44973
- shearing up to 700 m rel. to daytime and diffusion class *(German)* 8−44954
- shelf waves with wind-generated effects, resonant interactions 8−44835
- Sierra Leone, monsoon characts. 8−7693
- simulation in Oxford University wind tunnel 8−22443
- simulation in wind tunnels, roughness element geometry anal. 8−47079
- Somali coast, wind stress, spatial and temporal var. 8−49092
- space-time kinetic energy spectra in mid-latitudes 8−7707
- speed measurement using laser velocimeter 8−32251
- speed near ground, spectral anal. 8−11950
- sporadic-E layer, equatorial formation, electric fields and neutral winds effect 8−12045
- squall lines, radar obs. during GATE 8−20474
- stationary planetary waves and zonal wind, southern hemisphere 8−28276
- stratosphere, lower, power spectral anal. of meteorological data 8−40616

wind continued
- strong gales in E.Atlantic region, jet stream effects in subtropical latits. *(Spanish)* 8−44966
- strong wind shear, obs. using pulse compression radar 8−32193
- summer monsoon over S. Asia, break and active phases 8−3912
- summer monsoons over Africa and India, comparison 8−32149
- surface gravity wave, wind-wave generation, bispectral contrib. 8−49033
- surface layer, discrete turbulent gust concept 8−44907
- surface layer, drag coeff. rel. to intermittent convection 8−44898
- surface waves, wind-generated in deep water, Rayleigh method *(Russian)* 8−36178
- surface wind field over ocean, evidence for S_3 atmospheric tide 8−44911
- suspended dust deposition, wind speeds and particle concs. 8−40623
- thermosphere, ionospheric model effects on horizontal wind calcs. 8−36345
- thermosphere, lower, mid-latitude winds meas. *(Russian)* 8−36340
- thermosphere, lower, wind regime rel. to stratospheric and mesospheric processes 8−4019
- thermosphere, mass spectrometric meas. 8−28359
- thermosphere, meridional wind and O depletion at high latitudes 8−28353
- thermosphere, nighttime winds from Atmosphere Explorer C 8−28354
- thermosphere, vertical winds and turbulence from Ba cloud release over Thumba 8−49188
- thermosphere nighttime winds and temps., monthly vars. during solar min. 8−32263
- tornadoes probing with pulse Doppler radar 8−20558
- tornadogenesis, numerical model of vortex growth 8−49114
- tropical hurricane, wind field rel. to main ocean waves *(Russian)* 8−16021
- Tropical Wind, Energy Conversion and Reference Level Experiment (TWERLE), results 8−40605
- troposphere, middle-upper latits. westerlies rel. to Sun-induced standing planetary waves 8−36236
- troposphere, upper mean zonal wind determ. with allowance for turbulence heat fluxes *(German)* 8−32137
- troposphere and stratosphere, radar meas. of winds in Arctic region 8−49172
- two-dimensional turbulent flow past rectangular cylinder 8−1645
- upper atmosphere, meteor wind obs. from Sheffield during January 1976 winter anomaly 8−45070
- upper atmosphere, seasonal winds rel. to vars. in disturbances latit. struct. 8−32264
- upper troposphere, wind fluctuations meas. rel. to mesoscale turbulence *(Russian)* 8−16090
- USA-Japan studies on wind and seismic effects, conf., Tokyo, Japan (May 1975) 8−36252
- vegetative canopies, secondary wind speed maxima 8−3868
- velocity determ. from laser intensity fluctuation meas. *(Russian)* 8−36302
- water bodies, cooling from surface under free and forced convection regimes *(Russian)* 8−36179
- water surface, drag coeff. rel. to gust factor in light wind *(French)* 8−44905
- water waves, duration-limited, 1-dimens. spectra of growth 8−46990

wind tunnels
- adaptive-wall, convergence to interference-free conditions 8−38419
- adaptive-wall wind tunnel, iterative anal. of subsonic flow 8−22364
- aerodynamic design of blower tunnels with wide-angle diffusers 8−1771
- architectural and industrial aerodynamics 4×2 m tunnel, Oxford University 8−22443
- atmospheric boundary layer, model scale factor, full- or part-depth simulation 8−28285
- contraction section, smoothly varying nozzle construction method 8−47081
- fluctuating pressure meas. of drag reduction spike 8−30310
- Hurst phenomena in grid turbulence 8−46947
- intermittent high Reynolds no. wind tunnel 8−18361
- ionized air as tracer 8−22435
- low velocity, low turbulence intensity, at Karlsruhe University, characts. *(German)* 8−26224
- Mach t tunnel, fluctuating disturbances 8−1761
- pressure fluctuations, freestream 8−14102
- roughness element geometry required for atmospheric wind simulation 8−47079
- smoke tunnel, school and undergraduate use 8−16614
- sound source location, using acoustic mirror as directional microphone 8−30372
- square prisms, interaction in two flow fields 8−9632
- supersonic, Mach 5 quiet tunnel development 8−38437
- turbulence around Rock of Gibraltar, simulation at 1:5000 scale 8−28284
- walls effect on flow past cylinders and cooling tower models 8−46930

winding (process)
- glass fibre reinforced plastics, winding device for mech. test specimens prep. 8−7138

wire telephony *see carrier telephony*

wires (electric)
- *see also conductors (electric); exploding wires and foils*
- metallic thermal connectors for use in nuclear refrigeration, elec. resist. meas. 8−224

wiring diagrams *see circuit diagrams*

WKB calculations
- anharmonic oscillator with polynomial pot., asymptotic forms of energy eigenvalues 8−45509
- atom-surface 3-9 interaction, bound state vibr. spectrum 8−14615
- atomic spectral lines, foreign gas broadening, WKB approx. for satellite bands 8−46304
- bound states, WKB approx. from Heisenberg matrix mechanics 8−32717
- continuum Dirac electron, Coulomb field, simple asymptotic wave function 8−41455
- Dirac eqn., quasistationary levels in lower continuum, energy calc. *(Russian)* 8−45826
- hadronic amplitudes in scaling region for e^+e^- and e^-+hadron 8−41484

WKB calculations continued
high frequency gravitational and electromagnetic wave coupling 8−8304
inhomogeneous dielectric waveguides, generalized WKB approach 8−1359
ionospheric, electron density profile determ. from rocket-based 40 kHz propag. obs. *(Japanese)* 8−24403
Jahn-Teller problem, $T\times\varepsilon_g$, spin-orbit allowed tunnelling splitting, zero-phonon line splitting 8−19006
JWKB approximation for multiple-humped fission barriers, ^{234}Th appl. 8−585
Lennard-Jones mol., WKB vibr. energy level calc. 8−9057
modal dispersion in optical fibres with any numerical aperture and doping profile 8−1391
non-functional approach *(Russian)* 8−36861
numerical anal. to large order, one dimensional Schrodinger equation 8−16688
optical waveguide, multilayered, attenuation and tunnelling coeffs. for leaky rays 8−38002
phase space path integrals, without limiting procedure 8−32718
planar ion exchange waveguides, TE and TM mode analysis 8−9444
plasma waves, longit. to EM wave conversion, varying plasma 8−18389
polarisation effects in penetration of nonrelativistic electrons through potential barrier with appl. mag. field 8−11084
potential reconstruction by differential scatt. cross section, WKB approx. *(Russian)* 8−45818
potential scattering, JWKB phase shifts, using Gauss-Mehler quadrature formulas 8−46411
pseudoparticle contrib. to energy spectrum of 1-D system, comparison with WKB result 8−4517
radial wave eqns., Bremmer series soln., for eqn. with spherically symmetric velocity function 8−28973
rigid rotor, asymmetric, semiclassical energy levels determ., tunnelling 8−37624
Schrodinger eqn. one dimens. pot. finite interval, semiclassical eigenvalues 8−28978
Schrodinger equation, numerical integration, using WKB approx., eigenvalue estimates 8−12486
solitons and pseudoparticles, systems with many degrees of freedom 8−29255
stationary path integrals appl., bound state energies and wave functions 8−12587
third-order JWKB approximation method applic. to absolute continuity criteria derivation, approx. operators construction 8−12591
third-order JWKB approximation method applic. to absolute continuity criteria derivation, approx. operators and estimates 8−12592
transverse waves propag. along axisymm. mag. field in nonhomogeneous plasma, WKB kinetic theory 8−42740
$(O_2)_2$, van der Waals mol., WKB vibr. eigenvalues 8−33498
^{208}Pb+^{136}Xe, double octupole phonon excitation, coupled channel WKB approx. 8−4960
^{122}Sn+^{120}Sn, 630 MeV, multipair transfer calcs. for superfluid ions, coupled channel WKB approx. 8−37373
YIG rod, inhomogeneously magnetised, propag. characts. of magnetoelastic wave 8−15006

wolfram *see tungsten*

wood
clean cut surface preparation for SEM studies 8−15935
filled polystyrene exam. of reversible elastic deformation 8−48437
tree rings, ^{14}C radial flow and chemical pretreatment for ^{14}C meas. 8−28346
tree rings, climatic information from ^{18}O/^{16}O in cellulose, lignin and whole wood 8−24355
wood, load bearing capacity, and deformability, evaluation of timber structure safety *(German)* 8−39983

work function
see also electron emission; Schottky effect
alkali metal chemisorbed layers, changes in work function due to charge transfer 8−18900
chemisorption on metals, appl. of field emission techniques 8−35255
defects role, review 8−14551
elements, work function periodicity 8−19124
Fowler-Nordheim slope variation with cryst. plane size, FEM-FIM obs. 8−27383
metal, periods IV, V, and VI, work function depend. on plasmon energy 8−18986
metal, surface charge density prod. in satic electrification 8−14797
metal, surface pot. drop and contact pot. difference in terms of orbital electronegativity 8−2546
metal interface of unlike metals, secondary ion-ion emission 8−11050
metallic clusters, small size fluctuations of work function 8−14792
MOS p-channel transistors, metal-semicond. work function 8−34903
Mulliken electronegativities, rel. to work function 8−9096
negative ion formation, by sputtering, work function depend. 8−39645
physicochemical surface processes investigated by alpha-particle effect on electron work function 8−2547
poly-N-vinylcarbazole, electrophotographic film, dark discharge 8−34864
probe, vibrating capacitor type, for surface and adsorption studies 8−10274
rare earth oxide, cathode material, influence of surface and bulk effects 8−11065
submonolayer films on metallic surface, struct. and props. review 8−38972
surface electron states, electric field sustained, δ-well crystal 8−10528
transition metals, 3d, absolute $2p_{3/2}$ core binding energies and work functions 8−15253
Al (111), chemisorpt. of O 8−14593
Al, etched, electronic props. of surface *(Russian)* 8−15569
Al, film, initial oxidation, AES, work function and gravimetric meas. 8−7087
Au, stepped surface, edge atom dipole moments 8−14791
β-B, rhombohedral, photon energy depend. of work function 8−19637
Ba, adsorbed on 4d or 5d metal, O_2 coadsorption effects, thermionic emission obs. 8−11064
Ba film, growth on (111) face of Ir covered with graphite monolayer 8−26791
BaO, epitaxial, on Ir, low energy electron spectra, electron affinity, conduction band edge position 8−14790

work function continued
BaO-Ba coated cathode, role of surface donor centres 8−11063
$BaTiO_3$, adsorption of $O_2(H_2)$, effect on work function and spontaneous polarisation *(Russian)* 8−6211
Bi film, evaporated on W, work function obs. by field emission method 8−6834
Bi_2S_3 film, evaporated on W, work function obs. by field emission method 8−6834
C, black, surface acidity effects on work function 8−2548
CaO epitaxial layer, on Mo, secondary electron emission, struct. effects, LEED and AES expts. 8−2959
CdS-Au structure, work function of {0001} faces of CdS, effect of piezoelec. props. 8−23164
CdSe-$As_2S_3(AsSbS_3)$ heterostructure, energy bands and interface props., photoelectron spectroscopy 8−2551
CeB_6, thermionic emission rel. to surface state 8−39654
CeO_2, single cryst. whiskers, electron field emission 8−27378
Cs film, work function theory, size effect 8−43460
Cs suboxide film, work function theory, size effect 8−43460
Cu (111), chemisorpt. of CO on differently prepared surfaces 8−6223
Cu(111), adsorption of Cs, struct. and electronic props. 8−23147
Er, film, evap., CO effect on work function 8−39188
Er film, work function, effects of O_2 sorption 8−19125
Fe surface, (111) and (100), adsorpt. and decomp. of NH_3 8−40077
Fe surface, H_2 chemisorption LEED, UPS, thermal desorption spectroscopy, work function meas. 8−14566
GaAs (110), struct., elec. props., effects of illumination, O_2 absorpt., electron bombard. *(French)* 8−34690
Ge, work function, meas. by thermionic emission 8−19628
InSb, external photoelec. effect 8−27366
Ir (111), desorption of Ba, conc. depend. of kinetic characts. of thermal desorption 8−2377
K single crystals on W tips, field emission from individual planes 8−27385
KCl film, porous, injection mechanism for transmission secondary electron emission 8−19643
La, adsorbed on 4d or 5d metal, O_2 coadsorption effects, thermionic emission obs. 8−11064
LaB_6, single crystals, thermionic work function meas. 8−11067
LaB_6, thermionic emission rel. to surface state 8−39654
$LiNbO_3$, effect of spontaneous polarisation on thermionic emission 8−35245
MgO secondary emitter, increasing of efficiency by coating with Cs or Li film 8−2960
Mo (100), emission and work function, K adsorption effects 8−11060
Mo, (110) and (111) faces, joint adsorption of Cs and O, and emission props. 8−2364
Mo, adsorpt. of NH_3, and catalytic decomposition, field emission study 8−14596
Mo field emitter, adsorption of Te on single cryst. faces 8−34714
Mo film, work function, effects of O_2 sorption 8−19125
Mo-Ca, ion implanted, range distrib. of Ca^+ ions, work function and AES obs. 8−27365
$NbSe_2$, adsorption of Cs and O_2, 200-300K 8−26767
Ni (100) surface, electron binding energies of core levels in adsorbed Cs 8−18896
Pt (100), adsorption of S, obs. 8−14606
Pt, stepped surface, edge atom dipole moments 8−14791
Pt-Ba alloy, elemental comp. and chem. state of surface during thermal activation, AES obs. 8−2345
Re, adsorpt. of Au, on low index planes 8−14597
Ru (001), electron stimulated desorption of CO, correl. with other meas. 8−47658
Ru, NO chemisorpt. and decomp. 8−18903
SbSI, adsorption of $O_2(H_2)$, effect on work function and spontaneous polarisation *(Russian)* 8−6211
Sc, adsorbed on 4d or 5d metal, O_2 coadsorption effects, thermionic emission obs. 8−11064
Si (111), adsorpt. of Cs, LEED, work function and thermal desorpt. 8−14590
Si (111), with chemisorbed Al, electronic struct., self-consistent pseudopotential calc. 8−34880
Si(111), adsorption of HBr(Cl), AES, electron energy loss spectra and electron impact desorption exam. 8−43243
SrO epitaxial layer, on Mo (110), secondary electron emission and struct., LEED and AES expts. 8−2958
Ta (112), oxidised, emission and work function, K adsorption effects 8−11060
Ta, adsorption of O_2, FEM obs. of work function changes 8−26771
Ta film, vacuum-deposited, gas adsorpt. effects on photoelec. props. 8−15298
Ti, film, evap., CO effect on work function 8−39188
Ti film, work function, effects of O_2 sorption 8−19125
Ti, ion-surface bombard. optical radiation emission by excited atoms 8−39652
Ti, polycryst., chemisorption, of N_2, O_2 and CO, secondary electron yield spectrum obs. 8−38933
TiC single crystal, work function, field emission characts. *(Japanese)* 8−19641
W,(100) and (111), methane adsorption effect 8−38963
W (100), chemisorption of Hg, AES, LEED, work function and thermal desorption expts. 8−34709
W (110) surface, adsorption of O_2, LEED, AES and thermal desorption meas. 8−38957
W (112), adsorption of La, contact pot. difference, LEED and field emission microscopy *(Russian)* 8−14618
W, adsorption and early stages of condensation of Ag and Au on single cryst. surface 8−6212
W, adsorption of Au, field emission microscopy exam. of work function, correlation with LEED and RHEED meas. 8−35276
W, coadsorption of La and B, field emission meas. 8−47662
W field emitter, adsorption of Te on single cryst. faces 8−34714
W, monolayer of Ga(In)(Sn), field ion image qualities and work function 8−35272
W, stepped surface, edge atom dipole moments 8−14791
W tip, Cu covered, field ion microscopy study 8−23587
W, work function, field emission meas., Te and Cs surface film effects 8−19645
(W-Au)-SiO_2-Si:B MOS transistor, ion implantation effect on threshold voltage 8−34903

work function continued

- W{100} surface, co-adsorption of Cu and O_2, AES, thermal desorption, LEED and work function meas. 8−38950
- Y, adsorbed on 4d or 5d metal, O_2 coadsorption effects, thermionic emission obs. 8−11064
- Y single crystal, thermionic emission work function 8−2971
- ZnO-Cs, fabrication, UPS meas. 8−15279
- ZnS, surface, work function and luminesc. phenomena, effect of H,H_2,O and O_2 adsorpt. 8−10538
- ZrC, effect of H_2 adsorpt., thermionic emission expts. 8−2970

work hardening

- *see also cold working*
- alloys, $L1_2$, superstructure, dislocation link strength and strain hardening at high degrees of deform. *(Russian)* 8−39792
- anisotropic elastic state, plastic-strain mechanism 8−42530
- austenitic steel, mechanical properties, effect of high temp. thermomechanical treatment and post-deform. ageing *(Russian)* 8−39809
- Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
- α-brass, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
- constitutive eqns. of work hardening-recovery type, numerical integration, improved method 8−6949
- Cu-Al, FCC, study of dipoles using weak-beam electron microscopy 8−22724
- easy glide, computers modelling, range of permissible parameters *(Russian)* 8−47375
- elasto-plastic material, crack tip stress and strain fields and fracture behaviour 8−22304
- elastoplastic struct. with kinematic hardening, cyclic loading *(French)* 8−42537
- fatigue crack propagation model for strain hardening materials 8−18236
- finite distortional latent hardening in single crysts., perpetuation of slip 8−3144
- metal, fatigue fracture-stacking fault energy correlation *(Russian)* 8−15499
- metal, nonlinear mech. response, Swift effect 8−35433
- metal, plastic, work hardening, sintered, porous, irreversible deform. 8−19849
- metal, surface layer dissolution, effect of rate on softening during plastic strain 8−39957
- metal, work-hardening, plastic, sintered, porous, irreversible deform. 8−35459
- metal and alloy, deformation strengthening and anisotropy prediction *(Russian)* 8−27533
- necking and tensile instability in material with strain hardening and strain-rate hardening 8−23717
- plastic material, rate type, with kinematic work hardening 8−15450
- plastic rate type materials with general work hardening 8−42548
- rigid work hardening structures optimum design 8−13917
- sheet metal forming, strain hardening and strain rate sensitivity 8−7000
- sheet metals, strain-induced changes in mech. props. and press formabilities 8−19781
- simulation of inelastic material behaviour in struct. anal. 8−34041
- soil, cohesionless with curved yield surfaces, elastoplastic stress-strain theory 8−18186
- steel, 40Kh, plastic-strain mechanism for work hardening 8−42530
- steel, C, strain ageing contribution to fatigue hardening 8−23817
- steel, C (0.1-1.15 wt.%), fatigue under reversed tension-compression stresses, photoelasticity investig. *(German)* 8−31493
- steel, high strength, low alloy, response to cyclic plastic deform. 8−7035
- steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
- steel, low alloy, strengthening by strain tempering, deform. effects 8−15424
- steel, low C, cyclic stress-strain response under spectrum loading *(Slovak)* 8−19886
- steel, mild, tubes between rigid plates, lateral compression, strain hardening effect 8−48422
- steel, Mn-Cr, blank hardened, shot peening effect on bending fatigue strength *(German)* 8−35402
- steel, Ni-Mo, sintered, martensitic transformation due to cold working, metallographic study 8−44127
- steel, non-alloy, effect of shearing *(French)* 8−15423
- steel, perforated bent sections, microstruct. near holes 8−23725
- steel, plastically deformed or hardened, X-ray diffr. data anal., moment method *(Czech)* 8−31593
- steel, stainless, deformation temp. determ. for high yield strength 8−44177
- steel, stainless SUS 304, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
- steel, tensile prestrained strength of anisotropic rolled steel, rot.-bending fatigue tests, slip bands 8−27590
- steel, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
- transverse isotropic inelastic work hardening constitutive model, numerical implementation 8−42547
- tubes between rigid plates, lateral compression, strain hardening effect 8−48422
- Ag-Cu (5 at.%) solid solution, pre-fatigued, strain hardening at high temp. 8−15426
- Al alloy 2024-T3, work hardening in surface layers and bulk during fatigue 8−48428
- Al alloy 7075, fracture toughness, hydrostatic press. depend., tensile ductility 8−3209
- Al, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
- Al, non-elastic deformation, phenomenological model with solute strengthening effect incorporation 8−39832
- Al, prestrained, isotropic hardening rule, rel. to stress/strain curve 8−23772
- Al, single cryst., latent hardening *(Japanese)* 8−44135
- Al-Ag (15 wt.%), precipitation hardenend cyclic stress-strain response 8−35412
- Cd single crystal, low-temp. work hardening 8−3138
- Cu and Cu-Si, deformation and fracture under dynamic loading 8−35442

work hardening continued

- Cu, Bauschinger AE peak detection of back stress component in flow stress *(Japanese)* 8−6977
- Cu, shock loaded, work hardening and press. depend. of dislocation arrangement and density 8−48429
- Cu, whiskers, hardening during uniaxial extension, preliminary torsion deform. *(Russian)* 8−15420
- Cu X-ray and microhardness meas. at high strain rates *(German)* 8−3184
- Cu-Al (15 at.%), single crystal, steady state deform. with $\langle 001 \rangle$ axis at high temp. *(Japanese)* 8−6980
- Cu-Al_2O_3 dispersion hardened wires, drawn, substruct. and strength 8−35405
- Cu-Fe, single crystal with coherent γ-Fe particles, precipitation hardening 8−31416
- Cu-Sn solid soln. steady state deform. *(Japanese)* 8−19832
- Fe, cast, increase in yield strength, after phase transformations 8−44125
- α-Fe, cavitation and sliding distrib. changes during creep at 500°C 8−6991
- Fe, strain hardening and rate sensitivity, effect on ductile-brittle transition temp. 8−39900
- Fe-Ag (50 vol.%), two-phase system, plastic deformation *(French)* 8−39831
- Fe-Si (3.12 wt.%), brittle fracture, work hardening effect at notch tip 8−44220
- Fe-Si(Ni), strain hardening and rate-sensitivity, effect on ductile-brittle transition temp. 8−39900
- LiF, strained, mean mobile dislocation velocity 8−18657
- Mo and Mo superalloys high temperature properties 8−44173
- Ni, shock loaded, work hardening and press. depend. of dislocation arrangement and density 8−48429
- Ni, shock loaded, work softening 8−27537
- Ni-Cr-Al-Ti-Mo, low temp. mech. behaviour, precipitation 8−39860
- Ni_3Al, overshooting while testing in tension 8−44189
- Ni_3Fe, ordered and disordered states, strain hardening characts., temp. depend., multiple slip case *(Russian)* 8−15421
- Pb, hardening in intermediate state 8−47917
- Pb, sample length effect on plasticity 8−44179
- Pb, strain hardening and recovery, during primary creep 8−39799
- Pb-Sn(Cd)-Te, microhardness meas. as function of applied load, elec. props. exam. 8−48493
- PbTe, microhardness meas. as function of applied load, elec. props. exam. 8−48493
- Sn, single cryst., plastic deform., 1.6-300K *(Russian)* 8−3179
- Ti alloys, texture strengthening 8−23724
- α-Ti based alloys, deform. twinning effect on mech. props. at low temps. *(Japanese)* 8−6979
- Ti_3Al, cyclic deform., dislocation struct. 8−7003
- V, slip geometry and dislocation struct., rel. to degree and temp. of deform. *(Russian)* 8−38717
- V-H, H effect on fatigue crack propag. 8−48516
- Zn, compatible bicrystal, plastic deform. *(Japanese)* 8−31460
- Zn, deforming stress under basal slip, contrib. of forest and primary dislocations 8−3186
- Zn, incompatible bicrystals, effect of grain boundaries on mech. props. *(Japanese)* 8−39798
- Zr_3Al, $L1_2$ phase, work hardening 8−23718

workers *see personnel*

wrapping *see packaging*

Wratten filters *see optical filters*

X^0 meson resonances *see eta meson resonances*

X-ray absorption

- *see also X-ray absorption spectra*
- aerosol loaded filters, X-ray fluoresc. anal., absorpt. corrects. calcs. 8−7311
- biological materials, extrapolation of linear attenuation coefficients from diagnostic energies to megavolt range 8−24145
- Hounsfield number definition and computerised tomography number conversion 8−35952
- interstellar photoabsorpt. cross-sections for dense clouds and intercloud regions 8−12327
- pattern, recognition with spatially modulated X-rays 8−45761
- PIXE, low energy mass absorpt. coeff., meas. technique 8−7309
- proportional counter, wall effect elimination, method 8−4753
- reflection coefficient of absorptive single cryst. 8−9898
- Si, X-ray rot. polarisation, absorpt. crystal orientation effects 8−47206

X-ray absorption spectra

- atom, resonance formation, role of surrounding potential 8−9168
- core-hole lifetime effects in deep-level spectroscopies 8−48283
- cubic crystals, calc. of binding energy of X-ray excitons 8−2435
- cytochrome c oxidase, oxidised and reduced, X-ray absorpt., edges, using synchrotron radiation 8−48758
- density of states in K excitation spectra of solid and liq. phases 8−19601
- electron energy loss spectra, threshold potentials and X-ray absorption, band struct. determ. *(Russian)* 8−39009
- EXAFS, atomic origin of struct. 8−31277
- EXAFS amplitudes, wave function relaxation and chemical effects 8−46365
- EXAFS beats, determ. of differences in bond lengths 8−23552
- extended X-ray absorption fine structure using real space transform, struct. determ. technique 8−23553
- ferrimagnetic materials, ionic state, and using X-ray K absorption edge of Fe 8−35226
- fluoromethanes, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
- many body effects 8−27374
- metal, effects of correlation interaction of electrons with deep holes in X-ray spectra 8−31279
- metal, XPS and X-ray absorption spectra, thermal broadening of core levels, many-electron effects 8−31284
- metal film, mass absorption coeff. meas. using proton induced X-rays 8−2942
- metals, narrow-band, and simple, edge singularities in spin-depend. final-state interactions 8−6810
- methane, and -d_4, soft X-ray absorpt. spectra, fine struct. above K-edge of C 8−42096
- photoelectric cross-section at K-edge measurements 8−2983

X-ray absorption spectra continued
α-quartz, correlation between cryst. perfection and refl. intensity for analyser cryst. 8−48259
single crystals, use of polarised radiation 8−8481
soft X-ray thresholds, exchange effects, renormalisation group theory 8−31280
ternary compounds, and complex systems, chemical shift in X-ray absorpt. spectra, effective changes 8−6811
Ag, K-edge photoabsorption spectra, linear APW calc. 8−43960
Al, X-ray threshold anal. 8−31281
Au, M_5 absorpt. limits 8−6812
Ba plaster, X-ray absorption coefficients, from 100 to 400 keV 8−31283
Bi, M_5 absorpt. limits 8−6812
$CdGeP_2$, electronic struct. at cryst./vitreous transition, X-ray K-absorpt. and emission 8−15248
Cd_3P_2, band struct., X-ray spectra determ. 8−35225
Co ternary compounds, chemical shifts of K X-ray absorption discontinuities 8−19599
Cu ternary compounds, chemical shifts of K X-ray absorption discontinuities 8−19599
$CuAlS_2$, X-ray spectroscopic study 8−39626
$CuCr_2O_4$, spinel, K X-ray absorption spectrum 8−19600
$CuCr_2S_4$, spinel, K X-ray absorption spectrum 8−19600
$CuCr_2Se_4$, spinel, K X-ray absorption spectrum 8−19600
$CuCr_2Te_4$, spinel, K X-ray absorption spectrum 8−19600
$CuFeS_2$, X-ray spectroscopic study 8−39626
$CuGaS_2$, X-ray spectroscopic study 8−39626
$CuInS_2$, X-ray spectroscopic study 8−39626
EuO:Yb(Sm), electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
EuS:Yb(Sm), electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
FeF_2, EXAFS at high press., bond compressibility, at. spacings 8−39628
$(Fe_xMn_{1-x})_3C$ in steel, X-ray K-absorpt. spectra *(Russian)* 8−6813
FeS_2, EXAFS at high press., bond compressibility, at. spacings 8−39628
K_xZrS_2, intercalation cpd., X-ray K absorption edges 8−39627
$K_3[Fe(CN)_6]$ X-ray Fe K absorption edge struct. of $[Fe(CN)_6]^{3-}$ meas. 8−43959
$K_4[Fe(CN)_6].3H_2O$, X-ray Fe K absorption edge struct. of $[Fe(CN)_6]^{4-}$ meas 8−43959
Li I, II, absorption spectra in grazing incidence region, 215-160 Å 8−5164
Li, X-ray emission and absorpt. edges, temp. depend. 8−31282
Li, X-ray threshold anal. 8−31281
Mg, X-ray threshold anal. 8−31281
MnP, metallic, band struct., X-ray spectral obs. 8−11019
Mo, K-edge photoabsorption spectra, linear APW calc. 8−43960
$NH_4H_2PO_4$, correlation between cryst. perfection and refl. intensity for analyser cryst. 8−48259
Na, X-ray threshold anal. 8−31281
Nb_3Ge film, EXAFS meas. 8−2935
Pb, M_5 absorpt. limits 8−6812
Pd, K-edge photoabsorption spectra, linear APW calc. 8−43960
Pt, catalyst, dispersed onto silica support, EXAFS meas. 8−48258
Pt complexes, X-ray absorpt. spectra, mol. orbital interpretation 8−42097
Rb_xZrS_2, intercalation cpd., X-ray K absorption edges 8−39627
$RhBr_3$, bond distances exam. by EXAFS 8−26525
Ru catalysts, chemisorption of O_2, EXAFS obs. 8−15708
Se, amorphous, trigonal and monoclinic, 2p photoabsorpt. spectra 8−23551
Si, X-ray linear absorption coeff. 8−26384
IT-TaS_2, layered cpd., anisotropic X-ray absorption 8−39629
TiP, metallic, band struct., X-ray spectral obs. 8−11019
Tl, M_5 absorpt. limits 8−6812
U compounds, meas. of energy shifts of K absorption edge and K X-rays 8−11020
2H-WSe_2, layered cpd., anisotropic X-ray absorption 8−39629
Zn single crystal, EXAFS, using linearly polarised synchrotron radiation 8−2943
Zn_3As_2, determ. of ionicity by X-ray absorption method 8−31278
$ZnGeP_2$, cryst., electronic struct., X-ray K-absorpt. and emission 8−15248
Zn_3P_2, determ. of ionicity by X-ray absorption method 8−31278
Zr, K-edge photoabsorption spectra, linear APW calc. 8−43960

X-ray analysis
see also electron probe analysis; X-ray chemical analysis; X-ray crystallography; X-ray diffraction examination of materials; X-ray spectroscopy
No entries

X-ray apparatus
see also biomedical equipment; X-ray crystallography apparatus; X-ray monochromators; X-ray spectrometers; X-ray tubes
bent glass optics 8−45767
collimator, parallel X-ray beam generation and appl. to testing collimators 8−28526
computerised tomography equipment, for intracranial diagnosis 8−31884
coronary arteriography, current techniques and equipment 8−35940
differential energy absorpt. X-ray cassette, radiographic image contrast enhancement 8−20264
flash radiography, high energy, for dynamic NDT 8−15624
grazing incidence optics, total transverse aberration function 8−45765
grazing incidence X-ray microscopy, of laser fusion targets 8−47178
hard X-ray imaging instrument, for solar and cosmic sources 8−49332
high resolution X-ray optics, for astronomical and laboratory sources 8−45766
high-voltage low-power devices 8−21309
holographic microscopy *(Russian)* 8−12799
image intensifier, dual mode caesium iodide screen 8−21311
image intensifier freq.-contrast charact. curves determ., biomedical appl. 8−7427
image intensifier output screens 8−4755
imaging devices, for laser fusion programme 8−47173
imaging techniques, conf., Reston, USA (Apr. 1977) 8−45762
intensified minification camera for low dose radiography 8−20262
interferometer, three beam *(German)* 8−8483
mammographic X-ray screen sensitivity and resolution 8−7449

X-ray apparatus continued
micro-Fresnel zone plates for coded X-ray imaging of laser produced plasmas 8−42814
microchannel plate X-ray image intensifier, image resolution 8−35937
microscope, using holographically made zone plates and gratings 8−37855
microscope, with high time resolution X-ray streak camera *(French)* 8−42823
mirror, for HEAO-B X-ray telescope, design, fabrication and expected performance 8−49330
Neuroscope, for multiprojectional isocentric fluoroscopy and angiography 8−40292
output rating, equivalent DC power standard *(German)* 8−3650
picture transmission, CCTV system *(Hungarian)* 8−21306
radiography, exposure meas., energy depend. of correction factors for Victoreen 570 Condenser R-meters 8−3597
radiography, working places incorporating Medicor equipment 8−35942
radiography instrument calibration, energy depend. of correction factors for Victoreen 666 Survey System 8−3596
rare earth phosphor intensifying screen speed gain 8−7447
review of X-ray optics in 1 to 300 Å wavelength range 8−29221
soft X-ray synchrotron radiation focusing using toroidal mirror 8−45760
time-resolved coded aperture imaging system, for nuclear fuel motion HCDA conditions 8−45764
toroidal mirror fabrication for soft X-ray imaging 8−41384
transmission X-radiographic development trends *(German)* 8−15636
X-ray diffr. residual stress meas. method using parallel beam optics 8−5717
X-ray imaging, MOS solid-state detector arrays 8−47180
Au coated surface, reflectivity in soft X-ray range 8−45221
Au, grating, extreme off-plane mounting, X-ray efficiency calc. 8−45757
BaFCl:Eu X-ray intensifying screen 8−11735
LaOBr:Tb phosphor X-ray mottle reduction by multilayer screen construction 8−4756

X-ray applications
see also radiation therapy; radiography
aerospace guidance computer failure anal., coverseal particle detection 8−21313
cancer X-ray sensitivity increased by 434 MHz EM irradiation 8−24180
cineradiography, with continuous X-ray source 8−44341
duralumin, elastic-plastic stress anal. by photoelasto-plastic method and X-ray method *(Japanese)* 8−13978
field of 420 kV X-ray equipment including metal-ceramic tube *(German)* 8−4747
flash microscopy, appl. of electron beam-sliding spark device 8−5974
high speed photography, in aeroballistic range, track facilities of von Karman gas dynamics facility 8−37094
internal cavities in objects, exam. by scanning with ionising radiation beams, from radioactive sources 8−40003
macro X-ray fractography, fatigue failure anal. *(Japanese)* 8−11464
nuclear power plant components, acceptance tests, using X- and gamma ray images *(German)* 8−44297
polychromatic X-ray stress meas. *(Japanese)* 8−7143
steel, austenitic stainless, deformed plate, X-ray line profile anal. *(Japanese)* 8−7144
steel, C, elastoplastic stress anal. by photoelasto-plastic method and X-ray method *(Japanese)* 8−13978
steel, C, X-ray diffraction correlation between cyclic loading and residual stress *(German)* 8−48583
stress measurement, X-ray technique by side inclination method without $-\eta$ inclining incident angle *(Chinese)* 8−15608
thermistor bolometer failure anal. appl. 8−24795

X-ray astronomical observations
see also X-ray sources (astronomical)
2A 1102+384, soft X-ray emission obs. 8−49564
2A 1251−290, high-latit. X-ray source, X-ray spectrum and variability 8−32611
2A 1348+700, 1415+255, 1410−029, Seyfert galaxies, X-ray spectra and variability 8−32611
Abell 478, cluster of galaxies, X-ray and radio obs. 8−8133
Aquila X-1, nature of X-ray outbursts 8−20909
Ariel 0535+26, X-ray outburst on 1978 April 10, SAS-3 obs. 8−45433
Ariel 0620−00, transient X-ray source, obs. using OSO-8 Bragg cryst. spectrometer 8−12426
Ariel 1540−53, eclipsing X-ray binary pulsator 8−8151
YZ Canis Majoris, flare star, coordinated X-ray, optical and radio obs. 8−8012
η Carinae, soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
Centaurus A, X-ray variability, OSO-8 obs. 8−41082
Centaurus A (NGC 5128), detect. of X-ray emission from giant radio lobes 8−41055
Centaurus A (NGC 5128), radio and X-ray var. of nucleus 8−36711
Centaurus X-3, periodicity of extended lows 8−24526
Centaurus XR-4, bright transient X-ray source, assoc. with NGC 5824 globular cluster 8−12420
Circinus X-1, continuation of anomalous X-ray behaviour 8−32606
Circinus X-1, ms X-ray bursts, possible black hole 8−4404
clusters of galaxies, X-ray and optical study 8−28805
cosmic gamma-ray bursts, hard X-ray spectra 8−7846
Crab Nebula, high energy X-ray spectrum, OSO-8 obs. 8−12315
Crab Nebula, polarimetry with OSO-8 X-ray polarimeter 8−12426
Crab Nebula, search for thermal X-ray line emission 8−8095
Crab Nebula, X-ray polarization, precision meas. without pulsar contamination 8−41086
SS Cygni, dwarf nova, ANS detection of both soft and hard X-ray emission 8−36579
Cygnus region, soft X-ray sources and supernova remnants 8−4397
Cygnus X-1, absence of 39 day period in non-UV data 8−8167
Cygnus X-1, polarimetry with OSO-8 X-ray polarimeter 8−12426
Cygnus X-1, search for X-ray polarisation 8−4406
Cygnus X-1, short-term time variability, shot noise model 8−36721
Cygnus X-1, temporal and spectral var., X-ray rocket obs. 8−8163
Cygnus X-1, X-ray variability in high state 8−28855
Cygnus X-2, polarimetry with OSO-8 X-ray polarimeter 8−12426
Cygnus X-3, COS-B X-ray obs., 4.8 hour modulation 8−28856

X-ray astronomical observations continued
Cygnus X-3, evidence for X-ray Fe line emission obtained with cryst. spectrometer 8−8153
Cygnus X-3, observational constraints, on models 8−16567
flare-up of X-ray source, SAS-3 obs. 8−20915
galactic bulge X-ray sources, precise positions from SAS-3 obs. 8−16575
galactic centre sources, positions meas. by Ariel-5 RMC expt. 8−4407
galactic X-ray sources, $320° < l^{II} < 340°$, positions 8−28860
galactic X-ray sources, OSO-7 obs. 8−32600
Galaxy, diffuse soft X-rays distrib. and energy spectrum 8−28853
galaxy cluster, soft X-ray spectra, constraints on models for Coma Berenices and Perseus clusters 8−36702
galaxy superclusters, X-ray emission, Uhuru meas., intergalactic gas 8−41064
GX 13+1 (3U 1811-17), X-ray and radio obs. 8−41081
GX 17+2 (3U 1813-14), X-ray and radio obs. 8−41081
GX 301−2 (4U 1223−62), SAS-3 obs. of 1978 January brightening 8−28858
GX 304−1 (3U 1258−61), discovery of 272 second period var. 8−8152
H1122−59 near Centaurus X-3, new source, MSH 11−54 coincidence 8−28859
H2309+59 near Cassiopeia A, new source, V Cassiopeia coincidence 8−28859
H 1743−32, transient source, detect. 8−45431
HEAO-1 spacecraft, pointed obs. of selected sources 8−7856
Hercules X-1, hard X-ray pulsation obs. 8−12293
Hercules X-1, hard X-ray spectrum, strong cyclotron line emission 8−41085
Hercules X-1, X-ray spectra, Fe line fluoresc. from subrelativistic shell 8−4405
Hercules X-1, X-ray spectrum of pulse 8−8154
Hercules X-1 (HZ Herculis), hard X-ray obs. 8−36728
Hercules X-1 (HZ Herculis), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
AM Herculis, OSO-8 hard X-ray obs. 8−4409
AM Herculis (3U 1809+50), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
high galactic latitude $(|b|>10°)$ X-ray sources, Ariel V (SSI) catalogue 8−32362
HR 1099, RS Canum Venaticorum star, 4U 0336+01 optical counterpart 8−32475
HK Lacertae, RS Canum Venaticorum type variable, soft X-rays detect. 8−45362
LMC X−1, luminous extended X-ray source obs. 8−16570
LMC X-4, discovery of X-ray eclipses 8−24572
LMC X-4, obs. of X-ray eclipses 8−24571
LMC X-4, X-ray variability obs. 8−4398
M42 (Orion Nebula), X-ray obs. by Astronomical Netherlands Satellite 8−28852
MCG 5-23-16, galaxy, X-ray emission detect. 8−41052
MCG -6-30-15, X-ray emission in 2-10 keV range 8−45405
Moon, surface chemistry, weighted-filter imaging technique appl. to X-ray fluoresc., data 8−12124
MR2251−178, X-ray QSO discovery, 2 Ariel 2251−179 optical counterpart 8−24567
MSH 14−63, probable remnant of A.D. 185 supernova, X-ray emission obs. 8−45427
MXB1730−335, rapid X-ray burster, dual charact., X-ray bursts classification 8−32613
MXB1730−335, SAS-3 obs. on 1978 Apr. 15-16, no burst activity 8−49563
MXB 1636−53, X-ray burst source, SAS-3 obs. 8−8156
MXB 1659−29, nearby single burst on 1978 March 8 analyzed 8−36731
MXB 1659−29, persistent X-ray emission obs., (1978 March 6 to 9) 8−41090
MXB 1706−43, X-ray bursts obs. 8−8161
MXB 1728−34, X-ray bursts obs., (1978 March 8 to 10) 8−41091
MXB 1730−335, bursts obs. by SAS-3, 1978 March-April 8−45434
MXB 1730−335, rapid burster, position determ., HEAO 1 obs. 8−49561
MXB 1730−335, rapid burster, search for X-ray bursts, (1978 March 8 to 10) 8−41091
MXB 1730−335, rapid X-ray burster, long-term behaviour 8−32602
MXB 1730−335, SAS-3 obs. of 1978 March burst activity 8−45432
NGC 4151, Seyfert galaxy, Uhuru obs. 8−12411
NGC 4151, Seyfert galaxy, X-ray absorpt. increase 8−12367
NGC 4151 (4U 1206+39), Seyfert galaxy, hard X-ray spectrum 8−49537
NGC 5128 (Centaurus A), X-ray structure 8−24569
NGC 5128 (Centaurus A), X-ray variability, Ariel V Sky Survey obs. 8−16574
nova at $\alpha = 1^h 14^m$, $\delta = +64.4°$, discovery obs. 8−24515
Nova Ophiuchi 1977, X-ray intensity on 1978 Mar. 9 8−40961
Nova Ophiuchi 1977 (H1705−25), X-ray light curve 8−49453
Nova Ophiuchi 1977 (H1705−25), X-ray nova, HEAO 1 obs. 8−49452
NP 0532, Crab pulsar, pulsed X-ray emission obs. during lunar occultation 8−8032
Perseus Cluster, compact and diffuse X-ray sources in core 8−49545
Puppis A supernova remnant, X-ray spectrum and struct. 8−20876
radio quasars, deep search for X-ray emission by Ariel V 8−12402
2S 0114+650, X-ray source discovery obs. 8−12423
2S 1636−536 (MXB 1636−53), X-ray burst source, position 8−12419
2S 1728−337 (MXB 1728−34), X-ray burst source, position 8−12419
2S 1735−444 (MXB 1735−44), X-ray burst source, position 8−12419
Scorpius X-1, linear X-ray polarisation upper limit 8−49557
Seyfert galaxies detected as X-ray sources by Ariel V satellite 8−49540
Skylab photographic X-ray images, analysis 8−49341
SMC X-1, pulse profile and refined orbital elements 8−8148
SMC X-1, spin-up rate meas. 8−41083
SMC X-2, SMC X-3, discovery, hard spectra, high luminosity rel. to galactic X-ray sources 8−49559
SMC X-2 and SMC X-3, variable X-ray sources, SAS-3 obs. 8−20914
soft X-ray background, spatial struct., OSO-8 obs. 8−16580
soft X-ray diffuse background flux, southern galactic hemisphere 8−8170

X-ray astronomical observations continued
solar active region and flare plasmas, electron density from Fe IX lines intensity ratio 8−20771
solar active regions, imaging with Fresnel zone plates 8−49342
solar active regions, open mag. fields 8−28631
solar bright X-ray arcs and mag. flux emergence regions 8−12174
solar corona, activity complex development, Skylab soft X-ray obs. 8−12191
solar corona, Fe XVIII X-ray emission lines, obs. and anal. 8−36542
solar corona, soft X-ray obs. of large-scale active region brightening 8−20806
solar corona, XUV emission lines obs. rel. to Fe abundances and temps. determ. 8−4180
solar coronal hole, birth, Skylab soft X-ray obs. 8−7967
solar coronal hole, physical parameters defining changing struct. 8−20770
solar coronal holes and large-scale structures, plasma parameters from soft X-ray obs. 8−4161
solar flare, 1973 June 15, Hα, magnetic and X-ray morphology 8−4173
solar flare, 1973 June 15, high temp. plasma evolution 8−28636
solar flare, 1973 June 15, multiple loop activations and continuous energy release 8−28637
solar flares, Fe line X-ray emission 8−32426
solar flares, obs. of lines between 171 and 630 Å 8−49406
solar quiet corona, X-ray spectrum of highly ionised O and N 8−45297
solar soft X-ray limb flares from Skylab 8−4164
solar X-ray emitting active region, early evolution 8−28621
solar XUV He I and He II emission lines, intensities and gross centre-to-limb behaviour 8−40888
Sun, comparison of He II 304 Å and He I 10830 Å spectroheliograms 8−20799
Sun, coronal hole evolution by sudden large scale changes 8−40910
Sun, coronal holes and assoc. solar wind, sunspot cycle 20 survey 8−40911
Sun, coronal loops brightened by flares and transients, decay 8−40907
Sun, X-ray emission rel. to solar cosmic-ray intensity preflare enhancements 8−45166
transient events with precursor pulses, SAS 3 obs. 8−49562
transient source in Norma, precise position determ., HEAO 1 obs. 8−49560
transient source in Pictor, HEAO-1 A-2 expt. obs. 8−32607
4U0134−11, galaxy supercluster candidate, no X-rays from hot gas 8−8164
4U 0115+63, transient X-ray source, accurate positions 8−24570
3U 0614+09, case for X-ray burst 8−32610
2U 0832-45, extended X-ray source centred on Vela pulsar 8−41095
4U 1145−61 (HD 102567), X-ray periodicity and orbital motion 8−8160
3U 1538−52, binary X-ray pulsar, orbital elements 8−16573
4U 1608−52, 1977 Oct. decline, all-sky-monitor obs. 8−4412
3U 1626−67, X-ray pulsar, 7.68 sec. periodicity, SAS-3 obs. 8−8157
4U 1630−47, obs. of recurrent transient source 8−41092
4U 1642−45 and 1630−47, X-ray flare detect. 8−12422
4U 1700−37, SAS-3 obs. of 97 minute periodicity 8−36730
3U 1915−05, X-ray burst source discovery 8−8155
4U 1916−79, high-latit. X-ray source, X-ray spectrum and variability 8−32611
Vela X-1, OSO 8 extended obs. 8−49555
Virgo cluster, structure of extended X-ray source 8−4410
white dwarf binary systems, hard X-ray obs. 8−36732
III Zw 2, type I Seyfert galaxy, X-ray emission detect. 8−20895

X-ray astronomy
see also X-ray sources (astronomical)
broad-band X-ray imaging systems, physical parameter method 8−49414
coded aperture imaging with uniformly redundant arrays 8−37812
curved crystal X-ray spectrometer, for HEAO-B satellite 8−49331
diffuse cosmic X-ray component separation in balloon borne meas. 8−28862
equipment, large-area gas scintillation proportional counter 8−49322
extraterrestrial sources X-ray emission meas., equipment on (Salyut-4) 8−28521
galaxy clusters, X-ray line spectroscopy 8−36701
hard X-ray imaging instrument, for solar and cosmic sources 8−49332
HEAO-1 spacecraft, pointed obs. of selected sources 8−7856
HEAO-B, focal plane crystal X-ray spectrom. 8−40825
HEAO-B, imaging proportional X-ray counter 8−40823
HEAO-B, solid state X-ray spectrom. 8−40824
HEAO-B monitor proportional counter instrument 8−40822
HEAO-B spectrometer, high voltage power module and charge amplifier design 8−40826
HEAO-B X-ray telescope, gas control system 8−40827
HEAO-B X-ray telescope, high resolution imaging instrument 8−40821
HEAO-B X-ray telescope, mirror design, fabrication and expected performance 8−49330
HEAO-B X-ray telescope 8−40820
HEAO-B X-ray telescope orbiting observatory, aspect system providing absolute referencing to celestial sphere 8−40791
high resolution imaging X-ray detector, for astronomical meas. 8−49333
high resolution X-ray optics, for astronomical and laboratory sources 8−45766
interstellar soft X-ray photoabsorpt. cross-sections 8−12327
microchannel plate, X-ray quantum efficiency 8−45768
neutron stars, redshift determ. of X- and γ-ray lines rel. to strong principle of equivalence 8−40814
parallel X-ray beam generation, appl. to testing collimators 8−28526
phoswich-type scintillation detector system for X-ray astronomy 8−49328
proportional, low-background counter for X-ray astronomy 8−29705
review, 1960-1980 period 8−49567
review 8−32604
satellite microchannel X-ray image convertors *(French)* 8−24436
scintillation proportional large area gas counter for X-ray astronomy 8−49321
Spacelab facility for X-ray source spectroscopy and polarimetry 8−32314

X-ray astronomy continued
- spectrometer, bent crystal, for solar X-ray spectroscopy 8−7881
- toroidal mirror fabrication for soft X-ray imaging 8−41384
- X-ray imaging, conf., Reston, USA (Apr. 1977) 8−45762
- Au coated surface, reflectivity in soft X-ray range 8−45221

X-ray characteristic temperature *see Debye temperature*

X-ray chemical analysis
- *see also electron probe analysis; X-ray diffraction examination of materials; X-ray fluorescence analysis*
- alloys, liq., composition determination during electron bombardment furnace fabrication, X-ray emission spectrography *(French)* 8−3427
- alpha-induced X-ray emission, thin-layer anal. 8−20132
- automated X-ray microanalysis with electron microprobe and SEM 8−27840
- biological material, proton induced X-ray chem. anal., Fe and minor elements concs. 8−23989
- Black Sea, heavy metal conc. meas. by charged particle induced X-ray anal. 8−24312
- cellulose, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
- diffraction analysis of cryst. powder using exptl. mass absorpt. coeffs. 8−3390
- elemental mapping techniques in microscopic domain 8−24013
- energy dispersive X-ray microanalysis, improved reproducibility by normalization to the background 8−48727
- energy-dispersive X-ray microanalysis, background reduction due to backscatt. electrons 8−20121
- fluorapatite, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
- geological samples, chem. microanal., by X-ray microscopy near absorption edge with synchrotron radiation 8−20527
- iron oxides, core line X-ray photoelectron spectra 8−7263
- microanalysis of electron microscope extraction replicas, steel separations estimation *(Bulgarian)* 8−40012
- mine concentrator appl. 8−35778
- mineral processing isotope on-stream anal. 8−35777
- mullite, quantitative X-ray anal., standardisation, texture *(German)* 8−11176
- multicomponent analysis, computer program using fundamental parameters and empirical coeffs. 8−44416
- Pacific marine aerosol, continental component identification by combined neutron activation and SEM with X-ray anal. 8−3990
- phosphosilicate glass passivation layer P content, SEM analysis and interpretation 8−35759
- photoelectron spectroscopy, factors affecting quantitative determ. 8−7249
- pollution samples, X-ray anal., absolute sensitivity and detection limits 8−7261
- pottery manufacturing techniques, classification by X-ray anal. 8−354
- quartz, quantitative X-ray anal., standardisation, milling effect on degree of disorder *(German)* 8−11176
- review 8−23981
- serum samples, trace element anal., automatic data acquisition, on-line method 8−48726
- solid surface characterisation techniques, review 8−22945
- steel, stainless, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
- thick specimens, proton and electron induced X-ray spectrometry, detect. sensitivities 8−20087
- thin foil, X-ray microanalysis in scanning transmission electron microscope, limitations 8−20122
- thin foil microanalysis using XPS and STEM, surface film effects 8−35789
- thin specimens quantitative analysis, effects of absorpt., fluoresc. and beam spreading 8−35787
- tissue-equivalent materials, low-Z elements, nondestructive determ. by muonic X-ray method 8−44417
- trace element analysis by X-ray emission spectroscopy, excitation modes comparison 8−20113
- water pollution, energy disperion X-ray analysers, evaluation 8−48712
- X-ray microanalysis, in TEM at high accelerating voltages 8−36078
- X-ray spectrometer control, interactive program for data collection, manipulation 8−7312
- β-ray quantitative microautoradiograhy, by X-ray emission microanal. 8−20545
- Cr-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
- Cu whisker, H_2 reduction of CuI, growth mechanism 8−30853
- $CuInS_2$, homogeneity region and intrinsic dopant mechanism 8−34630
- Fe-Ni (3 wt.%) alloys, embrittled, microanalysis of grain boundary segregation using STEM 8−35633
- InSb, film, analysis by attenuation of substrate X-ray fluoresc. 8−27872
- Ni alloy, STEM microanalytical techniques comparison for precip. comp. determ. 8−35790
- Pb compounds identification in urban aerosols, rel. to health hazard 8−44991
- Ve-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
- YIG, energy dispersive X-ray microanalysis, improved reproducibility by normalization to the background 8−48727

X-ray crystallography
- *For results of structure analysis see crystal atomic structure*
- *see also X-ray crystallography apparatus; X-ray crystallography calculation methods; X-ray crystallography technique*
- absorptive single crystal, X-ray refl. coeff. 8−9898
- anomalous transmission at three-wave diffraction (220;202) *(Russian)* 8−34393
- anomalous transmission at three-wave diffraction (220;202) *(Russian)* 8−34394
- book, X-ray optics, appls. to solids 8−42859
- coherence length 8−26388
- computer simulation of topographs 8−30513
- crystallites, Scherrer consts., review and variation with hkl, contour map representation 8−42854
- Debye solid, amorphous and disordered harmonic, struct. factors 8−9954
- dislocation density, rocking curve half-width obtained by double X-ray crystal spectroscopy in single crystal 8−2131
- dynamic symmetry, appl. for interpretation of X-ray diffr. patterns 8−47265
- elastically bent crystal, integrated intensity of Laue diffr. 8−34383

X-ray crystallography continued
- FCC crystal, extrinsic faults, X-ray diffr. matrix intensity eqn. 8−38575
- Fourier transforms of Gaussian orbital products 8−38573
- introduction, structure and structuring of solids, book contrib. 8−42860
- Laue case rocking curves, oscillatory struct. expt. determ., theoretical analysis 8−9899
- Pendellosung fringes, meas. of real part of anomalous scatt. in Si 8−26381
- perfect crystal Bragg case, errors due to Zachariasen approx. 8−38574
- plane-polarised X-rays, coherent splitting, interaction with perfect crysts., synchrotron radiation topography 8−5989
- random stacking model scatt. intensity, appl. to tetrahedrally bonded amorphous semicond. 8−9953
- semiconductor film, X-ray diffraction in thin cryst. with linear variation of lattice period 8−26373
- spherical X-ray wave, dynamics theory of diffr. 8−26372
- square-section parallelepiped, primary extinction 8−38572
- Si, X-ray linear absorption coeff. 8−26384

X-ray crystallography apparatus
- *see also goniometers; X-ray diffractometers; X-ray monochromators*
- aberrations correction, expt. criteria for use of deconvolution methods 8−18492
- automated diffractometers, free specimen selection and angular marking synchronization 8−18496
- back-reflexion camera 8−32962
- camera, 10 cm diam. back-reflexion focusing, design and fabrication 8−18489
- camera, Kossel X-ray technique, for obtaining crystallographic data in the SEM 8−34391
- camera, low-angle, monochromatisation of primary beam on Borrmann principle 8−5985
- camera for orientation of large monocrystals 8−22600
- cassette for synchrotron topography, automated 8−18494
- convergent beam camera for struct. anal. of microcrystals 8−22602
- cooling, gas stream method 8−219
- crystal cooling device with heat exchanger 8−42850
- diamond anvil high-press. X-ray cameras, uniaxial stress component 8−38584
- diamond-anvil high-pressure cell, for X-ray diffraction studies 8−30514
- diffractometer, automatic triple-crystal, precision meas. of Bragg and Huang intensity distribs. 8−18491
- high brilliance sources and generators, soft and pulsed X-ray generators, book contrib. 8−42861
- high-pressure X-ray diamond-anvil cell, improved beryllium diamond support 8−30515
- Lucke texture goniometer with computer control X-ray pole figure plotting appl. 8−18500
- microfurnace for single-crystal diffr. meas. 8−32817
- multi-anvil apparatus for high press. X-ray diffr. 8−1950
- sample holder for diffractometric studies of specimens with curved surfaces 8−22601
- small-angle X-ray scattering camera, ORNL 10-metre 8−32961
- spectrometer, with diffractional focusing 8−5988
- synchroton radiation source and multichannel detector 8−47210
- TV system for polymer deform. obs. 8−15610

X-ray crystallography calculation methods
- absorption corrections in diffractometry of single cryst., cryst. shape and size determ. 8−1954
- absorption-extinction correction technique 8−9903
- alignment correction when calculated adjustment exceeds allowed movement on one arc 8−18495
- anisotropic temperature factors, anharmonic motions 8−9902
- atomic scattering factors from Patterson syntheses 8−18498
- Bragg reflections, profile measurement analysis 8−42855
- charge density analysis techniques, appl. to s-triazine 8−38578
- charge numbers-bond orders determ. from diffr. data 8−14306
- collagen triple helical struct. study using Fourier transform 8−7318
- coordinates calculation from distance information 8−38581
- deformation density and valence density maps, errors, scale factor contrib. 8−38580
- deformation density model of multipole terms, appl. to diamond 8−38656
- diffraction and spectral line breadth, anal. method using Voigt function 8−34387
- diffractometer line profile location in X-ray stress anal. 8−5711
- direct methods, use of centric projections 8−9900
- divergent beam diffr. phenomena, computer generation of identification 8−30520
- double Patterson function of first kind, false maxima in struct. locating cross sections 8−47202
- double reflection peaks, indexing methods 8−38586
- elastic X-ray scattering from solids containing non-rigid pseudoatoms 8−26378
- electron density analysis, exponent refinement, appl. to melamine 8−38579
- electron distribution models, appl. to Si 8−38657
- fine structure characteristics of polycrystalline materials, problem of accurate calc. by central moments method 8−5984
- generalised temperature-factor formulation , with appl. to CdS and other wurtzites 8−26383
- generalized inverse matrices 8−9910
- imperfect solids, anal. of X-ray diffr. profiles, appl. of convolution relations 8−34386
- instrumental aberrations correction, expt. criteria for use of deconvolution methods 8−18492
- Jacobi polynomial, augmented, sign 8−22599
- least squares, full matrix and block diagonal refinement 8−26375
- least squares analysis, method for optimizing relative weights 8−9909
- linked-atom least-squares reciprocal-space refinement system, LALS, incorporating stereochemical restraints 8−26377
- liquid crystal, X-ray structural analysis, computer program for analysing expt. data 8−1956
- microstrain values from diffr. line profiles, error correction procedure 8−14244
- monoclinic substances, trial and error indexing program for powder patterns 8−34390

X-ray crystallography calculation methods continued
mosaic crystal, polarisation of diffracted X-rays, Stokes parameters *(French)* 8−9907
multiple-solution direct methods, appl. of magic integers 8−34384
Patterson maxima shape calc., program in AKIT 8−5987
Patterson vectors in centrosymmetric crystals, symbolic method for identification 8−1952
phase relationships, appl. to complex struct., choice of reflexions 8−26380
phase relationships, appl. to complex struct., use of magic integers in phase determ. 8−26379
phase relationships, method of representations 8−9904
polycrystalline materials, phase analysis data, algorithmic processing 8−1953
polytypic structure with stacking faults, anal. by X-ray powder patterns 8−38577
powder diffraction patterns of heterogeneous materials, program for separating high-symmetry components 8−1955
quintets in P$\bar{1}$ and related phase relationships, probabilistic theory 8−9905
quintets use in direct procedures 8−9906
reciprocal lattice construction, Weissenberg photographs, axial coords. of diffr. spots 8−5983
refining the phases of structure amplitudes, automated procedure 8−26376
reflection set generation, computer program 8−18485
reflection sets, unique, computer program for generation, for all space groups 8−18501
residual stress anal., computer controlled, software, precision 8−5712
slit-height correction in small-angle scatt. without spherical symmetry, numerical calc. 8−18490
small angle data, least squares method for evaluation without desmearing 8−42851
small angle scattering, slit-height correction, exact soln., general method 8−42852
small angle scattering, slit-height exact soln., arbitrary slit transmission functions 8−42853
structural fragments located by digital computer on basis of interatomic vector functions, automatic anal. 8−1947
structure amplitudes, data averaging 8−47211
structure factors from electron density, test on model crystal 8−47204
structure factors from electron density distrib., theoretical foundations 8−47203
structure invariant phase probability, von Mises distribution 8−9901
structure-factor residuals, statistical analysis 8−1948
texture analysis, numerical calc. of generalised spherical harmonic function *(French)* 8−18484
texture analysis by vectorial method *(French)* 8−18483
$Rb_2O.SrO.4B_2O_3.12H_2O$, real Patterson function determ., method of rhombs. 8−5986

X-ray crystallography technique
alloy powder, plasma remelting, spherical monocrystals for X-ray work obtained 8−47205
applications in industrial research *(Hungarian)* 8−18486
crystallite size distributions, from X-ray line profile anal., smoothing and validity 8−34389
diffraction pattern recording on photographic film, student expt. 8−41130
diffuse scatt. of X-rays by single crysts, appl. to semiconductor mixed crysts. *(German)* 8−30517
dislocation image contrast, elastic anisotropy influence, appl. to feldspars 8−26573
electronic stationary picture method for cryst. with large unit cell 8−38582
energy-dispersive diffraction, preferred orientation influence 8−22603
energy-dispersive diffractometry, influence of incident beam polarisation on integrated intensities 8−26382
energy-dispersive diffractometry, optimum resolution 8−42857
energy-dispersive diffractometry using synchrotron radiation 8−18487
epitaxial film, X-ray topographic measurement, local variations in spacing and orientation of lattice plane *(Japanese)* 8−38585
extended growth defect characterisation, review 8−30649
extended X-ray absorption fine structure using real space transform, struct. determ. technique 8−23553
extinction elimination by temp. gradient 8−38583
fibrous polymers, crystallinity and crystallite size meas. 8−30549
high pressure X-ray diffraction *(Chinese)* 8−26385
high temperature-high pressure X-ray diffr. study, appl. to press. calibration above 100 kbar *(Japanese)* 8−24809
interferometry, principles, techniques and appls., book contrib. 8−42862
Kossel diffraction application developments for SEM 8−34405
Kossel X-ray technique, for obtaining crystallographic data in the SEM 8−34391
lattice deformation determ. from X-ray Pendellosung fringes 8−18499
live topography, diffr. pattern on TV screen, book contrib. 8−42864
magnetic domains observed by X-ray topographic technique in antiferromag. fluorides 8−14981
monochromation using ω/θ scan 8−9908
orientation of single cryst., diffractometer technique 8−42856
particle size meas. of crystallites in soln. by line-broadening meas. 8−18488
phase analysis of minority phases *(German)* 8−26387
plate crystal, simple procedure to vary effective radius of curvature 8−42858
polycrystals, problems of X-ray determ. of dislocation density from one diffraction line *(German)* 8−2129
powder intensity measurements, struct. factors accuracy 8−9911
quantitative diffraction analysis of cryst. powder using exptl. mass absorpt. coeffs. 8−3390
reciprocal lattice construction, Weissenberg photographs, axial coords. of diffr. spots 8−5983
reciprocal space limitations, chart of accessible regions for limited beam-crystal surface angle 8−18493
section topography, cryst. dislocation and planar defect images, book contrib. 8−42863
small-angle scattering of particles and micron-range structures, appl. to erythrocytes *(German)* 8−35812
spherical crystal marking for identical remounting 8−18497

X-ray crystallography technique continued
structure factor phase and intensity correlation, Goldberger technique evaluation, 2D 8−34392
texture, crystallographic, meas. by X-ray diffr. 8−22604
topography, oscill. technique for cryst. coarse perfection investigs. 8−30518
very perfect crystals, topography and goniometry 8−30516

X-ray detection and measurement
see also dosimetry; X-ray spectrometers
area photon detectors evaluation using detective quantum efficiency method 8−37519
Baldwin-Farmer chamber response at mammographic energies 8−28040
bone-seeking radionuclide skeletal burden determ. from in vivo scintillation meas. of head 8−15915
calorimeters, for meas. of ions, X-rays and scattered radiation in laser-fusion expts. 8−16800
cavity chamber, model for determ. of ionisation when exposed to soft X-rays 8−17482
coded aperture imaging with uniformly redundant arrays 8−37812
computed tomographic reconstruction noise, effect on detectability 8−40296
curved crystal X-ray spectrometer, for HEAO-B satellite 8−49331
differential energy absorpt. X-ray cassette, radiographic image contrast enhancement 8−20264
dosimeter, for routine meas. with X-ray therapy equipment between 10 and 250 kV 8−28084
dosimeter, low-energy, direct-reading, correction factor energy depend. 8−24144
EAS arrival direction distributions 8−28471
energy deposition measurement by thin film resistors 8−29719
extraterrestrial sources, X-ray emission meas. equipment on Salyut-4 8−28521
Farmer ionisation chamber, absorbed dose conversion factors C_λ and C_e 8−40341
film, versatile X-ray detector 8−45763
gas scintillation procortional counter, burst length discrimination system 8−21824
hard X-ray imaging instrument, for solar and cosmic sources 8−49332
high resolution imaging X-ray detector, for astronomical meas. 8−49333
inert gas photoelectron counter, XUV intensity meas. 8−32842
laser-fusion diagnostics, subpicosecond X-ray streak camera 8−42822
leakage radiation meas., effective energy determ. 8−28089
microchannel plate, response to hard X-rays 8−47181
microchannel plate, X-ray quantum efficiency 8−45768
optical/X-ray framing camera tube 8−37121
pattern, recognition with spatially modulated X-rays 8−45761
penetrameter cassette calibration to 400 kV and extra-focal radiation effects in X-ray tube filtration meas. 8−20242
phoswich detector for ^{147}Pm in-vivo meas. 8−28087
picosecond X-ray chronoscopy 8−38546
position sensitive detectors, read-out systems *(Japanese)* 8−33397
position sensitive X-ray detector 8−12800
powder diffractometer proportional counter detector system, digital read-out 8−4751
proportional counter, wall effect elimination, method 8−4753
proportional counter design and characts. *(Polish)* 8−41388
proportional counter with slight pulse amplitude shift for X-ray fluorescence anal. *(German)* 8−46213
radiography, exposure meas., energy depend. of correction factors for Victoreen 570 Condenser R-meters 8−3597
radiography instrument calibration, energy depend. of correction factors for Victoreen 666 Survey System 8−3596
radioisotopes low energy radiation meas. by X-ray detector, absolute method 8−878
semiconductor radiation detector, cooled preamplifier systems *(Slovak)* 8−21813
soil samples, meas. trace radionuclide L X-ray detection 8−49020
solid state electrophotographic imaging with ionic dielectric X-ray receptors 8−16899
spectrograph for single pulse detection 8−846
streak camera, high time resolution, with X-ray microscope *(French)* 8−42823
subnanosecond X-ray framing camera, fibre array technique 8−41394
TLD, energy and directional response of Harshaw TLD-100 in diagnostic X-ray range 8−11738
transition radiation spectra from polyethylene foam interfaces, particle discrimination 8−21805
ultrafast scintillators, response 8−41393
wave train length meas. with three-beam case interferometer 8−21310
X-ray imaging, conf., Reston, USA (Apr. 1977) 8−45762
xeromammography exposure timing 8−40291
$CaSO_4$:Tm composite TLD for γ-rays, X-rays, β-rays, and thermal neutrons 8−28076
Ge(Li) detector, comparison with Ge(Li)-NaI(Tl) Compton suppression spectrometer for low level activity meas. *(Slovak)* 8−21814
Ge(Li)-NaI(Tl) Compton suppression spectrometer for low level activity meas., rel. to Ge(Li) detector *(Slovak)* 8−21814
HgI_2 in vivo medical probe, DC and pulse counting meas. 8−44593
HgI_2, photoelectronic props. 8−41897
^{123}I two-crystal coincidence counting 8−13394
LiF TLD for radiotherapy dosimetry in accordance with section 13 of X-ray regulations *(German)* 8−20289
LiF TLD response to high-energy X-rays and electrons rel. to ^{60}Co photons 8−40332
Pu-Am survey instrument, β-α-γ-X-ray scintillation detect. probe 8−33376
Si(Li), relative photoionisation determ. from X-ray meas. 8−33369
Xe filled gas scintillation proportional counter in space environment, background radiation rejection efficiency 8−21819

X-ray diffraction
see also X-ray crystallography; X-ray diffraction examination of materials; X-ray diffractometers; X-ray scattering
strain meas., non-destructive testing method *(French)* 8−15626

X-ray diffraction examination of liquids
see also liquid structure
acetonitrile, mol. pair-correl. function, X-ray and neutron diffr. 8−26420

X-ray diffraction examination of liquids continued
- benzene X-ray diffr. pattern and liq. models using C-H group scatt. factors 8−6004
- binary melts, short-range order, X-ray and neutron scatt. *(German)* 8−14272
- t-butanol-water, X-ray scatt. intensity composition depend., soln. struct. 8−6005
- chloroform, X-ray diffr., struct. of mol. in liq. 8−26421
- cholesteryl acrylate, mono- and polymer, liq. cryst. order 8−9942
- cholesteryl methacrylate, mono- and polymer, liq. cryst. order 8−9942
- cholesteryl p-acryloyloxybenzoate, mono- and polymer, liq. cryst. order 8−9942
- collimation distortion, effect on diffr. curves 8−34388
- α,ω-diarylperfluorpolienes, X-ray spectra, phase transition temp. depend., struct. and mesomorphic props. *(Russian)* 8−38621
- HBT, liq. cryst., phase transitions, quenching effects obs. 8−22833
- 4-n-hexyloxybenzilidene-4′-n-propylaniline, liq. cryst. phases, thermal and structural studies 8−1989
- HxBPA smectic phases, X-ray diffr. and Raman spectra 8−6012
- liquid crystal, X-ray structural analysis, computer program for analysing expt. data 8−1956
- methanol, Compton profile meas., non-additivity of elastic and inelastic X-ray scatt. 8−43953
- octyloxycyanobenzylidene, smectic A, anomalous ordering, Landau-Peierls system 8−30538
- poly(ethyleneterephthalate)-p-hydroxybenzoic acid copolyester, liquid crystalline, X-ray scatt. obs. 8−9949
- poly(n-dodecyl L-glutamate), thermotropic polymorphism, low-angle X-ray diffr. *(French)* 8−34601
- water, Compton profile meas., non-additivity of elastic and inelastic X-ray scatt. 8−43953
- X-ray scatt. intensity composition depend., soln. struct. 8−6005
- $AgNO_3$, molten, X-ray diffr. structural anal. 8−42887
- Ar, liq., struct. determ. by X-ray diffr., pair pot. calcs. 8−6003
- Au-Co, liquid alloys, struct. determ. by X-ray diffr. 8−6006
- Bi, struct. factor, interat. interaction pot., X-ray diffr. obs., 280-800°C *(Russian)* 8−14270
- CaO-SiO_2, molten binary, X-ray exam. of struct. 8−38610
- Cd, small-ang. X-ray scatt., at. microgrouping depend. *(Russian)* 8−14271
- CeO-SiO_2, molten and glassy state, X-ray diffr. determ. of struct. *(Japanese)* 8−9936
- $CsNO_3$, molten, X-ray diffr. structural anal. 8−42887
- Fe^{3+}-Fe^{3+} distances, in aq. NO_3^- and ClO_4^- solns., from small-ang. X-ray diffr. maxima 8−42880
- $Fe(ClO_4)_3$, soln., struct., X-ray scatt. obs. 8−34421
- Ga, X-ray diffr. exam. of struct. at 203 and 323K *(French)* 8−14268
- ^4He, structure factor, momentum transfer meas. 8−22912
- In, direct pair correl. function 8−38613
- In, small-ang. X-ray scatt., at. microgrouping depend. *(Russian)* 8−14271
- KNO_3, molten, X-ray diffr. structural anal. 8−42887
- $LiNO_3$, molten, X-ray diffr. structural anal. 8−42887
- methanol-water mixture, Compton profile meas., non-additivity of elastic and inelastic X-ray scatt. 8−43953
- Mg-Bi (30 at.%), molten, short range order and partial struct. factor, neutron and X-ray diffr. 8−9941
- Mg-Cd melts, atomic struct., short range order and melting *(German)* 8−14273
- MgO-SiO_2, molten binary, X-ray exam. of struct. 8−38610
- NH_4NO_3 conc. aqueous soln., X-ray scatt., NO_3^--H_2O interactions 8−42881
- NaCl, aqueous soln., Lennard-Jones parameters, mol. dynamics and X-ray obs. 8−9939
- $NaNO_3$, molten, X-ray diffr. structural anal. 8−42887
- Ni-P, molten alloy, struct., X-ray scatt. 8−22640
- $NiCl_2$, aq. soln., diffusion and struct. 8−14488
- Pd-Ni(Si), melt, struct. and physical-chemical props., thermodynamic props. *(Russian)* 8−18536
- $RbNO_3$, molten, X-ray diffr. structural anal. 8−42887
- Sn, small-ang. X-ray scatt., at. microgrouping depend. *(Russian)* 8−14271
- TBBA, liq. cryst., evidence for cybotactic cluster pretransition formation, X-ray diffr. meas. 8−10179
- TE, small-ang. X-ray scatt., at. microgrouping depend. *(Russian)* 8−14271

X-ray diffraction examination of materials
- *for results of crystal structural analysis see crystal atomic structure*
- *see also X-ray chemical analysis; X-ray diffraction examination of liquids; X-ray diffraction examination of microstructure; X-ray diffraction examination of molecular structure*
- acrylonitrile-vinylacetate(styrene) copolymer films, gas permeation, chem. struct. effects *(Japanese)* 8−31691
- aliphatic-aromatic block copolyamides, synthesis, struct. and dynamic viscoelasticity, DTA and X-ray anal. *(Japanese)* 8−31377
- alkali metals in graphite, organic molecule effects, aromatic hydrocarbons *(French)* 8−27433
- alloys elastic const. meas. technique 8−7164
- Armco iron specimen, elastic const. meas., X-ray diffr. technique 8−5714
- badde-leyite-corundum refractories, qualitative X-ray phase anal. 8−7112
- benzalazine, thermal expansion, lattice consts. meas. 8−47539
- brass, cold worked, surface composition anal. oxidation, sulphidation by X-ray photoelectron spectroscopy 8−11423
- brass coated steel wire, surface composition, oxidation, sulphidation, study by XPS 8−11423
- carnauba wax thermoelectrets crystallite orientation, X-ray diffr. obs. 8−43774
- cement, hot pressed, type III, role of admixtures on pastes and H_2O cured cement, exam. 8−44073
- ceresin wax magnetoelectret, X-ray diffr. pattern 8−6014
- charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
- cholesteryl acetate, phase transitions and solid polymorphs 8−2255
- collagen fibril, probabilistic aspects of struct. 8−27886
- collagen triple helical struct. study using Fourier transform 8−7318
- cordierite, thermal expansion 8−6165
- cotton fibres, specimen clamps for X-ray angle-tensile meas. 8−4603
- 1,2-dipalmitoylglyceride, DTA and X-ray diffr., polymorphism *(French)* 8−43008

X-ray diffraction examination of materials continued
- erythrocytes, X-ray small-angle scatt. *(German)* 8−35812
- ethylene oxide, cryst. symmetry, X-ray diffr., far IR and Raman spectra 8−35123
- ethylidene-N,N′-diacetamide, interpretation of X-ray diffr. patterns, applic. of dynamic symmetry 8−47265
- fluorochloroapatite, synthetic, defect struct. and colour centres obs. *(Russian)* 8−30612
- glass workpiece, US drilling, structural alterations 8−48555
- graphite, electrochemical insertion of $BF_3(C_2H_5)_2O$ *(French)* 8−27438
- graphite intercalation compounds with K and tetrahydrofuran *(French)* 8−26692
- graphite nitrate, structural ordering in intercalation compounds 8−26539
- graphite nitrate intercalate, X-ray obs. *(French)* 8−27440
- graphite-alkali metal-benzene ternary intercalation compounds thermal and X-ray anal. *(French)* 8−27434
- graphite-metal chloride intercalation compound, reduction 8−27821
- n-hexatriacontane, cryst. struct., γ-ray effects obs. 8−43048
- ice, cryst. Ic and Ih phases, diffr. patterns and far IR spectra, isotope effects 8−6662
- III-V epitaxial pseudobinary compounds, lattice deform. determ. by X-ray diffraction 8−6242
- ilvaite, Fe temp. depend. oxidation states, electron hopping, Mossbauer spectra, X-ray diffr. obs. 8−2779
- lecithin cryst. growth rel. to mol. bilayer props. 8−31780
- manganese stearate monolayer, two-dimensional mag., prep. and characterisation 8−31097
- mica, defects effect on epitaxial film struct. 8−26794
- minerals, thermal annealing of ion tracks 8−20604
- montmorillonite, physicochemical and engineering props., k-fixation effect *(Japanese)* 8−31366
- muscle, myosin subfragment-1 attachment to actin, effect on equatorial X-ray refls. 8−27880
- naphthalene, mag. polarised electret, X-ray diffr. obs. 8−43775
- nematic binary mixture, smectic phase form. 8−26670
- nickeliferous limonites, pressure leaching for Ni extraction, using H_2SO_4 8−39717
- nylon II, high-press. X-ray structural study 8−14296
- olivines, lunar, Weissenberg photographs, reciprocal lattice from diffr. spots 8−5983
- p-n junction struct., X-ray topography visualisation during prep. *(Russian)* 8−26386
- perovskite, Re containing, new seignettomagnets and ferroelectrics 8−19425
- poly(N-vinylcarbazone), charge transport and struct., bromination effect 8−11516
- poly-m-phenylene isophthalamide-ε-caprolactam, complex polymer cryst. 8−9967
- polycarbonate, highly hot-drawn, mechanical prop. and phys. struct. changes 8−14293
- polycrystals containing defects with Coulomb displacement fields, X-ray scatt. *(Russian)* 8−38576
- polydioxolan, crystallisation, morphology and melting props. 8−14297
- polyethylene, amorphised by γ-irrad., interchain ordering, X-ray obs. 8−30545
- polyethylene, fibrous samples, struct. obs. by low-angle X-ray diffr. 8−34445
- polyethylene, high density, solid-state extruded, pole figure anal. 8−18556
- polyethylene, linear, cold-deformed, texture and molecular chain mobility 8−19805
- polyethylene, observation of deformation process with X-ray TV system 8−15610
- polyethylene cryst., unit cell variations with temp. and high press. 8−47250
- polyethylene films, uniaxially and doubly oriented, crystallite size determ., microparacrystallite lamellar surface identification 8−48431
- polyethylene high press. phase, struct., phase diagram and compressibility 8−9961
- polyethylene terephthalate film, X-ray diffr. exam. of morphology 8−18558
- polymer, amorphous, bulk, structure models and exptl. methods, review 8−22671
- polymer, shear-induced crystallisation, optical study 8−14289
- polymeric materials, stress meas., X-ray diffr. technique, review 8−5713
- polypropylene, isotactic, shear induced β-form crystallisation 8−18555
- polystyrene, soln. grown isotactic crystals, degree and distrib. of crystallinity, thermal stability 8−9964
- polystyrene, solution grown isotactic crystal, thermal change kinetics study by X-ray diffr. 8−9965
- polyvinylidene fluoride, direct obs. of cryst. transform. process under high press. 8−38630
- polyvinylidenefluoride melting and freezing rel. to structural factors *(German)* 8−15389
- polyvinylidene fluoride, poling by corona charging, pyroelec. effect 8−19423
- polyvinylidene fluoride X-ray diffr. pattern changes due to corona charging 8−14285
- PTFE, struct. effects in stress-strain relations at elev. temps. 8−31484
- pyrochlore, high temperature chlorination 8−11180
- quartz, hydrothermally grown single crystals, real struct. investig. of rhombohedral faces *(German)* 8−2348
- quartz, impact structs., peak shock press., X-ray diffr. investig., lunar rock bombard. appls. 8−7002
- rare earth compounds, $R_2V_2O_7$, (R=Tm, Yb, Lu), physical props. 8−39320
- rare earth intermetallic, RNi_4AlH_x, Hz absorpt. and cryst. struct. of hydride 8−34487
- residual stresses in thin specimens, layer-by-layer X-ray diffr. analysis, additional strains and corrections 8−39964
- residual stresses rel. to grinding and cutting directions, X-ray diffr. obs. *(Japanese)* 8−23847
- rhombic distortion of cryst. lattice at low temp. 8−2253
- sapphire, Czochralski crystals, formation of low angle grain boundary macrostruct. 8−47392
- sarcoplasmic reticulum hydrated oriented multilayers, lamellar X-ray diffr. 8−11614
- single-phase domain boundary identification by X-ray diffraction line broadening 8−1949
- sintered frictional material, environmental effects on props. 8−11338

X-ray diffraction examination of materials continued
sodium acetate trihydrate, whisker growth on membrane in aq. soln. 8−30854
β-spodumene-mica glass ceramics, phase evolution and TiO_2, MgF_2 additive effects, exam. 8−44089
sputtered coating, oxidation during metallic sputtering in inert atm. with uncooled cathode 8−3041
stacking fault X-ray topograph, computer simulation 8−30513
steel, 1045, elastic const. meas., X-ray diffr. technique 8−5714
steel, austenitic, hydrogenation effect, different stability characts. 8−35383
steel, C, X-ray diffraction correlation between cyclic loading and residual stress *(German)* 8−48583
steel, carbon, fastener holes, cold-worked, residual stress meas. 8−7163
steel, HSLA control-rolled, surface residual stress meas., X-ray diffractometer 8−5716
steel, Ni-Mn (16, 2 wt.%), 40N16G2, single crystal, stabilisation and destabilisation mechanisms *(Russian)* 8−23732
steel, stainless, hydrogenation different stability characts. 8−35383
steel, transformers, inhibitory phase *(Russian)* 8−3139
steel cylinder, electrodeposition internal stress meas. 8−27693
stress measurement by counter method, statistical anal. 8−27694
stress/strain distrib. meas. inside plastic zone of notched sheet, fatigue crack propag. *(Japanese)* 8−6981
Tanane, ferroelec. ferroelastic transition, X-ray and optical expts. 8−15110
1T-TaS_2, nearly commensurate phase, harmonics effect on phase transitions 8−14462
TCNQ-HMTSeF, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
telechelic polybutadiene-methacrylate acid copolymers, X-ray study *(French)* 8−18553
TGS, domain boundaries, X-ray topographic study 8−48136
thin film characterisation 8−22991
thiourea-cyclohexane inclusion compound, crystal, low temp. diffr. pattern, atomic structure determ., phase transitions 8−31116
transition metal-W-O system, phase relations in dioxide-trioxide region, 1373K 8−11212
transition metals, Y to Pd, intensities measured in temp. range 100 to 370K 8−18731
TSeF-TCNQ, X-ray diffuse scatt., one-dimens. distortion in phonon spectrum and interpret. 8−10144
TTF_x $TseF_{1-x}TCNQ$ solid soln., DC conductivity, struct. 8−10423
TTF-TCNQ, Kohn anomaly and Peierls-type transition, X-ray obs. 8−14435
TTF-TCNQ, low-temp. modulated lattice, Peierls distortion, Kohn anomaly 8−10033
TTF-TCNQ, neutron and X-ray diffuse scatt., phase transitions, one-dimens. behaviour and interpret. 8−10381
TTF-TCNQ, X-ray exam. of 2k and 4k anomalies 8−10162
vitreous china, crazing tendency, rel. to thermal expansion and quartz and cristobalite content *(Japanese)* 8−44243
X-ray scattering from small defects in very perfect crysts. 8−47395
Zircaloy-2 tubing, quantitative charact. of crystallographic texture 8−21647
$[Ni(NH_3)_6](ClO_4)_2$, X-ray powder diffr. exam. of enantiomorphic transitions 8−2054
Ag film, vacuum-deposited, removed from substrate, internal strain *(Japanese)* 8−22872
Ag ion plated film on permalloy, Cu and Vicalloy substrate, AES, SEM and X-ray study *(Japanese)* 8−11128
Ag-Ge, thermal expansion, X-ray determ. 8−26697
$Ag_xAu_{1-x}Zn$, resistivity and X-ray diffr. 8−47283
AgI-HgI_2, solid electrolyte, ionic and electronic cond., phase composition determ. 8−2296
$AgInS_2(Se_2)$-$SnS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
$Ag_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
Ag_2O, thermal expansion, lattice parameter determ., 150-250K 8−2267
Al alloy, residual stress relax. rel. to temp., load cycling, aircraft struct. appl. 8−7053
Al electrolytes, X-ray determ. of cryolite ratio 8−3417
Al, powder, X-ray at scatt. factors at 80K 8−2065
Al-Cu-Zn alloy, ageing, X-ray and electron diffr. meas. *(Russian)* 8−39806
Al-Ge (0.2 at.%), exam. of interstitial trapping by X-ray diffuse scatt. 8−47363
Al_2O_3 anodic oxide film colour and structure obs. 8−11450
$Al(OOH)_3$, formed by reaction of methyl esters and $Na_2Al_2O_2$, exam. of props. 8−48346
Al_2SiO_5, solid state reaction with $Ca_2P_2O_4$ *(Japanese)* 8−19702
Ar, solid, lattice parameter determ. at melting 8−10174
B_2O_3-NaF-$NaBF_4$, crystalline compounds and glasses 8−11210
BaF_2-YF_3 system, phase diagram 8−35363
$BaHPO_4$, high temp. conversion to $Ba_2P_2O_7$, X-ray diffr. meas. 8−44371
$Ba_3Nb_{10}O_{28}$, diffuse ferroelec. phase transition, dielec. const. and X-ray diffr. meas. 8−23419
BaO-TiO_2-Cr_2O_3, new compound, phase relations *(Japanese)* 8−6911
(BaSrCa)O, cathodes, thermionic emission characts., X-ray struct. obs. 8−48270
$BaTiO_3$, surface layer exam. 8−43805
$BaZrO_3$, cryst. growth and thermoluminesc. *(Russian)* 8−23604
Be_4TeO_7, cryst. growth by solid-state reaction and struct. *(German)* 8−18603
Bi film, vap. deposited, effect on deposition parameters and substrate condition on crystallinity 8−10290
Bi, low-temp. phase diagram, using diamond anvil pressure cell and X-ray diffr. 8−1951
C, amorphous, X-ray and electron diffr. intensities, model struct. 8−26441
$C_{12.6}AuCl_3$, intercalation compound, struct. *(French)* 8−42982
CaF_2, polished crysts., rocking curve meas. *(German)* 8−2347
CaO-B_2O_3-Fe_2O_3 glasses, effect of heat treatment on electronic props. 8−2480
$3CaO.Al_2O_3$-$CaSO_4.2H_2O$-CaO-H_2O, citric acid effect on reactions 8−27725

X-ray diffraction examination of materials continued
$ZCaO.SiO_2$-$2CaO.Na_2O.P_2O_5$ system, polymorphism and solid soln. 8−19731
Cd_3As_2, vapour phase single cryst. growth, X-ray topographic obs. of perfection 8−9976
$CdGe_{1-x}M_xAs_2$ (M=Si,Sn,Pb), (x=0.0,0.1,0.2), amorphous struct. 8−22651
$Cd(OH)_2$ decomposition, martensitic character of struct. transition, CdO crystallite shape determ. *(French)* 8−10194
CdS film, on Si, structural and transport props. 8−6463
CdS:Cu(Se)(Zn), heavily doped, defect struct. 8−22756
CdSe (1120), surface electronic struct. and chem. struct. 8−14788
CdTe, grown by chem. transport, morphology, struct. and microhardness *(Russian)* 8−22729
$CeNbO_{4+x}$, oxidation-reduction reactions 8−39930
Ce_3NbO_x, $CeNbO_x$ and $CeNb_3O_x$, redox processes, elec. resist., phase anal., mag. suscept., thermogravimetric meas. 8−34482
CeO-SiO_2, molten and glassy state, X-ray diffr. determ. of struct. *(Japanese)* 8−9936
$CeTaO_{4+x}$, oxidation-reduction reactions, phase equilibrium, thermogravimetry and magnetic susceptibility meas. 8−39930
Co-CoAl eutectic, invariant composition redeterm. 8−3099
Co-Cu, electrodeposited alloy, struct. and physicochem. props. 8−35327
Co-Ti, multilayer and imperfect martensitic phases form. 8−19754
CoB-based boride coatings on Co base alloys, microstruct. and mech. props. 8−11427
$Co_{75}Si_{15}B_{10}$, amorphous, crystallisation study *(Japanese)* 8−9959
Cr-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
Cr-Pt alloy, mag. props., effect of atomic environment 8−23247
Cs graphite, structural ordering in intercalation compounds 8−26539
Cs_2NpBr_6, prep., cryst. struct. and enthalpy of formation 8−10014
$Cs_9(XeO_3Cl_2)_4Cl$, neutron and X-ray diffr. struct. determ., Xe-Cl bonding 8−30591
Cu, self interstitial struct. determ., and vacancy clustering, X-ray exam. 8−47351
Cu, stress strain anal. of single crystal induced by absorbed H_2 *(Japanese)* 8−11276
Cu-Ge, thermal expansion, X-ray determ. 8−26697
Cu-Ni-Sn, thermal decomposition after prior cold work 8−15427
Cu-Sb alloy, splat-quenched, energy dispersive X-ray diffr. 8−23728
Cu-Ti (Zr), strength improvement by thermomechanical treatment *(Japanese)* 8−48426
β_1-Cu-Zn mixed crystal, metastable structural Umklapp process, isothermal phase transform. *(German)* 8−22798
Cu-Zr (50 or 54 at.%), splat-quenched, glass transition and crystn. temps. determ. 8−22659
Cu_3Au, ordering process, cluster size evolution 8−39766
$Cu_3Au(-xCo)$, x=0.64 and 1.5 at.% Co, LRO 8−18584
CuCl, anharmonic thermal vibr. X-ray diffr. exam. 8−30728
$CuInS_2$, homogeneity region and intrinsic dopant mechanism 8−34630
$CuInS_2(Se_2)$-$GeS_2(Se_2)$, degree of solid solubility and phases characts. 8−35377
$Cu_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
CuO-Ag film solar absorbers, mechanism of high-temp. instability 8−22971
$Cu_{60}Zr_{40}$, stability, crystallisation, ductility meas. 8−47246
EuO:Yb(Sm), electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
Eu_2O_3-Y_2O_3-Ta_2O_5, struct., phase form., luminesc. and X-ray diffr., obs. *(Russian)* 8−6765
EuPd, mech. of H absorption, Mossbauer, mag. and X-ray diffr. meas. 8−38846
$EuRh_2$, mech. of H absorption, Mossbauer, mag. and X-ray diffr. meas. 8−38846
EuS:Yb(Sm), electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
(Fe, Ni, Co)-Si-B, amorphous, compositional effect on struct. changes, after heating up to 700°C, exam. *(Japanese)* 8−48433
Fe, bonding of Al, growth of intermediate phases, effect of O and N impurities 8−27680
Fe, nitrided, X-ray and Mossbauer study of surface 8−48568
Fe powder, passivating oxide layer comp. 8−31558
Fe, stress strain anal. of single crystal induced by absorbed H_2 *(Japanese)* 8−11276
Fe-B metallic glasses, density, mech. and thermal props. 8−31432
Fe-B_4C powder mixtures, phase changes and struct. of sintered materials *(Russian)* 8−6872
Fe-Cr-Mn-C, high temp. oxidation, X-ray and weight gain meas. *(Russian)* 8−15571
Fe-graphite, intercalate, prod. by slow electrochemical reduction *(French)* 8−27437
Fe-Mn-C (11.5, 0.2 to 1.6 wt.%), water quenched, effect of C on phase composition, abrasion, plasticity *(Russian)* 8−35445
Fe-Ni, oxidation, Mossbauer spectroscopy, metallography, SEM and X-ray diffr. anal. 8−15577
Fe-Ni films, scatt. of homogeneous spin waves by anisomeric oriented plane, ferromag. reson. 8−19336
Fe-Ni-V alloy, ageing of martensite *(Russian)* 8−39808
$Fe_{40}Ni_{40}P_{14}B_6$, amorphous alloy, structural relaxation kinetics, X-ray diffr. exam. 8−38627
$Fe_{40}Ni_{40}P_{14}B_6$, Metglas 2826, stability, crystallisation, ductility meas. 8−47246
FeO, wustite, simultaneous solubilities of Na and Ca *(French)* 8−31392
α-Fe_2O_3, crystalline grain growth during heat treatment 8−11252
Fe_2O_3, pelletised, internal stresses, X-ray investigation *(Russian)* 8−19684
γ-Fe_2O_3, struct. vacancy distrib., effect on γ→α transform. heat 8−6051
$Fe_{80}P_{16}C_3B_1$ amorphous filament, produced by glass coated melt spinning, mech. props. 8−15483
$Fe_{78}Si_{10}B_{12}$, amorphous alloy crystallisation study *(Japanese)* 8−9959
$FeSnO(OH)_5$, mag. props. and cryst. struct. 8−43574
Ga metastable states, supercooling and polymorphism *(French)* 8−14325
Ga-rare earth alloys, phase diagram determ. 8−15366
$Ga_{0.64}Al_{0.36}As$, plasma grown oxide, phys. and elec. props. 8−48550
GaAs (111) substrate, and homoepitaxial layers, characterisation by divergent X-ray beam diffr. 8−31352

X-ray diffraction examination of materials continued
GaAs, LPE layers, X-ray topographic exam. of defects 8−30844
GaAs(Sb), two-phonon diffuse scatt. of X-rays 8−26374
$Ga_{1-x}In_xSb$, press.-induced structural phase transition 8−30751
$Ga_xIn_{1-x}Sb$, growth by LPE 8−27421
GaN, VPE, on sapphire, crystallographic aspects 8−2387
Ga_2O_3-R_2O_3:Nd^{3+} glass, prep., characts., X-ray diffr., absorpt. and thermal anal. obs. *(French)* 8−19704
GaP, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775
GaP, growth and props. of LPE layers on Si substrates 8−6864
GaP, LEC growth of dislocation-free crysts., microdefects and striations 8−9974
GaP_xAs_{1-x} $(0\leqslant x\leqslant 0.32)$ epitaxial film, one-dimens. superlattice, X-ray spectrometer scanning, struct. variations 8−47681
GaSe, basal plane orientation determ. in vertical Bridgman grown single crysts. 8−19658
Gd-Ag (0-16 at.%), vapour-quenched, struct. and mag. props. 8−38980
Gd-Mg, X-ray determ. of Debye temp., mean amplitude of vibr. 8−38802
Gd-Zn, X-ray determ. of Debye temp., mean amplitude of vibr. 8−38802
$GdNi_2H_4$, effect of absorbed H_2 on struct. and mag. behaviour 8−2682
$GdNi_2H_4$, effect of H_2 absorption on struct. and mag. behaviour 8−10685
Ge, amorphous layer on Ge bulk, photoemission during X-ray Bragg diffr. 8−47209
Ge, electrodeposited, X-ray, electrochem., and electrorefl. characterisation 8−14624
Ge, epitaxial, in situ X-ray topography, misfit dislocations 8−47671
Ge, screw dislocation loops, shrinkage vel. and cross slip freq., activation energies *(German)* 8−43028
Ge, shaped crystals, grown by Stepanov method, struct. perfection 8−2123
Ge, X-ray anomalous transmission at three-wave diffraction (220;202) *(Russian)* 8−34393
Ge, X-ray anomalous transmission at three-wave diffraction (220;202) *(Russian)* 8−34394
Ge:Ga, heavily doped, structure defect evolution during heating *(Russian)* 8−43026
Ge-Au-Ni(Pt)(Pd) trilayered films, annealing, interdiffusion 8−22902
Ge-Te, exam. of new compound, using light microscopy and X-ray diffr. exam. 8−48383
Ge-Te alloy films, amorphous, semicond. props., refr. index, struct. study 8−26978
GeS-GeSe, limits of solid soln. region, microstructural, X-ray and DTA meas. 8−47530
$Ge_{20}Se_{40}Te_{40}$ amorphous alloys, thermal crystn. study 8−26789
β-$H_2O.11Al_2O_3$, conversion from β-$Na_2O.11Al_2O_3$ and characterization 8−3069
$HUO_2PO_4.4H_2O$, H^+ ion cond., struct. mechanism, X-ray diffr. obs. 8−34651
HfO_2-R_2O_3 solid solns., prep., crystn., R=Nd,Sm,Dy,Yb 8−42909
Hg_2Cl_2, low temp. phase transition, X-ray diffr., Raman spectra 8−22849
In-Ga-As-P, phase diagram rel. to lattice matched LPE 8−39708
In-Tl alloy, FCC→FCT martensitic transformation, on cooling, enthalpy meas. and X-ray exam. 8−39773
In-Tl single crystal, phase transform. X-ray topographic study *(Japanese)* 8−31405
$In_{1.9}As_{0.1}Se_3$, growth by chem. vap. transport, characterisation as photoelectrode 8−43994
$In_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
InP (111) substrate, and homoepitaxial layers, characterisation by divergent X-ray beam diffr. 8−31352
InSb, two-phonon diffuse scatt. of X-rays 8−26374
$(In_{1-x}Sn_x)_2O_{3-y}$, pyrolytic selective coating, Sn additions effect 8−43499
$KAlSi_3O_8$, orthoclase, impact structs., peak shock press., X-ray diffr. investig., lunar rock bombard. appls. 8−7002
$KC_8H_{2/3}$, struct., X-ray anal. *(French)* 8−26538
$K_2Cr_2O_7$, thermal props. thermal anal. and X-ray diffr. obs. 8−30752
KD_2PO_4, X-ray topography of single crysts. grown on KDP seeds 8−23594
$KNbO_3$ powder synthesis, unit cell determ. 8−11168
$Kr.2SiO_2$, props. of vitreous deposits 8−22664
$La(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
$La_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
$LiAlSiO_4$, β-eucryptite, of Li, one dimens. co-operative diffusion 8−2294
$LiClO_4.3H_2O$, absolute sign of piezoelec. d_{33} and pyroelectric p_3 coeffs. 8−43793
Li_2CrO_4-K_2CrO_4, phase diagram determination by DTA and X-ray diffr. 8−31391
LiF, deformed by conc. loading, X-ray beam scattering *(Russian)* 8−35430
$Li_2Gd_4(MoO_4)_7$, Czochralski growth, struct. and optical props. 8−27397
$LiIO_3$, phase transitions obs. by DTA, heat treatment, X-ray diffr. *(Chinese)* 8−2249
$LiNbO_3$ waveguide, diffusion of Ti, exam. by electron probe anal. and X-ray diffr. 8−47588
$Li_{1-x}Ti_{2-x}O_4$, struct. phase transition and thermal expansion 8−14465
LiV_2O_5, needle cryst. form. by reduction of molten Li_2O-V_2O_5, semicond. props. *(Japanese)* 8−3030
Mg-Al (25 wt.%) powder, reaction with high press. H_2, MgH_2 form. and decomposition *(Korean)* 8−11554
MgO-$MgCl_2$-H_2O, cement paste, reaction products, X-ray diffr. study 8−23689
α-MnS, polycryst. and oriented single cryst., phase transition at 131K 8−6157
Mo film, on Si, silicide formation obs. 8−43261
Mo, neutron irradiated, influence on X-ray diffr. patterns *(Russian)* 8−22764
MoF_6-ZZ 8−27441
MoSCl, thermal expansion and thermal transform. 8−26696
N_2 $(^1\Sigma_g^+)$, charge density, X-ray scatt. factors, gas phase electron diffr. 8−930

X-ray diffraction examination of materials continued
$NaBrO_3$, cryst. chirality and optical rotation sense 8−10026
$NaCaPO_4$-Ca_2SiO_4 partial system, phase diagram 8−35364
NaCl, deformed by conc. loading, X-ray beam scattering *(Russian)* 8−35430
NaCl-CsCl-$CrCl_3$ system, phase struct. anal. by X-ray method *(Russian)* 8−3112
NaCl-KCl mixed crystal, growth, X-ray exam. and microstruct. 8−44001
$NaClO_3$, cryst. chirality and optical rotation sense 8−10026
NaF-Al_2O_3, β-Al_2O_3 form. *(Japanese)* 8−6912
$(Na_{0.5}La_{0.5})_xBa_{1-x}TiO_3$, dielec. and IR spectra exam., ferroelec. transition 8−23418
$Na_2Mg_6Si_8O_{22}F_2$, fluoramphibole, fibrous, crystn. from gas phase, mechanism 8−34451
Na_2O-Bi_2O_3-TiO_2, subsolidus phase equilibrium at 1000 degrees C 8−48384
$Nb_xCr_{1-x}O_2$, $(x\geqslant 0.5)$, cryst. growth by chem. transport and phase transitions 8−35281
Nb_3Ge film, CVD, thermal expansivity, X-ray diffr. meas. 8−6166
Nb_3Ge, supercond. film, determ. of lattice consts. 8−6470
Nb_3Sn film, electron beam codeposited, growth morphology and tensile props. 8−10301
Nb_3Sn, vap. deposited supercond. film, effect of N_2 and tape heating 8−34939
Nd-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
$Nd(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
$Nd_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
$Ni_{75}Si_8B_{17}$, amorphous alloy, crystallisation study *(Japanese)* 8−9959
Ni complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Ni complex, $[Ni(en)_2Cl]_2Cl_2$, heat capacity, X-ray diffraction and mag. meas., phase transition 8−47515
Ni, Czochralski grown single crystal, crystal perfection, X-ray topography 8−47252
Ni, magnetostriction, lattice parameter changes, direct X-ray obs. 8−15001
Ni, oblique mag. domain walls, obs. by X-ray topography 8−6540
Ni, self-ion irradiated, defect clusters, annealing 8−18687
Ni-Al-Si, β-phase stability *(Russian)* 8−39738
β-Ni-Co-Al, martensitic transform., metallographic, X-ray diffr., and elec. resist. obs. *(Russian)* 8−19748
Ni-P, amorphous, reversible effects of temp. on struct. 8−34442
NiF_2, tetragonal to orthorhombic transition at high press., possible mag. ordering 8−18765
Ni_3Fe, Debye temp. determ. from elastic consts. and X-ray meas., effect of configurational order 8−30727
Ni_3Fe, long range order, Mossbauer spectra comparison 8−10810
$NiFe_{2-t}Al_tO_4$, cryst. and mag. props. 8−14940
$Ni_{40}Fe_{40}B_{20}$ glass alloy, rapidly quenched, explosive welding to A516-70 steel and to itself 8−39954
$Ni(NH_3)_6(BF_4)_2$, enantiomorphic transition, X-ray powder diffr. meas. 8−30574
$Ni_{60}Nb_{40}$, stability, crystallisation, ductility meas. 8−47246
$NiPS_3$-Li, chemical and electrochemical intercalation *(French)* 8−38679
β-Ni_3S_2, formation during Ni sulphidation in H_2S-H_2 mixtures 8−3257
β-Ni_3S_2, formed during sulphidation of Ni, defect struct. and chemical diffusion 8−2115
NiZn ferrites, comp., X-ray diffr. and saturation magnetisation obs. 8−18617
$Ni_xZn_{1-x}Mn_2O_4$, mag. props. 8−43573
O_2 $(^3\Sigma_g^-)$, charge density, X-ray scatt. factors, gas phase electron diffr. 8−930
Pb compounds identification in urban aerosols, rel. to health hazard 8−44991
Pb, film, deposited on Si substrate, residual strains 8−18915
PbI_2 film, photolyzed, refr. index change 8−11010
PbS, epitaxial film, struct. perfection, two cryst. X-ray spectrometry 8−26792
$PbSbO_2Cl$, nadorite, thermal expansion, X-ray determ. 8−18802
Pd complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
$Pd_{80}Si_{20}$, amorphous, structural changes by neutron irradiation, X-ray scatt. meas. 8−6104
Pr-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
$Pr(OH)_2Br$, hydrothermal phase equilib., cryst. struct. 8−35372
$Pr_7(OH)_{18}Br_3(I_3)$, hydrothermal phase equilib., cryst. struct. 8−35372
Pt complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Pt complex, $(C(NH_2)_3)_2Pt(CN)_4Br_{0.23}.H_2O$, pseudo-one-dimens. cpd., solitary wave excitations, and cryst. struct. 8−6307
Pt complex, $Mg_{0.82}Pt(C_2O_4)_2.xH_2O$, X-ray diffuse scatt., 1-D Peierls-Kohn anomaly and struct. transforms. 8−14680
PtO, existence 8−18923
PtSi, growth under protective layers on Pt covered Si substrates, X-ray diffr. and Rutherford backscattering anal. 8−22965
$RbCaF_3$, lattice consts. temp. depend., X-ray examination, 194K transition *(French)* 8−10184
RbCl-KCl powder blends, diffusional homogenisation, X-ray diffr. exam. 8−18847
$RbNO_3$, cubic to rhombohedral transition, X-ray diffr. obs. 8−22681
$Rb_9(XeO_3Cl_2)_4Cl$, neutron and X-ray diffr. struct. determ., Xe-Cl bonding 8−30591
S, monoclinic, order-disorder transition, X-ray struct. determ. 8−30750
$(SN)_x$, linear compressibilities, X-ray determ. 8−34565
Sc-Fe-Si system, phase obs. at 800°C *(Russian)* 8−23661
Se, amorphous, struct., DSC and X-ray diffr. expts. 8−22662
Se, monoclinic to trigonal transform., DTA, X-ray diffr. and optical microscopy meas. 8−14461
Si, 5 MeV α-particle irrad., X-ray exam. of surface layer struct. changes 8−6114
Si, B ion irradiated, long-range damage to crystallinity, X-ray diffr. meas. 8−2171
Si, CVD epitaxial film, stacking fault nucleation and growth 8−10064
Si, film on Si substrate, stress meas., X-ray topography technique 8−5710
Si, heavily implanted, lattice defects and strains after high temp. annealing 8−10077

X-ray diffraction examination of materials continued
Si, implantation induced strains, X-ray interferometry and topography 8−43039
Si, polycryst. film on Si, disloc. config. obs. 8−10312
Si, surface layer, thin, density meas. by total external X-ray reflection 8−14635
Si wafer, Czochralski grown, precipitation during high temp. oxidation 8−11381
Si, X-ray diffraction characterisation, highly collimated beam 8−9912
Si, X-ray rot. polarisation, absorpt. crystal orientation effects 8−47206
Si:B, detection of atomic plane displacement in near-surface layers, ang. depend. of photoemission during X-ray Bragg diffr. 8−47207
SiC, 2H→6H transform. mechanism, X-ray diffr. theory 8−30575
SiC coating on C fibre, chemical vapour deposition, relation between surface morphology and coating conditions *(Japanese)* 8−39704
SiC film synthesis by plasma deposition process 8−11127
β-SiC, oxidation in CO-CO_2 mixture *(German)* 8−23844
β-SiC, polytype stability, α→β phase transformation during growth 8−6028
SiC, pyrolytic particles for high temp. reactor fuel, X-ray and SEM study *(French)* 8−22734
SiC+CeO_2(Pd), high temp. chem. reactions, products obs. by X-ray diffr. 8−17312
SiN_x film, d.c. reactive sputtering, and characterisation 8−3047
Si_3N_4, film on Si substrate, stress meas., X-ray topography technique 8−5710
Si_3N_4-Y_2O_3-Al_2O_3-SiO_2, X-ray diffr. exam., phase equilib. at 1400 degrees C *(Japanese)* 8−44113
SiO_2, film on Si substrate, stress meas., X-ray topography technique 8−5710
SiO_2:TiO_2, prep., amorphous struct., effect of roasting, bonds 8−44061
SiO_2-C mixture, nitridation to form. Si_3N_4 additives effects, exam. 8−44068
Sm-Cr-B system, phase equil. at 800°C, boride lattice parameters *(Russian)* 8−31388
$SmCo_5$ based alloys, dissociation process *(Russian)* 8−27542
SmS, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
SmSe, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
SmTe, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
Sn-Bi alloy, splat-quenched, energy dispersive X-ray diffr. 8−23728
Sn-Ni electrodeposit, metastable, transform. kinetics, X-ray and SEM meas. 8−38979
$Sn_xMo_3S_4$, chevrel phase, charge transfer and valence electron conc. 8−6029
$(SrCaR)_2(Cr_xGa_{1-x})O_4$, R=La or Sm, mag. 2-D oxide, phys. props. 8−47974
steel, Hadfield, hollow cathode sputtering 8−11433
Ta-H alloy, high conc., Huang diffuse X-ray scatt. from lattice strains 8−38746
Te, anisotropic thermal motion of atoms, X-ray exam. 8−18730
Te-Sn (20 at.%), amorphous, exam. of crystallisation by DTA, X-ray diffr. and TEM 8−47242
ThO_2, particle size of crystallites in soln. by line-broadening meas. 8−18488
Ti, recrystallised, dislocation obs. and characterisation by X-ray topography *(French)* 8−22722
Ti-Al-Zr, TA6Zr5D, oxidation at high temp. *(French)* 8−23860
$Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8−11292
$Ti_{50}Be_{40}Zr_{10}$, Metglas 2204, stability, crystallisation, ductility meas. 8−47246
TiC, ageing and ordering phenomena *(Russian)* 8−39807
TiC-Au film, prep. by activated reactive evaporation, struct. and mech. props. *(Japanese)* 8−3252
TiN film, struct. and elec. props. 8−26788
$Ti_{1-x}Zr_xCr_{2-y}Mn_y$, C14 type alloy, hydride form. *(Japanese)* 8−19944
$TlR(MoO_4)_2$ (R=La to Ho), polymorphism, X-ray diffr., thermographic anal. 8−47269
TmSe, Debye temps., vibr. amplitudes, X-ray diffr. determ. 8−2222
U-O system, phase equilibrium, thermal, X-ray and cond. meas. 8−35371
$V_{0.985}Al_{0.015}O_2$, struct. aspects of metal insulator transitions 8−18965
$V_{1-x}Al_xO_{2\pm y}$, mag. and struct. props. meas. 8−2658
VC-TiC coating, high rate deposition by activated reactive evaporation, and characterisation 8−11372
V_2O_3:Al, struct., props., rel. to V_2O_3:Cr, X-ray diffr. and elec. resist. obs. 8−2531
V_2O_5 bronze catalysts, α- and β-phase, rel. to decomp. mechanism determ. for isopropanol 8−11553
V_2O_5-TiO_2 interface, role of struct. props. in interfacial reactions 8−31688
V_xO_y, film, preparation by calcining vanadium naphthenate, formation process exam. *(Japanese)* 8−30849
$V_{1-x}Re_xO_2$ ($0\leq x\leq 0.15$), insulator-metal transition, DTA, X-ray, mag. and elec. meas. 8−10353
Ve-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
W-Ti(Zr)(Hf)-C, cubic solid soln., form. and props. 8−48348
WAl_4, diffusive interaction of solid W and Al melt *(Russian)* 8−26735
WF_6-ZZ 8−27441
YIG, film, LPE, annealing-induced relief of compressive misfit strain 8−2386
Y_2O_3 sintered body, luminous pipe of high press. Na discharge lamp, corrosion resistivity *(Japanese)* 8−19915
Yb, film, energy-scanning X-ray diffr. technique, stacking faults and coherent domains *(French)* 8−43264
Zn, anharmonic lattice vibr., 'forbidden' X-ray reflections obs., 300K 8−34586
Zn single cryst., diffuse X-ray scatt. determ. 8−11255
Zn, vacancy conc., lattice parameters meas. 8−10040
Zn-Sb diffusion couple, ZnSb phase layer growth kinetics, 240-320°C, up to 30 kbar 8−10229
ZnO film, sputtering using Zn target, technique and characterisation 8−3040
ZnO, ground powder, X-ray Fourier anal. *(Japanese)* 8−39727
ZnS, crystal, layered struct. microscopic observations *(Japanese)* 8−38725
ZnS vapour grown crystals, morphology and structure 8−42937
ZnS:Ag phosphor prep., physicochemical investigation of processes 8−11170
$ZnSiP_2$, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775

X-ray diffraction examination of materials continued
Zr alloys, crystallographic texture, quantitative charact., review 8−21647
Zr-Nb alloy, isothermal decomposition at elevated temp. 8−27470
$Zr(HPO_4)_2H_2O$, ^6Li loaded, α-radiation damage, X-ray Guinier powder reflection study *(German)* 8−47437
ZrO_2 film, CVD from organometallic cpds. and characterisation 8−23626
ZrO_2-R_2O_3 solid solns., prep., crystn., R=Nd,Sm,Dy,Yb 8−42909

X-ray diffraction examination of microstructure
see also crystal microstructure
boride coatings on Ni alloy, thermal stability, exam. of coating 8−44271
diamond, natural, defect struct., recent obs. by new methods 8−30628
diamond, natural, impurity complexes, shape and dimens., diffuse X-ray scatt. obs. 8−47398
dislocation stress field computation method 8−30624
fatigue crack, macroscopic residual stress at tip, X-ray obs. and finite element anal. *(Slovak)* 8−19885
feldspar, dislocation image contrast in electron microscopy and X-ray topography 8−26573
geikielite, solid soln., phase transform. during reduction *(Russian)* 8−44042
glass, decomposition, phase separation processes, diffusion coeffs. determ. *(Germany)* 8−39736
glass-ceramic second-order microstresses 8−27468
grain orientation nonuniformity across wire specimen sections, anal. of X-ray patterns 8−23886
graphite intercalation compound with SbF_5, texture 8−31355
ilmenite, solid soln., phase transform. during reduction *(Russian)* 8−44042
metal, atomic defect config. from X-ray and neutron scattering studies 8−47322
metal, plastic deform. effects from X-ray diffr. data, moment method *(Czech)* 8−31593
metal dislocation structures, X-ray diffr. exam. by vibrating crystal method *(Russian)* 8−34519
multialkaline antimonides, (Sb, Na, K, Cs) type, photoemission rel. to chem. struct. *(French)* 8−39655
octadecanol, normal, single cryst., lattice defects, X-ray topographic obs. 8−18650
pentacene, evaporated on quartz, optical absorption, substrate temp. depend. 8−2932
polyamide fibres, crystallinity and crystallite size meas. 8−30549
polybutylene terephthalate, hysteresis of stress-induced cryst. phase transition 8−31404
polycrystals, deformed, particle sizes and mean square strains *(German)* 8−3284
polyester fibres, crystallinity and crystallite size meas. 8−30549
polyethylene, high-density, lamellar sep. during deform. 8−23775
polymide, elasticity of crystal lattice 8−3164
polytetramethyl-p-silphenylenesiloxane, degree of crystallinity 8−26453
polytrioxane, γ-irrad., layer-like void formation 8−22760
PVC, highly syndiotactic, X-ray diffr. and IR studies of annealed material, crystallinity 8−2022
section topography as single-cryst. interferometry 8−47208
steel, 30KhG and 30KhN, carbide formation, Mo alloying effects *(Russian)* 8−48402
steel, austenitic, martensitic transform., mechanism and kinetics, TEM, X-ray and optical obs. *(Rumanian)* 8−19746
steel, C, decomposition of supercooled austenite, exam. of carbide formation *(Russian)* 8−35388
steel, C, wear charact. of worn surface layer under lubrication *(Japanese)* 8−35526
steel, complex alloy, exam. of temper brittleness 8−44209
steel, Cr-C (13, 0.15 wt.%), bainitic transform. *(German)* 8−11218
steel, Cr-Mn, unstable austenite, martensitic transform., effect of alloying, heat treatment, and deform. 8−19751
steel, Cr-Mo (2.25, 1 wt.%), decarburization, carbide effects in high temp. Na *(Japanese)* 8−15403
steel, Cr-Ni-Mo-V-Nb (12,8,1,1.5,0.4 wt.%) Ce addition effects on strength and hardness *(Russian)* 8−15454
steel, hardened, martensite struct. characts., Cu and Al additions effect *(Russian)* 8−19709
steel, high speed tool rapidly quenched, exam. of solidification struct. 8−39758
steel, low C, deform. form effect on texture *(Russian)* 8−3141
steel, low-C, Al-stabilised, texturing during annealing *(Russian)* 8−19777
steel, martensitic, retained austenite study by X-ray diffr. *(Korean)* 8−44143
steel, Mn, tempered, sementite crystals, carbide phase segregation, X-ray study *(Russian)* 8−35391
steel, problems of X-ray determ. of dislocation density from one diffraction line *(German)* 8−2129
steel, stainless, deoxidation in melting with Si *(Korean)* 8−19947
steel, stainless, metastable, determ. of strain-deform. martensite content 8−3282
steel, stainless, oxidation in melting *(Korean)* 8−19946
steel, stainless 304, elevated temp. low cycle fatigue, heat treatment effect 8−27626
steel, thermally and thermomechanically treated, struct. and decomposition of martensite 8−19784
steel, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
tetramethyl-p-silphenylenesiloxane-dimethyl siloxane copolymers, degree of crystallinity 8−26453
topography, oscill. technique for cryst. coarse perfection investigs. 8−30518
very perfect crystals, topography and goniometry 8−30516
α-Ag-Ge, cold-worked, lattice imperfections, X-ray diffr. study 8−38732
AgZn-AgMg quasibinary alloy, phase relation and superlattice form. 8−3097
Al alloy 7075, precipitation hardening, toughness and microstruct. *(Japanese)* 8−15509
Al, annealed and neutron irrad., exam. of positron lifetimes in voids and other defects 8−47426
Al, defect structure after plastic deformation 8−31467

X-ray diffraction examination of microstructure continued
Al, deformed, nucleation and recrystallisation at second phase particles 8−6941
Al, dislocation density, prep. of high-purity cryst. by strain-anneal method 8−48314
Al, energy-dispersive diffr., preferred orientation influence 8−22603
Al, fatigue crack propag., grain size effect *(Japanese)* 8−39889
Al, wire, determ. of incomplete axial texture by X-ray diffr. 8−23720
Al-Ge alloy, Ge particle size, determ. by small- and wide-angle X-ray scatt. 8−19966
Al-Mn (1.8 wt.%), cold-rolled, precipitation and recrystallisation 8−27540
Al-Si-Sr phase diagram *(Russian)* 8−15363
Al-Zn (18 at.%), position of coherency spinodal curve 8−23660
Al-Zn-Mg alloy 7075, effect of thermal and mechanical pretreatments, on Guinier-Preston zone 8−39817
Al-Zn-Mg alloys, precipitation behaviour *(German)* 8−39780
Al_2O_3, sintering with $SrTiO_3$ admixture *(Polish)* 8−19699
Al_2O_3-Eu_2O_3(Gd_2O_3), phase diagrams at high temps. exam. 8−44114
Al_2O_3-Sm_2O_3, phase diagram at high temps. *(Japanese)* 8−19732
Am, polymorphic transforms. obs. *(Russian)* 8−6153
Au-Ge, liquid quenched, exam. of phase decomposition 8−48371
B_4C, effect of fast neutron irradiation on struct. 8−26597
Ba-Al-Si system, phase diagrams construction by simplex designing method 8−6899
Be, phase struct. *(Russian)* 8−15401
Be-Si-O-N polytypes, X-ray study 8−27496
C fibres with large breaking strain, prep., mech. props., struct., appl. 8−44077
$CaCO_3$, growth dislocations obs. using Lang X-ray topography 8−2133
CaF_2-AlF_3, phase equilibria, DTA and X-ray diffr. study 8−27493
CdS, single cryst., surface treatment effects on photoluminesc., struct. and optical props. *(Russian)* 8−15224
Ce-Ga, phase diagram *(Russian)* 8−27478
Ce-Mn-Co, temp. conc. limits of homogeneous compounds *(Russian)* 8−23666
Co-Fe (2.92 to 30.05 wt.%), determination of phase equilibrium diagram *(Japanese)* 8−48374
Cr-C(N) coating, deposited by hollow cathode discharge, characterisation 8−11371
Cu alloys, microconductors, cast, struct. and physical props. exam 8−44232
Cu, dislocation-free melt growth conditions, and perfection obs. 8−3025
Cu, X-ray and microhardness meas. at high strain rates *(German)* 8−3184
α_2-Cu-Al, antiphase period and tetragonality 8−15374
Cu-Ge (10-12 wt.%), intermediate ζ'-phase form. during deform. *(Russian)* 8−19747
Cu-Ni-Mn (20,20wt.%), structural transform., X-ray and hardness study *(French)* 8−39760
Cu-Ni-Zn alloy, FCC, cold-worked, comp. effects 8−3143
Cu-Ti, lattice parameter change during ageing *(Japanese)* 8−35411
CuPt alloy, equiatomic, ordering processes, anisothermal annealing exam. *(Japanese)* 8−39765
Er_2O_3-ZrO_2, subsolidus phase relations, X-ray diffr. and thermal expansion exam. 8−31382
Fe alloy, surface layers examination, X-ray method 8−35606
Fe, electrolytic, oxidation in melting *(Korean)* 8−19946
Fe films, vacuum evaporated, exam. of texture for various vapour beam incidence angles *(Japanese)* 8−48318
Fe, wear of surface due to friction, surface hardening 8−44227
Fe-Be (16.5 or 19.5 at.%), four-phase model of struct. in initial ageing stages *(Russian)* 8−48430
Fe-Co-Cr, Cr effect on struct. of ordering 8−35407
Fe-Cr-Al-Ce, high temp. oxidation *(Japanese)* 8−11413
Fe-Cr-Ni(Mn)(Ni-Mn)-C alloy, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8−44085
Fe-Ga, solid soln., order-disorder transform. *(French)* 8−3121
Fe-Mn (10 to 14 at.%), martensitic transforms., dilatometric effects and X-ray diffr. meas. *(Russian)* 8−6922
Fe-Mo-Cr(Ni)(Mn)-C, carbide-austenite equilibria, 1173 to 1373K, microscopic and X-ray obs. 8−44085
Fe-Ni-Mo, small angle X-ray scatt. study, pre-precipitation phenomenon obs. *(French)* 8−19757
Fe-Si, recrystallization, in situ studies, appl. of X-ray synchrotron topography 8−35610
Fe-Si as grown crystal, dislocation study by etching and X-ray topography 8−47377
Fe-Si-N alloy, BCC→FCC transform., martensitic character obs. *(Russian)* 8−48397
Fe-WO_3 system, struct. phase exam. by optical microscopy and X-ray diffr. 8−31389
Fe_3Al, vacancy conc. and ordering conc. 8−18639
FeB_x coatings on steel, formed by B diffusion, pack cementation process, microstruct. and mech. props. 8−15592
GaTe, hexagonal, vacuum deposited, physical parameters and substruct. 8−2393
$GdFe_2$, Mossbauer sample, X-ray diffr. obs. 8−22737
Ge:As, containing dislocation loops, dynamic scatt. of X-rays, extinction effect 8−47384
Ge-Si-Sb solid soln., struct. peculiarities and mech. props. under weightlessness *(Russian)* 8−23693
HfO_2-Eu_2O_3, phase equilibrium, 960 to 1900°C, X-ray anal. 8−23688
$K_2Mg_4Mo_4O_{16}(OH)_2(H_2O)_2$ study of non-stoichiometry *(French)* 8−30604
La-Re-B, annealed and quenched, X-ray structural and phase anal. 8−11207
La_2O_3-CeO_2, microstruct. of La_2O_3 rich crystallites, electron microscopy and diffr. *(French)* 8−35374
$Li_{0.5}Fe_{2.5}O_4$, antiphase domains, broadened X-ray diffr. line anal. 8−26578
Mn-Ga (19 to 30 at.%), phase equilib. diagrams, X-ray diffr., thermal expansion, and mag. meas. *(Japanese)* 8−39743
Mo alloys, fractography of deformed samples *(Russian)* 8−19889
Mo film, on SiO_2/Si substrate, effect of heat treatment after deposition on internal stress 8−22973
Mo-Cu-Al, phase equilibrium *(Russian)* 8−15361
Mo-Zr-Nb-C, polythermal sections *(Russian)* 8−15365
$NH_4H_2PO_4$, defects, X-ray topographic study 8−26580

X-ray diffraction examination of microstructure continued
$NH_4H_2PO_4$, X-ray interference fringes due to diffraction effect at grown-in twin boundary 8−38728
NaCl:Ca, precipitate form., transform. after annealing, critical flow stress 8−38848
Nb-Pt alloy, superconducting parameters of A15- and σ-phases 8−39242
Nd-Ga, phase diagram *(Russian)* 8−27478
Ni, growth direction orientation effect on impurity distrib. 8−47261
Ni, transformed into hydride and decomposed, dislocation density and dislocation profile depth, positron annihilation and X-ray estimation 8−38711
Ni-Be bronze, Fe and Si alloying addition effect on phase composition *(Russian)* 8−15360
Ni-Cr alloy, structural changes, during thermal stress cracking, X-ray and microhardness meas. *(Russian)* 8−35496
Ni-Cr(Mo), solid soln., US effect on mech. props. *(Russian)* 8−23819
Ni-Cu-Si, Si effect on structural changes during ageing, TEM and X-ray obs. 8−15438
Ni-P alloy, electrodeposited, heat induced struct. changes *(Japanese)* 8−15433
Ni-Ti (60 at.%) alloy, high stress effects on struct. and props. *(Russian)* 8−19838
Ni-Ti (8 and 10 wt.%) alloy, aged, precipitation behaviour at 550 to 950°C, X-ray and electron microscopy exam. 8−39785
Pb-Bi alloy, fine powder electrodeposition and X-ray struct. obs. 8−11163
Pb-Rb, phase diagram *(Russian)* 8−19720
$Pb_5Ge_3O_{11}$, Czochralski growth, secondary phase formation 8−3027
PbS, vap deposited film, island growth obs. by optical diffr. from electron micrograph 8−10291
Pd, low temp. lattice parameter meas. 8−26496
Pd-H alloys, low temp. lattice parameter meas., β and mixed (α+β) phases study 8−26496
Re-Al-Si , X-ray determ.of system *(Russian)* 8−19763
Re-Fe-Al, physical-chemical investigation *(Russian)* 8−15362
Sb-Se-I, phase diagrams of various cross-sections 8−44093
Sc_2O_3:MgO, defect struct., X-ray diffr. and pyrometric density 8−34524
Si, dislocation-free single crystals, growth microdefects, etching and X-ray expts. 8−47385
Si particle reinforced Al, internal stresses, X-ray diffr. meas. *(Russian)* 8−23765
Si, wafer, suppression of oxidation stacking fault generation by preannealing in N_2 atm. 8−30648
Si:P^+ ion-implanted, annealing characts. 8−14372
Si-Al-O-N system, exam. of compounds and properties 8−48387
SiC (2H), vapour grown, growth and deform. faults, X-ray obs. 8−30650
SiC, reaction bonded, microstruct. characterisation 8−48353
Si_3N_4, oxidised, with Y_2O_3 densification aid, temp. and compositional stability of $Y_6Si_6O_{21}$ 8−27664
Si_3N_4, phase content determ., using X-ray diffr. anal. 8−44281
Si_3N_4-SiO_2-MgO, phase relations and interrelation with mech. strength, and oxidation 8−48386
Sm-Cu phase diagram *(Russian)* 8−27477
Sm-Ga, phase diagram *(Russian)* 8−27478
Sn-Pb, dil., undercooled alloy, solidification 8−3120
Sr-Al-Nd phase diagrams *(Russian)* 8−27480
Sr-Al-Si system, phase diagrams construction by simplex designing method 8−6899
Te-Pb (20 at.%) alloy, amorphous, obtained by rapid cooling from liq. state, crystn. behaviour 8−26445
Ti alloy, VT16, decomp. of α″ martensite during continuous heating *(Russian)* 8−48370
Ti alloy VT20 and VT22, yield strength anisotropy and durability after cyclic loading *(Russian)* 8−27565
Ti, single crystals, recrystallised, dislocations obs. 8−10054
Ti-Al-Mo-Zr alloy, VT9, decomp. kinetics of metastable β-phase, X-ray and mech. props. obs. *(Russian)* 8−48368
Ti-alloy, VTZ-1 and VT8, decomposition of metastable phases, effect of plastic deform. *(Russian)* 8−39770
β-Ti-Mo, alloy, struct. changes during deformation and ageing *(Russian)* 8−39791
Ti-V-Si, equlibrium silicide, X-ray and electron diffr. obs. 8−27483
TiCu intermetallic compounds, decomposition reaction by H_2 absorption *(Japanese)* 8−23668
TiN, precipitation of ordered δ’-phase *(Russian)* 8−6929
TiO_2-Ga_2O_3 system, phase relations and microstructs. 8−3107
V-S system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
V-Se system, quenched, order-disorder transition of metal vacancies, DTA and X-ray analysis 8−30576
V_4O(β-phase), X-ray study of precipitated phase *(Ukrainian)* 8−6928
$V_{2-x}Sb_xO_4$, defect struct. exam. 8−18635
Y-Re-B, annealed, and quenched X-ray structural and phase anal. 8−11207
Yb_xSy, synthesis and mag. props. 8−23242
Zn film, vac. deposited, X-ray diffr. study of microstruct. 8−26796
ZnO based varistors, evolution and role of chem. constituents rel. to prep. method, influence on elec. props. *(French)* 8−31367
ZnO-Bi_2O_3-Sb_2O_3-Co_2O_3-MnO_2-Cr_2O_3, nonohmic ceramic, microstruct. exam. 8−47292
ZrO_2-Sc_2O_3, phase system, X-ray and thermal anal. 8−27494

X-ray diffraction examination of molecular structure
see also molecular configurations
biopolymers, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
bis(diethylamino)dithiaboretane, cryst. struct., bond lengths and angs. X-ray diffr. obs. 8−18628
ceruloplasmin, human, mol. wt. determ. by hydrodynamic methods and low-angle X-ray scatt. 8−15761
1,8-dinitronaphthalene, orthorhombic 22, and 97°C 8−6048
N,N′-diphenyl-m-phenylenediamine, crystal and mol. struct., X-ray diffr. 8−47312
DNA, polymorphism, X-ray diffr. and computerised model building study 8−27894
DNA with heavy atom, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
globular protein struct., large angle X-ray diffuse scatt. exam. 8−3444

X-ray diffraction examination of molecular structure continued
- macromolecular structure, linked-atom least-squares reciprocal-space refinement system, LALS, incorporating stereochemical restraints 8−26377
- PMMA, molecular alignment 8−14299
- polypeptides, structured, nature of 4.5 Å max. on X-ray diffuse scatt. curves 8−31769
- polystyrene, molecular alignment 8−14299
- protein, X-ray struct. study using synchrotron radiation and multichannel detector 8−47210
- proteins, nature of 4.5 Å max. on X-ray diffuse scatt. curves 8−31769
- styrene-vinylpyrrolidone block copolymer soln., conform. props., light-, X-ray scatt. and viscometry obs. *(Russian)* 8−37779
- BaVO(EDTA).$6H_2O$, cryst. and mol. struct., X-ray diffr. obs. *(Russian)* 8−30601
- CO ($^1\Sigma^+$), X-ray and electron diffr. scatt. intensities, electron correlation effects 8−17577
- B-trichloro-m-carborane, cryst. electrophilic chlorination of 9, 10-dichloro-m-carborane, cryst. and mol. struct. from X-ray diffr., cryst. struct. 8−9268

X-ray diffractometers
- automatic attachment for punching DRON diffractometer data to tape 8−34385
- DRON-0.5 X-ray diffractometer, low-temp. attachment 8−343
- dual detector diffractometer for residual stress meas. 8−5716
- energy-dispersive diffractometry, optimum resolution 8−42857
- instrumental line broadening with non-ideal standard specimen, anal. 8−41391
- orientation of single cryst., small spherical, nonabsorbing, and large extended face 8−42856
- proportional counter detector system for powder diffractometry appl., digital read-out 8−4751
- soft X-ray spectrometer, for gaseous studies 8−24911
- stress meas. in different ψ directions, X-ray diffractometer 8−5715
- time-resolved X-ray diffraction counter and data acquisition system 8−45758
- Cu-target diffr. tubes, K_α charact. radiation rel. intensities calc. 8−4754

X-ray effects
- *see also biological effects of X-rays*
- alkali halide, X-ray induced strain effects rel. to time of irrad. 8−6120
- cyclohexane, liq. and solid, mobility of excess charge carriers 8−2489
- dimethyl sulfone, X-irrad. cryst., ESR spectrum 8−3351
- glass, Libyan Desert Glass, redox form. conditions, EPR obs. of as-received and irrad. samples 8−28228
- inositol, X-irrad., radical form. detection by ESR and ENDOR, oxidation process 8−27797
- polystyre, irrad, thermoluminesc. 8−2931
- pyrrole, free radicals produced by X-irrad. and decay of tritium atom, EPR study 8−48676
- quartz, synthetic, connection between lattice deform. and coloration pattern 8−10930
- succinamic acid, X-irrad., primitive radn. damage, ESR, ENDOR 8−3352
- TGS, ferroelec., negative ENDOR study of radiation damage 8−19373
- TGS, polarisation reversal, cryst. defects effect 8−27156
- As_2S_3, glassy, X-ray induced paramag. colour centres 8−19327
- As_2Se_3, glassy, X-ray induced paramag. colour centres 8−19327
- $[(100-x)B_2O_3.xLi_2O]_{98}.2CdO$, glass, X-ray irrad., EPR study of Cd^+ centres *(French)* 8−43638
- $BaO-Al_2O_3-B_2O_3:Ce^{3+}$ glass, EPR spectra, before and after X-irrad. 8−19320
- $BaTiO_3$, X-ray irrad. effect on dielec. props. 8−15082
- CaF_2:Co, X-irradiated, optical absorption spectrum 8−35173
- $Ca_3(PO_4)_2-CaCl_2:F^-$, EPR of electron excess centres 8−10772
- $Ca_{10}(PO_4)_6(OH)_2$:Mn, thermoluminesc. 77-500K, X-irrad. at 77K *(French)* 8−15234
- $CaSO_4$, thermoluminesc. spectra, X-irrad. effect 8−35210
- CsBr, X-irradiated, release of stored energy 8−38753
- KCl, cryst., colour centres, ionic cond., X-ray effects, thermoluminesc. *(Russian)* 8−6056
- KCl, pure and Pb^{2+}-doped, X-irrad., quenching effects on thermal glow curves 8−27333
- KCl, X-irradiated, release of stored energy 8−38753
- $KCl:SrCl_2$, H_{na} annealing, X-ray irrad., H centre capture by IV dipoles 8−10927
- KCl:Tl and KCl, F-centre production by positive ions and X-rays 8−38760
- $KCl-BaTiO_3$, composite cryst., F-centres, thermoluminesc., DC field and X-irrad. effects 8−2926
- Li disilicate glass, radiation induced centres, EPR exam. 8−35033
- LiF:Mg, X-irradiated, thermoluminesc. of Z_3-centres 8−15236
- $NaCl:Ag^+$, X-irrad., B-centres, thermal annealing, monomolecular and bimolecular sequence of kinetics 8−47373
- $NaCl:Ca^{2+}$, X-ray induced luminescence 8−23516
- $NaCl:Zn^+$, X-irrad., EPR and optical absorpt. 8−43642
- $NaClO_3$ trapped O species in irradiated samples, low-temp. X-ray photoelectron spectroscopy 8−27799
- S photoelectret produced in polycrysts. in elec. field 8−31147
- Si-In(Rh)(Au) Schottky diodes, X-ray irradiated, radiation-accelerated diffusion of impurities in Si 8−26952

X-ray emission spectra
- *see also appearance potential spectra; conversion electron spectra*
- antiprotonic atoms, X-ray transition energies, strong interaction and $\bar{p}$ mass meas. 8−25759
- antiprotonic atoms of light nuclei and isotopes, $\bar{p}$-n strong interaction effects 8−29867
- atom, Sommerfeld screening parameter σ_1, Z=13 to 103 8−25463
- atom+ion collisions, KK-vacancy sharing, X-ray emission 8−42190
- cellulose, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
- chain method appl. to electron emission 8−43983
- chemical shift meas. using automated X-ray fluoresc. spectrometer system 8−4750
- energy-dispersive, radiative Auger-like satellites 8−5168
- exploded-wire plasmas, spatial resolution techniques 8−14188
- fluorapatite, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
- fluorescence spectra of light elements by using synchrotron orbital radiation 8−39630

X-ray emission spectra continued
- fluorescent X-ray source for study of radiographic imaging systems 8−24132
- heavy ion+atom collisions, accelerators and X-ray emission spectra *(Norwegian)* 8−22013
- heavy ion collisions, molecular-orbital X-rays yield 8−13587
- heavy ion-atom collisions, inner shell ionis. X-ray emission and Auger spectra obs., appls. *(Japanese)* 8−9240
- heavy-ion collision, quasimolecular L X-rays, relativistic self-consistent correlation diagram 8−5247
- heavy-ion collisions, K-vacancy prod., K-L level matching 8−42196
- impurity atom position determ. from ion-excited characteristic X-ray emission *(Russian)* 8−47408
- ions, two vacancies in K shell, 2 electron 1 photon, and hypersatellite transition probabilities 8−46294
- ions backscattered from solid surfaces, radiative electron capture 8−11057
- many body effects 8−27374
- metal, effects of correlation interaction of electrons with deep holes in X-ray spectra 8−31279
- metal, X-ray emission edges, effect of incomplete phonon relaxation 8−35227
- metallic film, X-ray production by H^+ and H_2^+ impact, search for cluster effects 8−43961
- methane, C X-ray spectrum meas. by soft X-ray spectrometer 8−24911
- molecular X-ray fluorescence polarisation 8−1003
- multiply charged ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
- muonic atoms, X-ray meas., vac. polarisation test 8−29287
- oxides of third-row elements, Auger LVV transitions, X-ray photoelectrons and emission spectra 8−21978
- paradichlorobenzene, electronic struct., X-ray emission obs. 8−5246
- Quasimolecule formation in heavy ion collisions *(Russian)* 8−33568
- rare earth metals, X-ray $N_{IV,V}$ emission spectra in region of 5p→4d transitions *(Russian)* 8−6815
- rare earth monophosphides, K-emission bands, electronic struct. 8−15250
- resonance fluorescence, in X-ray K-spectra *(Russian)* 8−37587
- resonant X-ray Raman scattering, IR divergence of Compton effect 8−21873
- single crystals, use of polarised radiation 8−8481
- spectral line breadth, anal. method using Voigt function 8−34387
- steel, stainless, proton and photon induced X-ray emission anal., depth sensitivity 8−23988
- superdense plasma, X-ray emission, plasma diagnosis *(Russian)* 8−30487
- transition metals and compounds, L_I and L_{II} X-ray emission spectra 8−39631
- X-ray energies meas. by soft X-ray spectrometer 8−24911
- zeolites, coordination of Al and Si from X-ray spectra 8−11021
- Ag halide photochromic glass:Cu^{2+}, characterisation of Cu ions 8−5530
- Ag, K-shell X-ray prod. by H^+ and He^+ bombardment, cross sections, energy depend. 8−5337
- Al, energy bands, densities of states and X-ray spectra, superposed self-consistent pots. 8−39010
- Al, X-ray continua emission, proton and ^{14}N bombard. 8−23559
- Ar, 250 to 270 eV, new interpretation 8−33460
- Ar, L-spectrum X-ray energies meas. by soft X-ray spectrometer 8−24911
- Ar, lifetimes of L and LM vacancy states, X-ray emission linewidth 8−17621
- Ar^{x+}, high resolution spectroscopy of prompt and metastable decaying levels 8−33462
- $Ar+Cu^{x+}(11\leqslant x\leqslant 22)$, 1 MeV/amu, X-ray production cross-sections 8−37714
- Ar^++Ar, L-shell X-ray cross sections, 0.2-1.5 MeV, fluoresc. yield 8−1068
- B III, IV, laser produced plasma, satellite spectra 8−5165
- $B+H^+(He^+)$, double K-shell ionis., projectile Z depend. 8−25680
- BN, hexagonal, anisotropic emission of the X-ray K-emission band 8−23557
- B_2O_3, microprobe state anal. by X-ray OK and BK emission band spectra *(Japanese)* 8−19606
- BP-BAs solid solns., electronic struct. of valence bands and nature of interatomic interaction 8−34764
- Be II, III, laser produced plasma, satellite spectra 8−5165
- Be, X-ray K emission spectrum, high energy double plasmon satellite intensity calcs. 8−2944
- Be-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
- $Be+H^+(He^+)$, double K-shell ionis., projectile Z depend. 8−25680
- C IV, V, laser produced plasma, satellite spectra 8−5165
- C+C(N)(O) ions, 4 to 40 MeV, beam-foil K-shell X-ray prod. cross sections 8−33461
- $CdGeP_2$, electronic struct. at cryst./vitreous transition, X-ray K-absorpt. and emission 8−15248
- Cd_3P_2, band struct., X-ray spectra determ. 8−35225
- Cd(π^-, X), A=111, 112, 0 MeV, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
- Cl^++Ar, L-shell X-ray cross sections, 0.2-1.5 MeV, fluoresc. yield 8−1068
- Co, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
- Co-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
- CoGe, and TiCoGe, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
- $CoGe_x$, Co emission spectra *(Russian)* 8−21942
- CoSi, and TiCoSi, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
- Cr, K_β/K_α following K-electron capture and X-ray excitation 8−13031
- Cr, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
- Cr, oxidation, combined AES and threshold potential spectroscopy 8−11026
- Cr XXII, spectra from laser plasma comparison with solar corona and vacuum spark 8−17596
- $Cr-SiO_2-Si$ structure, solid-phase interaction between Cr and SiO_2, X-ray spectral obs. 8−10560
- Cu, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747

X-ray emission spectra continued
Cu, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Cu, K-shell X-ray prod. by H^+ and He^+ bombardment, cross sections, energy depend. 8−5337
Cu-Mn alloys, Mn K X-ray emission and XPS lines, width and asymm. 8−19605
ErT_2, film, surface oxide form. and interfacial metal loss, AAS, XES 8−31733
F ions+Ne(Ar)(Kr) and C foil and slab, K shell X-ray spectra 8−17599
Fe compounds, radiative Auger transition, $K \rightarrow M^2$ weak X-ray emission lines 8−33556
Fe, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
Fe, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Fe, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
Fe, X-ray line emission in Cygnus X-3, crystal spectrometer obs. 8−8153
Fe XVII to Fe XXI spectra, 8 to 18 Å, emitted from plasma after laser heating 8−25464
Fe XXV, spectra from laser plasma, comparison with solar corona and vacuum spark 8−17596
Fe-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
Fe+Ni, two electron one-photon X-ray transitions, Dirac-Fock calcs. 8−17600
$Fe(NH_4)_2.(SO_4)_2.6H_2O$, $K\beta'$ satellite of $K\beta_1$ X-ray emission line, plasmon oscill. theory 8−23556
GaP, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775
Ge XXIV, $2p^5$-$2p^4 3s(2p^4 3d)$ transitions in laser produced X-ray spectra 8−13460
Ge+Ge, quasimolecular K X-ray anisotropy and ang. distrib. 8−1073
H-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
HCl, emission K spectra, vibronic and core hole effects, nonempirical orbital defreezing calc. 8−5200
HF, emission K spectra, vibronic and core hole effects, nonempirical orbital defreezing calc. 8−5200
H^+ZZ 8−13586
He-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
^3He, liquid, pionic atoms, X-ray energies, Lorentzian widths, relative intensities 8−46470
^4He, +X, (X=Nb through to Gd), X-ray production, 0.6 to 2.4 MeV 8−13586
Hg doubly K ionised, energy shift between K_α X-ray and its hypersatellite line 8−9107
$^{165}Ho(\pi^-,X)$, 175 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
K_2O-AlF_3-B_2O_3 glass, Al atom bonding mode, optical absorption of VO^{2+} and AlK_α spectrum *(Japanese)* 8−11023
$Kr+Cu^{q+}$, $(16 \leqslant q \leqslant 23)$, 1.4 MeV/amu, X-ray emission, charge state dependence 8−37713
LaOBr:Tm X-ray emission spectra and screen-film system design 8−11024
Li, X-ray emission and absorpt. edges, temp. depend. 8−31282
Li-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
$^{175}Lu(\pi^-,X)$, 230 MeV/c, monopole and quadrupole strong interaction effects in pionic atoms 8−41777
Mg, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
$MgO.Al_2O_3$-$MgO.nAl_2O_3$ spinel, coordination state of atoms, charact. X-ray emission *(Japanese)* 8−6816
Mn, doublet struct. of Kα-hypersatellite 8−5167
Mn, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
MnO, $K_{\beta 5}$ X-ray emission spectrum, low energy plasmon satellite A 8−2945
MnO, X-ray Kβ emission spectra, unpaired electron and plasmon effects 8−19603
MnO_2, X-ray Kβ emission spectra, unpaired electron and plasmon effects 8−19603
MnP, metallic, band struct., X-ray spectral obs. 8−11019
Mo ions, X-ray emission spectra, from laser produced plasma, line identification via HF calcs. 8−33459
Mo, $K\alpha_{1,2}$ $K\beta_{1,3}$ using diffractional focusing X-ray spectrometer 8−5988
Mo XLI, Mo XL, X-ray emission from vacuum-spark plasma 8−41991
Mo_3Si, Mo_5Si_3 and $MoSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249
N V, VI, laser produced plasma, satellite spectra 8−5165
N^++N, 35-200 keV, K MO X-rays, production mechanism, spectral distrib. 8−42183
N^++N_2, 35-200 keV, X-ray spectrum, rel. to N^++N mechanism 8−42183
NH_3+N^+, 35-200 keV, X-ray spectrum, rel. to N^++N mechanism 8−42183
Na, KK vacancy prod. in Na^++Ne collisions 8−17781
Nb-Co, X-ray emission spectra investigation of electron struct. of Laves phases *(Russian)* 8−23554
Nb-Fe, X-ray emission spectra study of electron struct. of Laves phases *(Russian)* 8−23555
Nb-V alloy, valence bands, X-ray M- and L-emission bands obs. *(Russian)* 8−19602
NbC, valence band struct. *(Russian)* 8−6268
Nb_4Si, Nb_5Si_3 and $NbSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249
Ne II-VIII L-shell excit. by highly ionised heavy ion impact 8−1074
Ne, Kα satellite lines meas. by soft X-ray spectrometer 8−24911
Ne post-foil Kalpha X-ray emission, correlation with empirical charge state distribs. 8−15252
Ne-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
Ne^{n+}-Ne, K-shell vacancy prod. cross section, X-ray and Auger electron prod. fluoresc. yield 8−13582
Ni (110), oxidation, initial stage kinetics, RHEED and X-ray emission 8−15588
Ni, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
Ni-like ions, multiply charged, laser plasmas, 1.5-15 Å 8−13462
Ni-P alloy, electrodeposited, heat induced struct. changes *(Japanese)* 8−15433
X-ray emission spectra continued
Ni+Ni, 39 MeV, X-ray emission spectra, nonLorentzian shape of atomic line tail 8−21872
$Ni+Ni^{x+}$, K X-rays, two-electron-one-photon excitation 8−13589
$NiGe_x$, Ni emission spectra *(Russian)* 8−21942
O VII, laser produced plasma, satellite spectra 8−5165
$O+H^+(He^+)$, double K-shell ionis., projectile Z depend. 8−25680
^{194}Os beta decay, X-ray/gamma relative intensities, L_1 subshell yields 8−4919
Pb+Pb quasimolecules ab initio calc. of K X-ray spectra 8−21941
PbO, microprobe state anal. by X-ray OK and BK emission band spectra *(Japanese)* 8−19606
PbO-B_2O_3-SiO_2, molten mixture, microprobe state anal. by X-ray OK and BK emission band spectra *(Japanese)* 8−19606
^{208}Pb+Ag(Au), 5.8 MeV/amu, Pb K-shell excitation probability 8−5338
Pd, circular polarisation of muonic K_α X-rays 8−9284
Pd, circular polarisation of muonic X-rays, strange μ^- depolarisation 8−25758
^{105}Pd muonic X-rays, nuclear charge parameters, quadrupole moments 8−29377
Pu, M-lines 8−15251
S, in CoS, CdS, ZnS, MnS, $BaSO_4$ and K_2SO_4, X-ray L-emission spectra *(Japanese)* 8−15254
S, X-ray and Auger transition probabilities to 2p level 8−17640
$(SN)_x$, X-ray and optical props. 8−39632
Se, circular polarisation of muonic K_α X-rays 8−9284
Se, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
Se film, metal ion diffusion during memory switching 8−26976
Se XXVI, $2p^5$-$2p^4 3s(2p^4 3d)$ transitions in laser produced X-ray spectra 8−13460
Si, K_α X-ray emission spectra chemical shifts, linewidths and intensities 8−13461
Si, struct. of $L_{2,3}VV$-Auger line, rel. to soft X-ray spectra 8−2953
Si, X-ray continua emission, proton and ^{14}N bombard. 8−23559
Si:B(P)(As), ion implantation, 20-2800 keV, obs. of X-rays produced 8−14367
Si^{12+}+He, K X-rays for population in $^3S_1$ metastable state, Si^{12+} from C, Au foils 8−17776
SiC, struct. of $L_{2,3}VV$-Auger lines, rel. to soft X-ray spectra 8−2953
SiO_2, microprobe state anal. by X-ray OK and BK emission band spectra *(Japanese)* 8−19606
SiO_2, struct. of $L_{2,3}VV$-Auger line, rel. to soft X-ray spectra 8−2953
$^{28}Si^{n+}$+Sc(Ti)(Cu)(Ge), K-shell ionisation, projectile charge state depend., theory 8−17786
$^{122}Sn(K^-, X)$, 0 MeV, E2 nuclear resonance effects, γ and X-ray meas. 8−41774
Ta, K X-ray energy, excitation mode depend. 8−17597
Ta, K X-ray energy, excitation mode depend. 8−17598
Ta XLVI(XLVII), $3d^k$-$3d^{k-1}npnf$ transitions in laser plasma 8−9108
Ta-Fe, X-ray emission spectra study of electron struct. of Laves phases *(Russian)* 8−23555
^{182}Ta, decay scheme, conversion electron spectra, K-line transitions 8−13025
Ti, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Ti $K\beta_{1,3}$ line width and $K\beta_5$ band 8−2946
Ti, X-ray continua emission, proton and ^{14}N bombard. 8−23559
Ti XXI, spectra from laser plasma comparison with solar corona and vacuum spark 8−17596
Ti-Co, X-ray emission spectra investigation of electron struct. of Laves phases *(Russian)* 8−23554
Ti-Zr alloy, valence bands, X-ray M- and L-emission bands obs. *(Russian)* 8−19602
TiCo, and TiCoSi(Ge), electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
TiGe, and TiCoGe, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
TiO_X, $K\beta_{1,3}$ line width and $K\beta_5$ band 8−2946
TiP, metallic, band struct., X-ray spectral obs. 8−11019
TiSi, and TiCoSi, electronic struct., X-ray K- and L-spectra obs. *(Russian)* 8−11022
U, X-ray and Auger transition probabilities to 2p level 8−17640
V, K_β/K_α following K-electron capture and X-ray excitation 8−13031
V, $K\alpha^h$ hypersatellite spectra and K-shell double photoionisation cross-section 8−21874
V XXII, spectral from laser plasma, comparison with solar corona and vacuum spark 8−17596
VC, valence band struct. *(Russian)* 8−6268
V_xO_y, Lα emission spectra of V 8−2947
$^{260}X_{105}$, prod., L X-ray spectra, decay 8−8780
Xe, K X-ray energy shifts following electron capture beta decay, role of nucl. hyperfine struct. 8−5166
$Xe+Cu^{q+}$, $(16 \leqslant q \leqslant 23)$, 1.4 MeV/amu, X-ray emission, charge state dependence 8−37713
Y, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
^{70}Yb, L X-ray emission spectrum, new satellites 8−46293
Zn, K_β/K_α following K-electron capture and X-ray excitation 8−13031
Zn, Kβ X-ray spectra and autoionisation following β-decay of ^{64}Cu 8−13029
Zn XXII, $2p^5$-$2p^4 3s(2p^4 3d)$ transitions in laser produced X-ray spectra 8−13460
$ZnGeP_2$, cryst., electronic struct., X-ray K-absorpt. and emission 8−15248
$ZnSiP_2$, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775
Zr-Ni, energy spectra of valence electrons *(Ukrainian)* 8−6814
Zr-Ni alloys, energy spectra, X-ray emission obs. *(Russian)* 8−19604
ZrC, valence band struct. *(Russian)* 8−6268
ZrSi and $ZrSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249

X-ray fluorescence analysis
aerosol loaded filters, X-ray fluoresc. anal., absorpt. corrects. calcs. 8−7311
aerosols, atmospheric, X-ray fluoresc. anal., filter attenuation corrections 8−35740
airborne particulates, in industrial Greek city, X-ray fluoresc. 8−27857
atmospheric sampling filters, charged particle induced X-ray fluorescence anal. *(French)* 8−27852

X-ray fluorescence analysis continued
biological samples, multichannel analyser spectroscopy using XRF, minicomputer appls. 8−20106
blood, human, X-ray fluorescence spectroscopy for trace element anal. 8−20248
blood serum, trace element anal. of thick samples, photon excited X-ray fluoresc. 8−3423
borate glass, Al^+ ion coordination study by $AlK_{\alpha1,2}$ X-ray fluorescence spectra *(Japanese)* 8−7308
botanic reference materials, candidate standards, homogeneity testing, anal. methods 8−11594
cereal, proton-induced X-ray emission and nuclear reactions for determ. of protein quality 8−20321
component particle size analyser, using X-ray fluorescence *(Japanese)* 8−15615
computer-controlled analyser 8−23982
dosimetry film exposure determ., comparison of X-ray fluoresc. and optical density 8−24137
energy dispersive, pulsed-tube counting rate performance 8−4752
energy dispersive X-ray spectra, peak separation from background 8−7310
environmental samples, X-ray fluoresc. anal., particle size correction method 8−48705
germanate glass, Al^+ ion coordination study by $AlK_{\alpha1,2}$ X-ray fluorescence spectra *(Japanese)* 8−7308
grain legumes, proton-induced X-ray emission and nuclear reactions for determ. of protein quality 8−20321
kaolinite-mullite reaction sequence, spectroscopic anal. of Al coordination changes 8−48719
liquid/solid nondestructive anal., fundamentals *(German)* 8−20125
Martian soil, proportional counters for Viking Lander spectrometer 8−40792
Martian soil, Viking lander expt., anal. methods and results 8−20703
matrix correct., FORTRAN IV program 8−7313
monazite from South India beach sands, superheavy elements search using X-ray fluorescence 8−16017
Moon, surface chem., appl. of weighted-filter imaging technique 8−12124
Naval Research Laboratory Programme, 1965-75, progress rpt. 8−3425
nuclear fuel reprocessing plant, remotely controlled computer-guided preparation facility for X-ray fluoresc. anal. *(German, English)* 8−17399
organic compounds, light elements, determ., matrix composition effects on line intensity 8−7257
organic specimens, thick, trace element anal., photon excited X-ray fluoresc. 8−3423
oxide film characterisation, using low energy electron induced X-ray spectroscopy *(French)* 8−41386
pewter, English and Scottish measures 8−347
phosphate glass, Al^+ ion coordination study by $AlK_{\alpha1,2}$ X-ray fluorescence spectra *(Japanese)* 8−7308
plant trace element anal. by X-ray fluoresc. for environmental pollution study 8−3690
pollution control appl. 8−15882
portable analyser for bore hole and powder meas. 8−45759
proportional counter with slight pulse amplitude shift for X-ray detection *(German)* 8−46213
α-quartz, correlation between cryst. perfection and refl. intensity for analyser cryst. 8−48259
radioisotope sources, development, characts. 8−15741
reactor fuel for LMFBR, pilot plant based on X-ray fluoresc. chem. anal. 8−5006
sample preconcentration, using ion exchange filter membranes 8−7228
SEM energy dispersive X-ray imaging techniques and appls. 8−48740
silicate rocks, X-ray spectral fluoresc. anal. 8−3762
thin specimens, X-ray spectra characteris. in TEM 8−35788
trace element anal., polarised X-radiation excitation source 8−7314
Viking experiment on Mars, sampling strategy, lab. simulation 8−20704
water, elemental anal. using PIXE 8−20127
water, mineral type, Na, Cl, I and S determ. by neutron activation and X-ray fluoresc. analyses 8−3428
Au trace anal. with portable X-ray analyser 8−49160
Ba plaster, X-ray absorption coefficients, from 100 to 400 keV 8−31283
Co, determ. in NBS standard alloy steels, X-ray fluoresc. method 8−31734
MnZn ferrite, quantitative anal., using X-ray fluorescence 8−40090
$NH_4H_2PO_4$, correlation between cryst. perfection and refl. intensity for analyser cryst. 8−48259
NiZnCo ferrite, quantitative anal., using X-ray fluorescence 8−40090
$Pb_5Ge_3O_{11}$, Czochralski growth, secondary phase formation 8−3027
PtI_4, aerosol, X-ray fluoresc. anal., particle size correction method 8−48705
$Tm_{1-x}Y_xTe$, $(0 \leq x \leq 1)$, single cryst. growth and characts. 8−23603
WC-Co cemented carbides, effect of Co form and distrib. in prep. starting mixture 8−44072
Zn coating on continuous galvanising line, mass meas. and control 8−19960
Zr, thin film, trace element determ. by X-ray fluoresc. anal. 8−40107

X-ray fluorimetry *see X-ray fluorescence analysis*

X-ray lasers
Compton laser, scatt. stimulation by decelerated EM waves, semiclassical theory 8−29926
electron beam-sliding spark plasma device, props. and laser appls. 8−5974
flash X-ray sources, characteristics 8−41392
Al, laser-produced plasma, population inversion between Al^{11+} levels, X-ray lines obs. 8−38539
C ion impurity in linear Z-pinch He plasma, outer 2s-shell electron excitation emission 8−22113
C VI, laser produced plasma, pumping by C VII+Ar III charge exchange 8−5462
Cl VII, transitions in laser heated plasma, intensity anomalies obs. 58 to 78 Å 8−1214
$Cs+H^+$, charge transfer processes with plasma gun, Lyman-α radiation exam. 8−46573
N ion impurity in linear Z-pinch He plasma, outer 2s-shell electron excitation emission 8−22113

X-ray lasers continued
$Na+H^+$, charge transfer processes with plasma gun, Lyman-α radiation exam. 8−46573
Ne-like multicharged ions, vacuum UV lasing action 8−1213
O ion impurity in linear Z-pinch He plasma, outer 2s-shell electron excitation emission 8−22113

X-ray monochromators
Borrmann principle based monochromatisation of primary beam in low-angle camera 8−5985
holographic grating monochromator for 5 to 1000 eV synchrotron radiation 8−18049
integration scan, ω/θ, restricted detector slits 8−9908
soft X-ray interference mirror 8−41385
total external reflection and β filter combination for monochromatization 8−4745

X-ray photoeffect *see photoemission*

X-ray photoelectron spectra
accuracy, factors affecting 8−7249
acid oxygen carbon electrodes, electrochemical measurements and surface studies, ESCA method appl. 8−31651
adsorbate relaxation energies in XPS, calc. 8−15283
adsorbed species, plasmon versus shake-up satellites in XPS 8−48286
alkyl cadmium, valence and core electron energies, photoelectron spectra, ab initio calc. 8−25613
alloy core electrons, spectra asymmetry *(Ukrainian)* 8−2982
angle resolved UPS and XPS disorder effects 8−15287
N-aryl ylides, obs. of satellite lines 8−37680
atom, X-ray photoelec. effect in presence of laser radiation 8−37615
benzene, X-ray photoelectron spectra, C 1s shake-up struct., PPP CI calc. 8−42126
binding energy determ. without retarding pot., relativistic mass increase 8−41377
brass, cold worked, surface composition anal. oxidation, sulphidation by X-ray photoelectron spectroscopy 8−11423
brass coated steel wire, surface composition, oxidation, sulphidation, study by XPS 8−11423
2-bromostearic acid, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
-carotene, valence bands, XPS obs. 8−24030
charge effects on insulator sample current *(French)* 8−41376
chemical states at surfaces exposed to high-temp. vapours 8−11559
contamination layers, XPS meas. 8−31301
core-hole lifetime effects in deep-level spectroscopies 8−48283
corrosion science, review of use of XPS 8−15586
diamond, Ar ion induced struct. changes, depth profiles, from XPS 8−34554
energy spectra generated by low-energy X-rays from intense plasmas, meas. using mag. spectrometer 8−31298
ESCA, chem., technical and industrial appls., lecture 8−27875
ESCA expt., charging and rotational dependence of time position 8−21970
ESCA expt., photoconducting effect on charging 8−21971
ethylene, valence XPS spectrum satellite struct., C(2s) region, correlation states 8−5278
fluoropolymers, linear, valence electronic struct., LCAO cryst. orbital calcs., ESCA 8−5384
fuel particles, HTR, surface anal. by XPS 8−33252
furan, gas, X-ray photoelectron spectra, satellite struct. 8−5281
graphite, high energy cond. and valence band states 8−39664
graphite, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
graphite, XPS and Auger KVV valence band spectra 8−11028
graphite intercalation compounds with K and Cs, low temp. specific heat meas. and XPS 8−26693
halogens in transition metal coordinate compounds, binding energies from XPS data 8−21973
imperfect surfaces, XPS *(Russian)* 8−35252
inorganic compounds, XPS chem. anal., chem. shift, core binding energy 8−20134
intermediate valence materials, autocorrelation, line shapes, power spectrum due to occupancy variations 8−47742
iron oxides, core line X-ray photoelectron spectra 8−7263
lepidolite, quantitative anal. by XPS 8−35742
localised levels near surfaces, photoelectron spectroscopy, scatt. effects and relax. shifts 8−15291
many body effects 8−27374
metal, conduction band X-ray photoemission, intrinsic plasmons effects 8−39661
metal, free-electron-like, lineshape asymmetries 8−14681
metal, XPS and X-ray absorption spectra, thermal broadening of core levels, many-electron effects 8−31284
metal electron response to local fields, X-ray processes 8−23584
metal oxide powder, quantitative surface meas., XPS method and appl. 8−40104
metallic glasses, electronic structure, neutron scatt., elec. resist., Hall coeff., mag. susceptibility and XPS 8−23013
metals, narrow-band, and simple, edge singularities in spin-depend. final-state interactions 8−6810
methane, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
muscovite, quantitative anal. by XPS 8−35742
oxides of third-row elements, Auger LVV transitions, X-ray photoelectrons and emission spectra 8−21978
Permalloy film, oxidation, quartz cryst. microbalance, AES and XPS obs. 8−27676
Permalloy film oxidation, microbalance, AES, ESCA and sputter profiling 8−15600
phlogopite, quantitative anal. by XPS 8−35742
photoelectric cross-section at K-edge measurements 8−2983
polyethylene, melting on Al, XPS meas. 8−15556
polyethylene, valence electronic struct., LCAO cryst. orbital calcs., ESCA 8−5384
polymer, ESCA investigation of struct., reactivity and bonding, O_2 (inert gas) surface modification 8−3438
polymer, ESCA investigations on selected systems, struct. and bonding obs. 8−14302
polymers, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
polysiloxane-metal oxide interfaces, bonding mechanism, surface anal. by XPS and static SIMS 8−15643

X-ray photoelectron spectra continued
powder specimens, oxidised and unoxidised layers, X-ray irradiated electron emission intensities, Monte Carlo calc. *(Russian)* 8−6825
pyrrole, gas, X-ray photoelectron spectra, satellite struct. 8−5281
quantitative surface anal., comparison of XPS results with model 8−40091
rare earth oxides, XPES final state struct., 4d electron ionis. 8−25616
recoil effects in light atom mols., X-ray photoelectron induced vibr., rot. excitation 8−42129
retinal_1, all-trans, valence bands, XPS obs. 8−24030
rubber to metal bonding 8−15648
semiconductor, core electron line shapes 8−11082
semimetal, core electron line shapes 8−11082
solids, quantitative anal. by XPS 8−35742
stearic acid, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
surface analysis, in space exploration, analytical appls. of Auger and XPS 8−35756
TCNQ and its salts, XPS meas. surface effects 8−11075
thin foil microanalysis using XPS and STEM, surface film effects 8−35789
thorium compounds, 4f level XPS shake-up satellites, assignments 8−1023
transition metal, 3d, superatomic relax. and positions of inner levels 8−11069
transition metal borides, charge state of B, core electron binding energies *(German)* 8−10391
transition metals, 3d, XPS of valence bands 8−35249
uniform depth profiling, in XPS, using saddle field ion source 8−48708
Ag (111), adsorbed layers of $O_2(N_2)(S)$, electronic props., XPS and UPS 8−10279
α-Ag-Cd, dil., electronic struct. determ. from thermoreflectance and XPS 8−39011
AgBr, photographic emulsions, adsorpt. of thiolic antifoggants, chem. struct., ESCA investig. 8−32907
$AgInSe_2$, reflectvvity and XPS meas. 8−35165
AgO and Ag_2O, ESCA spectra, Auger effect, initial and final states effect 8−15280
Al (111), chemisorpt. of O 8−14593
Al, adsorption of O_2, intrinsic and extrinsic plasmon coupling, XPS of adsorbed atoms core states 8−10278
Al, ang. depend. of plasmon loss features in XPS 8−43987
Al, angle-resolved XPS from valence levels, Brillouin zone averaging 8−48285
Al film, XPS lineshapes, many body processes 8−39663
Al, ultra soft X-ray photoelectron energy loss study, angle and energy dependence 8−23582
Al-Mn(Fe)(Co)(Ni)(Cu)(La)(Ce)(Gd), dil. virtual bound state 8−15285
γ-Al_2O_3, fluorided, appl. of XPS method for surface anal. 8−40104
Al_2O_3, quantitative surface anal., comparison of XPS results with model 8−40091
Ar, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
As_2S_3, amorphous semicond., photo-induced optical and structural changes *(Japanese)* 8−47244
Au, angle-resolved XPS from valence levels, Brillouin zone averaging 8−48285
B-S compounds, relative antiwear efficiency 8−35532
Be, electronic density of states 8−6829
BiI_3, layered semicond., valence bands UPS and XPS obs. 8−11078
CO oxidation by NO on Ir surface XPS and UPS 8−15702
CO, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
CO_2, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
Cd, core binding energies, gas phase X-ray photoelectron spectra 8−37611
CdO, ESCA spectra, Auger effect, initial and final states effect 8−15280
CdTe, surface layers formed by etchants, XPS meas. 8−44240
CeB_6, thermionic emission rel. to surface state 8−39654
CeN, electronic struct., XPS exam. 8−6269
Cl_2, chemisorpt. on Ag (110), XPS and UPS meas. 8−31293
Co complex, oxygenated CoII amino acid-imdazole, XPS 8−21968
$CoFe_2O_4$, core line X-ray photoelectron spectra 8−7263
$CoFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
Co(III) compounds, XPS exam., struct. of 2p lines 8−19631
CoO, ESCA and Auger lines, chem. shifts 8−6817
Co_3O_4, ESCA and Auger lines, chem. shifts 8−6817
CoSb, electronic struct., XPS meas. 8−2990
Cr alloys, ESCA meas. of oxide layer 8−15584
Cu and Cu alloys, corrosion inhibitor study by XPS, adsorbed benzotriazole 8−35554
Cu, surface d-band narrowing, angle resolved XPS 8−19635
Cu-Mn alloys, Mn K X-ray emission and XPS lines, width and asymm. 8−19605
$CuAlS_2$, reflectvvity and XPS meas. 8−35165
$CuFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
$CuGaS_2$, reflectvvity and XPS meas. 8−35165
CuInSe, reflectvvity and XPS meas. 8−35165
$EuCu_2Si_2$, XPS studies, valence band, 4-f region 8−6831
F Kα X-ray line, from KF, for excitation of electron spectra 8−29865
Fe, excitation of 1s core-level photoelectrons with synchrotron radiation 8−19632
Fe-Cr, mechanically polished, XPS determ. of comp. of surface and surface oxide 8−7074
Fe-Cr, passivity in H_2SO_4, XPS study 8−44256
Fe-Cr, surface composition change caused by heating in high vacuum, XPS obs. 8−44254
Fe_2O_3, core and valence level XPS spectra meas. 8−15290
Fe_3O_4, core and valence level XPS spectra meas. 8−15290
Fe_xO, core and valence level XPS spectra meas. 8−15290
Fe_xO, wustite, width of d-level final-state struct. obs. in XPS 8−19633
FeOOH, core and valence level XPS spectra meas. 8−15290
αFeOOH, core line X-ray photoelectron spectra 8−7263
GaAs (110) cleaved surface, oxidation, XPS exam. 8−31551
$GaPO_4$ film growth on GaP, XPS exam. 8−31552

X-ray photoelectron spectra continued
Ge, valence band relaxation energies during XPS 8−39657
Ge-GaAs abrupt interface, orientation depend. of interface dipole energies, XPS expts. 8−39196
H_2O, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
$H_2W_{12}O_{40}{}^{6-}$, XPS spectra, oxidation states 8−6824
In, quantitative surface anal., comparison of XPS results with model 8−40091
In surface, impurity precipitation and resolution at melting point 8−14553
In, ultra soft X-ray photoelectron energy loss study, angle and energy dependence 8−23582
InSe, two-dimensional band struct., XPS meas. and tight-binding calc. 8−2419
Ir (111), chemisorption of CO, UPS and XPS obs., comparison with Pt 8−38942
$KCoF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
$KCuF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
$KFeF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
$KMnF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
$KNiF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
$KZnF_3$, multiplet struct. in XPS spectra of 3p and 3s subshells 8−43981
Kr, atomic, XPS calc. 8−958
LaB_6, thermionic emission rel. to surface state 8−39654
Li film, XPS lineshapes, many body processes 8−39663
$LiCoO_2$, XPS of low spin Co (III) 8−31300
Mg, adsorption of O_2, at 100 and 300K, XPS, UPS and X-ray AES meas. 8−18901
Mg, electronic density of states 8−6829
Mg film, XPS lineshapes, many body processes 8−39663
Mg, polycryst., adsorpt. of O_2 at 100 and 300K, XPS, UPS, XAES 8−18906
MnSb, electronic struct., XPS meas. 8−2990
Mo film on Si surface, $MoSi_2$ form. conditions *(French)* 8−43270
MoO_3 film, electrochromism, X-ray electron spectra 8−48146
MoS_2 film, adhesion to oxidised metal surfaces, XPS meas. 8−22972
N containing molecules, N NMR, nuclear mag. shielding, X-ray photoelectron spectra 8−17695
N_2, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
NH_3, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
Na, electronic density of states 8−6829
Na film, XPS lineshapes, many body processes 8−39663
$NaClO_3$ trapped O species in irradiated samples, low-temp. X-ray photoelectron spectroscopy 8−27799
NbC, valence band struct. *(Russian)* 8−6268
Nb_3Ge, superconducting hybridisation and bonding, XPS exam. 8−2988
Ne, photoelectron spectra, 21.2-151.4 eV and soft X-ray, ionis. cross-section 8−37683
Ni, clean, chemisorpt. of S-containing alkanes, XPS and thermal desorpt. with mass spectrometric anal. 8−14595
β′-NiAl, density of states, XPS meas. 8−48284
$NiFe_2O_4$, core line X-ray photoelectron spectra 8−7263
$NiFe_2O_4$, thermally induced surface chemistry and struct., XPS 8−22939
NiSb, electronic struct., XPS meas. 8−2990
Pb (100) and (110) surfaces, oxidation and sulphidation, LEED and XPS obs. 8−20070
Pb, quantitative surface anal., comparison of XPS results with model 8−40091
$PbCl_2(Br)(I_2)$, valence band electronic struct., XPS and UPS obs. 8−6826
PbI_2, layered semicond., valence bands UPS and XPS obs. 8−11078
Pt (100) unreconstructed surface, CO chemisorption 8−38962
Pt film, RF sputtered, thickness distribution function 8−11083
Ru-Cu catalyst, electron spectroscopy exam. 8−44405
$(SN)_x$, electronic struct., X-ray and UV photoemission obs., OPW and pseudopot. calcs. 8−6832
S_2N_2, XPS, solid-state polymerisation 8−19630
SO_2, adsorption on Fe surface, X-ray photoelectron spectra 8−27370
Sc, core level binding energies, plasmon peaks 8−6828
ScH_2, core level binding energies, plasmon peaks 8−6828
Sc_2O_3 core level binding energies, plasmon peaks 8−6828
Se film on brass, ESCA interface study 8−43269
p-Si, achievement of negative electron affinity 8−2980
Si, amorphous, hydrogenated bonding 8−19636
Si, photoelectron escape depths determ. from X-ray photoelectron spectra 8−27368
Si surface, before and after $N_2{}^+$ bombardment at 500 eV, chem. reactions 8−48265
Si, valence band relaxation energies during XPS 8−39657
SiO surface, before and after $N_2{}^+$ bombardment at 500 eV, chem. reactions 8−48265
SiO_2, quantity anal. of O ions, meas. of chemical shift in Si2p binding energy, using ESCA *(Japanese)* 8−48274
SiO_2 surface, before and after $N_2{}^+$ bombardment at 500 eV, chem. reactions 8−48265
SiO_2:Ag, implanted atom, X-ray photoemission obs. 8−39050
SiO_2:Au, implanted atom, X-ray photoemission obs. 8−39050
$Sm_{1-x}Ca_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
$Sm_{1-x}Gd_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
$Sm_{1-x}Th_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
$Sm_{1-x}Y_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8−43988
$SnCl_2$, valence band electronic struct., XPS and UPS obs. 8−6826
$SnSe_2$, single crystal, reflectivity, XPS, UPS, and band struct. 8−6701
Te compounds, X-ray photoemission, core level binding energy shifts rel. to Mossbauer isomer shifts 8−2984
thiophen, gas, X-ray photoelectron spectra, satellite struct. 8−5281

X-ray photoelectron spectra continued
Ti, XPS exam. *(French)* 8−23858
Ti_yO_x on Ti film electrodes, AES, XPS and electrochem. characterisation 8−7086
$TiS_2(Se_2)$, modelling contrasting semimetallic characters 8−43393
TlCl, valence band electronic struct., XPS and UPS obs. 8−6826
U in transition metal coordinate compounds, binding energies from XPS data 8−21973
UO_2, valence electronic configuration determ. by photoelectron spectroscopy 8−15284
V, surface state, XPS investigation 8−11070
VC, valence band struct. *(Russian)* 8−6268
VC_x, surface state, XPS investigation 8−11070
VN_x, surface state, XPS investigation 8−11070
VO_x, surface state, XPS investigation 8−11070
V_2O_5 film, electrochromism, X-ray electron spectra 8−48146
WO_3 film, electrochromism, X-ray electron spectra 8−48146
Xe, satellites in 304 Å photoelectron spectrum 8−17627
$YbAl_3$, XPS studies, valence band, 4-f region 8−6831
Zn, core binding energies, gas phase X-ray photoelectron spectra 8−37611
$ZnGeP_2(As_2)$, reflectvvity and XPS meas. 8−35165
ZnO powder, with adsorbed methanol, appl. of XPS method for surface anal. 8−40104
ZnO{10$\bar{1}$0} surface, clean, preparation, XPS meas. 8−39933
ZnS, RF sputtered film, stoichiometry, chem. comp. 8−34727
ZrC, valence band struct. *(Russian)* 8−6268
ZrN, plasma-formed, ESCA and supercond. transition temp. 8−19697

X-ray production
see also X-ray tubes
AURORA machine studies of air chem., cond. and boundary layer 8−32144
flash X-ray sources, characteristics 8−41392
high brilliance sources and generators, soft and pulsed X-ray generators, book contrib. 8−42861
nanosecond pulse electron and bremsstrahlung generator 8−21308
plasma, laser produced, as soft X-ray source 8−14213
radiological safety standard for industrial X-ray equipment, USA 8−29223
synchrotron radiation for VUV and X-ray spectroscopy, lecture 8−24870
synchrotron radiation sources and utilisation, review 8−41390
syncyrotron orbital radiation appl. *(Japanese)* 8−25941
^{55}Fe, X-ray source, parameter determ. 8−5081

X-ray protection *see radiation protection*

X-ray reflection
absorptive single crystal, X-ray refl. coeff. 8−9898
multilayer mirrors, for X-ray and far UV radiation 8−1313
neutron star surfaces, X-ray refl. theory and appl. to Hercules X-1 8−28716
quartz, ion-implanted layers, total X-ray reflection investig. of clustering 8−6081
review of X-ray optics in 1 to 300 Å wavelength range 8−29221
total external reflection and β filter combination for monochromatization 8−4745
$LiNbO_3$, imaging of photorefractive effects by double cryst. X-ray refl. topography 8−39521
Si ion-implanted layers, total X-ray reflection investig. of clustering 8−6081
Si, surface layer, thin, density meas. by total external X-ray reflection 8−14635
Si, thermoreflectance near $L_{2,3}$ soft X-ray threshold, temp. depend. 8−35224

X-ray scattering
see also Compton effect; X-ray diffraction
aerosol loaded filters, X-ray fluoresc. anal., absorpt. corrects. calcs. 8−7311
inelastic scatt. in crystals, review 8−39625
mammography, backscatt. factors, var. with field diameter and half-value layer 8−3593
metals, reson. scatt. of X-ray theory 8−11017
noncrystalline state structure determ. techniques, phase retrieval methods 8−22656
random stacking model scatt. intensity, appl. to tetrahedrally bonded amorphous semicond. 8−9953
slit-height correction in small-angle scatt. without spherical symmetry, numerical calc. 8−18490
spherical X-ray wave, dynamics theory of diffr. 8−26372
tissue-maximum ratios for high-energy X-rays 8−3609
Ar, incoherent X-ray scatt., statistical atom model 8−29747
BC_x X-ray scatt., polarised radiation excitation source for X-ray fluoresc. anal. 8−7314
$CaWO_4$ and rare-earth X-ray intensifying screen sensitivity to scattered radiation 8−7450
Cu, atom and ions, isoelectronic sequence, coherent photon scatt. cross section calc. 8−5177
Na, thermal diffuse X-ray scatt. meas. in longitudinal and transverse branches 8−19598
Si, energy-integrated inelastic X-ray scattering cross sections, energy-integrated, separation of components 8−38587
Si, X-ray rot. polarisation, absorpt. crystal orientation effects 8−47206

X-ray sources (astronomical)
see also X-ray astronomical observations
A0535+26, transient slow X-ray pulsar, spectrophotometric survey 8−4263
A0535+26 (HDE 245770), Hβ var., general props., spectral obs. of optical counterpart 8−4247
A0620−00, transient X-ray source, spectrophotometry 8−4400
2A0 120−591, obs. of assoc. galaxy/quasar, (ESO 113-IG45) 8−28782
2A 0946−310, spectroscopic obs. of possible galaxy counterpart 8−45404
2A 1052+606 (SAO 015338), analysis of possible identification 8−32608
2A 1102+384, soft X-ray emission obs. 8−49564
2A 1251−290, high-latit. X-ray source, X-ray spectrum and variability 8−32611
2A 1348+700, 1415+255, 1410−029, Seyfert galaxies, X-ray spectra and variability 8−32611
Abell 478, cluster of galaxies, X-ray and radio obs. 8−8133

X-ray sources (astronomical) continued
Abell 478, X-ray cluster of galaxies, redshift and optical struct. 8−8134
Abell clusters of galaxies, X-ray luminosity function 8−36704
accretion discs, turbulent energy transport 8−28661
Aquila X-1, nature of X-ray outbursts 8−20909
Aquila X-1, photometry and spectroscopy of optical counterpart, model 8−32614
Aquila X-1 (3U 1908+00), optical counterpart for flaring source 8−41089
Ariel 0535+26, X-ray outburst on 1978 April 10, SAS-3 obs. 8−45433
Ariel 0535+26 (HD 245770), photoelectric UBV photometry 8−36592
Ariel 0535+26 (HDE 245770), UBV photometry during X-ray flare-up 8−28705
Ariel 0620−00, transient X-ray source, obs. using OSO-8 Bragg cryst. spectrometer 8−12426
Ariel 0620−00, transient X-ray source, spherical model 8−12415
Ariel 0620-00 (Nova Monocerotis 1975), photographic photometric obs. 8−36587
Ariel 1540−53, eclipsing X-ray binary pulsator 8−8151
Ariel 5 clusters, optical morphology and galaxy density 8−8135
Ariel V (SSI) catalogue, of high galactic latit. (|b|>10°) X-ray sources 8−32362
binary sources, effect of vacuum birefringence on X-ray polarisation 8−4408
binary stars, review *(Italian)* 8−32516
binary stars and neutron star spin down *(Chinese)* 8−28857
binary stars linear radial and nonradial modes of oscillation 8−4213
binary systems, variable optical polarization rel. to black hole secondary component 8−20910
binary X-ray sources, accretion disc coronae 8−16569
binary X-ray sources, evolutionary history 8−12431
binary X-ray sources, fate of matter and ang. momentum in disc accretion onto magnetised neutron star 8−28715
binary X-ray sources, radiative effects in supersonic accretion 8−40978
binary X-ray sources, review of optical obs. 8−12429
binary X-ray sources, Roche-lobe overflow model 8−32601
binary X-ray sources stellar parameters of early type companions 8−36564
binary X-ray systems, accretion flows 8−12432
binary X-ray systems, twisted accretion discs 8−4283
burst sources, effects of thermal limit for spherical accretion 8−45430
burst sources, neutron-star thermonuclear flahses model 8−12417
burst sources, nuclear burning on accreting neutron stars 8−36724
burst sources, review 8−12416
burst sources, review 8−41084
burst sources, review 8−49566
burst sources in globular clusters, neutron stars hypothesis *(Russian)* 8−16480
bursters, time dependent accretion by magnetic neutron stars 8−4401
CA 0340−538 (3U 0328−523), southern cluster of galaxies, vel. dispersion and global parameters 8−36705
α Canis Majoris (Sirius B), EUV obs., evidence against photospheric origin of 0.25 keV flux 8−49481
η Carinae, soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
CD −33°12119, 3U 1727−33 candidate, UBV photometry 8−12251
Centaurus A, X-ray variability, OSO-8 obs. 8−41082
Centaurus A (NGC 5128), detect. of X-ray emission from giant radio lobes 8−41055
Centaurus A (NGC 5128), radio and X-ray var. of nucleus 8−36711
Centaurus X-3, periodicity of extended lows 8−24526
Centaurus XR-4, bright transient X-ray source, assoc. with NGC 5824 globular cluster 8−12420
Circinus X-1, continuation of anomalous X-ray behaviour 8−32606
Circinus X-1, distance 8−12413
Circinus X-1, ms X-ray bursts, possible black hole 8−4404
Circinus X-1 (3U 1516−56), obs. of optical and radio counterpart 8−12414
clusters of galaxies, Compton scatt. of microwave background by intracluster gas 8−24575
clusters of galaxies, evidence for gas stripping from spirals 8−32586
clusters of galaxies, evolution rel. to origin and distrib. of intracluster gas 8−28770
clusters of galaxies, hot gas X-ray emission rel. to radio sources props. 8−12398
clusters of galaxies, numerical models for X-ray line emissions 8−8149
clusters of galaxies, radial distrib. of morphological types of galaxies 8−8129
clusters of galaxies, radiative regulation of gas flow, X-ray source model 8−4371
clusters of galaxies, unborn, microwave and X-ray emission 8−8131
clusters of galaxies, X-ray and optical study 8−28805
clusters of galaxies, X-ray emission, Compton and thermal models 8−12378
clusters of galaxies, X-ray emission rel. to intracluster hot gas 8−12374
clusters of galaxies, X-ray struct. and spectra 8−12387
clusters of galaxies. X-ray luminosity correl. with galactic content 8−32585
collapsed stars, accretion magnetosphere stability, polar cap dripping motion 8−4194
compact X-ray sources, masses 8−12430
Comptonisation of Fe X-ray spectral features 8−20908
convective accretion discs and X-ray sources 8−16568
Crab Nebula, polarimetry with OSO-8 X-ray polarimeter 8−12426
Crab Nebula, search for thermal X-ray line emission 8−8095
Crab Nebula, X-ray polarization, precision meas. without pulsar contamination 8−41086
critical accretion flow of gas into compact stars, rel. to X-ray sources 8−20817
SS Cygni, dwarf nova, ANS detection of both soft and hard X-ray emission 8−36579
Cygnus region, soft X-ray sources and supernova remnants 8−4397
Cygnus X-1, 39 day polarization period, Thomson scatt. 8−8166
Cygnus X-1, absence of 39 day period in non-UV data 8−8167
Cygnus X-1, accretion disc corona 8−16569
Cygnus X-1, anomalous light curve during X-ray increase of 1975 April-May 8−28850
Cygnus X-1, black hole candidate, review 8−16577

X-ray sources (astronomical) continued
Cygnus X-1, discovery of synchronous binary polarization 8−41087
Cygnus X-1, evidence for 39 day period 8−8165
Cygnus X-1, HEAO-1 pointed obs. 8−7856
Cygnus X-1, obs. in energy range 100 keV-3 MeV 8−20907
Cygnus X-1, physical reality of millisecond bursts questioned, shot noise effects 8−45429
Cygnus X-1, polarimetry with OSO-8 X-ray polarimeter 8−12426
Cygnus X-1, search for rapid optical periodicities 8−24573
Cygnus X-1, search for X-ray polarisation 8−4406
Cygnus X-1, short-term time variability, shot noise model 8−36721
Cygnus X-1, temporal and spectral var., X-ray rocket obs. 8−8163
Cygnus X-1, X-ray variability in high state 8−28855
Cygnus X-1 (HDE 226868), optical photometry, (1972-1976) 8−32609
Cygnus X-1 (HDE 226868), orbital period and inclination 8−16579
Cygnus X-1 possible existence of black hole in binary system 8−16457
Cygnus X-2, polarimetry with OSO-8 X-ray polarimeter 8−12426
Cygnus X-3, binary pulsar age and activity *(Russian)* 8−4413
Cygnus X-3, cocooned X-ray binary pulsar model 8−36723
Cygnus X-3, COS-B X-ray obs., 4.8 hour modulation 8−28856
Cygnus X-3, evidence for X-ray Fe line emission obtained with cryst. spectrometer 8−8153
Cygnus X-3, observational constraints, on models 8−16567
diffuse background, active galactic nuclei contrib. 8−36733
diffuse background radiation, origin, primaeval hot gas clouds fragmentation 8−28861
diffuse soft X-ray sky, astrophysics rel. to 0.1-2.0 keV cosmic X-rays 8−16581
diffuse X-ray background, source 8−8168
Fairall 9, X-ray emitting Seyfert galaxy 8−28790
flare-up of X-ray source, SAS-3 obs. 8−20915
galactic bulge X-ray sources, precise positions from SAS-3 obs. 8−16575
galactic centre sources, positions meas. by Ariel-5 RMC expt. 8−4407
galactic nuclei, compact X-ray sources model rel. to giant elliptical galaxy (M87) 8−28847
galactic soft X-ray background rel. to coronal gas O VI absorpt. 8−36653
galactic X-ray sources, $320° < l^{II} < 340°$, positions 8−28860
galactic X-ray sources, correl. between hardness and pulsation 8−4399
galactic X-ray sources, distrib. in Milky Way 8−28851
galactic X-ray sources, OSO-7 obs. 8−32600
galaxies, compact nuclei, scattered X-ray flux 8−4363
galaxies in nearby superclusters, X-ray source clustering rel. to hot gas 8−41065
Galaxy, diffuse soft X-rays distrib. and energy spectrum 8−28853
galaxy superclusters, X-ray emission, Uhuru meas., intergalactic gas 8−41064
globular cluster X-ray source formation by collisions of compact and normal stars 8−28854
globular cluster X-ray sources, review 8−12428
globular clusters, central X-ray binary stars 8−20916
globular clusters, evidence for H II in cores 8−8065
globular clusters, UBV photometry 8−16468
gravitationally redshifted γ-rays, neutron star mass constraints 8−4274
GX 13+1 (3U 1811-17), X-ray and radio obs. 8−41081
GX 17+2 (3U 1813−14), photometry of optical candidate 8−28849
GX 17+2 (3U 1813-14), radio and optical identification 8−45428
GX 17+2 (3U 1813-14), X-ray and radio obs. 8−41081
GX 301−2 (4U 1223−62), SAS-3 obs. of 1978 January brightening 8−28858
GX 304−1 (3U 1258−61), discovery of 272 second period var. 8−8152
H1122−59 near Centaurus X-3, new source, MSH 11−54 coincidence 8−28859
H2309+59 near Cassiopeia A, new source, V Cassiopeia coincidence 8−28859
H 1743−32, transient source, detect. 8−45431
HD 153919, Of supergiant, X-ray binary 3U 1700−37 optical counterpart, light curve anal. 8−32470
HD 64740, He variable star, X-ray source 4U 0750−49 optical candidate 8−36584
HDE 245770 (Ariel 0535+26), optical spectrum of Be star 8−4227
Hercules X-1, hard X-ray pulsation obs. 8−12293
Hercules X-1, hard X-ray spectrum, strong cyclotron line emission 8−41085
Hercules X-1, mag. neutron star, cyclotron emission and beaming mechanisms 8−36726
Hercules X-1, X-ray binary, X-ray refl. from neutron star surface 8−28716
Hercules X-1, X-ray lines and magnetic field 8−24574
Hercules X-1, X-ray spectra, Fe line fluoresc. from subrelativistic shell 8−4405
Hercules X-1, X-ray spectrum of pulse 8−8154
Hercules X-1 (HZ Herculis), 35 day cycle investigation 8−32509
Hercules X-1 (HZ Herculis), hard X-ray obs. 8−36728
Hercules X-1 (HZ Herculis), multiperiod variable star 8−28848
Hercules X-1 (HZ Herculis), optical behaviour in (1976) 8−32603
Hercules X-1 (HZ Herculis), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
Hercules X-1 spectrum, struct. and higher harmonics of cyclotron lines 8−20912
AM Herculis, multicolour photometry, slow optical pulsar 8−28693
HZ Herculis, optical props. of accretion disc 8−28729
AM Herculis, OSO-8 hard X-ray obs. 8−4409
AM Herculis, X-ray binary, obs., slow rotator model 8−12408
AM Herculis, X-ray binary, vel. curves for emission lines broad and sharp components 8−32513
AM Herculis (3U 1809+50), IR light curves 8−28727
AM Herculis (3U 1809+50), multicolour linear and circular polarisation obs. and geometrical model 8−8053
AM Herculis (3U 1809+50), soft X-ray results from OSO-8 Wisconsin Expt. 8−36722
high galactic latitude sources, identifications with southern clusters of galaxies 8−49553
hot degenerate stars in steady-state accretion, thermal stability 8−40929
hot plasma, X-ray emission and radiative transfer effect 8−36451
HR 1099, RS Canum Venaticorum star, 4U 0336+01 optical counterpart 8−32475

X-ray sources (astronomical) continued
Klemola 44, X-ray cluster of galaxies, redshifts and vels. 8−45414
line spectra, prod. by nonthermal ions 8−36725
LMC X−1, luminous extended X-ray source obs. 8−16570
LMC X-4, discovery of X-ray eclipses 8−24572
LMC X-4, obs. of X-ray eclipses 8−24571
LMC X-4, X-ray variability obs. 8−4398
M15, globular cluster, dynamical models without black hole 8−32536
M15, X-ray globular cluster, search for O III 5007 Å forbidden line emission 8−36644
M31, extended H I regions rel. to. interpretation of X-ray obs. 8−12354
M42 (Orion Nebula), X-ray obs. by Astronomical Netherlands Satellite 8−28852
M87, elliptical galaxy, enormous mass rel. to extended X-ray source model 8−28775
in Magellanic Clouds, high luminosity rel. to galactic X-ray sources 8−49559
massive binary X-ray sources, evolution in conservative case 8−49479
massive black holes, X-ray spectrum from disc accretion 8−40985
MCG 5-23-16, galaxy, X-ray emission detect. 8−41052
MCG -6-30-15, X-ray emission in 2-10 keV range 8−45405
MR2251−178, X-ray QSO discovery, 2 Ariel 2251−179 optical counterpart 8−24567
MSH 14−63, probable remnant of A.D. 185 supernova, X-ray emission obs. 8−45427
MXB1730−335, rapid X-ray burster, dual charact., X-ray bursts classification 8−32613
MXB1730−335, SAS-3 obs. on 1978 Apr. 15-16, no burst activity 8−49563
MXB 1636−53, X-ray burst source, SAS-3 obs. 8−8156
MXB 1659−29, nearby single burst on 1978 March 8 analyzed 8−36731
MXB 1659−29, persistent X-ray emission obs., (1978 March 6 to 9) 8−41090
MXB 1706−43, X-ray bursts obs. 8−8161
MXB 1728−34, X-ray bursts obs., (1978 March 8 to 10) 8−41091
MXB 1730−335, bursts obs. by SAS-3, 1978 March-April 8−45434
MXB 1730−335, comparison with dwarf novae rel. to neutron star model 8−12410
MXB 1730−335, rapid burster, position determ., HEAO 1 obs. 8−49561
MXB 1730−335, rapid burster, search for X-ray bursts, (1978 March 8 to 10) 8−41091
MXB 1730−335, rapid X-ray burster, long-term behaviour 8−32602
MXB 1730−335, SAS-3 obs. of 1978 March burst activity 8−45432
neutron stars, luminosity enhancement following X-ray bursts 8−32502
neutron stars, rotating, magnetic, accretion flow inside magnetosphere rel. to rot. rate 8−8037
NGC 4151, Seyfert galaxy, Uhuru obs. 8−12411
NGC 4151, X-ray emission, two-component model for Seyfert galaxy 8−45399
NGC 4151 (4U 1206+39), Seyfert galaxy, hard X-ray spectrum 8−49537
NGC 5128 (Centaurus A), X-ray structure 8−24569
NGC 5128 (Centaurus A), X-ray variability, Ariel V Sky Survey obs. 8−16574
nova at $\alpha = 1^h14^m$, $\delta = +64.4°$, discovery obs. 8−24515
Nova Ophiuchi 1977 (H1705−25), X-ray light curve 8−49453
Nova Ophiuchi 1977 (H1705−25), X-ray nova, HEAO 1 obs. 8−49452
OB supergiant X-ray binaries, line distortion effects 8−7995
objective prism spectrophotometry of UV and X-ray sources 8−8150
observations and models, review, 1960-1980 period 8−49567
periods, review 8−12424
X Persei, 580 day and other periodicities 8−16435
X Persei, energy distrib., light vars. 1972-76 period 8−16437
X Persei, V-band polarization variability 8−49455
X Persei (2U 0352+30), photoelec. obs., light vars. 8−40999
X Persei (3U 0352+30), photometry, search for optical 13.9 minute period 8−16426
X Persei (4U 0352+30), light vars., tidal distortion by massive unseen companion 8−36640
Perseus Cluster, compact and diffuse X-ray sources in core 8−49545
pulsars, effect of vacuum birefringence on X-ray polarisation 8−4408
quasar-like objects, black hole model for X-ray emission 8−20905
quasars, X-ray emission from accreting stellar debris clouds 8−32597
radio quasars, deep search for X-ray emission by Ariel V 8−12402
review of X-ray sources 8−32604
2S 0114+650, OB star optical candidate and spectral var. 8−16578
2S 0114+650, X-ray source discovery obs. 8−12423
2S 1636−536 (MXB 1636−53), X-ray burst source, position 8−12419
2S 1728−337 (MXB 1728−34), X-ray burst source, position 8−12419
2S 1735−444 (MXB 1735−44), X-ray burst source, position 8−12419
Scorpius X-1, linear X-ray polarisation upper limit 8−49557
Scorpius X-1, variability analysis, method of time histograms 8−20652
Scorpius X-1, X-rays effect on equatorial lower mesosphere ionisation 8−36233
Scorpius X-1 review 8−16576
Seyfert galaxies detected as X-ray sources by Ariel V satellite 8−49540
SMC X-1, HEAO-1 pointed obs. 8−7856
SMC X-1, pulse profile and refined orbital elements 8−8148
SMC X-1, spin-up rate meas. 8−41083
SMC X-1, VBLUW photometry, evidence for accretion disc 8−12409
SMC X-1 (SK 160), spectroscopic orbit and masses 8−4285
SMC X-2, 14th magnitude OB star 0.5′ from source position 8−4411
SMC X-2, colours, spectral type and position of optical candidate 8−12421
SMC X-2, obs. of optical candidate 8−8162
SMC X-2, SMC X-3, discovery, hard spectra, high luminosity rel. to galactic X-ray sources 8−49559
SMC X-2 and SMC X-3, variable X-ray sources, SAS-3 obs. 8−20914
SMC X-3, colours, spectral type and position of optical candidate 8−12421
SMC X-3, obs. of optical candidate 8−8162
soft X-ray background, spatial struct., OSO-8 obs. 8−16580
soft X-ray background 8−16582
source counts at high galactic latitude 8−49565
space distrib. of galactic sources using Uhuru catalogue 8−8159
spectroscopy and polarimetry from Spacelab 8−32314

- **X-ray sources (astronomical)** continued
  - transient events with precursor pulses, SAS 3 obs. 8−49562
  - transient soft X-ray sources, identification with flare stars 8−45337
  - transient source in Norma, precise position determ., HEAO 1 obs. 8−49560
  - transient source in Pictor, HEAO-1 A-2 expt. obs. 8−32607
  - transient X-ray sources, review 8−12425
  - transrelativistic plasmas, relevance of photon pair prod. 8−20632
  - 4U0134−11, galaxy supercluster candidate, no X-rays from hot gas 8−8164
  - 4U 0115+63, transient X-ray source, accurate positions 8−24570
  - 4U 0115+63, transient X-ray source, optical and X-ray obs. 8−32605
  - 4U 0241+62, identification with QSO or Seyfert nuclei-like object 8−16572
  - 3 U 0352+30 (X Persei), UBVRI photometry 8−8049
  - 3U 0614+09, case for X-ray burst 8−32610
  - 2U 0832-45, extended X-ray source centred on Vela pulsar 8−41095
  - 3U 0900-40 (HD 77581), binary X-ray source, spectroscopic orbit and masses of components 8−16461
  - 4U 0945−30, spectroscopic obs. of possible galaxy counterpart 8−45404
  - 4U 1145−61 (HD 102567), X-ray periodicity and orbital motion 8−8160
  - 4U 1223−62, high-speed UV photometry of periodic modulation of WRA 977 (Feb.-Mar. 1977) 8−16442
  - 4U 1249-28, possible identification with EX Hydrae (U Geminorum type star) 8−36729
  - 3U 1252−28, evidence for assoc. with single galaxy 8−32586
  - 4 U 1325−31, X-ray emission in 2-10 keV range from MCG -6-30-15 Seyfert galaxy counterpart 8−45405
  - 3U 1538−52, binary X-ray pulsar, orbital elements 8−16573
  - 4U 1538−52, obs. of optical candidate 8−41093
  - 4U 1538−52, spectrograms of optical candidate, confirmation of identification 8−41094
  - 4U 1538-52, binary X-ray source, spectral type of possible optical counterpart 8−36727
  - 3U 1538-52, optical candidates 8−12412
  - 4U 1608−52, 1977 Oct. decline, all-sky-monitor obs. 8−4412
  - 4U 1608−52, optical identification and transient source outburst 8−41088
  - 3U 1626−67, X-ray pulsar, 7.68 sec. periodicity, SAS-3 obs. 8−8157
  - 4U 1626−67, X-ray pulsar, optical candidate photometry 8−12418
  - 3U 1626−67, X-ray pulsar as accreting neutron star in compact binary 8−49470
  - 4U 1630−47, obs. of recurrent transient source 8−41092
  - 4U 1636−53 (MXB 1636−53), X-ray burster, optical candidate photometry 8−12418
  - 4U 1642−45 and 1630−47, X-ray flare detect. 8−12422
  - 4U 1700−37, SAS-3 obs. of 97 minute periodicity 8−36730
  - 3U 1700−37 (HD 153919), forbidden Fe XIV 5303 Å emission detect. 8−16571
  - 3U 1700−37 (HD 153919), X-ray binary, spectrum variations 8−8158
  - 3U 1700-37 (HD 153919), binary X-ray source, radial vels. in blue spectral region 8−49556
  - 4U 1735−44 (MXB 1735−44), X-ray burster, optical candidate photometry 8−12418
  - 3U 1809+50 (AM Herculis), light curves and Fourier analysis 8−49483
  - 3 U 1809+50 (AM Herculis) system nature, general *(Russian)* 8−4295
  - 4U 1837+04 (Serpens X-1), obs. of optical candidate 8−41093
  - 3U 1915−05, X-ray burst source discovery 8−8155
  - 4U 1916−79, high-latit. X-ray source, X-ray spectrum and variability 8−32611
  - 3U 1956+11, optical counterpart photometry and spectrum 8−49554
  - 3U 1959−69, possible identification with EUV source in Pavo region 8−28675
  - Vela X-1, OSO 8 extended obs. 8−49555
  - Vela X-1 (HD 77581), optical pulsations discovery 8−20911
  - Virgo cluster, structure of extended X-ray source 8−4410
  - weak, variability analysis, method of time histograms 8−20652
  - white dwarf binary systems, hard X-ray obs. 8−36732
  - X-ray bursts, review 8−12427

- **X-ray spectra**
  - *see also X-ray absorption spectra; X-ray chemical analysis; X-ray emission spectra*
  - energy dispersive peak separation from background 8−7310
  - lectures on interaction of radiation with condensed matter, Trieste, Italy (Jan.-March 1976) 8−27172
  - lineshifts in nonrelativistic and relativistic approxs. 8−951
  - measurement, interpretation and comparison from various industrial units *(German)* 8−7149
  - mesic atom, X-ray radiation anisotropy, suppression coeffs. *(Russian)* 8−22058
  - model uncertainty and bias in evaluation, smoothest consistent baseline theory 8−11591
  - radiographic inspection, spectra and angular distrib. meas. of scattered X-radiation *(German)* 8−7148
  - transition radiation in stack of plates 8−9044
  - X-ray tube with thermionic cathode in pulsed mode, spectra 8−4744
  - Σ^- atoms, meas. of strong interaction effects 8−42251
  - Al XII, intercomb. line obs., in laser-produced plasma 8−9106
  - Au, K-shell X-rays, energy shifts and excitation mechanism 8−41990
  - Cl XVI, intercomb. line obs., in laser-produced plasma 8−9106
  - Cr-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662
  - Mg XI, intercomb. line obs., in laser-produced plasma 8−9106
  - P XIV, intercomb. line obs., in laser-produced plasma 8−9106
  - S XV, intercomb. line obs., in laser-produced plasma 8−9106
  - Si, thermoreflectance near $L_{2,3}$ soft X-ray threshold, temp. depend. 8−35224
  - ^{235}U (n,f), fission by fast neutrons, fragment K X-ray spectra, $\tilde{\nu}$ energy depend. in heat balance method 8−17260
  - Ve-Fe-Ga system, phase obs. at 800 and 820°C *(Russian)* 8−23662

- **X-ray spectrometers**
  - *see also X-ray crystallography apparatus*
  - bent crystal, for solar X-ray spectroscopy 8−7881
  - Bragg crystal spectrometer, on line, step scan control and data accumulation system *(Japanese)* 8−5088
  - chemical anal., spectrometer control, interactive program for data collection, manipulation 8−7312

- **X-ray spectrometers** continued
  - curved crystal X-ray spectrometer, for HEAO-B satellite 8−49331
  - diffraction grating for X-ray microanalyzer 8−4746
  - diffractional focusing 8−5988
  - electronics for X-ray focal plane spectrometer 8−40826
  - energy and wavelength dispersive spectrometers, minimum detection limits comparison 8−24002
  - energy and wavelength dispersive types comparison 8−21312
  - fluorescence analyser for in situ Au trace anal. 8−49160
  - fluorescence spectrometer system, automated for chem. shift meas. 8−4750
  - focusing spectrograph for laser plasma X-radiation recording 8−1891
  - HEAO-B, focal plane crystal X-ray spectrom. 8−40825
  - HEAO-B, imaging proportional X-ray counter 8−40823
  - HEAO-B, solid state X-ray spectrom. 8−40824
  - HEAO-B monitor proportional counter instrument 8−40822
  - HEAO-B X-ray telescope, gas control system 8−40827
  - HEAO-B X-ray telescope, high resolution imaging instrument 8−40821
  - HEAO-B X-ray telescope 8−40820
  - low temp. cooling device with DRON or URS-50 spectrometers 8−24910
  - multichannel analyser for quantitative image processing with SEM, surface meas. appls. *(French)* 8−41379
  - OSO-8, high-energy celestial X-ray instrument 8−28522
  - p-i-n photodiodes as low-energy photon spectrometer, resolution, efficiency, for $\sim$22 keV X-rays 8−17471
  - proportional counters for Viking Lander spectrometer, fluoresc. anal. of Martian soil 8−40792
  - reference voltage supply using high-voltage source 8−21307
  - scintillation proportional large area gas counter for X-ray astronomy 8−49321
  - scintillation proportional large area gas counter for X-ray astronomy 8−49322
  - Seeman type with position sensitive detector, optimum geometry 8−4749
  - semiconductor radiation detector, cooled preamplifier systems *(Slovak)* 8−21813
  - soft X-ray spectrometer, for gaseous studies 8−24911
  - spectrograph for single pulse detection 8−846
  - CdTe detectors, international workshop 8−41887
  - CdTe n-type low resistivity detectors, advantages and limitations 8−41890
  - Cu $K\alpha_{1,2}$ spectrum, detection of multiplet struct. by monolithic double cryst. spectrometer 8−8482
  - HgI$_2$ detectors, international workshop 8−41887
  - HgI$_2$, resolution limit in room temp. low energy X-ray spectrom. 8−37479

- **X-ray spectroscopy**
  - *see also appearance potential spectroscopy; X-ray crystallography; X-ray diffraction; X-ray spectra*
  - flow analysis using X-ray image contrast evaluation 8−344
  - metal film, mass absorption coeff. meas. using proton induced X-rays 8−2942
  - metallic supported film, thickness determ. using ^{63}Ni radioactive source 8−22989
  - remelting process anal. appl. 8−23560
  - single crystals, use of polarised radiation 8−8481
  - Spacelab facility for X-ray source spectroscopy and polarimetry 8−32314
  - surface sensitive analytical techniques, eval. 8−27876
  - synchrotron radiation appls., including extended X-ray absorpt. fine struct. technique 8−32963
  - synchrotron radiation for VUV and X-ray spectroscopy, lecture 8−24870
  - Cu electrodeposition on Su, reliability anal. 8−24901
  - HgI$_2$, resolution limit in room temp. low energy X-ray spectrom. 8−37479

- **X-ray transport** *see photon transport theory*

- **X-ray tubes**
  - computerised tomography spectral artifact correction 8−35953
  - diagnostic system compatible with DHEW standards 8−7445
  - energy dispersive X-ray fluoresc. systems, pulsed-tube counting rate performance 8−4752
  - fluorescent X-ray source for study of radiographic imaging systems 8−24132
  - grid control type, diagnostic, quality improvements 8−11733
  - high brilliance sources and generators, soft and pulsed X-ray generators, book contrib. 8−42861
  - laser driven 3 kA X-ray source 8−41389
  - laser-fusion diagnostics, subpicosecond X-ray streak camera 8−42822
  - microfocus, electron source with single pole mag. lens and novel focusing system 8−32964
  - optoelectronic revolution counter for X-ray tube anodes *(German)* 8−12678
  - penetrameter cassette calibration to 400 kV and extra-focal radiation effects in X-ray tube filtration meas. 8−20242
  - Philips PW 1360 X-ray diffraction tube shield, mechanical safety interlock device 8−36989
  - picosecond X-ray chronoscopy 8−38546
  - rotating anodes, temperature distribution, physical props. 8−29222
  - streak camera, high time resolution, with X-ray microscope *(French)* 8−42823
  - subnanosecond X-ray framing camera, fibre array technique 8−41394
  - thermal monitoring system, LOADIX, features 8−3658
  - thermionic cathode in pulsed mode, spectra 8−4744
  - X-ray fluoresc. anal., polarised radiation excitation source 8−7314
  - Cu-target diffr. tubes, K_α charact. radiation rel. intensities calc. 8−4754

- **X-rays**
  - *see also cosmic ray X-rays; photons*
  - No entries

- **X-Y model**
  - antiferromagnet, two-dimensional, approx. to susceptibilities 8−47928
  - critical behaviour, high temp. susceptibility and internal energy series 8−34987
  - ferromagnetic coupling, finite magnetisation 8−43541
  - ground state energy density 8−12651
  - interface roughening and tricritical points 8−23286

X-Y model continued
  Monte Carlo simulation of quantum spin systems, two dimens. X-Y model 8−27011
  Mori continued fraction truncation for spectral function 8−6496
  nonuniversal dynamic scaling in two dimens. degenerate systems 8−6497
  one-dimens. alternating X-Y model time-depend. spin correl. functions and ergodic props. 8−31031
  one-dimens. time-depend. xx correl. function 8−31030
  phase transition in X-Y model, singular bounds on free energy and susceptibility 8−43595
  quantum effects in critical props., in transverse magnetic field 8−2689
  renormalisation group transformation for quantum spins 8−47984
  screw spin ordered state through dipole-dipole interaction 8−39337
  spin 1/2 X-Y model, thermodynamic props., high temp. series expsn. 8−47929
  spin 1/2 X-Y model, thermodynamic props. in three dimens., high temp. series expsn. 8−47930
  spin dynamics for classical X-Y model in one and two dimens. 8−34997
  spin glass, low temp. renormalisation, crit. temp. 8−10688
  spin glass, mean field theory and ε-expansion 8−10705
  spin glass, two-level system, three-dimensional model and mag. field effect 8−39331
  spin glass phase transitions, instability 8−23285
  spin-glass, two-level system, general formalism and two-dimens. model 8−19257
  two dimensional, Monte Carlo simulation and phenomenological theory of phase transition 8−6534
  Co complex, $Co(C_5H_5NO)_6I_2$, simple cubic X-Y mag., specific heat, mag. exchange anisotropy meas. 8−39346
  ^4He film, superflow onset, 2-dimens. XY model 8−47623

Xalpha calculations
  atoms, first ionis. potential, Slaters transition-state method 8−46269
  Compton profile as criterion for choice of local exchange parameter α 8−33410
  copper porphine, Xα multiple scatt. calcs., EPR and electronic spectra 8−13426
  ferroelectric, band struct. calc. 8−15106
  fluoromethanes, ionisation pots., SCF-multiple scatt.-Xα calcs. 8−5141
  metal cluster, H site, SCF-Xα-MS calc. 8−47730
  molecules, spheroidal config. region in scattered-wave method 8−25437
  multiple scattering, appl. to props. of metal clusters *(Russian)* 8−38996
  piezoelectric, band struct. calc. 8−15106
  polydiacetylenes, electronic structure, bond length variations effect, Xα SCF calc. 8−5378
  rare earth orthovanades, $LnVO_4:R^{3+}$, R=Nd, No, Tm, Sm, Dy, Er, Eu, Tb, electronic struct. and spectra of VO_4, RO_8 clusters 8−10953
  TTF-TCNQ, dimers and trimers, Xα scattered wave calc. 8−10326
  Ag_n, n=7,10,13,19, atom clusters, local density of states, Xα scattered wave calcs. 8−18989
  Al (100), O chemisorption , mol. orbital cluster calc. 8−14582
  CO and $(CO)_6$, electronic struct. and bonding, SCF-Xα-MSW calcs. 8−25431
  $CaF_2:O^-$, Jahn-Teller distortion, electronic struct., MS Xα calc. 8−23057
  CeF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
  $Cr(CO)_6$, electronic struct. and bonding, SCF-Xα-MSW calcs. 8−25431
  EuO, electronic structure, octahedral clusters, determ. by X_α method 8−10350
  $F_4S_4N_4$, SCF-Xα-CNDO/BW calcs., comparison 8−25435
  Fe_3O_4, SCF X_α calcs. of one-electron energy levels 8−47727
  $FeS_6{}^{10-}$, electronic struct., SCF-Xα scatt. wave calcs., rel. to spectra of FeS, FeS_2 8−5138
  H_2O, Compton profile, H-bond contrib., HFS Xα model 8−17726
  He^+, Xα statistical exchange method, orbital energies, HF method comparison 8−9071
  $LaBr_3$, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
  LaF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
  $LaO_4{}^{5-}$, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
  Mo complex, hexadimethylamino molybdenum, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
  Mo, localized electronic states near ⟨100⟩ edge dislocation compared with perfect lattice 8−30888
  $Mo_2(NH_2)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
  $Mo_2(OH)_6$, electronic description of triple bonds and verification by photoelectron spectroscopy 8−41949
  NO, ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
  $NO_2(NO_2{}^-)$, ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
  $NO_3(NO_3{}^-)$, ionis. pot. and electron affinity, overlapping sphere MS Xα calc. 8−41948
  NdF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
  Ne_2, total energy MS and LCAO Xα calcs., non-muffin-tin corrections, overbinding 8−46266
  Ni, chemisorpt. of CO, catalytic activity, SCF-Xα-SW calcs. 8−15711
  Ni-H system, cluster calc. of electronic struct. of interstititial H 8−43326
  Pd, chemisorption of O_2 and CO, catalytic activity, SCF-Xα-SW calcs. 8−15711
  Pd-H system, cluster calc. of electronic struct. of interstitial H 8−43326
  PrF_3, ionisation energies, satellite struct., photoelectron spectra, MS Xα calcs. 8−13425
  Pt, chemisorpt. of O_2, catalytic activity, SCF-Xα-SW calcs. 8−15711
  S_8, cyclic, electron deformation density distrib., SCF-Xalpha-scatt. wave method 8−33425
  $S_4N_4H_4$, SCF-Xα-CNDO/BW calcs., comparison 8−25435
  SiO^+, vac. UV photoelectron spectra, ab initio mol. orbital and Xα calcs., $(X^1\Sigma^+)$ state 8−46395

Xalpha calculations continued
  $Tc_2Cl_8{}^{3-}$ ion, visible spectra, electronic struct. 8−5240
  Ti-H system, cluster calc. of electronic struct. of interstitial H 8−43326
  TiO_2, surface electronic struct. by discrete variational Xα cluster calc. 8−43449
  $UO_2{}^{2+}$, relativistic X_α scatt. wave calcs. 8−46268
  YVO_4:Eu, cluster electron struct., X-alpha calc., emission spectra 8−2898

xenon
  see also nuclei with ......
  adsorption on Ge (111) plane, adsorpt. pot. 8−26768
  atom, 3.51 μm broadening due to velocity-changing collisions 8−37597
  atom, $5d_{7/2}\rightarrow6p_{5/2}$ transition, struct., laser spectrosc. and double reson. obs. 8−1210
  atom, 5p subshell photoelectron branching ratio, Dirac-Fock calcs. 8−42021
  atom, 5s electron photoionisation cross section with synchrotron radiation 8−5180
  atom, 5s photoelectron ang. distrib. 8−33482
  atom, $^3P_1$ resonance state, three photon excitation, fluoresc. obs. 8−13481
  atom, $^3P_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8−33454
  atom, $^3P_2$ metastable, deexcitation by slow electrons *(Russian)* 8−13607
  atom, ab initio effective core pot., Dirac-Hartree-Fock and Hartree-Fock calcs. 8−33426
  atom, collective excitation spectra, schematic model 8−41981
  atom, electron impact, near threshold UV-emitting level excitation 8−25711
  atom, electron pulse radiolysis, 2p levels formation and decay kinetics 8−31665
  atom, fluoresc. lifetimes, time resolved VUV spectra 8−17601
  atom, Hanle effect expt. on $6p_{01}$ level, peculiar signal 8−25487
  atom, intershell correlation, double electron ejection from outer shell 8−42019
  atom, K X-ray energy shifts following electron capture beta decay, role of nucl. hyperfine struct. 8−5166
  atom, metastable, photoionisation rel. to laser development 8−13476
  atom, multiphoton ionisation spectrum, interatomic effects in multiphoton transitions 8−29764
  atom, photoionis. collective level existence RPA with exchange calc. 8−42025
  atom, polarisation transfer collision with Rb atom, NMR of Xe 8−33453
  atom, VUV fluoresc. under monochromatic excitation 8−9237
  atom, X-ray photoelectron spectrum, 304 Å, satellites 8−17627
  atom and ions, electronic struct., relativistic Dirac-Fock-Slater calc., fluoresc. yield, X-ray energies shift 8−25450
  atomic three-body collision-induced light scatt. spectrum moments 8−9226
  critical region, thermodynamic properties, correlation experimental data 8−6139
  crystalline, photoluminesc. lifetime meas. 8−19548
  discharge, energy balance, optical meas. 8−1935
  discharge, microwave, energy characts. 8−5979
  electroluminescence, electron resonance trapping, temp. effects 8−14130
  excimer laser, near atm. press. operation 8−17905
  fission reactor transient processes optimisation 8−17295
  gas, refraction, determ. by phase vel. matching method *(Russian)* 8−30406
  gas-liquid crit. pt. region, depolarised light scatt. 8−34612
  incommensurate overlayer on Ag (111), dynamical calc. of LEED 8−30828
  ion, γ-γ PAC following nucl. electron capture, cascades perturbed by hyperfine coupling 8−37303
  isotope abundance of Te ores, geochem. test of nucleon stability 8−8667
  lamp, pulsed, effect of gas heat capacity on characts. 8−42838
  laser, electron beam excited, form. of multiply-charged ions *(Russian)* 8−25853
  laser, He-Ne-Xe mixture, hollow cathode, internal anode system, CW 8−9396
  laser, waveform analysis of 3.5 μm self-mode-locked pulse 8−1290
  laser line ionic assignment at 3306 Å 8−1209
  laser pump source for blue laser dyes 8−46621
  liquid, μ, ρ and T-surfaces, global behaviour, rel. to catastrophe theory 8−26226
  liquid, ionisation and scintillation, application to radiation detectors, review *(Japanese)* 8−35206
  liquid, T_c, P_c, V_c, from eqn. of state 8−2228
  liquid-vapour crit. exponents, NMR 8−18759
  Mars, regolith adsorption rel. to atmosphere Xe relative conc. 8−49358
  molecule, photoelectron spectra, $X^1\Sigma^+{}_{(1/2)g}$ ground state pot. 8−5280
  molecule excited state lifetimes time-resolved spectra 8−17704
  monolayer, on graphite, misfit dislocations and lattice parameters, model 8−34708
  plasma, dense, photoionisation absorption spectra, photorecombination radiation 8−26252
  plasma, electron-ion pairs, correlated pairs, effect on conductivity 8−26249
  plasma, laser prod., fast ionis. wave *(Russian)* 8−22528
  plasma, ruby laser radiation effects *(Russian)* 8−22514
  plasma, Z-pinch heating efficiency 8−47152
  pulse gas discharge, high-intensity, energy storage and temp. in channel 8−1926
  pulsed high frequency discharge, energy spectrum and electron density meas. *(Russian)* 8−26354
  satellite lines in 5s-5p photoelectron spectrum 8−25493
  solid, absorption spectra of self-trapped excitons 8−43879
  solid, core excitons, integral eqn. formalism, isolated atoms and cryst. 8−47704
  solid, HCP, vap. phase grown thin films 8−18917
  solid, synchrotron irradiation pulse excitation photoluminesc. decay, exciton generation 8−6746

xenon continued
- tetramethyldioxetane, collisional dissoc. by supersonic Xe beam, chemiluminesc. 8−40029
- viscosity meas., 170-1300K, up to 1000 bar 8−42698
- Ba+Xe, spectral line contour meas. determ. of potentials 8−25477
- Cs, Xe perturbed emission lines, satellites in square well pot. approx. 8−46303
- Cs+Xe, collision-induced 6s-ns transitions in absorpt. spectrum 8−9101
- Fe:Xe, gyromagnetic ratios of first 2^+ states in Xe, implantation PAC 8−12966
- Fe:Xe, interaction of impurities with point defects, Mossbauer spectroscopy exam. 8−47414
- H+Xe, electron-loss cross section struct., 0.05-4 MeV 8−9236
- H^++Kr(Xe), electron capture into 3s state, cross-section meas. 8−42209
- H_2-Xe, bound complex form., anisotropic intermol. pot., IR spectra anal. 8−37634
- He-CO_2-Xe electrical discharge laser pumped by crossed electric and mag. fields 8−42320
- He-Xe laser, 3.51 μm, mode competition in axial mag. field 8−25850
- He+Ar(Kr)(Xe), He*(2^1S) scatt., low energy repulsion systematic struct. 8−22000
- He+Xe, electron-loss cross section struct., 0.05-4 MeV 8−9236
- ^{3}He-Xe laser, direct nuclear pumping by protons and tritons 8−5458
- Kr, thermal diffusion factors, isotopic 8−22450
- Ne^{2+}+He(Ne)(Ar)(Xe)(Kr), cross sections for electron capture, 60 to 200 keV 8−46442
- O(^5S)+Ne(Ar)(Kr)(Xe), total cross sections 8−42188
- Rb+Xe, interatomic spectrum, theoret. and exptl. obs. 8−9112
- Xe, plasma, optical props., wall erosion products effects calcs. 8−47164
- Xe-Ar, 3547 to 1182 Å conversion efficiency limited by Kerr-induced dispersion 8−37940
- Xe-Ne, interatomic pots., Ne adatom on Xe-plated graphite 8−18904
- Xe+Ar^{x+} multiple scatt., combined ang. and lateral spread 8−46441
- Xe+CO_2 (methane), ^{13}C-mag. shielding density depend. 8−9173
- Xe+CsF, sudden, body-fixed and semiclassical approx. calcs. 8−42164
- Xe+Cu^{q+}, (16≤q≤23), 1.4 MeV/amu, X-ray emission, charge state dependence 8−37713
- Xe+F_2, collision induced photoabsorpt. indicating Xe+F_2+hν→XeF*+F 8−27786
- Xe+F_2, transient species, matrix isolation spectra 8−48635
- Xe+H, 20-500 eV, ion pair and free electron production, integral cross sections 8−46437
- Xe+H^-, 1 to 5 keV, production cross sections for 3d,3s,4s,5s states of H 8−33603
- Xe+He(Ne)(Ar)(Kr), binary mixture viscosity and diffusion coeffs. 8−38443
- Xe+Ne*, quenching rate const. for metastable Ne($^3P_2$), flowing afterglow 8−46295
- Xe+S_2, fluoresc. quenching and lifetimes of S_2 8−46386
- Xe+TlF(Tl_2F_2), collision-induced ion-pair formation 8−17749
- Xe+Xe(6s′(1/2)), (6p(1/2)), energy transfer, rate coeffs. 8−33573
- Xe^++NF_3 reaction, XeF^+ form., $Xe^+(^2P_{1/2})$ radiative deactivation 8−27737
- Xe_2, collision-induced Raman spectra, absolute cross sections 8−46351
- Xe_2, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
- Xe_2 excimer lasers, review *(Japanese)* 8−33723
- Xe_2^+, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
- Xe_2^+, electronic states, pot. curves, with/without spin-orbit interaction 8−33443
- Xe_2^+, near UV absorption spectra, config. interaction methods 8−17680
- Xe($^3P_{0,2}$)+Br_2→Xe*+Br, excitation function 8−40028
- $^{129}Xe^+$, hyperfine struct., ion-beam mag reson., laser induced fluoresc. for signal detect and state selection 8−41986
- ^{131}Xe*, hyperfine struct., ion-beam mag reson., laser induced fluoresc. for signal detect and state selection 8−41986
- ^{133}Xe, atmos. separation technique, preliminary results *(German)* 8−16222
- ^{133}Xe, nuclear moments and optical isotope shift 8−33118
- ^{133}Xe trapping and re-use system for nucl. medicine 8−28051
- ^{136}Xe +Au(Pb)(Bi)(Th), 625 MeV, probability of forming 1sσ vacancies 8−25681
- Xe_2*, form. and UV fluoresc. under monochromatic excitation and collision processes 8−9237

xenon compounds
- KrX, (X=He, Ne, Ar, Xe), VUV absorpt., van der Waals mols. props. 8−13513
- XeAr(XeKr) photoionisation spectra of ground and excited states 8−5297
- XeCl laser, electron beam excitation *(Russian)* 8−22115
- XeCl, UV preionised discharge pumped laser, improved performance 8−37906
- XeF, B-X transition vibr. anal., flash photolysis UV absorpt. spectroscopy 8−42088
- XeF, effective core pot., Hartree-Fock calc., relativistic and nonrelativistic effects 8−46281
- XeF excimer lasers, review *(Japanese)* 8−33723
- XeF, high repetition rate transverse flow laser 8−46620
- XeF high-power electron-beam pumped lasers, optical performance 8−46640
- XeF laser, discharge-pumped, spectroscopic study at high resolution 8−37873
- XeF laser, electron beam stabilised discharge *(Russian)* 8−25894
- XeF, laser, influence of diluent gas 8−9365
- XeF, laser, injection locking, cross relax. rates 8−17909
- XeF laser, nuclear pumping possibility 8−17916
- XeF laser, transverse discharge in Xe+He+NF_3, time and energy characts. *(Russian)* 8−25861
- XeF laser line, 353 nm, picosecond gain and saturation meas. 8−17910
- XeF, spark-preionised large-vol. discharge laser 8−1218
- XeF, transient species, matrix isolation spectra 8−48635
- XeF, UV laser, longit. elec. discharge *(Russian)* 8−1220
- XeF_2, photolysis, lifetime and collisional quenching meas. of XeF*(B) 8−33545

xenon compounds continued
- XeF_6, energy levels, nonrigid mol. effects 8−41931
- XeF_6, UV absorpt. band shape 8−5289
- XeF*, formation and quenching in Ne-Xe-F_2 laser mixtures 8−42324
- XeF*, lifetime and collisional quenching meas., XeF_2 photolysis 8−33545
- XeF*, optical excitation device 8−13629
- XeO_2F_2, mean amplitudes of vibr. and molar thermodynamic functions 8−17649
- XeO_3F_2, mol. consts., general valence force field calcs. 8−21906
- XeOH exciplex, UV emission 8−37653
- XeX, (X=He, Ne, Ar, Kr), VUV absorpt., van der Waals mols. props. 8−13513

xerography *see electrophotography; reproduction (copying)*

XPS *see X-ray photoelectron spectra*

Yang-Mills theory
- 0(4) eqns., soln. reln. to Einstein field eqns. 8−8521
- ξ-function regularisation of fluctuations around Yang-Mills pseudoparticle 8−16919
- ’t Hooft’s mag. monopole unicity 8−16908
- allowed supersymmetric vacuums 8−4783
- asymptotic behaviour of ’t Hoofts mag. monopole 8−32974
- black holes as Yang-Mills field source 8−8280
- BPST instanton uniqueness 8−12811
- chronos principle and interactions of fields of spin 0 and 1 8−8286
- classical point charges, interaction, rel. to quark confinement *(Russian)* 8−32995
- classical soln. to Yang-Mills gauge theory in colour meson model 8−45780
- classical Yang-Mills eqn., multiple meron solns. 8−32987
- classification of SU(3) mag. monopole 8−364
- closed string as source of Yang-Mills field, gluon gauge field vortex 8−41413
- coloured theory, string like phase 8−32990
- conformally flat space-times of divergence free Riemann tensor 8−41220
- Coulomb gauge ambiguity, instanton solns. 8−8514
- coupling of O(2) supergravity with vector multiplets, Yang Mills field appl. 8−33020
- covariant canonical formulation of Yang-Mills theories, phys. S-matrix unitarity, phys. state subsidiary conditions 8−37141
- effective potentials in gauge field theories containing scalar bosons 8−21330
- Euclidean Yang Mills theory, pseudoparticle parameters for arbitrary gauge groups 8−24955
- Euclidean Yang-Mills fields, instantons and monopoles 8−4760
- extension to include two types of self-coupling 8−16926
- fermion-boson puzzle, coupled Yang-Mills isovector Higgs system, canonical formalism 8−41415
- fibre bundles, internal affine symm. of Dirac fields 8−24697
- field strengths, sources and gauge potentials *(Chinese)* 8−29231
- gauge symmetries, perturbation theory 8−359
- gauge theory of gravity, gravit. field of spherically symm. matter distribs. 8−4773
- gravitational dynamics, Yang-Mills formulation 8−24721
- gravitationally coupled classical fields, decomposition method extension 8−127
- gravity dynamics, homogeneous and isotropic world models 8−45543
- hadron bags, interactions under strict quark-line rule 8−41495
- Higgs-Kibble-Yang-Mills field eqns., axially symm. solns. 8−368
- Hopf fibrings, associated with solns. of Yang-Mills and Maxwell eqns. 8−37129
- instability, simple proof 8−45793
- instanton construction 8−37138
- instanton plasma in O(3) nonlinear σ model 8−16912
- instantons, space-time topology 8−8522
- instantons, topological props., non-Abelian group, SU(3) group *(Russian)* 8−45801
- instantons, variational anal. 8−24934
- instantons in two and three dimens. 8−4781
- instantons of Yang-Mills eqn., rank 2 stable vector bundles 8−45774
- instantons with fractional topological charge 8−21336
- invariance of Yang Mills theory, hypertorus solns. 8−24960
- inverse scatt. problem, self-duality eqns. 8−29247
- large order calcs. 8−8511
- lattice, convergence of strong coupling expansion and linear pot. 8−45847
- lattice approx. of gauge field theories 8−29225
- magnetic monopole solns. in Yang-Mills and unified gauge theories 8−21320
- mass spectrum for integral isospin monopoles, bag model as high isospin limit 8−24935
- massless Yang-Mills field and many-body pot. 8−29258
- massless Yang-Mills theory, exponentiation of leading IR divergences 8−32988
- Minkowski space, classical soln. 8−29263
- Minkowski space, four dimensional, general theorem for absence of finite energy nonsingular solns. 8−21318
- multi-instanton solution, new compact form 8−24971
- observation, calcs. using relativistic quantum field theory 8−24933
- $P(\varphi)_2$ gauge invariant massive theory 8−41403
- path-depend. approach to coloured mag. monopoles 8−37127
- pseudoparticle methods for toplogical invariants greater than one 8−45789
- pseudoparticle solns. in extended systems 8−4764
- pseudoparticle solns. on O(5,1) light cone 8−24952
- pseudoparticle solution, O(5) formalism, ghost formalism 8−8531
- QCD, energy levels of 1+1 dimensional lattice gauge theory 8−4828
- QCD, struct. functions, perturbation theory *(Russian)* 8−8595
- quantisation of Yang-Mills theory around classical solns. 8−29245
- quantum chromodynamics, field strength formulation 8−16924
- quark fragmentation in gauge theories 8−21340
- radiative corrections, vacuum state instability 8−8515
- Regeisation of scalars and dual model struct. 8−16927
- renormalisation of four dimensional operators 8−16929
- rotationally invariant solutions of Yang-Mills-Higgs system for general gauge group, mag. monopoles 8−29235
- self-dual SU(2) gauge fields, Backlund transform. and Atiyah-Ward ansatze 8−21339

Yang-Mills theory continued
- self-dual Yang-Mills fields, complex, in Minkowksi space time 8−41424
- Slavnov-'t Hooft identities in Mandelstam's formalism 8−45776
- SO(4)-symmetric solutions of Minkowskian Yang-Mills field equations 8−4780
- SO(5) Yang-Mills eqns., class of pseudoparticle solns. 8−371
- spherically symm. Yang-Mills Euclidean solns. 8−8533
- spherically symmetric fields in gauge theories, Yang Mills eqns., mag. monopoles 8−16914
- spinor analysis of Yang-Mills theory 8−8532
- spinor Yang-Mills superfield 8−12825
- spontaneously broken, reggeon field theory appl. 8−8512
- SU(2) classical gauge field eqn., self-dual static solns. 8−45792
- SU(2) field equations, props. of O(4)×O(2) symm. solns. 8−24931
- SU(2) theory deformation of instantons 8−45786
- SU(2) Yang-Mills fields, coupled to (2s+1) dimens. Higgs field, classical soln. 8−41430
- SU(2) Yang-Mills quantum field theory, meron pairs and quark confinement 8−37174
- SU(2) Yang-Mills theory, self duality of solns. 8−37143
- SU(4) supersymmetric, charge renormalisation 8−24929
- SU(N) 2-D theory in leading 1/N expansion 8−8516
- supergravity, SU(4) invariant theory 8−41471
- supergravity and gravity as gauge theories on group manifold 8−41469
- supersymmetric cancellation of supercurrent anomaly 8−8518
- supersymmetry and classical solns. 8−8549
- supersymmetry and instantons 8−32986
- superunified theories, geometry of gauge invariance 8−24723
- tachyon bound state, vac. instability 8−29244
- timelike gauge, physical states 8−21335
- two-dimensional SU(2) Yang-Mills theory 8−24942
- U gauge in Abelian and non-Abelian gauge theory, Gribov ambiguities 8−45788
- unconstrained temporal gauge 8−45790
- vacuum in the Coulomb gauge 8−24932
- vacuum-to-vacuum amplitude, one-loop contrib., manifestly 0(5)-invariant calc. 8−24945
- vector meson scatt., two to three body, high energy 8−17051
- Wong eqns. of motion for spinning Yang-Mills particle 8−24946
- Wu-Yang soln., stability of S-wave perturbations 8−24944

yield point
- *see also yield strength; yield stress*
- elastic body, inhomogeneous yielding, slip plane intersection with stress free boundary 8−5667
- fission reactor fuel rod ballooning prevention 8−17290
- fracture, post-yield, numerical investigation 8−18249
- plasticity, polycrystalline, probabilistic approach, appl. 8−26622
- polyamide, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
- polyethylene, linear, strain rate effects on ratio of recoverable to nonrecoverable strain 8−27566
- polyethylene, linear role of recovery forces in deformation 8−48459
- polyethylene spherulites, high density, microstruct. and mech. props. 8−42921
- polypropylene nonfilaments, highly drawn, plastic deform. 8−44174
- polystyrol, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
- PVC, test pipes, static tensile strength, equipment effect on tension-extension diagram *(German)* 8−35453
- ruby, temp.-time dependence of yield point by compression and extension 8−6988
- shell, deposited in vacuum, elastic characts. meas. by short time static extension *(Russian)* 8−39961
- steel, C, predeformed, anisotropy temp. effect on yield point 8−39878
- steel, data reduction for samples under high ambient press. and axial tension 8−3181
- steel, deformation anisotropy in yield point, precompression effects *(Russian)* 8−11268
- steel, H_2 effect 8−15474
- steel, low C, pressurised, strain rate sensitivity prior to serrated yielding onset 8−48482
- steel, Mg effect on precipitation of C and or N, and mech. props., during strain ageing *(German)* 8−35387
- steel, mild, microbehaviour of notch tip during increasing load in brittle fracture beyond general yield 8−35487
- steel, plastic flow area, determ. of relative elongation and rel. to yield point 8−23769
- steel, quench ageing effect of Mn content on C and N precipitation and mech. props. *(German)* 8−31409
- steel, sorbitic, yield point rel. to average carbide particle size *(Russian)* 8−6967
- steel OKh18N10T, subjected to low temp. thermal cycling, temp. depend. of yield point *(Russian)* 8−48489
- unified theory of elasticity and plasticity using rate theory type constitutive eqns. 8−9571
- Al-Mn profiled alloy components pulled from melt, physicomech. props. 8−3175
- α-Cu-Al (0.5 to 10 at.%), latent hardening and dislocation density 8−19853
- Fe, H_2 effects 8−15474
- Fe-refractory compound condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
- LiF, electron irradiated, mech. characts. 8−26595
- Ni, magnetised mono- and polycryst., activation vol. var. during low temp. deform. *(Russian)* 8−3178
- Si, plastic deformation, dislocation density in yield point area *(German)* 8−38720
- Sn-Sb (0.57 at.%) solid soln., yield point for cold-worked and annealed specimens *(Russian)* 8−48448
- Sn-Zn (0.4 at.%) solid soln., yield point for cold-worked and annealed specimens *(Russian)* 8−48448
- Ti-Al-V-Sn(Mo-Fe), heavy section extrusion, fabrication and mech. props. 8−6985

yield strength
- ageing alloys, single cryst., deform. and hardening 8−23716
- diamond, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
- ELN-1 alloy, prestrain effects on strength *(Russian)* 8−11267

yield strength continued
- glass fibre reinforced polyester, epoxy-polyamide, single lap joint, tension-shear strength *(Japanese)* 8−11494
- glass fibre reinforced polyester, single lap joint, tension-shear strength *(Japanese)* 8−11494
- metals and alloys, fracture toughness determ. in conditions of similarity to local fracture *(Russian)* 8−31505
- metals and alloys, stress-strain time dependence based on nonlinear heredity, delayed yielding 8−48452
- pipeline girth welds, NDT of defects 8−27704
- steel, 4140 compact, fatigue crack growth delay, yield strength, neg. stress ratio depend. 8−3210
- steel, alloy, 300M, fracture toughness and strength, effect of heat treatment on microstruct. 8−15436
- steel, alloy, Mn-Cr-Cu, exam. of ductility when deformed, alloying addition effects 8−44175
- steel, C-Mn, pressure vessel usage, elevated temp. mech. beahviour 8−35462
- steel, C-Mn-(Cr), structural changes during stress cycling after heat treatment and cold rolling *(Russian)* 8−19787
- steel, H_2 assisted cracking equilibrium and kinetic studies 8−3201
- steel, high strength, press. depend. yield and plastic vol. change 8−19810
- steel, irradiation by neutrons, damage function for mech. props. 8−13228
- steel, low alloy, hot deform. behaviour and modified ausforming *(Japanese)* 8−11244
- steel, low alloy, impurity and strength effect on H_2 induced cracking 8−27625
- steel, low alloy, strengthening by strain tempering, deform. effects 8−15424
- steel, mild, yield strength and fracture toughness, microstruct. effect, heat treatment 8−27615
- steel, silchrome, thermomech. hardening 8−23736
- steel, stainless, deformation temp. determ. for high yield strength 8−44177
- steel, stainless, sulphide stress corrosion cracking resistance, improvement by heat treatment 8−7076
- steel, stainless AISI 316, fatigue crack growth, effect of grain size on threshold stress intensity 8−44216
- steel, structural, classification according to ductile-brittle transition temp. 8−11298
- steel 17G1S, magnetic method of mech. prop. determ. of thick sheet 8−48600
- steel St.3kp, ductile-brittle transition temp., variation with grain size 8−27640
- steel tubing, cold rolled, nondestructive mag. method for determ. of mech. props. 8−23903
- Al alloy, particle strengthened, yield drop and creep minimum *(German)* 8−39881
- Al, non-elastic deformation, phenomenological model with solute strengthening effect incorporation 8−39832
- Al-Al$_3$Ni, aligned, eutectic alloy, mech. behaviour at high strain rates 8−39855
- Al-Cr (3 to 11 at.%), cooling rate effect on solidification struct. and mech. props. *(Japanese)* 8−39755
- Al-Cu (4 wt.%), relationship between enthalpy, yield strength, and size of Guinier-Preston zone *(French)* 8−19767
- Al-Mg-Cu-Si-Cr (1,2.7,0.6,0.2wt.%), laser shock hardening of weld zones 8−39800
- Al-Mg-Mn-Cr (4, 0.45, 0.15 wt.%), laser shock hardening of weld zones, exam. 8−39800
- Be-Cu high-strength alloy characteristics for electrical components 8−48547
- C fibre reinforced polyethylene, for medical appls., tensile and flexural props. 8−31969
- Co based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
- Cu based materials, sputter deposited at high rate, microstruct. and props. 8−22988
- Cu-base alloy formed by high rate sputtering 8−11368
- Cu-Ge(Zn), conc. single crystal, yield region investigation, flow stress and obstacle charact. 8−3173
- Fe based metallic glass, B and P glass former additions, elastic consts., flow behaviour correlations 8−44154
- Fe, cast, increase in yield strength, after phase transformations 8−44125
- Fe, cast, spheroidal graphite, graphite size effect on mech. props. *(Korean)* 8−11278
- Fe, commercial, ductile-brittle transition temp., variation with grain size 8−27640
- Fe-Ag (50 vol.%), two-phase system, plastic deformation *(French)* 8−39831
- Fe-Cr-Mn (11.5, 3 wt.%), microduplex ferritic-martensitic steel, exam. 8−39862
- Fe-Cr-Ni-Ti-Al, superalloy, Ti, Ni, Al, H_2 variations effect on mech. props. 8−3188
- Fe-Ni-C (10, 0.6 wt.%), effect of austenite yield strength on martensitic transformation 8−39772
- Ge, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
- Ge, ultimate yield strength calc. 8−43062
- Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8−44146
- Nb, radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
- Ni, oxide dispersion strengthened materials, effect of prior creep at 1365K on room temp. tensile props. 8−39857
- Ni, radiation hardening and yield strength correlations for 16 MeV H^+ and (D,T) neutron effects 8−14389
- Ni-Al bronze, fracture resistance of tubes 8−19867
- Ni-Cr-Al-Ti-Mo, low temp. mech. behaviour, precipitation 8−39860
- Ni-Cr-(Al), oxide dispersion strengthened materials, effect of prior creep at 1365K on room temp. tensile props. 8−39857
- Ni-Nb-Al (21,2.5 wt.%), eutectic aligned alloy, mech. behaviour at high strain rates 8−39855
- Pd-Cd eutectic, unidirectionally solidified, tensile and compressive props. 8−27567
- Si, high press. appl. by spherical diamond indentor, plastic deform. obs. method 8−35619
- Si, ultimate yield strength calc. 8−43062

yield strength continued

- Ti alloy VT20 and VT22, yield strength anisotropy and durability after cyclic loading *(Russian)* 8−27565
- α-Ti, solid soln., strain ageing *(Japanese)* 8−6953
- U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8−23729
- WC, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
- WC-Co, cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
- WC-Co-Ta(Ta-Ti-Nb), cemented carbide, deformation, high temp., stress relaxation, and strain rate depend. 8−39854
- Zr$_3$Al, L1$_2$ phase yield strength 8−19811

yield stress

- *see also yield point; yield strength*
- alloys of two ductile phases of unequal strength, deform. *(Japanese)* 8−11284
- bone, anelastic deform. and friction stress 8−19871
- cylindrical shell, pressurized, containing long part-through notch plane strain general yielding 8−18199
- dispersion hardened alloy, load type effect on yield stress 8−35458
- double-layer lattice plate yield surfaces, anisotropic continuum treatment *(Japanese)* 8−22261
- elastic body, inhomogeneous yielding, slip plane intersection with stress free boundary 8−5667
- fatigue crack, macroscopic residual stress at tip, X-ray obs. and finite element anal. *(Slovak)* 8−19885
- fibre-reinforced rigid-plastic plates transverse impact anal. 8−38211
- granular materials, invariants depend. models 8−34026
- hexagonal polycrystals, creep and plasticity, rel. to single crystal slip 8−13920
- mechanical anisotropy evaluation, using hardness test *(Polish)* 8−48575
- metal/glass fibre reinforced plastic vessel, with damaged reinforcing layer, carrying capacity 8−39876
- multilayered composite soft interlayer, limiting stressed state and carrying capacity 8−30201
- nonlinear material and structural behaviors, soln. procedure, theoretical basis for program composite−III 8−30204
- nonsteady-state mechanism 8−48481
- oriented transversely isotropic solid, yielding and failure 8−13915
- plastic anisotropy theory based on yield function of fourth order 8−31457
- plastic material, rate type, with kinematic work hardening 8−15450
- plate, notched, plane strain general yield due to combined axial force and bending 8−18197
- plate, symmetrically notched, plane-strain general yield due to combined axial force and bending 8−18198
- PMMA, craze zones at crack tips at different temps., meas. correl. with Dugdale model 8−23826
- polycarbonate, viscoelastic ductile, delayed yielding of plane stress viscoelastic Dugdale model 8−27569
- polycrystalline material, plasticity analysis using stat. model *(Russian)* 8−26619
- polyester model material, optical response and yield behaviour 8−31453
- polymer, glassy, power law relationship between yield stress and shear modulus 8−15467
- polymer, viscoelastic ductile, delayed yielding of plane stress viscoelastic Dugdale model 8−27569
- polymer, yield behaviour, interpret. w.r.t. correlated motion 8−6973
- polyoxymethylene, effects of hydrostatic press. on shear deform. 8−15457
- polypropylene, effects of hydrostatic press. on shear deform. 8−15457
- PTFE, crystalline, subject to simple plane loading, limiting resistant, time and temp. factors 8−23794
- ruby single crystal, compression tests, temp.-time depend. 8−48484
- solid soln. strengthening, conc. computer simulation 8−31420
- steel, Al-killed rolled sheet, plastic anisotropy theory based on yield function of fourth order 8−31458
- steel, alloy 36NKhTYu, deformation resistance, grain size effect *(Russian)* 8−11271
- steel, C, strain ageing contribution to fatigue hardening 8−23817
- steel, Cr-Mo (2.25, 1.00 wt.%), bainitic, strain rate effects on elevated temp. tensile behaviour 8−35461
- steel, ferritic, static yield props., changes during fatigue cycling 8−23790
- steel, low C, lower yield stress, grain size effects, Petch slope, temp. depend. *(Japanese)* 8−39852
- steel, low C, relation between low yield behaviour and tensile speed, preloading and temp. effect *(Japanese)* 8−6982
- steel, stainless, 304, creep fracture propag., elongation, tensile strength, yield stress meas. applicability of fracture mechanics parameters 8−35508
- steel, unalloyed, brittle fracture, effect of prestrain and ageing *(German)* 8−19857
- steel, V strengthened dual phase, deform. and fracture props. 8−48467
- yield surface motion and loading surface 8−15449
- Al alloy sheet, anisotropic, yield strsses and plastic strain rates, directionality correl. 8−23760
- Al, cold rolled, annealed, fatigue crack propag. rate, temp. effect 8−39904
- Al, isoaxial bicrystal, deformation behaviour, study by photoelastic coating and moire methods *(Japanese)* 8−11294
- Al, prestrained, isotropic hardening rule, rel. to stress/strain curve 8−23772
- Al, single cryst., latent hardening *(Japanese)* 8−44135
- Al tube, thin-walled statically pre-tensioned, torsional impact loading 8−27557
- Al, yield surface motion and loading surface 8−15449
- Al-SiO$_2$ interface, stress and microstruct. via TEM 8−26797
- Al-Zn (6.5 at.%), fatigue props., effect of ageing and thermomech. treatment 8−27620
- AlZnMg alloy, precipitation hardened, strength 8−39786
- Co-Cr-Al-C eutectic alloy, thermal cyclic loading, exam. 8−48496
- Cu fatigued polycrystals, point defect cluster rel. with yield stress temp. depend. 8−6989
- Cu-Fe, single crystal with coherent γ-Fe particles, precipitation hardening 8−31416

yield stress continued

- Cu-H, rolled sheet, plastic anisotropy theory based on yield function of fourth order 8−31458
- Cu$_3$Al-Al$_2$O$_3$ dispersion hardenend, short range order, quenching effect on yield stresS 8−35399
- β-Cu(ZnMn), orientation, temp. depend. 8−10056
- α-Fe, dislocation density determ. after quenching, internal friction meas. 8−18658
- Fe, pure, tensile deform., sources of acoustic emission 8−19814
- Fe-Ni-C austenite, metastable, influence of prior deform. on yield stress 8−15461
- Fe-refractory compound condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
- Ge, ultimate yield strength calc. 8−43062
- H embrittlement cracking at notches, model, based on stress induced diffusion of H atoms 8−39897
- KCl-KBr conc. solid soln., edge dislocation motion in stress field *(Japanese)* 8−2138
- KCl-KBr solid solution, yielding model on plateau stress 8−27568
- LiF:Mg, slip band struct. changes with temp. 8−47390
- MgAl$_2$O$_4$, spinel materials press forged, mech. props., IR appl. 8−39722
- Mo, exam. of H$_2$ embrittlement mechanisms, effect on mech. props. 8−39891
- NaCl:X (X=Ca, Sr, Ba, Mg, K, Li, Tl, Ag), impurity conc. effect on mech. and elec. props. 8−47469
- Nb-T alloy, effect of T on low temp. yield stress of Nb, comparison with Nb-H alloy behaviour 8−39863
- (Ni,Co)$_3$Ge, Co effect on temp. depend. of yield stress 8−31487
- Ni, quenched vacancies, effect of oxidation *(French)* 8−27686
- Ni$_3$(Al,W), yield stress, orientation depend. 8−39830
- Pb, strain hardening and recovery, during primary creep 8−39799
- Si, ultimate yield strength calc. 8−43062
- Ti-Al, hardening of Ti by addition of Al *(French)* 8−23715
- W wire reinforced Cu, microfield, flow stress 8−27575

yielding *see plastic deformation*

Young's modulus

- bone, anisotropy, US meas. 8−11687
- collagen, reconstituted, mech. props. drug release support appl. 8−3666
- complex Young's modulus determ. by resonant rod vibrs. *(German)* 8−18259
- composite bar technique for Young's modulus and internal friction meas., multiple reson. 8−35612
- epoxy polymer, with low thermal expansion coeff., Young's modulus under tension 8−3094
- fibre reinforced composites, transverse plane, elastic, failure behaviour *(Japanese)* 8−48510
- fibrous composite materials, models for composites with different props. in tension and compression 8−35417
- filled polymer, elastic moduli, effect of particle shape 8−15444
- fracture toughness, J-integral rel. to crack tip opening displacement *(Japanese)* 8−42569
- glass bead-reinforced epoxy resin composite, bulk and shear elastic props. 8−6959
- glass fibre reinforced epoxy filler shape, orientation distrib. and interaction effects on Young's modulus *(Japanese)* 8−39735
- high-temperature US apparatus for elasticity characts. and thermal cond. meas. of materials 8−5705
- magnetostrictive ferrites, magnetising field influence on amplitude depend. of Young's modulus rel. var. 8−2723
- metal under Shoenberg effect conditions, Young modulus anomalies *(Russian)* 8−35018
- metallic glasses, Young's modulus/thermal props. correlation 8−6961
- muscle dynamic stiffness rel. to crossbridge action 8−48819
- nuclear fuel compacts for HTR, irrad.-induced creep 8−44168
- polyethylene, highly oriented, fibre composite model 8−3183
- polyethylene, highly oriented 8−47614
- polyethylene terephthalate, extruded, elastic consts. meas., mech. anisotropy 8−44155
- polymer complex dynamic Young's modulus measurement equipment 8−1615
- polypropylene, extruded, elastic consts. meas., mech. anisotropy 8−44155
- polystyrene spheres, crystallised suspension, gravitational compression 8−23975
- precipitate vol. fraction with ellipsoidal morphology estimation method using Young's modulus data 8−39781
- reinforced plastic, elastic orthotropic cylindrical shell, axisymmetric contact problems, shell interaction with tires 8−1569
- shell, deposited in vacuum, elastic characts. meas. by short time static extension *(Russian)* 8−39961
- steel, 300 grade maraging low temp. elastic props. 8−27555
- TCNQ salt, Cs$_2$(TCNQ)$_3$, elec. cond. and elastic const., mol. bending *(Korean)* 8−23090
- thin plate, measurement by composite vibrator method *(Japanese)* 8−11463
- transparent materials, low-modulus, mech. props. determ. method 8−5704
- Zerodur, glass-ceramic, thermoelastic props. 8−27550
- Al alloy, 2024, shock-loaded, recovery of Young's modulus 8−23751
- Al, changes after plastic deforms. at room and cryogenic temps. 8−23747
- C fibre reinforced plastic, laminate, non Hookean behaviour in fibre direction, effect of fibre waviness on tensile props. 8−19804
- C fibre reinforced plastics, prep. with large breaking strain C fibre 8−44077
- C fibres, oxidation by NO$_2$, struct., props. modification 8−44237
- C fibres with large breaking strain, prep., mech. props., struct., appl. 8−44077
- CaSO$_4$.2H$_2$O, Young's modulus in (010) plane, dynamical meas., natural cryst. 8−38768
- Eu$_2$O$_3$, mech. and physical props. rel. to reactor control rod appl. 8−21641
- Fe-B metallic glasses, density, mech. and thermal props. 8−31432
- Fe$_{80}$P$_{16}$C$_3$B$_1$ amorphous filament, produced by glass coated melt spinning, mech. props. 8−15483
- Gd-Y (40 wt.%) alloy, magnetic phase transitions, elastic consts. meas. 8−14957
- Ge, amorphous, random network model, calc. 8−6119

Young's modulus continued
Ge-As-Se glasses, US vel. and reson. freq. meas. 8−23756
HFO_2, polycrystalline, monoclinic, elastic props. at room temp. 8−27548
In-Cd alloys, elastic-phase transition, US study 8−6919
LiF, inverse moduli, up to temp. of 650°C 8−14397
Mo, pure, temp. depend. of Young's modulus, and shear modulus 8−27553
$NbSe_3$, Young's modulus meas. 8−48443
Ni complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Ni, pure, temp. depend. of Young's modulus, and shear modulus 8−27553
Ni-Zn ferrite, elastic moduli temp. and composition depend. 8−26617
$Ni_{1-x}Fe_x$, short range order exam. allowing for formation of structural domains *(Russian)* 8−6888
Pb-Sn eutectic, superplastic, anelasticity effect on stress relaxation 8−31443
Pd complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Pt complex, 1,2-benzoquinonedioximates, refl. spectra, 0.5-2.5 eV, Young's modulus and internal friction 8−39562
Pt, pure, temp. depend. of Young's modulus, and shear modulus 8−27553
$(SN)_x$, tensile and piezoresist. expts. 8−15447
Si , amorphous, random network model, calc. 8−6119
SiC, strength assessment by Young's modulus meas. up to 1400°C *(German)* 8−11253
SiO_2 fibres, plastic deformation and Young's modulus *(French)* 8−23746
β IIITi alloys solution treated and aged, estimation of precipitate volume fraction using Young's modulus 8−39781
Ti, hot-rolled, anisotropy of Young's modulus calc. *(Russian)* 8−23749
$Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8−11292
TiO_2-Fe_2O_3, comp. waves, Young's modulus minima rel. to crystallographic shear orientations 8−43034
UO_2, computer model of Young's modulus 8−31450

ytterbium
see also nuclei with ......
atom, L X-ray emission spectrum, new satellites 8−46293
atom, photoionisation cross-section of $^3P_1$ excited state, laser isotope separation *(Russian)* 8−25496
film, energy-scanning X-ray diffr. technique, stacking faults and coherent domains *(French)* 8−43264
isotopic and elemental abundances in meteorites and terrestrial samples 8−32419
liquid, resist. and thermoelec. power, t-matrix calc. 8−26840
phosphate glass:Yb^{3+}, impurity centres, migration of excitations, math. modelling 8−48225
phosphate glass:Yb^{3+}, nonreson. interaction parameters, luminesc. kinetics obs. *(Russian)* 8−31246
semiconducting phase, resistivity behaviour at high temps. semimetal-semiconductor transition 8−14727
BaF_2:Yb^{3+}, trigonal centres, point-charge approx. 8−39072
CaF_2:Mn^{2+},Yb^{3+}, efficient luminesc. energy transfer from Mn^{2+} to Yb^{3+} 8−19536
CaF_2:Mn^{2+},Yb^{3+}, luminescent energy transfer efficiency obs. 8−6777
CaF_2:Yb^{2+}, luminesc. polarisation, elastic uniaxial compression effect, radiative state model 8−6739
CaF_2:Yb^{3+}, trigonal centres, point-charge approx. 8−39072
CaF_2+Yb^{3+}, Stark level Zeeman energies, mag. susceptibiltiy, Schottky specific heat, crystal field splitting 8−26831
CdTe:Yb, exciton emission, cathodoluminescence 8−39033
CeO_2:Yb^{3+}, trigonal centres, point-charge approx. 8−39072
EuO:Yb, electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
EuS:Yb, electron transition and valence state of impurities, X-ray spectroscopy and structural anal. 8−39064
K halide, Yb^{2+} activated, X-ray and intracentre luminesc. 8−6737
$KMgF_3$:Yb^{3+}, transferred hyperfine interaction of Yb^{3+}, ENDOR meas. 8−19375
La_2O_2S:Yb^{3+},Er^{3+}, IR excited visible luminesc. of Er^{3+} 8−2910
SrF_2:Yb, superhyperfine interaction of trigonal Yb^{3+} centres 8−27117
SrF_2:Yb^{3+}, trigonal centres, point-charge approx. 8−39072
ThO_2:Yb^{3+}, trigonal centres, point-charge approx. 8−39072
$Y_3Al_5O_{12}$:Yb^{3+}, one-phonon satellites in luminesc. spectra, rel. to effective phonon density 8−6730
YB^++inert gas, ($^2P_{3/2}$) states relax. cross sections 8−13595
YOCl:Yb,Er, anti-Stokes luminesc., temp. depend. *(Russian)* 8−6764
Yb^{3+}, in dessicated (nondessicated) and protonated (deuterated) solvents, photoluminesc. energy degredation 8−19544
ZnS:Yb^{3+}, spin-lattice relax. times meas. 8−19324

ytterbium alloys
Au-^{171}Yb, dil., nuclear induced resistivity drop 8−10431
Au-^{174}Yb, dil., nuclear induced resistivity drop 8−10431
Gd-Yb, Curie temp. and saturated mag. moment, nonmag. solute effects 8−39301
$Y_2(Fe_{1-x}Co_x)_{17}$, ZZ 8−2780
$YbAl_3$, XPS studies, valence band, 4-f region 8−6831
$YbFe_2$, Laves phase compounds, synthesis, mag. props., ^{57}Fe Mossbauer effect 8−10807
$Yb_2Fe_4Si_9$ and $YbFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8−34957
$YbInAu_2$, intermediate valence cpd., mag. susceptibility expts., 4.2-280K 8−39288
$YbNi_2Ge_2$, intermediate valence cpd., mag. susceptibility expts., 4.2-280K 8−39288

ytterbium compounds
see also ytterbium alloys
formate, IR spectra and phase transitions, under pressure 8−31179
Mossbauer spectrum of ^{172,174,176}Yb, appl. of in-beam implantation method 8−25372
phthalocyanine solutions, bleaching by ruby laser beam 8−30030
CdF_2:YbF_3, conversion processes into semiconductor 8−14730
CdF_2:YbF_3, photoconversion from insulating to semicond. state, IR absorption and elec. cond. 8−14759
$Fe_{0.76}Yb_{2.16}S_4$, cryst. struct. determ. 8−26533
HfO_2-Yb_2O_3 solid solns., prep., crystn. 8−42909
KF-YbF_3, phase analysis 8−44101

ytterbium compounds continued
$(Y,Gd,Yb,Bi)_3(Fe,Al,Ga)_5O_{12}$ films, magnetic bubble domains, domain wall motion examined 8−19294
$(Y,Gd,Yb,Bi)_3(Ga,Al,Fe)_5O_{12}$, bubble conversion to anomalous behaviour 8−23309
$(Y,Gd,Yb)_{3-x}Bi_x(Fe,Al)_5O_{12}$, garnet single cryst. film, possible bubble appl. 8−6552
$(Y,Gd,Yb)_{3-x}Bi_x(Fe,Al)_5O_{12}$, LPE, for magneto-optical appls. 8−48341
$(Y,Gd,Yb)_3(Fe,Ga)_5O_{12}$ film, magnetisation processes and domain struct. near compensation temp. 8−14996
$(YGdYbBi)_3(FeAlGa)_5O_{12}$ film, motion of mag. bubble domains in inhomogeneous pulsed mag. field 8−27064
YbAG, cryst. field parameters calc., exchange charge model 8−47747
YbFX mixed halides, synthesis and lattice parameters 8−30594
YbIG, mean field phase diagrams 8−23269
$YbMo_6S_8$, supercond., low temp. thermal and mag. props. 8−14904
$Yb_{1.0}Mo_6S_8$, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
$Yb_{1.0}Mo_6Se_8$, Chevrel phase supercond., compressibility and vol. depend. of Tc 8−31008
YbPrBiIG, wave props. of domain wall 8−48011
Yb_2Te_3, films, prep., elec. props. 8−43494
$Yb_2V_2O_7$, physical props. 8−39320
ZrO_2-Yb_2O_3 solid solns., prep., crystn. 8−42909

yttrium
see also nuclei with ......
adsorbed on 4d or 5d metal, work function, O_2 coadsorpt. effects, thermionic emission obs. 8−11064
atom, electron bombard., 300 to 600 keV, K_α/K_β X-ray intensity ratios, K-shell ionis. cross sections 8−37747
diffusion of Fe, Mossbauer exam. 8−27138
film, thickness dependent polymorphism rel. to resistivity 8−39232
HCP, elec. field gradient 8−14698
mean excitation energy based alpha particle stopping power meas. 8−30678
solubility of H_2 and D_2 *(Japanese)* 8−18784
sorption of H_2, tritium recovery in D-T fusion reactor *(Japanese)* 8−29646
thermionic emission work function of single cryst. 8−2971
transport props., anisotropy, high temp. obs. 8−26843
CaF_2:Y^{3+}, DC cond., high Y concs. influence 8−22887
Y-Y_2O_3-Au junction, defect struct. and local conduction 8−26970
Y-Y_2O_3-metal junction, electroforming and conduction 8−26969
Y+H_2O(D_2O)(alcohols), O atom abstraction, product internal state distrib., fluoresc. study 8−48643
Y+O_2(NO)(SO_2), nascent product state distribs., laser fluoresc. detect. 8−7187

yttrium alloys
see also yttrium compounds
rare earth alloys, mag. phase diagram 8−10684
Al-Y, dil., hyperfine interactions, $^{87}Y^m$ nuclear orientation meas. 8−43715
Au-Y, dil., hyperfine interactions, $^{87}Y^m$ nuclear orientation meas. 8−43715
Co-Cr-Al-Y, high temp. oxidation 8−11432
Co-Cr-Al-Y, turbine blade coating, hot corrosion by Na_2SO_4 and vaporous NaCl 8−19941
Co-Cr-Al-Y coating, Pt-modified, oxidation and hot corrosion resist. 8−11437
CoCrAl-Y, Y effect on oxidation 8−44275
Cr-Y, cast, B additions effect on struct. and props. *(Russian)* 8−19891
Cu-Y, effect of alloying additions on electrical cond., and mech. strength 8−44233
Dy-Y, scatt. of cond. electrons by spin disorder 8−47778
$Dy_{1-x}Y_xAl_2$, cryst. field quenching of Dy^{3+} 4f shell, Mossbauer effect meas. 8−39480
$Dy_{1-x}Y_xAl_2$, ordered alloys, ^{163}Dy NMR, hyperfine field 8−10801
Fe-Y, dil., hyperfine interactions, $^{87}Y^m$ nuclear orientation meas. 8−43715
Gd-Y, Curie temp. and saturated mag. moment, nonmag. solute effects 8−39301
Gd-Y (40 wt.%) single crystal, elastic, magnetic props. 8−14957
LaCeY, three normal supercond. transitions 8−26989
$(La_{0.80}Y_{0.20})$Ce, three superconducting crit. point behaviour 8−10625
$La_{1-y}Y_y$(Ce) system, mag. impurities in supercond., supercond. transition temp. and sp. ht. 8−39244
Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8−44146
Nb-Y, cold plastic deform., oriented microdistortions *(Russian)* 8−39840
Nd-Y, elec. resist. temp. depend. 8−2462
Ni-Co-Cr-Al-Y coating, electron beam deposited, for Ni-base superalloy, fatigue crack initiation and propag. 8−11438
$(Ni_{1-y}Y_y)_3Al_{1-x}Sc_x(Ti)_x$, quarternary gamma prime ($L1_2$) pseudobinary props. revealed by ionicity modified pair model 8−19725
Tb-Y, magnetostriction, mag. and elec. props. 8−27068
$Tb_{1-x}Y_x$ alloy, helicoidal antiferromag. to ferromag. transition 8−10687
$(Tb_{1-x}Y_x)_3$Co, mag. props. and transitions, conc. depend. *(Russian)* 8−10671
Th-Y-Ce, supercond., magnetisation of Ce impurities, sp. ht. meas. 8−47904
Y-Er, surface, high-freq. elec. cond. dispersion function, effects of polishing and annealing 8−19506
Y-Mn alloy, mag. props. and effect of H_2 absorpt. 8−19250
Y-Ni, liquid alloys, enthalpy struct. *(Russian)* 8−27474
Y-rare earth, dil. alloy, cryst. field parameter determ. 8−10650
Y-rare earth, dil. alloy, cryst. field determ. 8−10651
Y-Re-B, annealed, and quenched X-ray structural and phase anal. 8−11207
YBe_{13}-Mo, solid state reaction, 1000 to 1400°C *(Russian)* 8−18845
YCo_2, anomalous high-field magnetisation 8−47958
YCo_5, spin polarised energy band struct., APW calc. 8−10342
$YCo_5(Ni_5)$, H_2 solubility *(Russian)* 8−15356
$Y(Fe_{1-c}Al_c)_2$, mag. and Mossbauer study, local environment effects 8−27033
$Y(Fe_xAl_{1-x})_2$, mag. order in pseudobinary systems down to millikelvin temps. 8−19251

yttrium alloys continued
$Y(Fe_xCO_{1-x})_2$ model, Co, mean mag. moment composition depend.; reciprocal susceptibility, thermal var. 8-47945
$Y(Fe_{0.022}Co_{0.978})_2$ mag. props., Mossbauer expts., 0.15-4.2K 8-43712
$Y(Fe_{1-x}Co_x)_2$, magnetic saturation moment, Co conc. depend., NMR exam. 8-15037
$Y(Fe_xCo_{1-x})_2$, compositional dependence of Co's mean mag. moment, local environment model anal. 8-43560
$Y_6(Fe_xMn_{1-x})_{23}$, mag. order in pseudobinary systems down to millikelvin temps. 8-19251
$Y_2(Fe_{1-x}Ni_x)_{17}$, Mossbauer spectra, hyperfine field interactions 8-6614
Y_3Ni_2, crystal struct., tetragonal type 8-14309

yttrium compounds
see also yttrium alloys
domain boundary mobility, effect of easy magnetization axis inclination 8-19293
sintering at Si_3N_4-Al_2O_3-Y_2O_3 *(Japanese)* 8-19703
BaF_2-YF_3 system, phase diagram 8-35363
CaF_2-YF_3:Nd^{3+}, selective excitation of activator centres, time resolved luminesc. 8-15223
$Ca_{0.5}Y_{0.5}H_n$, H_2 dissociation press., phase behaviour and struct. 8-2260
CdF_2:YF_3, photoconversion from insulating to semicond. state, IR absorption and elec. cond. 8-14759
Cr-Y_2O_3 dispersion hardened, oxidation and nitridation resistance, embrittlement 8-44267
$Er_xY_{3-x}Fe_5O_{12}$, spin reorientation transitions 8-2686
Eu_2O_3-Y_2O_3-Ta_2O_5, struct., phase form., luminesc. and X-ray diffr., obs. *(Russian)* 8-6765
$(Gd,Tm,Y)_3(Ga,Fe)_5O_{12}$, bubble domain gradient propag., elliptical distortion and bias compensation 8-19292
HgO_2-Y_2O_3, solid soln., elastic and photoelastic props., Mendelstam-Brillouin scatt. 8-6693
LaB_6-YB_6-ScB_6, thermionic emission 8-11068
$Li_6Yb(BO_3)_3$, cryst. struct. determ. 8-18621
Si_3N_4-Y_2O_3-Al_2O_3-SiO_2, X-ray diffr. exam., phase equilib. at 1400 degrees C *(Japanese)* 8-44113
$(SmY)_3(FeGa)_5O_{12}$, LPE on $Gd_3Ga_5O_{12}$, growth kinetics, 920-980°C 8-3064
$Sm_xY_{3-x}Fe_5O_{12}$, spin reorientation transitons 8-2686
$Sm_{1-x}Y_xS$, effect of valence fluctuations on lattice dynamics 8-47493
$Sm_{1-x}Y_xS$, XPS, electronic struct. excitonic effects, insulator to metal transition 8-43988
$Tb_pY_{1-p}AsO_4$, crystallographic, mag. phase transition as function of temp. and Tb conc. 8-43334
$Tb_xY_{3-x}Fe_5O_{12}$, spin reorientational phase transitions *(Russian)* 8-39349
$Tb_xY_{3-x}Fe_5O_{12}$, spin-reorientation phase transitions, neutron depolarisation factor 8-27037
ThO_2 ceramics, CaO and Y_2O_3 stabilised density, elec. cond., permittivity 8-47838
ThO_x:Y_2O_3 solid electrolyte high-temp. vaporisation obs. 8-14456
$Tm_{1-x}Y_xTe$, $(0 \leq x \leq 1)$, single cryst. growth and characts. 8-23603
$(Y,Gd,Tm)(Fe,Ga)_5O_{12}$, cylindrical mag. domain behaviour in external mag. field *(Russian)* 8-6553
$(Y,Gd,Yb,Bi)_3(Fe,Al,Ga)_5O_{12}$ films, magnetic bubble domains, domain wall motion examined 8-19294
$(Y,Gd,Yb,Bi)_3(Ga,Al,Fe)_5O_{12}$, bubble conversion to anomalous behaviour 8-23309
$(Y,Gd,Yb)_{3-x}Bi_x(Fe,Al)_5O_{12}$, garnet single cryst. film, possible bubble appl. 8-6552
$(Y,Gd,Yb)_{3-x}Bi_x(Fe,Al)_5O_{12}$, LPE, for magneto-optical appls. 8-48341
$(Y,Gd,Yb)_3(Fe,Ga)_5O_{12}$ film, magnetisation processes and domain struct. near compensation temp. 8-14996
$(Y,Gd)_3(Fe,Ga)_5O_{12}$, thin film lightguide, noninteracting mode conversion *(Russian)* 8-1347
$(Y,Sm)_3(Ga,Fe)_5O_{12}$ film, domain boundary mobility, effect of easy magnetization axis inclination 8-19293
$(Y,Sm)_3(Ga,Fe)_5O_{12}$ films, growth from melt, growth property control 8-27395
Y ferrite-garnet, porous polycrystal, law of approach to saturation *(Russian)* 8-47956
YAG single crystal growth by flux method *(Japanese)* 8-19655
YAG:Cr^{3+}, radiation colour centres, absorpt. and thermolum. spectra 8-48206
YAG:Nd^{3+}, Ce^{2+}, sensitisation, luminesc., absorpt. and emission spectra *(Russian)* 8-10982
YAG:Nd^{3+}, cryst. field parameters calc., exchange charge model 8-47747
YAG:R^{3+}, CRT and X-ray phosphor lattice-activator energy transfer model 8-6792
$Y_3Al_5O_{12}$:$Yb^{3+}(Nd^{3+})$, one-phonon satellites in luminesc. spectra, rel. to effective phonon density 8-6730
$Y_2BiFe_{3.8}Ga_{1.2}O_{12}$, film, dynamics of domain walls 8-27065
$Y_{2.7}Bi_{0.3}Fe_{3.8}Ga_{1.2}O_{12}$ epitaxial film, mag. domains in microwave mag. field, Faraday obs. 8-19295
$Y_{3-x}Bi_xFe_{5-y}Ga_yO_{12}$, epitaxial film, domain wall dynamics *(Russian)* 8-2718
$Y_{3-x}Bi_xFe_{5-y}Ga_yO_{12}$-PbO-$B_2O_3$-$Bi_2O_3$ system, crystn. fields 8-43996
$Y_{2.45}Eu_{0.55}Fe_{3.8}Ga_{1.2}O_{12}$, hard bubble conversion in in-plane field 8-14998
$Y_{1.57}Eu_{0.78}Tm_{0.65}Ga_{1.05}Fe_{3.95}O_{12}$ film, gradient propagation, overshoot and creep 8-19291
YF, $^3\Phi - ^3\Delta$ system, rot. anal. 8-9149
YF_3, force consts., Coriolis coupling consts., vibr. amplitudes 8-17650
YF_3:Tb^{3+}, cryst. fields, luminesc. spectra 8-19563
$Y_3Fe_{5-x-y}Co_xGe_yO_{12}$, anisotropy and magnetostriction, ferromag. reson. expts., 4.2-500K 8-27030
$YFe_{1-x}Co_{x/2}Ti_{x/2}O_3$, magnetostriction meas. in spin reorientation region 8-2721
$Y_3Fe_{4.2}Ga_{0.8}O_{12}$, LPE grown thin film, ferromag. reson. 8-35041
$YFe_{1-x}Mn_xO_3$ orthoferrite, spin reorientation, mag. torque meas. 8-47979
$YFeO_3$, induced spin reorientation near Neel point 8-19267
$YFeO_3$, influence of mag. field on Faraday effect 8-27196
$YFeO_3$, magneto-optical near UV reflection-spectra, meridional and polar intensity effects *(Russian)* 8-39572

yttrium compounds continued
$YFeO_3$, thermodynamic study of form. 8-48685
$Y_2Fe_4Si_9$ and $YFeSi_3$, cryst. struct. and mag. suscept., temp. depend. *(Russian)* 8-34957
$Y_3Fe_{5-x}Si_xO_{12}$, charact. of photoinduced mag. effects in weak magnetising field 8-27071
$Y_3Ga_5O_{12}$:Nd^{3+}, cryst. field parameters calc., exchange charge model 8-47747
$Y_{2.01}Gd_{0.99}Fe_{4.925-x}Mn_xO_{12}$, comp. depend. of mag. props., and stress sensitivity control 8-27057
$Y_{1-x-c}Gd_xNd_cScO_3$, crystal, absorption, luminescence, stimulated emission spectra 8-15220
$(YGdYbBi)_3(FeAlGa)_5O_{12}$ film, motion of mag. bubble domains in inhomogeneous pulsed mag. field 8-27064
YH_3:Er, Mossbauer spectra of Er^{3+}, gyromagnetic ratios and cryst. field parameters determ. 8-19388
YIG, Barkhausen effect *(German)* 8-14986
YIG, Bloch wall mobility, effect of dynamic change in wall struct. *(Russian)* 8-2698
YIG ceramic, transient flash effect on permeability 8-27024
YIG, corrugated slab, magnetostatic surface wave propagation 8-27072
YIG, diffr. of laser radiation by parametrically excited elastic and magnetoelastic waves 8-19338
YIG, energy dispersive X-ray microanalysis, improved reproducibility by normalization to the background 8-48727
YIG epitaxial film, magnetostatic volume wave propag. 8-10736
YIG film, Ca, Ge-substituted, having mag. bubbles, LPE growth 8-31350
YIG, film, LPE, annealing-induced relief of compressive misfit strain 8-2386
YIG, film, magnetostatic surface wave refl. at shallow groove 8-19283
YIG film, microwave generation and manipulation of magnetic domains 8-39378
YIG film, oblique incidence of magnetostatic waves on metallic grating 8-19229
YIG film, on GdGaG, mag. excitations, diffusion layer effects 8-31112
YIG films, deposition by DC sputtering from two facing targets 8-31341
YIG, homogeneous crit. relax. in dipole region *(Russian)* 8-10782
YIG, homogeneous mag. relax. near phase transition *(Russian)* 8-23351
YIG, light diffr. by banded domain struct. *(Russian)* 8-15150
YIG, light scatt. by parametric spin waves with longit. pumping *(Russian)* 8-43648
YIG, magneto-optical near UV reflection-spectra, meridional and polar intensity effects *(Russian)* 8-39572
YIG, magnetostatic precession modes, optical investigation 8-19337
YIG magnetostatic surface wave dispersion rel. to mag. saturation diffusion 8-2671
YIG, magnetostatic wave linewidth, wave no. depend., mag. relax., rods and films *(Russian)* 8-2667
YIG, magnetostriction meas. with recording rot. field magnetostrictometer 8-12733
YIG multilayered film, magnetostatic spectrum 8-23350
YIG, nonstoichiometry and electronic defects, thermogravimetric expts. and anal. of elec. data 8-6050
YIG, one-magnon light scatt. with and without compensation temps. 8-31062
YIG, polycrystalline, microwave relax. at low power levels 8-39409
YIG, pseudo-surface magnetoelastic waves, damping *(Russian)* 8-23320
YIG rod, inhomogeneously magnetised, propag. characts. of magnetoelastic wave 8-15006
YIG, single cryst. film, pinning effects on magnetostatic modes 8-31111
YIG, single cryst. growth by floating zone method 8-19656
YIG, single cryst. growth from high temp. soln. 8-31315
YIG slab, corrugated, magnetostatic surface-wave propagation 8-19228
YIG, spinwave dispersion curves 8-19230
YIG, surface spin waves, microscopic theory, mag. field effects 8-35044
YIG, thin ferromagnetic resonators, intermodulation distortion, spin waves 8-48048
YIG, transparent, domain struct. realignment in external mag. field 8-10739
YIG:Ca film, strong mag. reson. of Fe^{4+} 8-48047
YIG:Gd^{3+}, mag. relax., hyperfine field interactions, PAC expts. 8-27128
YIG:La film, for microwave applics., growth and ferromag. reson. meas. 8-3008
YIG:Pb(Si) film, (111) LPE, in-plane mag. anisotropy and ferromag. reson. meas. 8-2706
YIG:Si, EM wave effects on mag. and optical props., lecture 8-27031
YIG:Si, photo-induced low freq. mag. permeab. *(Russian)* 8-39368
YIG:Sn, IR absorpt. and MCD 8-19447
YIG:V, mag. anisotropy and magnetostriction, effect of V 8-27029
YIG-Ge layer structure, amplification of bulk magnetostatic waves 8-34972
YIG-semiconductor-dielectric-metal layered structure, amplification characts. of magnetostatic surfaces waves 8-23321
$Y_{3-x}La_xFe_{5-y}Ga_yO_{12}$, mag. bubble film, low freq. ferrimag. reson. 8-31110
$YNbTiO_6$:Eu^{3+} emission under UV excitation 8-6770
YO, fluoresc. spectra, atom+ROH O atom abstraction reactions, fluoresc. study 8-48643
$YO_{1.5}$-PrO_x, phase relns. and electrophys. props. of solid solutions 8-23686
Y_2O_3, digital pyrometry in solar furnace *(Japanese)* 8-32821
Y_2O_3, effect on elec. cond. of fused CaF_2 8-43157
Y_2O_3, electron and hole migration distances determ. 8-19526
Y_2O_3 film in Y-Y_2O_3-metal junction, electroforming and conduction 8-26969
Y_2O_3 film in Y-Y_2O_3-Au junction, defect struct. and local conduction 8-26970
Y_2O_3, formation and changes in point defects, EPR, optical transitions and thermolum. spectra 8-2118
Y_2O_3, hot cast ceramic, prod., used as dielectric 8-11181
Y_2O_3, hot pressing characts. 8-27456

- **yttrium compounds** continued
  - Y_2O_3, laser heated pellet, melting point determ., secondary melting point standard 8-37011
  - Y_2O_3, plastic deform. tests, under compression, creep testing, exam. 8-48458
  - Y_2O_3, secondary standard investigation, melting point *(French)* 8-41271
  - Y_2O_3 sintered body, blackness study thermoluminescence anal. *(Japanese)* 8-23541
  - Y_2O_3 sintered body, luminous pipe of high press. Na discharge lamp, corrosion resistivity *(Japanese)* 8-19915
  - Y_2O_3, sintering of granular masses of ZrO_2, stabilisation 8-44064
  - Y_2O_3, specific elec. cond., m.p. to 3200K, activation energy 8-43383
  - Y_2O_3, US comminution of refractory compound powders 8-23656
  - Y_2O_3:Fe^{3+}, EPR obs. of non-cubic phase 8-19316
  - Y_2O_3-Fe_2O_3 systems, solid-phase reacts., $Y_3Fe_5O_{12}$ form. 8-44062
  - Y_2O_3-Lu_2O_3-Eu_2O_3-CaO-GeO_2-Fe_2O_3-PbO-B_2O_3 system, garnet crystn. fields 8-43995
  - Y_2O_3-ZrO_2 refractory, sublimation *(Russian)* 8-47513
  - YOCl:Yb,Er, anti-Stokes luminesc., temp. depend. *(Russian)* 8-6764
  - Y_2O_2S:Eu^{3+}, luminesc. props., charge transfer effects 8-15214
  - Y_2O_2S:Tb, cathodoluminesc. efficiency at low electron energy 8-6790
  - Y_2O_2S:Tb, recomb. processes and emission spectra *(Russian)* 8-6797
  - Y_2O_2S:Tb^{3+},Eu^{3+}, energy transfer mechanism 8-6793
  - $YP_{0.99}V_{0.01}O_4$, luminesc. spectra in visible region, vanadate group 8-43921
  - $Y_{2.5}Pr_{0.5-x}Ca_xFe_5O_{12}$, magnetic aftereffect exam. 8-23304
  - $Y_{1-x-y}R_xEr_yAlO_3$, $Y_{1-x-y}R_xEr_yScO_3$, stimulated emission of Er^{3+} ions 8-6705
  - YRh_4B_4, supercond., electronic struct. and reentrant magnetism 8-10340
  - $Y(Rh_{0.85}Ru_{0.15})_4B_4$, mag. ordering and supercond. 8-14861
  - YS, soft-mode behaviour in phonon dispersion, inelastic neutron scatt. meas. 8-38807
  - Y_2S_3-Ga_2S_3 system, phase diag. *(French)* 8-3108
  - $Y_3Sc_2Al_3O_{12}$:Nd^{3+}, cryst. field parameters calc., exchange charge model 8-47747
  - $YScO_3$, synthesis and lattice const. 8-30593
  - YSeF, crystal atomic struct. *(French)* 8-10001
  - $Y_6Si_6O_{21}$ in oxidised Si_3O_4, temp. and compositional stability 8-27664
  - $YSiO_3F(Cl)(Br)$, phosphor host, luminesc. and struct. props. 8-48212
  - $Y_{3-y}Sm_yFe_{5-x}Ga_xO_{12}$ film, LPE growth induced mag. anisotropy 8-2709
  - $Y_{3-x}Sm_xFe_5O_{12}$, cubic and induced anisotropy, temp. depend., 100-300K, ferromag. reson. obs. *(Russian)* 8-39313
  - YVO_4, luminesc. spectra in visible region, vanadate group 8-43921
  - YVO_4:Eu, cluster electron struct., X-alpha calc., emission spectra 8-2898
  - YVO_4:Eu^{3+}, absorption and fluoresc. spectra, SU(2) chain *(French)* 8-28912
  - YVO_4:Eu^{3+}, ligand field parameters, computed from fluoresc. and absorption data 8-2453
  - YVO_4:$Eu^{3+}(Er^{3+})$, energy transfer, laser time-resolved spectroscopy 8-27306
  - YVO_4:Nd, stimulated emission cross-sections at 1064 and 1342 nm 8-39575
  - YVO_4:R^{3+}, R=Nd, No, Tm, Sm, Dy, Er, Eu, Tb, electronic struct. and spectra of VO_4, RO_8 clusters 8-10953
  - $Y_2V_{10}O_{28}.24H_2O$, cryst. struct. by X-ray diffr. 8-43005
  - $(Y_{0.80}Yb_{0.19}Er_{0.01})F_3$ phosphors, IR to visible conversion 8-48210
  - $(Y_{0.80}Yb_{0.19}Ho_{0.01})F_3$, IR to visible conversion 8-48210
  - Yb_xSy, synthesis and mag. props. 8-23242
  - ZrO_2, Y_2O_3 stabilised, hydrothermal growth 8-15302
  - ZrO_2-Y_2O_3, phase equilibria and ordering 8-48385
  - ZrO_2-Y_2O_3, solid electrolyte, cond. maximum 8-47577
  - ZrO_2-Y_2O_3, solid solns., density meas. rel. to O vacancy model 8-2113
  - ZrO_2-Y_2O_3, solid soln., elastic and photoelastic props., Mendelstam-Brillouin scatt. 8-6693
  - ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8-26663
  - ZrO_2-Y_2O_3-Nd_2O_3, spectral determ. of crystal stabilisation 8-27203
- **Yukawa potential** *see meson field theory; nuclear forces*
- **Z-centres**
  - CsCl(Br)(I), doped F_{z1}-centre exam. 8-14341
  - KBr:Ca, $F \rightarrow Z_1$ colour centre conversion, hologram recording appls. 8-17877
  - KCl:Ca, $F \rightarrow Z_1$ colour centre conversion, hologram recording appls. 8-17877
  - KCl:Eu crystallophosphores, aggregation of $Eu^{2+}v_c^-$ centres *(Russian)* 8-43909
  - LiF, restored thermoluminescence mechanism 8-19580
  - LiF:Mg, X-irradiated, thermoluminesc. of Z_3-centres 8-15236
  - LiF:Mg,Ti, thermolum. related Z-centres, optical absorpt. bands 8-23540
- **Z pinch** *see pinch effect*
- **Zeeman effect**
  - *see also atomic spectra; Hanle effect; spectral line breadth*
  - $^1\Sigma$ state, anomalous Zeeman effect, Doppler-free standing wave saturated resonance, book contrib. 8-9279
  - Ap-stars, magnetic intensification of spectral lines *(Russian)* 8-4254
  - atomic, two-level system, absorption spectrum, intense two-photon excitation obs. *(Russian)* 8-33465
  - atomic absorption spectrometry, background correction, Zeeman effect based methods 8-27831
  - atomic absorption spectroscopy, Zeeman modulated, quantitative sensitivity *(Japanese)* 8-20124
  - atomic hyperfine transitions in buffer gas, quantum theory *(Russian)* 8-21881
  - benzophenone $^3(n,\pi^*)$, and isotopic forms, in 4,4′-dibromodiphenylether, level anticrossings, ODMR obs. 8-2772
  - 1-bromo-2, 4-dinitrobenzene, cryst., ^{79}Br NQR Zeeman effect 8-2765
  - coronene, solution in bromobutane, Zeeman effect in phosphoresc. at laser $T_1 \leftarrow S_0$ excitation 8-37679
  - data collected using high mag. field installation *(Dutch)* 8-252
  - 2,6-dichloroacetanilide, NQR, cryst. struct., band character 8-6596
  - exciton luminescence, RF coherence and polarisation 8-10937
  - fluoroacetylene, and -d_1, vibr. Zeeman effect, g-factors 8-46391
  - formyl chloride, rot. Zeeman effect of low-J transitions 8-25519
  - formyl radical-d_0,-d_1, microwave spectroscopy, high field Zeeman effect 8-37631
- **Zeeman effect** continued
  - free radicals, rot. Zeeman spectroscopy, mag. field splitting of hyperfine components 8-25610
  - methane(-^{13}C), absorpt. spectra. optoacoustic laser meas. 8-37635
  - methyl groups, reorientation in solids, nonexponential Zeeman relax. 8-6589
  - molecule, complex, Zeeman effect in phosphoresc. at laser $T_1 \leftarrow S_0$ excitation 8-37679
  - neutron stars, X-ray emission lines Zeeman splitting by mag. field 8-4275
  - Orion Nebula, Zeeman splitting in OH masers 8-16493
  - Paschen-Back effect in reson. radiation field 8-17607
  - platinum phthalocyanine single cryst., triplet state Zeeman effect, phosphoresc. 8-6747
  - polar semiconductors, chemical shift of Zeeman masses 8-10338
  - polyethylene, molecular motion and spin-lattice relaxation 8-48071
  - ruby, E, 2A levels, laser excitation, Zeeman spectra 8-43908
  - ruby, ESR of Cr^{3+} excited state as function of delay time, Zeeman levels explained 8-43695
  - SS Cr, g-factor of J=2 states, interacting Rydberg series 8-17609
  - stellar spectrograms, relative Zeeman and Doppler shifts determ. via statistical approach 8-36467
  - subDoppler Stark spectroscopy in crossed elec. and mag. field 8-948
  - TCNQ salt, Rb-TCNQ, ^{14}N NQR, Zeeman perturbation study, charge transfer 8-39438
  - thioformic acid, g-values, mag. susceptibility, quadrupole moments, rot. Zeeman effect, isomer effects 8-25520
  - type II superconductor, spin diffusion in inhomogeneous mag. fields 8-2618
  - zinc porphin, in n-alkane crystals. at 4.2K, Zeeman spectra for Jahn-Teller instability 8-27256
  - $^{12}B \rightarrow B^- + ^{12}C$, second-class current search, alignment correlation meas. by Zeeman technique 8-37313
  - $^{12}B \rightarrow \beta^- + ^{12}C$, alignment correlation meas. by Zeeman technique, vector currents and form factors 8-37312
  - Ba, diamagnetic Zeeman effect, 20-40 kG, induced config. mixing 8-17608
  - Ba, quadratic Zeeman effect, diamagnetic shift, Rydberg series, strong field mixing 8-946
  - ^{81}Br NQR in MAl_2Br_7 crysts. (M=Li, Na, K, Cs, NH_4, $(CH_3)_4N$), Zeeman effect 8-6597
  - CO_2, anomalous Zeeman effect, nonlinear optical techniques, book contrib. 8-9279
  - CaF_2:Ce^{3+}, ENDOR meas. on Ce^{3+} photochromic centre 8-19372
  - CaF_2+Yb^{3+}, Stark level Zeeman energies, mag. susceptibiltiy, Schottky specific heat, crystal field splitting 8-26831
  - $CdCl_2$:Co^{2+} Zeeman spectra meas. 8-6712
  - $Cd_{1-x}Mn_xTe$ mixed cryst., giant exciton Faraday rotation 8-27260
  - CdTe, shallow donors, excited state transitions 8-6710
  - ^{113}Cd, two-level system, absorption spectrum, intense two-photon excitation obs. *(Russian)* 8-33465
  - Cl_2, matrix isolated, Zeeman effect and magnetically polarised luminesc. 8-46379
  - Cs, $6S_{1/2}$-$7P_{1/2}$ transition, photon echo polarisation rotation in mag. field 8-22180
  - $^{133}Cs^+$/Cs g-factor ratio, NMR and zeeman transition freqs. 8-17817
  - $Cs_3Cr_2Br_9$, Cr (III) trigonal pair, exchange interactions, absorpt., MCD and Zeeman spectra 8-19009
  - $Cs_2Cr_2Cl_9$, Cr (III) trigonal pair, exchange interactions, theory 8-19008
  - Fe Zeeman tuned mag. confined arc lamp, appl. to U 8-17593
  - GaAs, shallow acceptor states exam. by far IR Fourier transform spectroscopy 8-31185
  - GaAs, shallow donors, excited state transitions 8-6710
  - GaP, complex form of donor energy levels, optical spectra anal. 8-23045
  - $Gd_2(MoO_4)_3$, low temp. optical absorpt., external mag. field influence 8-43896
  - $GdVO_4$:Ho^{3+}, optically excited doublet splitting in magnetically ordered state 8-19238
  - Ge:Al, acceptor levels, Zeeman splitting, far IR photoconductivity spectrum 8-43444
  - GeO_2:Al, tetragonal, $[Al]^0$ centre, nuclear Zeeman and quadrupole effects 8-35035
  - H ($1^2S_{1/2}$) to ^{4}He (2^3S_1) electronic g-factor ratio from Zeeman resonance meas. 8-13467
  - HCO, ν_2 fundamental band, laser mag. reson. spectra 8-5256
  - He-Ne laser light polarisation in transverse mag. field, Zeeman effect *(Dutch)* 8-29997
  - ^{3}He, BCC, Zeeman exchange cross relax. time 8-22930
  - ^{4}He (2^3S_1) to H ($1^2S_{1/2}$) electronic g-factor ratio from Zeeman resonance meas. 8-13467
  - Hg lamp, line crossing obs. in 2537 Å line 8-9129
  - Kr, $^3P_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8-33454
  - $MnCl_2.2H_2O$, magnetically ordered phase, $^6A_{1g}$ to $^4T_{2g}$ transition absorpt. lines, Zeeman effects 8-6699
  - $MnCl_2.2H_2O$, ordered, paramag. phases, optical absorpt. spectra, V-lines, Zeeman effects 8-6698
  - $MnCl_2.2H_2O$, paramag. phase, external mag. field depend. of $^4T_{2g}$(II) Kramer doublets of Mn^{2+} 8-6700
  - NH_4ClO_4, with 0.015% and 0.1% D, proton Zeeman relaxation 8-6592
  - NO_2, EPR, mag. dipole transitions, Zeeman parameters 8-17697
  - NO_2, rot. Zeeman spectroscopy, 8_{08} to 7_{17} rot. transition 8-25610
  - N_2O, anomalous Zeeman effect, nonlinear optical techniques, book contrib. 8-9279
  - Na, vap., sum frequency generation, via reson. quadrupole transition, theory 8-42385
  - $Na_2O.2Al_2O_3.5SiO_2$:Fe^{3+}, Mossbauer effect and magnetometric exam. 8-6613
  - ^{23}Na, ground state g_j factor, meas. from weak-field Zeeman spectra 8-33469
  - OD, $^2\Pi_{3/2}$ state EPR spectra 8-21949
  - RbKr, magnetic resonance meas. of spin-rotational interaction 8-33528
  - Si:P, acceptor bound multiexciton complex recomb., shell model, luminesc. line splitting 8-6275
  - Sr, quadratic Zeeman effect, diamagnetic shift, Rydberg series, strong field mixing 8-946

Zeeman effect continued

Tb^{3+} in rare earth ion cryst. field in YF$_3$ struct., spectra 8−19563

Xe, ^{3}P$_1$ state, reson. fluoresc., Zeeman beats, time-resolved VUV spectra using synchrotron radiation 8−33454

Zener breakdown *see Zener effect*

Zener diodes

sample heater, high vacuum, using Zener diode 8−12690

tunnelling and negative resistance phenomena in p-n junction devices, book 8−26947

Zener effect

see also Zener diodes

No entries

Zener relaxation

Ag-Sn(In)(Cd), Zener relaxation, valency and dimensional effects *(Russian)* 8−19802

Ag-Zn (30 at.%), electron irrad. exam. of defect supersaturation by elasticity, and creep meas. 8−47366

zero sound

see also liquid helium sound propagation

^{3}He, liq., elementary excitations, RPA model using extended Landau theory 8−14527

^{3}He, liq., longitudinal zero-sound dispersion, thermal cond., and Landau F$_2$ 8−2327

zeta-potential *see electrokinetic effects*

zinc

see also nuclei with ......

acoustic emission during twinning of single crystal 8−11468

adsorption-desorption on GaAs, thermal desorpt., at. beam adsorpt., AES, SEM, RHEED 8−14591

anharmonic lattice vibr., 'forbidden' X-ray reflections obs., 300K 8−34586

atom, (ns nd)^{1}D$_2$ states, Hanle effect, alignment destruction by collisions *(French)* 8−5324

atom, core binding energies, gas phase X-ray photoelectron spectra 8−37611

atom, inner core neutral binding energies, relaxed orbital relativistic Hartree-Fock-Slater calc. 8−13433

atom, Kβ X-ray spectra and autoionisation following β-decay of ^{64}Cu 8−13029

atom, L$_{23}$-M$_{4,5}$M$_{4,5}$ principal and satellite Auger spectra 8−42030

atom, L and M Auger spectra, CI effects, anomalies 8−33488

atom, reson. X-ray Raman scattering, IR divergence of Compton effect 8−21873

atom, simultaneous excitation of two electrons 8−21867

atom, triplet state lifetimes, (4s6s), (4s5d), (4s6d) configs. *(French)* 8−5175

atomic spectral line breadth optimisation, pulsed supply hollow cathode discharge 8−33471

atomisation, for graphite furnace AAS, using graphite platform 8−32877

Auger spectra, comparison with multiplet struct. calc. 8−31287

bicrystal, compatible, plastic deform. *(Japanese)* 8−31460

cathodic pretreatment 8−19929

cavitation induced multiple slip, twinning and fracture 8−39872

concentration in a.c. arc, during interruption, time depend. *(Russian)* 8−22597

conduction-electron elec. field gradient, probe valence effects 8−47749

contact area, effect of loading time *(Japanese)* 8−6230

corrosion in de-aerated 0.1 M NaCl pH range 1.6 to 13.3 8−19921

corrosion rate meas. by differential pulse method 8−19962

critical temp. determ. by exploding wires method, liquid metal enthalpy 8−6149

defect recovery after low temp. electron irrad. 8−10090

deforming stress under basal slip, contrib. of forest and primary dislocations 8−3186

determination, in beef extract, by NAA 8−27856

determination in Cu alloys, by at. absorpt. spectroscopy *(Russian)* 8−23998

die-cast, substrate temp. effects on microstruct. and stresses in evaporated Cr film 8−10304

diffusion in Al$_{0.7}$Ga$_{0.3}$As, comparison with GaAs 8−26589

diffusion in Al-CuAl$_2$ lamellar eutectic, two dimensional, computer simulation 8−30799

diffusion in GaAs and GaP, low-temp.-selective process using anodic oxides 8−47399

diffusion in GaAs-AlGaAs half-ring laser 8−17960

dislocation structure control after prep. low angle boundary decomp. *(Russian)* 8−3142

elastic constants, diffuse X-ray scatt. determ., single cryst. 8−11255

elastic properties, compilation and review 8−27551

electric field gradient at nucleus calc. 8−39079

electric field gradient on Cd, press. depend., TDPAC expts. 8−48092

electrodeposited on polished Fe, reaction rate in solid state *(Japanese)* 8−15322

electron-phonon interaction anisotropy, microcontact spectroscopy *(Russian)* 8−43372

electrowinning, use of organic additives, eval. 8−44048

EXAFS, obs. of single cryst. 8−2943

faceting of interstitial loops 8−47381

fast separation by ion exchange resin *(Rumanian)* 8−23922

film, vac. deposited, X-ray diffr. study of microstruct. 8−26796

galvanic couple with Al alloys, velocity effect on corrosion 8−35566

gamma ray generation of microwaves *(Russian)* 8−2939

geochemistry, chemical speciation in mixed freshwater, seawater and bine solns. 8−20409

glide dislocations, second order pyramidal band, etch pit obs. of pure single cryst. *(Japanese)* 8−38716

grain boundary detachment from adsorbed impurity, conc. depend. 8−2144

Hall effect, analysis at high temp. 8−2465

hexagonal networks in basal plane, TEM exam. 8−2132

ice nucleating material 8−49093

incompatible bicrystals, effect of grain boundaries on mech. props. *(Japanese)* 8−39798

α-irradiation damage and stage I recovery 8−38759

isoelectronic sequence, RRPA calcs. of resonance transitions from 4s^2 ^{1}S$_0$ 8−17612

liquid, reaction with solid Fe, interdiffusion exam. *(Japanese)* 8−39944

nuclear quadrupole interaction, theory 8−10412

ocean concentrations in NE.Pacific 8−36200

zinc continued

oxide film growth on (0001) surface, at. and electronic struct. 8−15587

pionic atom, 2p level shifts and widths 8−46469

planar diffusion in InP, p-n junction formation 8−43040

plasma, electron beam in Zn vapour, plasma prod. and beam interaction 8−47133

plastic deform after pinch effect *(Russian)* 8−27563

point contacts, electron-phonon coupling, microcontact spectroscopy investig. *(Russian)* 8−38796

positron annihilation, 4.2-500K, Doppler broadening meas. 8−43957

quadrupole interaction, ^{67}Zn Mossbauer expt. 8−27120

quadrupole interaction for ^{129}I, ^{131}I, and ^{132}I, PAC expts. 8−48087

quadrupole interaction of ^{12}B and ^{12}N 8−47750

quadrupole interaction of ^{67}Ge and ^{71}Ge, TDPAC meas. 8−43740

quadrupole interactions, nuclear quadrupole alignment of ^{69}Zn^m 8−48090

radionuclide dosimetry standards and crit. organs 8−35961

recovery after 6.1 MeV α-particle irradiation at 4.2K 8−47441

shaped single crystal prod. from melt, twinning 8−2040

soil-water system interfacial reactions and heavy metal adsorption 8−3832

sputtered film, thermal ageing, thickness dependent effects 8−6462

sputtering in inert atm., with uncooled cathode, oxidation of metallic coatings, X-ray diffr. obs. 8−3041

superconducting transition temp., electron-phonon mass enhancement, pseudopot. calcs. 8−2604

surface, (0001), Cu ordered monolayer, electronic struct., photoelectron spectra 8−39660

thermal recovery and stress-strain relations 8−11266

vapour, reaction with solid Fe, Zn chem. potential effect on interaction layers 8−11416

wear resistant coating, effect of surface-active substances in electrodeposition on props. *(Russian)* 8−11359

X-ray emission spectra, L$_\text{l}$ and L$_\eta$ 8−39631

Cd, nuclear quadrupole antishielding effects, ab initio theory 8−34814

Cd UV subshell photoionisation cross section, expt. and GIPM theory 8−21887

CdP$_2$:Bi,Zn, photolum. and photocurrent stationary characts. 8−27317

CdS:Zn, heavily doped, defect struct. 8−22756

Cu-Zn multilayer condensate, diffusion process, brass formation 8−43186

Cu$_2$S:Zn, effects of doping on elec. and optical props. 8−38743

Ga+:N,Zn, interimpurity recomb., acceptor binding energies 8−34796

GaAs:n, ion implantation, hole conc. and mobility profile meas. 8−23082

GaAs:Zn, implanted, hole conc. and mobility profiles meas. 8−23081

GaAs:Zn, implanted, low temp. photolum. spectra 8−39583

GaAs:Zn, pulsed laser annealing, expt. 8−34828

GaAs$_{0.6}$P$_{0.4}$:Zn, control of Zn diffusivity by multiple implantation 8−38877

GaN:Zn, epitaxial film lumins. 8−10955

GaN:Zn, temp. and press. depends., electrolum. 8−19567

GaN:Zn epilayers, growth parameters effect on props., device struct. 8−26975

GaP:Zn,O, kinetics of X-ray luminesc. 8−10984

He-Zn, coaxial type hollow cathode laser, oscillation charact. *(Japanese)* 8−13692

He-Zn hollow cathode laser, electron density, excited ions radial profiles 8−29937

He-Zn laser, 7588 Å, He metastable atoms effect on power 8−33722

He-Zn laser, negative glow and positive column discharges comparison 8−1217

p-InP:Zn, electrical meas., doping levels hole conc. 8−14745

InP:Zn, isoconcentration diffusion of Zn at 800°C 8−6186

InSb:Zn, heat treatment effects on elec. props. 8−43411

NaCl:Zn$^+$, X-irrad., EPR and optical absorpt. 8−43642

Si:Zn, deep-level impurities, insulating props. 8−39124

Zn I,II, excited state lifetimes, electron-photon delayed coincidence meas. 8−25478

Zn XX, electron impact excitation, transition probabilities, oscill. and collision strengths 8−25718

Zn XXII, 2p^5-2p^{4}3s(2p^{4}3d) transitions in laser produced X-ray spectra 8−13460

Zn$^+$ laser in He-halide discharge, CW oscill. 8−17913

Zn-glass, friction, loading time effect *(Japanese)* 8−34095

Zn-S system, Zn-rich liquidus, 1000-1300°C 8−18747

Zn-Sb diffusion couple, ZnSb phase layer growth kinetics, 240-320°C, up to 30 kbar 8−10229

^{65}Zn behaviour in sediments in laboratory-scale aquatic ecosystem 8−3831

zinc alloys

see also brass; zinc compounds

Al-Zn-Mg (6, 3 wt.%), water vapour embrittlement and H$_2$ bubble form 8−15564

internally deformed struct. as source of homogeneous linear struct. 8−26497

Kondo alloys, with magnetic breakdown, anal. of de Haas-van Alphen effect 8−34751

Ni-Zn ferrites, mag. param. 8−35005

rare earth intermetallics, RZn, magnetoelastic consts. 8−15005

steel, Cu-Mn-Zn, Zn addition effects in powder forgings produced by liquid solid alloying 8−11157

Ag-Cu-Zn-Cd solid metal lubricant in self lubricating composite steels 8−11340

α-Ag-Zn, atomic short-range order determ., X-ray scatt. and pseudopot. calc. 8−2067

Ag-Zn, dil., elec. quadrupole interactions on ^{111}Cd probe nuclei, time differential PAC meas. 8−15066

Ag-Zn, production and annealing of radiation defects 8−47362

Ag-Zn (30 at.%), electron irrad. exam. of defect supersaturation by elasticity, and creep meas. 8−47366

Ag-Zn equiatomic, creep of β phase *(French)* 8−48477

Ag$_x$Au$_{1-x}$Zn, resistivity and X-ray diffr. 8−47283

AgZn-AgMg quasibinary alloy, phase relation and superlattice form. 8−3097

Al-Cu-Zn alloy, ageing, X-ray and electron diffr. meas. *(Russian)* 8−39806

Al-Mn-Zn, fatigue cracks, in NaCl, oil and water vapour *(Japanese)* 8−11414

zinc alloys continued
Al-Zn, dil., Dingle temp. calc. 8−39005
Al-Zn, Guinier-Preston zone form. kinetics study using linear localisation probe *(French)* 8−15413
Al-Zn, low temperature lattice parameters 8−38658
Al-Zn, pitting potential 8−35550
Al-Zn, resistivity anomalies in Guinier Preston zones *(French)* 8−6937
Al-Zn (11 wt.%), stress depend. of strain rate at elev. temps. 8−23757
Al-Zn (18 at.%), position of coherency spinodal curve 8−23660
Al-Zn (22 wt.%), superplastic strain rate sensitivity, rel. to ductility 8−31478
Al-Zn (40 wt.%), grain refinement by thermal cycling 8−3149
Al-Zn (40 wt.%), mechanical properties after thermal cycling 8−3150
Al-Zn (60 or 71 wt.%), natural ageing *(Russian)* 8−48367
Al-Zn (6.5 at.%), fatigue props., effect of ageing and thermomech. treatment 8−27620
Al-Zn (6.8 wt.%), effects of ageing temps. on microhardness and resistivity *(Japanese)* 8−35408
Al-Zn eutectic, mechanism of lamellar spacing adjustment 8−31395
Al-Zn eutectoid, superplastic, fracture, electron microscope obs. 8−31533
Al-Zn ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
Al-Zn solid soln., controlling creep mechanisms, role of diffusion 8−31469
Al-Zn solid soln., controlling creep mechanisms role of diffusion 8−31470
Al-Zn-Mg, cavitation during superplastic deform. *(Japanese)* 8−15464
Al-Zn-Mg, grain boundary surfaces, plasmon loss satellites in Auger spectra 8−15261
Al-Zn-Mg (3,1.5 wt.%), precipitation hardened and fatigued alloys, solute loss at fracture surface, EPMA exam. 8−39893
Al-Zn-Mg (4.5, 2.5 wt.%), composition effect on stress corrosion and mech. behaviour 8−27684
Al-Zn-Mg (6.0, 2.5 wt.%), aged, grain, size depend. of fracture toughness 8−48495
Al-Zn-Mg alloy, welded, solute profiles at weld bead/parent metal interface 8−19942
Al-Zn-Mg alloy 1915, stress corrosion cracking, protective anodic film *(Russian)* 8−35572
Al-Zn-Mg alloy 7075, effect of thermal and mechanical pretreatments, on Guinier-Preston zone 8−39817
Al-Zn-Mg alloy (6, 3 wt.%), grain boundary segregation, AES exam. 8−39783
Al-Zn-Mg alloys, H_2 bubbles in embrittlement 8−19868
Al-Zn-Mg alloys, precipitation behaviour *(German)* 8−39780
Al-Zn-Mg-Cu, fracture toughness 8−7044
Al-Zn-Mg-Cu alloy, X-ray microanalysis in scanning transmission electron microscope, limitations 8−20122
AlZnMg alloy, precipitation hardened, strength 8−39786
AlZnMgCuO.5, crack propag. under monotone and cyclic load 8−7006
AlZnMgCuO.5, static crack growth, stress state effect, elec. pot. meas. 8−7007
Au_4Zn, electropolishing for electron microscopic examination 8−35589
Au_4Zn, long period ordered alloy, selective radiation damage in electron microscopy 8−10092
Au_4Zn, ordered alloy, long period superstructure study, electron microscopy, diffr. 8−10059
Ce-Zn, liquid, solubility and thermodynamic props. *(Russian)* 8−19717
γ-Co-Zn, inversion antiphase domains, formation and stabilisation, electron conc. effect 8−14363
Co-Zn melt, Zn activity determ. *(German)* 8−19715
Cu-Ni-Zn alloy, at 775 degrees C, diffusional and thermodynamic interactions 8−38883
Cu-Ni-Zn alloy, FCC, cold-worked, microstruct., X-ray obs. 8−3143
Cu-Zn, α-phase, photoelectron meas. 8−35247
Cu-Zn, conc. single crystal, yield region investigation, flow stress and obstacle charact. 8−3173
Cu-Zn, dil., optical props. and electronic struct. 8−35164
Cu-Zn, microconductors, cast, struct. and physical props. exam 8−44232
β_1Cu-Zn, structural Umklapp processes at low and high temp. lattice kinetics of phase transformation isotherms *(German)* 8−30707
Cu-Zn, wear, effect of Mn_5Si_3 content *(Japanese)* 8−35525
β-Cu-Zn elec. resist. change with degree of order *(Japanese)* 8−34817
β_1-Cu-Zn mixed crystal, metastable structural Umklapp process, isothermal phase transform. *(German)* 8−22798
Cu-Zn-Al, internal friction, temp. and amplitude depend. 8−11262
Cu-Zn-Al, internally faulted martensite, TEM obs. 8−3124
β-Cu-Zn-Al, ordering, TEM obs. 8−39768
β-Cu-Zn-Al, US elastic const. meas. near martensitic transform. temp. 8−39827
Cu-Zn-Al Marmem alloy, β_1 phase superstruct. obs., rel. to transform. mode 8−39776
Cu-Zn-Fe, Mossbauer effect of Fe impurities 8−31131
CuZn, omega phase, roles of electron microscopy and electron diffraction *(French)* 8−27524
Fe-Zn, chemically induced grain boundary motion 8−38724
Fe-Zn, diffusion coefficients in δ_1 phase *(Japanese)* 8−14512
Fe-Zn, dil., size effects on mag. hyperfine fields at non-mag. impurities 8−43586
γ-Fe-Zn, inversion antiphase domains, formation and stabilisation, electron conc. effect 8−14363
Fe-Zn, phase diagram Zr aggregated effect on Fe corrosion *(Dutch)* 8−48571
Fe-Zn couple, Zn electrodeposited on polished Fe, reaction rate in solid state *(Japanese)* 8−15322
Gd-Zn, X-ray determ. of Debye temp., mean amplitude of vibr. 8−38802
HoZn, spin wave spectrum, Green function analysis 8−2666
$La_{1-x}Gd_xZn$, NMR ^{139}La 8−15038
Mg-Al-Zn, solute-vacancy binding energies from hardness meas. 8−39789
Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8−44146
$Nd_{0.2}La_{0.8}Zn$, cryst. field, neutron diffr. meas. 8−34810
Ni-Al bronze, fracture resistance of tubes 8−19867
Ni-Zn liquid alloys, Zn activity obs., 1100 to 1300K 8−40072

zinc alloys continued
Ni-Zn melt, Zn activity determ. *(German)* 8−19715
Pd-Zn system, struct. stability of B2 and $L1_0$ phases 8−26495
$Pr_{0.25}La_{0.75}Zn$, cryst. field, neutron diffr. meas. 8−34810
β_1-PtZn, defect struct., lattice parameter meas. 8−43009
Sn-Zn, ingots, solidified, formation of equiaxed eutectic grains *(Japanese)* 8−39756
Sn-Zn, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
Sn-Zn (0.4 at.%) solid soln., yield point for cold-worked and annealed specimens *(Russian)* 8−48448
γ-Vi-Zn, inversion antiphase domains, formation and stabilisation, electron conc. effect 8−14363
Zn-Ag, dil., dislocation-point defect interactions in slip systems 8−47417
Zn-Ag, dil., elec. field gradient, temp. depend. 8−39481
Zn-Al, dil., impurity quasi-particle lifetimes and pseudopotential form factor 8−47734
Zn-Al, impure and pure, as cast, endogenous-exogenous freezing 8−19736
Zn-Al (22 wt.%), superplastic deform. mechanism, electron microscope obs. 8−3167
Zn-Al (22 wt.%) eutectoid, superplastic, grain size effect on plastic deform. at room temp. *(Japanese)* 8−31462
Zn-Al-Cu-Mg-Pb-Sn (12, 1, 0.02, 0.01, 0.015, wt.%), combined effects of Pb and Sn additions on corrosion, in wet steam 8−39952
Zn-Bi alloys, morphology and mechanism of formation of eutectic *(Russian)* 8−6916
Zn-Cd, dil., dislocation-point defect interactions in slip systems 8−47417
Zn-Cd (1.4 at.%), crystallisation kinetic diagram appl. *(Russian)* 8−15384
Zn-Cd liquid alloy, activity meas. by transportation method *(Japanese)* 8−35358
Zn-Cd-Bi, appl. of computational techniques for treatment of thermodynamic data, phase diagram calc. 8−10172
Zn-Cr, Kondo alloys, spin and phonon resistivity independ. 8−47777
Zn-Mn, dil., Kondo effect and impurity interactions in resist., 0.05-14K 8−14721
Zn-Mn, Kondo alloys, spin and phonon resistivity independ. 8−47777
Zn-Pb composite, production under conditions when gravity forces are balanced out by EM forces 8−31363
Zn-Sn alloys, morphology and mechanism of formation of eutectic *(Russian)* 8−6916

zinc compounds
see also zinc alloys
etioporphyrin I anion radical, photoreduction obs. *(Russian)* 8−23958
formate dihydrate, 2-D Heisenberg antiferromag., sp. ht. 8−14965
halides, matrix isolation, vibr. spectra, isotope effects, force consts. and geometry 8−46337
halides-He discharge, CW ion laser oscill. 8−17913
oxalate, crystallisation kinetics, specific surface energy at cryst.-soln. interface 8−26471
oxalate, effect of supersaturation on crystallisation kinetics, turbidimetry meas. 8−30569
paste, direct tensile tests and tied crack model 8−11178
piezo-birefringent zinc blende crystals, optical filters using coupled polarised waves *(French)* 8−33896
sphalerite, kinetic study of pressure leaching for Zn prep. 8−44050
zinc bisdiethyldithiocarbamate:Cu^{2+}, exchange interaction of Cu^{2+}-Cu^{2+} pairs, spin-lattice relax. 8−48034
zinc porphin, in n-alkane crystals. at 4.2K, Zeeman spectra for Jahn-Teller instability 8−27256
ZnS-Mn, Cu film, ZnS-Cu_xS films, electroluminescence, joule heating 8−2599
Au-ZnSe:Ga(Al), Schottky diode, wavelength modulated photoresponse spectra 8−6714
$Ba_2Zn_2Fe_{12}O_{22}$, model for low mag. moment, magnetisation meas., 5-1375K 8−2655
CdS-ZnS(CdSe), film, light transmittance spectra, comparison with Schott GG 495 glass filter 8−33838
$Cd_{3-x}Zn_xAs_2$, cryst., two-band and impurity conduction, 1.8 to 370K 8−19057
$Cd_{1-x}Zn_xS$ reactively sputtered phtoconductive films for high field applications *(German)* 8−39154
$Cd_xZn_{1-x}S$ film, vacuum evaporated, struct. 8−38985
CoZn ferrite, chemical shift in X-ray absorpt. spectra, effective changes 8−6811
$Co_{2-y}Zn_yTiO_4$, cation distrib. and mag. props. 8−14939
Cu complex, hexakis pyridine-N-oxide cuprate ion, pure and Zn doped, EPR, Jahn-Teller effect 8−10754
$(Cu_xAn_{1-x})_2AsO_4(OH)$, olivenite-adamite solid soln., ordering 8−42962
Fe_3O_4-$ZnFe_2O_4$, spinel type solid soln., thermodynamic study by EMF meas. 8−15379
GaP-ZnS, solid solns., microstruct. investig. 8−2128
K_2SO_4-$ZnSO_4$ system, glass formation and phase diagram study, physical props. 8−27500
K(Zn,Mn,Co)F_3, crysts., Mn, Co distrib., as function of cryst. region *(German)* 8−14375
$K_xZn_{x/2}Ti_{8-x/2}O_{16}$, ionic cond., rel. to struct. and chemical bonding *(French)* 8−18824
(Li,Na,Cu,Zn) ferrites, nonceramic synthesis, electrochem. investig. 8−35339
LiZn ferrospinel, sequence of mag. transforms. *(Russian)* 8−19252
$LiZnVO_4$, high press. spinel modification, vibr. spectra 8−35124
Mn-Zn ferrite, domain struct. and initial permeability, effect of O non-stoichiometry 8−35001
MnZn ferrite, mechanically induced anisotropy, effect on mag. permeability 8−47970
MnZn ferrite, optical refl. and electroreflection spectra obs. 8−27262
MnZn ferrite, polycrystalline, doped, DC resist. 8−47788
MnZn ferrite, prep. and magnetic props. 8−19254
MnZn ferrite, quantitative anal., using X-ray fluorescence 8−40090
MnZn ferrite, temperature dependence of Hall mobility 8−30944
MnZn ferrites, low loss, highly stable, study *(Slovene)* 8−27055
MnZn polished ferrite worked layer magnetic characts. changes meas. *(Japanese)* 8−10742
$Mn_cZn_{1-c}F_2$, crit. neutron scatt. near percolation threshold 8−2693
$(Mn_{0.7}Zn_{0.3})_xFe_yO_4$, electromag. props. rel. to Fe content 8−43613

zinc compounds continued
Ni-Zn ferrite, elastic moduli temp. and composition depend. 8−26617
Ni-Zn ferrites, comp., lattice imperfections, sintering 8−3080
NiZn ferrite, exchange integrals, magnetisation data and mol. field theory 8−19241
NiZn ferrite, magnetic field effect on Rayleigh wave attenuation 8−6557
NiZn ferrites, comp., X-ray diffr. and saturation magnetisation obs. 8−18617
NiZnCo ferrite, quantitative anal., using X-ray fluorescence 8−40090
$Ni_{1-x}Zn_xFe_2O_4$, LPE growth, film quality, mag. meas. 8−11136
$Ni_{1-x}Zn_xFe_2O_4$ spinel, low-temp. transitions and spin configurations, Mossbauer study 8−27144
$Ni_xZn_{1-x}Mn_2O_4$, mag. props. 8−43573
Pb-Zn-SiO melt, mathematical model of thermal C reduction *(Russian)* 8−15663
$PbCl_2$-$ZnCl_2$, thermodynamic quantity meas. by quantitative thermal anal. of heating process 8−19730
(Zn, Hg)S:Cu, Cl, effect of superposition of two sinusoidal fields and freq. on electroluminesc. 8−39606
$(Zn,Mg)_2GeO_4:Mn^{2+}$ phosphor, for low press. fluoresc. lamps, luminesc. characts. 8−10960
Zn (II) complex, β-diketonate, 5-coord. adducts, Cu^{2+}, ground state ion wavefunction calcs. 8−895
Zn complex, aminoacetate, proton spin-lattice relaxation, temp. depend. 8−31119
Zn-B system, interactions, product chem., phase, struct. anal., book contrib. 8−47305
Zn-Ga-P-S quaternary system, p-type conductive alloys 8−39105
Zn-S system, Zn-rich liquidus, 1000-1300°C 8−18747
$ZnAl_2O_4:Cr^{3+}$, luminesc. spectra, N-lines and Cr^{3+} pairs 8−2896
Zn_3As_2, determ. of ionicity by X-ray absorption method 8−31278
Zn_3As_2, phys. props. 8−26527
Zn_3As_2, solubility in Bi, LPE on $(Cd_xZn_{1-x})_3As_2$ 8−35324
Zn_3As_2, sp. ht., thermodyn. props. 8−22863
Zn_3As_2, synthesis and layer growth 8−15312
$Zn_2BaFe_{12}O_{22}$, mag. phase transitions, magnetostriction temp. depend. *(Russian)* 8−34983
$Zn(BrO_3)_2.6H_2O:Cu^{2+}$, Jahn-Teller system, EPR and spin-lattice relax. 8−10760
$ZnCO_3:Fe^{2+}$, electronic relaxation, Mossbauer effect 8−19385
$Zn_{1-x}Cd_xS$ films, polycryst., reactively sputtered, MSM struct. obs. of dielec. props. and cond. mechanism *(French)* 8−14841
$Zn_{1-x}Cd_xS$ mixed crystals, Raman spectra between frequencies LO(Γ) to TO(Γ) 8−2854
$Zn_xCd_{1-x}S$ epitaxial layers, elec. resist. and luminescence obs. 8−19540
$Zn_xCd_{1-x}S$, forbidden band width, exciton refl. and luminesc. meas. 8−10947
$Zn_xCd_{1-x}S$ solid soln. films, reactive cosputtering, struct., comp. and opt. absorpt. edge *(French)* 8−6237
$Zn_xCd_{1-x}S$ substrate, rough, lattice mismatch with Cu_2S and InP films 8−43263
$Zn_xCd_{1-x}S:Cl$, $Cu^+(Ag^+)$, high pressure luminesc. 8−19533
$Zn_xCd_{1-x}Te$, absorpt. edge luminesc. on high-intensity excitation 8−6745
$Zn_xCd_{1-x}Te$, reson. Brillouin scatt. meas. using injected acoustic domains 8−27243
$ZnCl_2$, aq. solns., complex IR refr. indices, IR spectra, mechanisms, spectrometer system 8−43831
$ZnCl_2$ solution, solvent stress cracking of nylons 8−27594
$ZnCr_2Se_4$, screw spin struct., neutron diffr. exam. 8−27019
$ZnCs_2(SO_4)_2.6H_2O:Mn^{2+}$ EPR, 298K, spin-Hamiltonian parameters, cryst. fields 8−27086
ZnF_2, elastic moduli, press. depend., 0-10 kbar 8−10117
ZnF_2, elastic props., 4.2-300K, incipient ferroelec. transition 8−30691
ZnF_2, long-wavelength lattice vibr. modes, symmetry coordinates 8−43081
$ZnFe_2O_4$, LPE growth, film quality, mag. meas. 8−11136
(ZnFe)S, marmatite, optical properties 8−39555
$ZnGa_2Te_4$, cryst. struct., and melting point 8−35360
$ZnGeAs_2$, reflectvvity and XPS meas. 8−35165
$ZnGeAs_2$-$GdGeAs_2$, material distrib., possibility of heterostructure *(Russian)* 8−30979
$Zn_{1-x}Ge_xFe_2O_4$, spinel series, obs. by Mossbauer spectroscopy of electron hoppings 8−43754
$ZnGeP_2$, Br_2-methanol etching soln. for crystallographic axes determ. 8−35541
$ZnGeP_2$, cryst., electronic struct., X-ray K-absorpt. and emission 8−15248
$ZnGeP_2$, crystal, polarisation of recombination radiation 8−19562
$ZnGeP_2$, reflectvvity and XPS meas. 8−35165
$ZnGeP_2$, single cryst., polarised light photocond., optical transparency anisotropy *(Russian)* 8−2518
$Zn_xHg_{1-x}Se(Te,S)$ film preparation and props. *(Russian)* 8−11122
ZnI_2 aqueous solution, US study of apparent molar compressibility 8−10125
$ZnIn_2S_4$, fund. optical consts., Kramers-Kronig analysis, reflectivity spectra 8−39573
$ZnIn_2S_4$, fund. reflectivity, 2 to 6 eV, band struct. implications 8−39574
$ZnIn_2S_4$, nonlinear susceptibility, SHG 8−30019
$ZnIn_2S_4$, photoluminesc., reson. Raman scatt. 8−48179
$ZnIn_2S_4$, Raman and IR spectra 8−48181
$ZnK_4(P_3O_9)_2.4H_2O$, cryst. struct. determ. *(French)* 8−26503
$Zn_xMn_{1-x}Fe_2O_4$, substitution effect on mag. struct. and exchange interaction *(Russian)* 8−47949
$ZnNb_2O_6$, bonding characterisation 8−38680
$ZnNb_2O_6$, columbite struct., normal coord. anal. 8−964
$ZnNb_2O_6$, columbite struct., IR and Raman spectra *(French)* 8−19485
ZnO (0001), $(000\bar{1})$ and $(10\bar{1}0)$, UPS rel. to elec. struct. 8−15288
ZnO (0001) surface, hardness, electrolyte pH and bias voltage effect 8−47654
ZnO, adsorption of rhodamine B on (0001) face of single cryst. electrode 8−31645
ZnO, ang. depend. of reflection spectra and directional dispersion of anisotropic exciton polaritons 8−31216
ZnO based varistors, evolution and role of chem. constituents rel. to prep. method, influence on elec. props. *(French)* 8−31367
ZnO binder layers, regeneration of sensitising dyes 8−21241
ZnO ceramics, nonohmic, cryst. phases 8−26530

zinc compounds continued
ZnO, condensates, growth from vapour, morphological comparison with, MgO, AlN 8−34450
ZnO deposition for metal-ZnO-SiO_2-Si struct., SAW appl., fabrication related deterioration 8−14829
ZnO, dielec. theory of interacting exciton reson., wave-vector polariton dispersion relation 8−14673
ZnO electrode, in aq. soln., phototransition at 380 nm, anodic photocurrent obs. 8−19145
n-ZnO electrode, photoelectrochemical behaviour in acetonitrile solns. 8−31644
ZnO electrode surface, dye sensitisation mechanism, from reson. Raman spectrum obs. 8−42066
ZnO, F-centre exam., pseudopotential calc. 8−43328
ZnO, field emission energy distrib., surface state emission obs. 8−35258
ZnO film, growth rate and defectiveness, rel. to deposition conditions and substrate orientation 8−3057
ZnO film, longit. elastic wave attenuation, 9.4 GHz 8−18888
ZnO film, sputtering using Zn target, technique and characterisation 8−3040
ZnO, ground powder, X-ray Fourier anal. *(Japanese)* 8−39727
ZnO, hollow crystals, growth by oxidation of ZnSe vapour, mechanism 8−34733
ZnO, ion implantation effect on luminesc. and cryst. damage 8−6758
ZnO, L_l and L_η X-ray emission spectra 8−39631
ZnO, near-forward Raman scatt. intensity of E_1(TO) polariton mode 8−23462
ZnO on Zn (0001), oxide film growth, at. and electronic struct. 8−15587
ZnO, optical second-order nonlinear polarisability 8−25919
ZnO piezoelec. film, fabrication and appl. *(Japanese)* 8−23616
ZnO, powder, sintering, surface area reduction, exam. 8−44039
ZnO powder, with adsorbed methanol, appl. of XPS method for surface anal. 8−40104
ZnO, powder layers, conductivity, O_2 chemisorpt. and photodesorpt. effects 8−43441
ZnO, precipitation from gas phase 8−6025
ZnO resin layer leakage current in corona charging *(Japanese)* 8−24877
ZnO, reson. Raman scatt. 8−35137
ZnO, singlercrystal, excess Zn atom conc. and elec. cond. determ. 8−3435
ZnO, strong accumulation layers, negative magnetoresistance 8−6428
ZnO surface, adsorption of O_2 and CO, electron energy loss spectra meas. 8−14601
ZnO, third order nonlinear optical difference frequency generation 8−22176
ZnO varistors, cond. model 8−14736
ZnO:Er(Ag), photoluminescence and electroluminescence 8−27327
ZnO:Li, luminesc. donor-acceptor pairs, exchange broadened optically detected EPR spectra 8−23373
$ZnO:Ni^{2+}$ tetrahedral ion config. interaction and crystal field spectra intensity 8−43335
ZnO/SOS monolithic SAW amplifier 8−6205
ZnO-Au-epoxy resin, and ZnO-Au-fused quartz transducers, $\lambda/4$-mode operation, theory *(Japanese)* 8−30145
ZnO-based binary semiconductor system nonlinearity prognosis *(Russian)* 8−43406
ZnO-Bi_2O_3-Sb_2O_3-Co_2O_3-MnO_2-Cr_2O_3, nonohmic ceramic, microstruct. exam. 8−47292
ZnO-binder system, reciprocity failure, photoconductivity 8−39151
ZnO-Cs, fabrication, UPS meas. 8−15279
ZnO-electrolyte interface, electron transfer sensitisation by salt additions 8−34894
ZnO-Nb_2O_5 system, Czochralski growth, phase relations and cryst. data 8−9975
ZnO-PbF_2-SiO_2 glass, shear wave velocity and its temp. depend. *(Japanese)* 8−30702
ZnO-Si p-n diode monolithic storage correlator 8−18119
ZnO-Si structure, MIS and SAW propag. characts. 8−30988
ZnO-Zn_2TiO_4, solid soln. formation 8−27490
(ZnO-ZnS)Cu:I, double band electroluminophors, form., props. 8−19568
$Zn_4O(BO_2)_6$, phonon coupling exam. by Raman spectroscopy 8−30719
ZnO$\{10\bar{1}0\}$ surface, clean, preparation, XPS meas. 8−39933
ZnP_2, birefringence and optical activity, dispersion 8−2821
ZnP_2, tetragonal, one and two phonon states using second order Raman spectra 8−43874
ZnP_2, two-photon light absorpt. dispersion, allowed-forbidden transition *(Russian)* 8−15193
ZnP_2, Zn_3P_2, polymorphic transitions 8−23699
Zn_3P_2, determ. of ionicity by X-ray absorption method 8−31278
Zn_3P_2, multiphonon absorption in IR spectra 8−39554
Zn_3P_2, phys. props. 8−26527
Zn_3P_2, sp. ht., thermodyn. props. 8−22863
$Zn_3(PO_4)_2:Mn$, cathodoluminophor, nature of ageing 8−10994
$Zn_4(P_2S_6)_3$, cryst. struct. *(French)* 8−34474
$ZnRb_2(SO_4)_2.6H_2O:Mn^{2+}$, EPR, 298K, spin-Hamiltonian parameters, cryst. fields 8−27086
ZnS CVD windows for forward looking IR radar systems 8−46816
ZnS, Compton profile, state of valence electrons 8−11018
ZnS, crystal, layered struct. microscopic observations *(Japanese)* 8−38725
ZnS crystals, luminescence kinetics, centre discrimination exam. 8−15215
ZnS, defect form. in single crysts. during implantation of Zn, S, and Ar *(Russian)* 8−14369
ZnS electroluminescent films, low energy Mn implantation system 8−30658
ZnS electroluminophors, ageing effects *(Russian)* 8−15231
ZnS, energy levels of Mott excitons 8−6282
ZnS, epitaxial growth by Zn-S-H_2 CVD method 8−27413
ZnS, F-centre exam., pseudopotential calc. 8−43328
ZnS film, doubly silvered, light interferometry, refr. index, film thickness and phase shift determ. 8−276
ZnS film, evaporated amorphous, mechanism of memory phenomena *(Japanese)* 8−23140
ZnS, film, on semicond. substrates, early stages of growth, electron microscope obs. *(Russian)* 8−38976
ZnS, high temp. annealing effects on photoluminescence 8−19564

zinc compounds continued
ZnS, highly transparent semicond. crysts., multiphonon IR absorpt. 8−10885
ZnS, interimpurity high press. luminesc. 8−19532
ZnS, laser residual lattice absorpt., freq. and temp. depend. 8−25910
ZnS leaky waveguide electro-optic modulator limitations 8−22218
ZnS, low resistivity, ohmic contact noise characts. and contact resistance 8−14827
ZnS, natural and stress induced birefringence dispersion 8−6651
ZnS, optical material, thermal expansion, 60-300K 8−33791
ZnS, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnS, phosphor, optical flash stimulation, optical absorption, MCD, thermally stimulated luminescence expts. 8−10951
ZnS, plastic deform. induced luminesc., dislocations role *(Russian)* 8−10985
ZnS platelets, cathodolum. analysis using STEM 8−32950
ZnS, RF sputtered film, stoichiometry, chem. comp. 8−34727
ZnS, rare earth activated phosphor, scintillation mechanism *(Russian)* 8−48231
ZnS, S annealed, IR enhancement and quenching of photocond. 8−14763
ZnS, secondary electron emission coeffs. for multiply charged ion bombard. 8−11051
ZnS, self-activated, IR sensitivity 8−6742
ZnS, self-activated, orientation of luminesc. centre 8−27307
ZnS, single cryst. plate, photovoltaic spectra, intensity depend. 8−14762
ZnS, single cryst. vap. growth by sublimation and chem. transport 8−27390
ZnS striated platelets, SEM studies of local variations in cathodolum. 8−15232
ZnS, surface, work function and luminesc. phenomena, effect of H,H_2,O and O_2 adsorpt. 8−10538
ZnS, surface acoustic wave modes 8−2352
ZnS type structure solids, contrib. of many body forces to elastic consts. 8−2188
ZnS vapour grown crystals, morphology and structure 8−42937
ZnS, X-ray L-emission spectra of S *(Japanese)* 8−15254
ZnS:Ag, electroluminesc., surface barriers *(Russian)* 8−2919
ZnS:Ag, struct. and mech. props. 8−22753
ZnS:Ag,Sm, recomb. centre interaction, luminesc. quenching 8−10946
ZnS:Ag phosphor prep., physicochemical investigation of processes 8−11170
ZnS:Be, far IR lattice absorpt., Green's function calc. 8−43865
ZnS:Cl, spectral distrib. of photocond., effect of powerful UV illumination 8−14767
ZnS:Co^{2+}, spin-lattice relax., phonon heating effect *(Russian)* 8−19317
ZnS:Cr^+, Fe^{3+}, luminesc., cond. and paramag. centre conc. parameters 8−6724
ZnS:Cr^{2+}, Jahn-Teller interaction energy calc. 8−2455
ZnS:Cu, Co, deep traps and stationary luminescence *(Russian)* 8−48227
ZnS:Cu, current pulses stimulated by elec. field at low temp. 8−39121
ZnS:Cu, H, double band phosphor, electrolum., −100 to +100°C 8−10987
ZnS:Cu, polycryst. phosphor, excitation storage, recombination barrier participation 8−27316
ZnS:Cu,Al phosphor, shallow hole traps 8−31237
ZnS:Cu,Cl, electrolum. voltmeter design, accurate high-voltage meas. 8−24813
ZnS:Cu,Pt phosphors, photoluminesc., thermoluminesc. 8−43915
ZnS:Cu AC electroluminescent patterns and polytypic transformations 8−6784
ZnS:Cu phosphor, electric field quenching of photoluminesc. and flash-like rise in luminesc. 8−2911
ZnS:Fe, piezospectroscopic effect on electron-vibr. lines of Fe^{2+} 8−27269
ZnS:Ga(Cl), deep traps, impurity electroabsorpt. and photocond. meas. 8−6707
ZnS:Mn film, AC electrolum., memory effect 8−15228
ZnS:Mn film, current conduction and light emission, physical mechanism 8−14840
ZnS:Mn on SnO_2/glass transparent conductive base, surface morphology effects on electroluminesc. *(Russian)* 8−48238
ZnS:Mn^{2+}, $^4T_1$ excited state, absorpt., MCD, Jahn-Teller model 8−43907
ZnS:Pb^{2+}(Mn^{2+}), high press. luminesc., localised excitations 8−19534
ZnS:S, photoconductivity and negative differential photo-effect 8−39156
ZnS:TbF_3, photoelectroluminescence, effect of electron-hole pairs 8−27328
ZnS:V (d^3), absorption and luminesc. spectra 8−15203
ZnS:Yb^{3+}(Nd^{3+}), spin-lattice relax. times meas. 8−19324
ZnS-based phosphor, microstruct. and luminesc. efficiency 8−10959
ZnS-CdS:Tm,Ni, recomb. centre interaction, luminesc. quenching 8−10946
ZnS-MgF_2 dielectric film, laser irrad. and microscopic inhomogeneities 8−2157
ZnS-MgF_2(SrF_2), dielec. films, transparent, microscopic inhomogeneities and optical breakdown 8−10844
ZnS-Mn sublimated phosphor films, annealing effects *(Russian)* 8−43949
ZnS-O, single cryst., fast neutron irrad., optical props. 8−27331
ZnS-SrF_2 dielectric film, laser irrad. and microscopic inhomogeneities 8−2157
$ZnSO_4$, LMFBR, boiling pools with internal heat generation, void distrib. 8−21626
$ZnSO_4.H_2O$, hydrate librational modes in IR spectra 8−48161
$ZnSO_4.7H_2O$ impurity meas. using digital instrument *(Polish)* 8−31653
$ZnSO_4.7H_2O:VO^{2+}$, single cryst., struct., EPR 8−15014
ZnS.CdS, flux growth, processes accompanying roasting of CdS+NaCl 8−23590
ZnSb, band struct. calc. 8−39015
ZnSb phase in Zn-Sb diffusion couple, layer growth kinetics, 240-320°C, up to 30 kbar 8−10229
Zn_3Sb_2, phys. props. 8−26527
ZnSe (111), low-energy electron loss spectra, bulk and surface transitions 8−11042

zinc compounds continued
ZnSe, Anderson-Gruneisen parameter, bulk modulus temp. depend. 8−10154
ZnSe, Bridgman growth under Ar press., temp. distrib. in furnace 8−11100
ZnSe, CVD, laser window material, impurity absorpt. meas. 8−25909
ZnSe, crystal, new polytype structure 8−14319
ZnSe crystal and film, refr. index, 10.6 μm ellipsometric meas. 8−24847
ZnSe, cubic, magnetoreflectance of Γ_6-Γ_8 exciton ground state 8−23495
ZnSe, deep centres, photolum., photocapacitance and photocurrent expts. 8−39053
a-ZnSe, elec. and optical meas., Mott-type model for amorphous semicond. 8−2414
ZnSe, energy levels of Mott excitons 8−6282
ZnSe film, on semicond. substrate, early stages of growth, electron microscope obs. *(Russian)* 8−38976
ZnSe film, surface polaritons, thermostimulated emission *(Russian)* 8−10904
ZnSe film, thermostimulated polariton emission 8−2436
ZnSe, highly transparent semicond. crysts., multiphonon IR absorpt. 8−10885
ZnSe, hot-pressed powder LED fabrication and characts. 8−23639
ZnSe, IR absorpt., temp. depend. 8−48155
ZnSe, laser residual lattice absorpt., freq. and temp. depend. 8−25910
ZnSe, laser window material, multiphonon absorpt. temp. depend., calorimetric meas. 8−25907
ZnSe, laser window material, absorpt. at CO wavelengths, calorimetric meas. 8−25911
ZnSe, laser window material, surface and bulk absorpt., photoacoustic meas. 8−25912
ZnSe, low resist. single crysts., radiative recomb. mechanism, photolum. and electrolum. 8−6744
a-ZnSe, low temp. photocond., increase of activation energy as temp. decreases 8−26902
ZnSe MIS diode, blue electrolum., heat treatment effects 8−19569
ZnSe MIS diode, forward-bias electrolum. 8−23532
ZnSe MIS LED, donor density calc. from C-U meas. 8−47878
ZnSe, nature of large electric charges of moving dislocations *(Russian)* 8−39065
ZnSe, optical material, thermal expansion, 60-300K 8−33791
ZnSe, optically detected mag. reson. of V^- centre and donors 8−10805
ZnSe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnSe, single cryst. vap. growth by sublimation and chem. transport 8−27390
ZnSe:Al(Ga)(In), single cryst., doping, blue luminesc. 8−39584
ZnSe:B(F), ion implantation, photocond. and cathodoluminesc. meas. 8−26586
ZnSe:Co, effect of in-band position of states on photoelec. props. 8−23132
ZnSe:Co, optical props. in near IR 8−43924
ZnSe:Co^{2+}, depression of vibronic levels, transition of Jahn-Teller states from dynamic to static 8−43337
ZnSe:Cr^+, Fe^{3+}, luminesc. cond. and paramag. centre conc. parameters 8−6724
ZnSe:Cu, Cl, high press. luminesc. 8−19532
ZnSe:Cu, luminescence and diffusion behaviour of Cu impurities 8−35188
ZnSe:N, ion implanted cond. type conversion on annealing *(Korean)* 8−18668
ZnSe:Na, characterisation of edge emission 8−27312
ZnSe:V (d^3), absorption and luminesc. spectra 8−15203
ZnSe-CdTe heterojunction, cathodolum. and electrolum. 8−6782
ZnSe-GaAs solid solns., chem. transport cryst. growth, struct. 8−43991
ZnSe-Ge(GaAs)(mica) epitaxial heterostructs., growth struct. 8−43257
ZnSe-metal contact, elec. props. 8−14826
ZnSe-ZnTe heterojunction, cathodolum. and electrolum. 8−6782
$(ZnSe)_x(CdTe)_{1-x}$, low temp. photoluminesc. *(Russian)* 8−43931
$ZnSeO_4.6H_2O:Cu^{2+}$, crystal struct. orientational degeneracy removal scheme, space groups, ESR spectra 8−47267
ZnSe(100) surface, anomalous oxidation props. 8−15558
$ZnSiAs_2$, synthesis and layer growth by CVD in open flow system 8−15312
$ZnSiF_6.6H_2O$, dielec. props., 100-270K, rel. to $NiSiF_6.6H_2O$ 8−35088
$ZnSiF_6.6H_2O$:Co, influence of hydrostatic press. on Co^{2+} EPR spectrum 8−27084
$ZnSiF_6.6H_2O:Ni^{2+}$, cryst. field, uniaxial compression method *(Russian)* 8−35027
$ZnSiF_6.6H_2O:Ni^{2+}$, spin-lattice relax. at press. up to 6.5 kbar 8−48033
$ZnSiF_6.6H_2O(.6D_2O)$, near IR spectrum, 80K, assignments 8−48164
Zn_2SiO_4:Mn, cathodoluminophor, nature of ageing 8−10994
Zn_2SiO_4:Mn luminescent film on Si, electron injection 8−23176
$Zn_2SiO_4:Mn^{2+}$ phosphor, for low press. fluoresc. lamp, luminesc. characts. 8−10960
$ZnSiP_2$, 1 MeV proton bombardment, lattice deformation investigation by Kossel effect 8−22775
$ZnSiP_2$, first- and second-order Raman scatt. 8−35151
$ZnSnAs_2$-$CdSnAs_2$, material distrib., possibility of heterostructure *(Russian)* 8−30979
$ZnSnCuO_4$, cryst., struct., mag. susceptibility obs. 8−2085
p-$ZnSnP_2$, photolum. anisotropy, 77K 8−19557
ZnTe, Anderson-Gruneisen parameter, bulk modulus temp. depend. 8−10154
ZnTe doped with group I impurities, fluorescence spectra meas. 8−10949
ZnTe, energy levels of Mott excitons 8−6282
ZnTe film, LF oscills. of dark current obs. 8−19093
ZnTe film, on semicond. substrate, early stages of growth, electron microscope obs. *(Russian)* 8−38976
ZnTe MBE thin film growth, elec. and optical props. 8−47887
ZnTe, magnetoreflectance meas. on Γ_6-Γ_8 exciton 8−6656
ZnTe, phonon dispersion under extreme press. and metallic transform., Raman spectra meas. 8−10895
ZnTe, relax. processes at high excitation levels, Bose-Einstein condensation of excitons 8−48219
ZnTe, reson. Brillouin scatt., injected acoustic domains obs. 8−19493

zinc compounds continued

ZnTe, single cryst. vap. growth by sublimation and chem. transport 8−27390

ZnTe single crystal, power depend. of photocurrent on excitation intensity, sublinear behaviour 8−43442

p-ZnTe, single crystal *(Russian)* 8−23488

ZnTe, temp. depend. of Raman scatt. and exciton luminesc. spectra 8−39586

ZnTe, vacuum deposited on Al alloy for optical contrast enhancement 8−44301

ZnTe, vapour growth by closed tube method 8−39703

ZnTe: group I element, absorption saturation *(Russian)* 8−35183

ZnTe:Ag, containing dislocation loops, optical absorption-edge fine struct. 8−43905

ZnTe:Li(Cl)(Al)(In), ion implanted and annealed, photoluminesc. meas. 8−15208

ZnTe:O, Ne or Al implantation, electronic and optical parameters of O-related centre 8−6399

ZnTe:P, excitations spectra of donor-acceptor pair photoluminesc. 8−23522

ZnTe:P(As), g-values, spin temp., determ. from Raman spectra 8−43856

ZnTe-CdSe, solid soln. formation and effects 8−27489

ZnTe-Ga_2Te_3, phase diagram 8−35360

$ZnTiO_3$, ceramic channel electron multiplier, detect. efficiency in vacuum UV 8−12759

$Zn(UO_2AsO_4)_2.8H_2O$, prep. cryst. struct. characterisation 8−30589

$Zn_3(VO_4)_2$, luminesc. spectra in visible region, vanadate group 8−43921

$ZnX_4^{2-}(IO_4^-)$, (X=Cl,Br, I), force consts., compliance and Coriolis consts. calcs. 8−42242

zirconium

see also nuclei with ......

abundance determ. in silicate rocks, meteorites and lunar samples by neutron activation 8−20547

atom, magnetic hyperfine struct. 8−934

band structure correlation with ZrC, APW calc. *(Japanese)* 8−23017

calibration sample proposal, long wavelength neutron scatt. meas. 8−29722

cold-rolled, textural transform. *(Russian)* 8−39790

corrosion resistant pure metal, passivity and pitting in chloride solutions 8−44258

creep, optical and electron metallographic anal., 473 to 873K 8−39986

defect solute atom interaction investigation using channelling techniques 8−47442

diffusion in Cu, microstruct. and microanal. study of coating formed *(Rumanian)* 8−19917

diffusion in Nb bulk cryst., diffusion coeff., effect on Nb self diffusion isotope effect 8−47602

electron extinction distances for twenty two lowest order reflections 8−47213

excited state radiative lifetime, sputtering technique 8−17602

field evaporation, search for high ionic charges 8−35269

film, reactive ion beam sputtering 8−19666

HCP, elec. field gradient 8−14698

K-edge photoabsorption spectra, linear APW calc. 8−43960

laser microprobe damage, metallographic exam. of craters formed 8−39988

neutron irradiated, faulted loops 8−10094

oxidation in flow conditions at 1000 to 6000K 8−11445

photoelectric cross section, total to K-shell ratios 8−5188

photoelectric cross-section at K-edge measurements 8−2983

photon emission from inert gas-surface impact 8−11059

point defect props., effect on irradiation behaviour of Zr alloys 8−30609

reactive, trapping of energetic 18 keV deuterons 8−10096

reactor cooling and heat recovery appl. *(Italian)* 8−4978

separation from Hf, new process 8−6875

sorption of H_2, tritium recovery in D-T fusion reactor *(Japanese)* 8−29646

sputtered film, compressive stress transition 8−10310

thin film, trace element determ. by X-ray fluoresc. anal. 8−40107

X-ray reflection intensities, charact. temps. and Debye-Waller factors, 100-370K 8−18731

(Br,Zr) quasimolecular system, 1 s σ orbital, variational calc. 8−37707

CaS:Zr, Gd phosphors, thermoluminesc., trap distrib., activator effects 8−2929

Ga_2O_3:Zr single crystals, quenched, ionic and elec. props. 8−30922

YIG:Zr^{4+}, X-ray induced change in initial permeability 8−19280

Zr-H system, H location in HCP phase 8−18637

ZrO_2-Zr cermet composite, hot pressed, fracture toughness 8−27604

zirconium alloys

see also zirconium compounds

crystallographic texture, quantitative charact., review 8−21647

domain struct. of diffuse ω-phase formed in quenching, 1D model 8−27523

irradiation props., point defect struct. of α-Zr effect 8−30609

pressure tubes, cracking due to high residual tensile stresses 8−29585

steel, R6M6, micro-alloying effect 8−6939

Zircalloy in thermal gradient, calc. of supercharging effect of H_2 and hydride distrib. 8−21639

Zircaloy, hydriding reaction kinetics, oxidised specimens 8−26728

Zircaloy, micrograin superplasticity at 850°C 8−23758

β-Zircaloy, O_2 diffusion 8−6181

Zircaloy 2 and 4, oxidation kinetics appl. to loss of coolant accidents, data review 8−19958

Zircaloy cladding, embrittlement and failure during reactor power-cooling-mismatch 8−21688

Zircaloy hulls, conversion to zirconate ion exchange materials for waste stabilisation 8−702

Zircaloy-2, elastic const. determ. 8−11257

Zircaloy-2, irradiation creep under H^+ bombardment at 5.5 MeV 8−14392

Zircaloy-2, irradiation-induced creep following 4 MeV H^+ bombardment 8−14390

Zircaloy-2 cladding, bonding to UO_2 fuel, mechanisms determ. by SEM and EPMA 8−17317

Zircaloy-2 cladding, fracture in iodine environment 8−31581

zirconium alloys continued

Zircaloy-2 cladding, stress corrosion cracking in iodine vapour, 250-450°C 8−17313

Zircaloy-2 tubing, quantitative charact. of crystallographic texture 8−21647

Zircaloy-4, accelerated corrosion in high temp., high press. steam, effect of heat treatment 8−44263

Zircaloy-4, diffusion bonding with 304 stainless steel 8−34658

Al alloy 7075, $CrAl_7$ form., effect of V and Zr 8−44132

Al-Cr-Zn (2.5, 1.5 wt%), phase equilibrium, solubility *(Russian)* 8−19723

Al-Cu-Mn-Zr-Fe-Si (6,0.3,0.18,0.3,0.1 wt.%) experimental evidence of Mn enrichment in Al_2Cu precipitates by EDS in TEM 8−15415

Al-Mg-Zr, phase diagram *(Russian)* 8−11205

Al-Zr (0.8 and 1.5 wt.%), hyperperitectic, non equilibrium solidification 8−3113

Al-Zr solid soln., discontinuous precipitation of metastable Al_3Zr 8−3130

Be-Zr, glassy, quenched from melt, supercond. props. 8−26983

Cu-Ti-Zr, strength improvement, using thermomechanical treatment *(Japanese)* 8−48426

Cu-Zr, vapour quenching prod. (thermal evaporation and r.f. sputtering), amorphous film for electron microscopy 8−6851

Cu-Zr (50 or 54 at.%), splat-quenched, glass transition and crystn. temps. determ. 8−22659

Cu-ZrO_2, dispersion hardened, electrical cond. and mech. props. 8−44133

$Cu_{60}Zr_{40}$, stability, crystallisation, ductility meas. 8−47246

Fe-Co-Ni-Al-Zr magnetically hard alloys, reduction *(Russian)* 8−43614

Mg-Y-Nd-Zn-Zr (2,2,0.3, 0.7 wt.%), heat treatment effect on casting dimensional stability, alloy mech. props. 8−44146

Mo-Zr, nitride form. in N_2 atmos. *(Russian)* 8−19938

Mo-Zr-B-C, dil. alloy, struct. changes under prolonged high temp. annealing *(Russian)* 8−6944

Mo-Zr-Nb-C, polythermal sections *(Russian)* 8−15365

Mo-ZrC, phase diagram *(Russian)* 8−27476

Nb-Zr, (10 at.%), optical props., 0.1-25 eV, band models 8−10892

Nb-Zr, cold plastic deform., oriented microdistortions *(Russian)* 8−39840

Nb-Zr, diffusion of O_2 8−2298

Nb-Zr (1 wt.%), ion irradiated, void ordering 8−22770

Nb-Zr alloy, 5VMTs1, thermal expsn., 1261-2289K 8−43150

Nb-Zr-C alloy, strengthening phase, struct. and morphology after stress ageing *(Russian)* 8−31454

Nb-Zr-N, deformed and annealed, internal friction, rel. to structural state *(Russian)* 8−6957

Nb-Zr-O, corrosion resistance in molten Li *(Russian)* 8−31567

Nb_3Sn strip, made by diffusion method, crit. curent anisotropy, Zr alloying addition effects *(Russian)* 8−47921

Ti-Al-Mo-Zr alloy, VT9, decomp. kinetics of metastable β-phase, X-ray and mech. props. obs. *(Russian)* 8−48368

Ti-Al-Mo-Zr alloy VT9, Cu-Cr(Ni) coated, plastic deform. and diffusion annealing effect on props. *(Russian)* 8−35425

Ti-Al-V-Cr-Mo-Zr (3,8,6,4,4 wt.%), beta-C, microstruct. effect on mech. props. 8−27577

Ti-Al-V-Sn-Zr alloy TS5, annealing effect on ductility and strength *(Russian)* 8−35427

Ti-Al-Zr, TA6Zr5D, oxidation at high temp. *(French)* 8−23860

Ti-Al-Zr-Mo-Si (6,5,0.5,0.25 wt.%), fracture toughness and crack propag. 8−39892

Ti-Be-Zr, struct. and form. of metastable phase m-TiBe 8−48375

Ti-Mo-Zr-Sn, alloy, βIII, struct. transform. in thermally affected zones after electron beam welding 8−23919

Ti-Nb-Zr-Fe-Mo-V, cold worked, struct. and phase transform. during ageing 8−3153

Ti-Zr, valence bands, X-ray M- and L-emission bands obs. *(Russian)* 8−19602

$Ti_{50}Be_{40}Zr_{10}$ glass, mech. props., X-ray diffr. exam. 8−11292

$Ti_{50}Be_{40}Zr_{10}$, Metglas 2204, stability, crystallisation, ductility meas. 8−47246

$Ti_{1-x}Zr_xCr_{2-y}Mn_y$, C14 type alloy, hydride form. *(Japanese)* 8−19944

$Ti_{1-x}Zr_xMn_2$, hydride formation, hydriding characts. of reversible uptake 8−44402

U-Mo-Nb-Zr-Ti (0.75, 0.75, 0.75, 0.5 wt.%), heat treatment effect on microstruct. and mech. props. 8−23729

U-$Q^4(Q^5)$, Q^4=quad, Q^5=quint, stress corrosion cracking in moist air, salt water, salted moist air 8−35562

V-Zr-C, radiation hardening and plastic instability *(Russian)* 8−39842

V-Zr-N quasi-binary section, long term hardness to compare heat resistance 8−3223

V-Zr-Nb alloy, rel. between density of states and martensitic and superconducting phase transition temps. 8−10594

V_2Hf, NMR meas., mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359

V_2Ta, NMR meas., mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)* 8−23359

V_2Zr, NMR meas. mag. susceptibility, Knight shift and elec. field gradient determ. *(Russian)*. 8−23359

W-C-Zr, vacuum melted, phase composition, struct. and props. 8−31403

W-Zr-C, cubic solid soln., form. and props. 8−48348

Zr base alloy, fatigue crack propag., role of adsorption in H_2S, Hg and moist air *(French)* 8−15580

Zr-Al-Fe (8.9, 0.001 to 0.006 wt.%) Fe partitioning to Zr_2Al during peritectoid transformation 8−39784

Zr-base alloy as reactor core material, microstruct., deform. and fracture 8−4988

Zr-Cr-Cu, phase diagram in Zr corner *(Russian)* 8−19721

Zr-Ge-B system, phase equilibria 8−35356

Zr-Mn (up to 0.3%), high-magnetic field magnetisation and magnetoresistance 8−10652

Zr-Mo (3 wt.%), β-phase stability 8−39742

Zr-Mo-Al (3, 1 wt.%), β-phase stability 8−39742

Zr-Nb (1 and 2.5 wt.%), annealed, thermal expansion, α/β transition *(Russian)* 8−26702

Zr-Nb (2.5 wt.%), cold worked, in reactor oxidation of crevices and cracks 8−23865

Zr-Nb (2.5 wt.%), fuel cladding, anisotropy after creep and irradiaton 8−7001

zirconium alloys continued
Zr-Nb (2.5 wt.%), H_2 induced subcritical crack growth meas., application of potential drop method 8−27645
Zr-Nb (2.5 wt.%), hydride forming materials, H_2 induced delayed cracking 8−27623
Zr-Nb (2.5 wt.%), memory effect in hydride precipitation 8−11227
Zr-Nb (2.5 wt.%), oxidation kinetics appl. to loss of coolant accidents, data review 8−19958
Zr-Nb (2.5 wt.%) neutron effects on oxidation kinetics 8−690
Zr-Nb alloy, isothermal decomposition at elevated temp. 8−27470
Zr-Nb microduplex alloys, struct. and props. 8−3170
Zr-Nb solid solutions, BCC, direct imaging of linear defect using diffuse scatt. 8−22726
Zr-Nb-Mo-Re, alloying effect on dislocation core struct., determ. by discrete lattice modelling 8−30618
Zr-Ni, energy spectra of valence electrons *(Ukrainian)* 8−6814
Zr-Ni alloys, energy spectra, X-ray emission obs. *(Russian)* 8−19604
Zr-Sn-Mo (6, 1 wt.%), creep and creep rupture 8−23778
Zr_3Al, irradiation 8−6111
Zr_3Al, $L1_2$ phase, work hardening 8−23718
Zr_3Al, $L1_2$ phase yield strength 8−19811
Zr_3Al, ordered, notch sensitivity, neutron suppression 8−23779
Zr_3Al, ordered, review of physical metallurgy 8−15419
ZrC-Re, in H_2, thermionic emission residual gas effects 8−48269
ZrC_x, x=0.99 to 0.13, elec. cond., supercond. state 8−43504
$Zr(Fe_{1-x}Co_x)_2$, magnetic saturation moment, Co conc. depend., NMR exam. 8−15037
$Zr(Fe_xCo_{1-x})_2$, mag. order in pseudobinary systems down to millikelvin temps. 8−19251
$ZrGe_2$, RF sputtered, supercond. crit. temp. 8−14853
ZrH_x, two-phase ($\delta+\varepsilon$), homogenisation during neutron bombard. *(Russian)* 8−18684
ZrNb, ω-phase, diffuse neutron scatt. meas. 8−14311
$Zr_{0.7}Pd_{0.3}$, amorphous supercond., sp. ht. and thermal cond., 0.1-10K 8−26991
ZrSi and $ZrSi_2$, ultrasoft X-ray emission bands, empirical band schemes 8−15249
ZrV_2, supercond. rel. to struct. instability *(Russian)* 8−23196

zirconium compounds
see also zirconium alloys
cordierite glass ceramics, effect of TiO_2 and ZrO_2 content on phase sequence during heat treatment 8−48381
zirconium hexacyanoferrate, possible agent for removal of radioactive Cs from contaminated water *(Slovak)* 8−24319
Al_2O_3-MgO/ZrO_2-CeO_2/MgF_2 triple layer antirefl. coating for crown glass in visible region 8−13777
Al_2O_3-ZrO_2, dispersion hardened, fracture toughness improvement by induced microcracking *(German)* 8−31501
Al_2O_3-ZrO_2 cast refractories, nucleation processes reconstruction by SEM, TEM and STEM 8−35380
Al_2O_3-ZrO_2 dispersed system, thermal diffusivity/conductivity, effect on microcracking resulting from phase transform. 8−10231
Al_2O_3-ZrO_2 dispersed system, fracture toughness, inclusion induced microcracking effect 8−11296
Al_2O_3-ZrO_2 mixture, stress induced transformation of tetragonal ZrO_2, exam. 8−48392
Er_2O_3-ZrO_2, subsolidus phase relations, X-ray diffr. and thermal expansion exam. 8−31382
Fe-ZrB_2 condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
Fe-ZrO_2 condensate, struct. and mech. props., disperse particle content depend. *(Russian)* 8−19772
K_xZrS_2, intercalation cpd., X-ray K absorption edges 8−39627
MgO-Al_2O_3-ZrO_2, wetting with liquid Fe and Al 8−22936
Na_2O-ZrO_2-SiO_2 glass, density, refractive index, thermal expansion hardness, IR spectra, DTA *(Japanese)* 8−15535
$PbZrO_3$-$PbCd_{0.5}W_{0.5}O_3$, phase transitions 8−43817
Rb_xZrS_2, intercalation cpd., X-ray K absorption edges 8−39627
Si_3N_4-ZrO_2, sintered and hot pressed, exam. of mech. props. 8−48509
$SrO.ZrO_2$, US comminution of refractory compound powders 8−23656
TiC-ZrC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
TiO_2-ZrO_2-SiO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
Z+C, band struct. correlation with Zr, APW calc. *(Japanese)* 8−23017
Zr-H system, δ and ε phases, neutron irrad., radiation swelling investigation 8−18685
Zr-O, high temp. phase diagram 8−11211
ZrB_2, etching method using H_3PO_4 and H_2SO_4, effect of Pt 8−44339
ZrB_2, pure, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649
ZrB_2, single cryst., quadrupole coupling const. of ^{12}B 8−37279
ZrB_2-Ta composite, vacuum hot-press sintering and microstruct. *(Japanese)* 8−23649
Zr(C,N), coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 500-600°C *(French)* 8−44266
Zr(C,N), hydrolysis 8−15713
ZrC, in H_2, thermionic emission, residual gas effects 8−48269
ZrC, prep. from $ZrCl_4$+C *(Russian)* 8−19682
ZrC, recrystallisation 8−11251
ZrC, sintering 8−19700
ZrC, US comminution of refractory compound powders 8−23656
ZrC, valence band struct. *(Russian)* 8−6268
ZrC, work function, effect of H_2 adsorpt., thermionic emission expts. 8−2970
ZrC-HfC, pseudobinary systems, phase diagrams, computer calcs. 8−44092
ZrC-NbC, kinetic characteristics, review 8−47613
ZrC_x, thermophysical props. at high temp., thermal vacancies form. 8−43141
ZrC_x, x=0.99 to 0.13, elec. cond., supercond. state 8−43504
ZrF_4-BaF_2-NdF_3 glass, vitreous domain, prep. and optical props. 8−27304
$Zr_2F_8(H_2O)_6$, cryst. struct. refinement 8−18592
Zr_3Ge, superconducting transition temp. 8−47898
ZrH_x, two-phase ($\delta+\varepsilon$), homogenisation during neutron bombard. *(Russian)* 8−18684
$ZrH_mCe_n(PO_4)_2.XH_2O$, cryst., self-diffusion of Ce^{3+} ions 8−34648

zirconium compounds continued
α-$ZrH_{0.74}La_{0.42}(PO_4)_2.4.6H_2O$ cryst., self-diffusion of La^{3+} ions 8−34648
$Zr(HPO_4)_2H_2O$, ^6Li loaded, α-radiation damage, X-ray Guinier powder reflection study *(German)* 8−47437
$ZrIr_3Br_{-4}$, cryst. struct. 8−42963
ZrN, coating on Zr substrate, oxidation by water vap., kinetics, 0.2-20 torr, 550-700°C *(French)* 8−44266
ZrN, optical props. at 300K 8−19466
ZrN, plasma-formed, ESCA and supercond. transition temp. 8−19697
ZrN-AlN, composite, erosion resist. in electron stream 8−11365
ZrO_2, abrasive grains, single, wear on steel, exam. *(Japanese)* 8−44230
ZrO_2, addition to $SrTiO_3$, effect on sintering kinetics 8−44037
ZrO_2, additive for sintered TiO_2 ceramics, effect on props. 8−35329
ZrO_2 amorphous film, alkali resistance, refractive index, IR spectra *(Japanese)* 8−23546
ZrO_2, arc spot heat impact degradation *(Japanese)* 8−39819
ZrO_2, coating on Cu, thermal shock performance 8−7081
ZrO_2 coatings, prod. by low-temp. oxidation, props. 8−23856
ZrO_2, digital pyrometry in solar furnace, freezing point *(Japanese)* 8−32821
ZrO_2, elec. cond. at high temps. 8−6380
ZrO_2 film, CVD from organometallic cpds. and characterisation 8−23626
ZrO_2 induction furnace for precision silica optical fibre drawing 8−1446
ZrO_2, near-surface phase transforms., effect of grinding and polishing 8−15557
ZrO_2, polycrystalline, tetragonal phase, stabilisation 8−15392
ZrO_2, powder, preparation technique for highly sinterable powder 8−39714
ZrO_2, Raman spectra, temp. depend. 8−6668
ZrO_2, rate of dissolution in molten slag of polycomponent systems *(Japanese)* 8−22859
ZrO_2, sintering of granular masses, stabilized with CaO and Y_2O_3 8−44064
ZrO_2, stabilised microspheres, sintered, temp. depend. of strength, 20 to 1700°C *(Russian)* 8−23766
ZrO_2, thermolum., UV and γ-ray effects 8−2930
ZrO_2, wear chart, exam. *(German)* 8−35521
ZrO_2, Y_2O_3 stabilised, hydrothermal growth 8−15302
ZrO_2-Al_2O_3-SiO_2, subsolidus equilibria and stabilization of tetragonal ZrO_2 8−27497
ZrO_2-CaO, phase equilibria and ordering 8−27498
ZrO_2-CaO (12-19 mole%), AC elec. behaviour, 300-900°C, grain size, electrode material, and sintering effects 8−34649
ZrO_2-CeO_2, semiconducting ceramics, electronic conductivity and oxido-reduction *(French)* 8−26919
ZrO_2-HfO_2(Y_2O_3) solid soln. complex refractories, sublimation *(Russian)* 8−47513
ZrO_2-R_2O_3 solid solns., prep., crystn., R=Nd,Sm,Dy,Yb 8−42909
ZrO_2-Sc_2O_3, phase system, X-ray and thermal anal. 8−27494
ZrO_2-SiO_2 glass fibre prep. form metal alcoholates 8−6886
ZrO_2-W, eutectic microstruct. 8−27499
ZrO_2-Y_2O_3, phase equilibria and ordering 8−48385
ZrO_2-Y_2O_3, solid electrolyte, cond. maximum 8−47577
ZrO_2-Y_2O_3, solid solns., density meas. rel. to O vacancy model 8−2113
ZrO_2-Y_2O_3, solid soln., elastic and photoelastic props., Mendelstam-Brillouin scatt. 8−6693
ZrO_2-Y_2O_3-Nd_2O_3, high-temp. thermophys. props. 8−26663
ZrO_2-Y_2O_3-Nd_2O_3, spectral determ. of crystal stabilisation 8−27203
ZrO_2-Zr cermet composite, hot pressed, fracture toughness 8−27604
$ZrO_2.nH_2O$, possible agent for removal of radioactive Cs from contaminated water *(Slovak)* 8−24319
Zr_3P, superconducting transition temp. 8−47898
Zr_3Sb, superconducting transition temp. 8−47898
$Zr_3Sc_4O_{12}$, n-beam struct. images, expt. observations and computer calc. 8−38593
$Zr(SeO_4)_2.4H_2O$, cryst. struct., X-ray powder diffr. meas. 8−34483
Zr_3Si, superconducting transition temp. 8−47898
$ZrSiO_4$, sintering, effect of grinding and additives 8−48356
$ZrSiO_4$, zircon, (sand), thermolum., UV and γ-ray effects 8−2930
$Zr(SiO_4)_{1-x}(OH)_{4x}$, synthetic hydroxyled zircon, influence of OH^- on thermoluminescent emission *(French)* 8−6795
ZrX_4, (X=Cl,Br,I), He I and He II photoelectron spectra, ionis. energy, chem. bonding 8−46394

zodiacal light
see also sky brightness
brightness distrib. rel. to dust near 1 AU, Helios 1 and 2 obs. 8−36511
brightness integral, phase function isotropy, scatt. from particles *(French)* 8−45279
dust free zone around Sun, search with Helios 1 solar probe 8−45277
Fraunhofer lines Doppler shift, interplanetary dust dynamics 8−45278
Helios 1 and 2 obs. 8−24483
IR photometric obs. using balloon-borne telescope 8−36453
meteoroid stream widths, rel. to zodiacal light interp. 8−4156
photometric axis, prediction from theoretical model 8−20727
photopolarimetry, brightness annual vars. rel. to zodiacal cloud symmetry plane 8−45276
source function from Helios A and Pioneer 10 photometric obs. 8−36539
UV polychromator appl., Astro 7, absolute radiometric calibration 8−49336
UV spectroscopy at 20° elongation 8−20728

zonal heating *see atmospheric thermodynamics*

zone melting
molten zone shape and stability, theory 8−30568
ribbon-to-ribbon growth method and sample characterisation Si 8−11103
solution-melt drops, periodic instability of motion over crystal surface 8−47260
thermodynamics of phase transition intensity in crystn. processes *(Russian)* 8−38636
transition metal borides, refractory, single cryst. prep. methods and characterisation, book contrib. 8−48296
Al-Cu, liq. diffusion coeff. meas. using temp. gradient zone melting 8−26710

zone melting continued
  $Al_xGa_{1-x}As$, epitaxial layer, distribution of Te and Ge impurities 8−43046
  B modifications, polymorphism, cryst. chem., struct., growth, book contrib. 8−47278
  Bi-Sb, cryst., hopper growth 8−18564
  Cd isotope enrichment, by refining and pulsed currents 8−3032
  $CdIn_2S_4$ single crystal growth by two-zone horizontal Bridgman technique 8−27400
  GaAs, melted zone displacement by current *(Russian)* 8−26727
  InP, molten stoichiometric, surface tension 8−39684
  $NaNO_3$ floating zone melting, surface tension driven flow 8−48313
  Si, crucible-free growth, zone melting in combined heating system 8−3031
  Si, failure in strong melt grown single crysts. 8−3205
  Si, float zone crysts., large diameter, growth parameters 8−31336
  Si, float zone grown, low ohmic seeds and dislocations 8−27398
  Si single crystal growth advances 8−6842
  Si, temp. distrib. in working zone of composite heater, heat transfer calc. 8−3016
  Si:O, C, impurity conc. profiles and process-induced defects 8−6094
  n-Si:P, doping, by zone melting using solid dopant source 8−43035
  Si:P, effect of annealing on charge carrier conc. on floating zoned crystals 8−47805
  SiC, growth from soln. in fused Si, temp. gradient method in Tb vap. 8−35301
  TiC single crystal, prep. by floating zone technique *(Japanese)* 8−23607
zone plates (optical) *see optical zone plates*
zone refining
  electron beam zone refiner, improved emission current control 8−6844
  narrow band gap semiconducting alloy layers, electron-beam microzone refining, in space 8−35325
  organic compound *(Japanese)* 8−48312
  oven for material purification *(Spanish)* 8−44009
  Bi-Sb solid soln., crystallisation in capillaries *(Russian)* 8−44006
  Cd isotope enrichment, by refining and pulsed currents 8−3032
  Ge, molten zone movement under influence of Peltier effect 8−44007
  Ge purification 8−39683
  GeTe, nonstoichiometric, homogenisation 8−44004
  KCl, zone refined single crystal growth for high power CO_2 laser optics 8−22181
  Nb, impurity conc. monitoring during single cryst. production, use of nuclear phys. methods 8−31337
  Pb, by electron transfer *(Russian)* 8−19662
  PbS, liquid encapsulation zone-refining, source material for sublimation growth 8−27399
  Pd, float zone purification, residual resistivity ratio 8−44008
  Si crystal production and perfection for photodetectors 8−11107
  Si_xGe_{1-x}, Ge distrib. in single crysts. grown by zone refining without crucible 8−22754
  W, single cryst. wire fabrication using electron beam zone-refining system modification 8−6845
zoology
  bull, intestinal-prostatic impedance at ejaculation 8−40458
  deep-sea animals trapping, pressure vessel with simply actuated closure 8−3821
  rat, female, sexual behaviour and US vocalisations 8−40208
zoosemiotics *see biocommunications*
Zr *see zirconium*

ABSTRACTS AND CURRENT PAPERS JOURNALS

SUBSCRIPTION PRICES

[illegible]

CUMULATIVE INDEXES

[illegible]

ORDERING PROCEDURE

[illegible]

OTHER INSPEC SERVICES

[illegible]

ABSTRACTS AND CURRENT PAPERS JOURNALS

SUBSCRIPTION PRICES

	USA $	UK £	ROW £	JAPAN Y
PHYSICS ABSTRACTS				
Paper *or* Microfiche	700	290	360	252,000
Paper *and* Microfiche	1050	435	540	378,000
ELECTRICAL & ELECTRONICS ABSTRACTS				
Paper *or* Microfiche	510	240	285	199,500
Paper *and* Microfiche	765	360	427	299,250
COMPUTER & CONTROL ABSTRACTS				
Paper *or* Microfiche	295	150	185	129,500
Paper *and* Microfiche	442	225	277	194,250
PA/EEA/CCA COMBINED SUBSCRIPTION				
Paper *or* Microfiche	1300	600	740	518,000
Paper *and* Microfiche	1950	900	1110	777,000
EEA/CCA COMBINED SUBSCRIPTION				
Paper *or* Microfiche	725	350	420	294,000
Paper *and* Microfiche	1087	525	630	441,000
CURRENT PAPERS IN PHYSICS				
Member rate	50	25	25	—
Non-Member rate	100	55	55	38,500
CURRENT PAPERS IN ELECTRICAL & ELECTRONICS ENGINEERING				
Member rate	40	25	25	—
Non-Member rate	80	45	45	31,500
CURRENT PAPERS ON COMPUTERS & CONTROL				
Member rate	40	25	25	—
Non-Member rate	80	45	45	31,500
KEY ABSTRACTS				
Member rate*	25	12	12	—
Non-Member rate	45	20	20	14,000
KEY ABSTRACTS				
EMI/PMI PER SECTION—Member	40	12	12	—
Non-Member rate	55	25	25	17,500
COMBINED	—	40	40	28,000

*The Key Abstracts Member rate is available to Members of the IEE and IEEE *only*.

CUMULATIVE INDEXES

Cumulative indexes are available for *Physics Abstracts*, *Electrical & Electronics Abstracts* and *Computer & Control Abstracts*, for both authors and subjects. These cumulations generally cover a period of four years, with the exception of *Computer & Control Abstracts* where the initial volume covered the period 1966–68. The table below shows the prices and periods for the two types of cumulative index.

	PHYSICS ABSTRACTS				ELECTRICAL & ELECTRONICS ABSTRACTS				COMPUTER & CONTROL ABSTRACTS			
	AMERICAS		REST OF WORLD		AMERICAS		REST OF WORLD		AMERICAS		REST OF WORLD	
	Subject	Author	Subject	Author	Subject	Author	Subject	Author	Subject	Author	Subject	Author
	$	$	£	£	$	$	£	£	$	$	£	£
1955–59	50	50	20	20	38	50	15	20	—	—	—	—
1960–64	100	43	40	17	50	30	20	12	—	—	—	—
1965–68	150	75	63	25	88	50	35	20	—	—	—	—
1969–72	545	—	222	—	180	160	72	64	123	78	48	30
1973–76	1200	600	600	300	500	300	250	150	300	150	150	75
1966–68	—	—	—	—	—	—	—	—	38		15	

ORDERING PROCEDURE

THE AMERICAS

North (including Canada), Central and South

All orders from the above areas, and orders from members of Institute of Electrical and Electronics Engineers Inc. anywhere in the world, should be sent to Fulfillment Manager, Institute of Electrical & Electronics Engineers Inc., 445 Hoes Lane, Piscataway, N.J. 08854, USA.

日本のお客様にご案内申し上げます

日本国内に於けるINSPECの購入価格はすべて円建てとなっております。また刊行物はすべて航空便で配達されます。INSPEC刊行物の価格、その他についてのお問合わせは最寄の洋書取扱専門店または輸入総代理店㈱ユー・エス・エシアテック　カンパニー　〒105東京都港区新橋1−13−12，TEL03（502）6471までご連絡ください。

REMAINDER OF THE WORLD

All remaining subscriptions should be sent to INSPEC Marketing Department, P O Box 26, Hitchin, Herts SG5 7RS, England. Telephone 01-240 1871, Telex 261176, Telegrams Voltampere London WC2.

OTHER INSPEC SERVICES

SDI

(Selective Dissemination of Information.) This is a service individually tailored to the requirements and interests of the engineer or research worker. Details of information relevant to the interest profile of the individual subscriber are selected from the data being processed for the INSPEC database. Information is dispatched weekly on 150 mm × 100 mm (6″ × 4″) cards.

TOPICS

This is an SDI service based on standard profiles. There are over 70 subjects covering high-activity areas of research and development. This is an inexpensive card service designed to alert engineers and researchers to the availability of literature within their subject area.

MAGNETIC TAPES

Tapes containing all the information included in the INSPEC publications are issued twice monthly. They enable the larger research and development organisations to produce their own internal information and current-awareness services.

inspec
The Institution of Electrical Engineers

IEE PERIODICALS

The Institution of Electrical Engineers has long been an important publisher of primary periodicals and conference publications, and, in this respect, makes a major contribution to the science and engineering literature of the world.

Proceedings IEE
This monthly periodical contains significant and original contributions in electrical engineering, electronics and control engineering. A particular feature is the annual IEE Reviews issue, which contains specially commissioned articles written by specialists that review topics in depth for the professional electrical and electronics engineer.

Electronics Record, Power Record and Control & Science Record
The Records are quarterly periodicals containing papers covering the fields of electronics, power engineering, control, automation, electrical science, education and management, reprinted from the three previous issues of the Proceedings IEE.

Electronics Letters
A fortnightly international publication specially designed to provide rapid publication of short communications by research workers and development engineers in electronic science and engineering, radio and automatic control.

Electronics & Power
This wide-ranging technological magazine, published 11 times a year, contains industrial news and new-products information, together with articles on technology, management and other topics likely to interest, and be of use to, the engineer. The subscription also includes IEE News.

IEE Journal on Microwaves, Optics and Acoustics (MOA)
Bimonthly journal with detailed coverage of microwave, optical and acoustic engineering of systems, components and devices of a size comparable to or greater than the wavelength of operation.

IEE Journal on Electronic Circuits and Systems (ECS)
Bimonthly journal covering original concepts, theory and analysis in circuits and systems including computer-aided design, communication, computers and radar.

IEE Journal on Solid-State and Electron Devices (SSED)
Coverage is given in this bimonthly journal to the fundamentals and physics of bulk-effect, m.i.s., optoelectronic and novel devices along with their design, limitations and performance.

IEE Journal on Computers and Digital Techniques (CDT)
This new quarterly journal is devoted to digital systems in the broadest sense, covering the structure, design and technology of the systems themselves and the subsystems and components from which they are built.

IEE Journal on Electric Power Applications (EPA)
The aim of this new quarterly journal is the dissemination of technical knowledge on all aspects of the utilisation of electric power.

For full details of all IEE primary periodicals, conference publications and books, as well as information on special prices for IEE members, please write to:
Marketing Department
Institution of Electrical Engineers
PO Box 8, Southgate House, Stevenage, Herts. SG1 1HQ, England